MITSUBISHI ELECTRIC

Changes for the Better

AIR CONDITIONING SYSTEMS

HYBRID CITY MULTI

DATA BOOK

R32/R410A series

H7

Preface

DATA BOOK describes the technical specifications of MITSUBISHI ELECTRIC Corp.'s HYBRID CITY MULTI (HVRF) air conditioning system products.

DATA BOOK H7 is updated from H4 and H6. The contents below are added as well as some minor revisions.

Changes from H4 to H7

Outdoor: PURY-P-YNW-A1(-TR) and PURY-EP-YNW-A1(-TR) have been changed to PURY-P-YNW-A2/TR2 and PURY-EP-YNW- A2/TR2.
PUHY-M-YNW-A1 and PUHY-EM-YNW-A1 have been added to the lineup.
PURY-M-YNW-A1 and PURY-EM-YNW-A1 have been added to the lineup.

Hydro units: CMH-WM-V-A has been added to the lineup.

HBC controller: CMB-WM-V-AB has been changed to CMB-WM-V-BB.
CMB-WM-F-AA has been added to the lineup.

Indoor: PCFY-WL-VKM-E has been added to the lineup.
PFFY-WL-VEM-A has been added to the lineup.
PFFY-WP-VLRMM-E has been changed to PFFY-WL-VCM-A.

Controller: PAR-40MAA has been changed to PAR-41MAA.
PAR-SL100A-E has been changed to PAR-SL101A-E.
PAR-SA9CA-E has been added to the lineup.
AE-200E/AE-50E/EW-50E have been changed to AE-C400E/EW-C50E.
PZ-61DR-E and PZ-43SMF-E have been deleted from the lineup.
PZ-62DR-EA/EB has been added to the lineup.
LMAP04-E has been deleted from the lineup.

Changes from H6 to H7

Outdoor/heat source: PURY-P-YNW-A2/TR2 and PURY-EP-YNW- A2/TR2 have been added to the lineup.
PQRY-P-YLM-A2 and PQRY-P-YLM-A1 have been added to the lineup.

Indoor: PCFY-WL-VKM-E has been added to the lineup.
PFFY-WL-VEM-A has been added to the lineup.
PFFY-WP-VLRMM-E has been changed to PFFY-WL-VCM-A.

Controller: AE-200E/AE-50E/EW-50E have been changed to AE-C400E/EW-C50E.
PZ-61DR-E and PZ-43SMF-E have been deleted from the lineup.
PZ-62DR-E has been changed to PZ-62DR-EA/EB.
LMAP04-E has been deleted from the lineup.

We recommend DATA BOOK users to read carefully and take advantage of all the contents inside to design the HYBRID CITY MULTI air conditioning system and/or to prepare documents for promotions.

Along with the DATA BOOK, MITSUBISHI ELECTRIC provides a Design-Tool software to ensure the users to design the system correctly and simplify the calculations. Please contact your local distributor for this software.

Please be notified that specifications are subject to change without notice due to continual improvements of the product.
For any inquiries, please contact your local distributor.

"CITY MULTI" described in chapter titled "Controller" includes "HYBRID CITY MULTI."

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HYBRID CITY MULTI R32/R410A Series
DATA BOOK H7

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HYBRID CITY MULTI R32/R410A Series

1. OUTDOOR/HEAT SOURCE UNITS/HYDRO UNIT/HBC CONTROLLER

GENERAL LINE-UP

Compatibility

Cooling or Heating

Y-Series R32

PUHY-M-YNW-A1, PUHY-EM-YNW-A1 ..... 1 - 1

Hydro unit R32

CMH-WM-V-A ..... 1 - 83

Simultaneous Cooling and Heating

R2-Series R32

PURY-M-YNW-A1, PURY-EM-YNW-A1 ..... 1 - 97

R2-Series R410A

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GENERAL LINE-UP

Line-up of Outdoor Units of R32 HYBRID CITY MULTI

Cooling or Heating

Y-Series R32



PUHY-M200YNW-A1(-BS) PUHY-M250YNW-A1(-BS)
PUHY-M300YNW-A1(-BS)

8, 10, 12HP



PUHY-M350YNW-A1(-BS) PUHY-M400YNW-A1(-BS)
PUHY-M450YNW-A1(-BS)

14, 16, 18HP



PUHY-M500YNW-A1(-BS)

20HP

High efficiency Y-Series R32



PUHY-EM200YNW-A1(-BS) PUHY-EM250YNW-A1(-BS)
PUHY-EM300YNW-A1(-BS)

8, 10, 12HP



PUHY-EM350YNW-A1(-BS) PUHY-EM400YNW-A1(-BS)
PUHY-EM450YNW-A1(-BS)

14, 16, 18HP



PUHY-EM500YNW-A1(-BS)

20HP

GENERAL LINE-UP

Hydro unit R32



CMH-WM250V-A
CMH-WM500V-A

CMH-WM350V-A

GENERAL LINE-UP

Simultaneous Cooling and Heating

R2-Series R32



PURY-M200YNW-A1(-BS) PURY-M250YNW-A1(-BS)
PURY-M300YNW-A1(-BS)

8, 10, 12HP



PURY-M350YNW-A1(-BS) PURY-M400YNW-A1(-BS)
PURY-M450YNW-A1(-BS)

14, 16, 18HP



PURY-M500YNW-A1(-BS)

20HP

High efficiency R2-Series R32



PURY-EM200YNW-A1(-BS) PURY-EM250YNW-A1(-BS)
PURY-EM300YNW-A1(-BS)

8, 10, 12HP



PURY-EM350YNW-A1(-BS) PURY-EM400YNW-A1(-BS)
PURY-EM450YNW-A1(-BS)

14, 16, 18HP



PURY-EM500YNW-A1(-BS)

20HP

GENERAL LINE-UP

Heat Recovery R2-Series R410A



PURY-P200YNW-A2/TR2(-BS) PURY-P250YNW-A2/TR2(-BS)
PURY-P300YNW-A2/TR2(-BS)

8, 10, 12HP



PURY-P350YNW-A2/TR2(-BS) PURY-P400YNW-A2/TR2(-BS)
PURY-P450YNW-A2/TR2(-BS)

14, 16, 18HP



PURY-P500YNW-A2/TR2(-BS)

20HP

Heat Recovery High efficiency R2-Series R410A



PURY-EP200YNW-A2/TR2(-BS) PURY-EP250YNW-A2/TR2(-BS)
PURY-EP300YNW-A2/TR2(-BS)

8, 10, 12HP



PURY-EP350YNW-A2/TR2(-BS) PURY-EP400YNW-A2/TR2(-BS)
PURY-EP450YNW-A2/TR2(-BS)

14, 16, 18HP



PURY-EP500YNW-A2/TR2(-BS)

20HP

GENERAL LINE-UP

Heat Recovery WR2-Series R410A



PQRY-P200YLM-A2
PQRY-P300YLM-A2

PQRY-P250YLM-A2

8, 10, 12HP



PQRY-P350YLM-A2
PQRY-P450YLM-A2

PQRY-P400YLM-A2
PQRY-P500YLM-A2

14, 16, 18, 20HP

GENERAL LINE-UP

Heat Recovery WR2-Series R410A



PQRY-P200YLM-A1
PQRY-P300YLM-A1

PQRY-P250YLM-A1

8, 10, 12HP



PQRY-P350YLM-A1
PQRY-P450YLM-A1

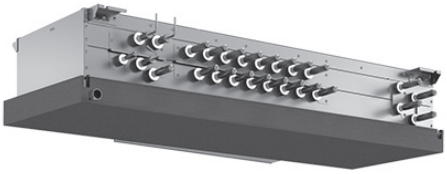
PQRY-P400YLM-A1
PQRY-P500YLM-A1

14, 16, 18, 20HP

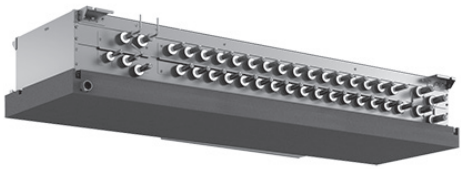
GENERAL LINE-UP

HBC controller (Main-HBC controller)

Horizontal type R32 R410A



CMB-WM108V-AA



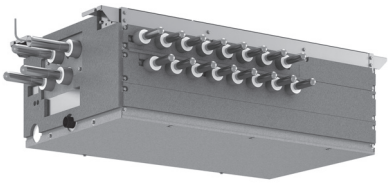
CMB-WM1016V-AA

Vertical type R32

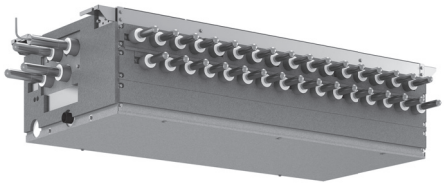


CMB-WM350, 500F-AA

HBC controller (Sub-HBC controller) R32 R410A



CMB-WM108V-BB



CMB-WM1016V-BB

Compatibility of outdoor/heat source units and HBC controllers

Outdoor/heat source units					
Refrigerant			R32	R410A	R410A
Series			R2-Series	R2-Series	WR2-Series
Model name			PURY-(E)M-YNW-A1	PURY-(E)P-YNW-A2/TR2	PQRY-P-YLM-A2/A1
HBC controllers	Horizontal type	CMB-WM-V-AA R32 R410A	Compatible	Compatible	Compatible
	Vertical type	CMB-WM-F-AA R32	Compatible	Not compatible	Not compatible
	Horizontal type	CMB-WM-V-BB R32 R410A	Compatible	Compatible	Compatible

PUHY-M-YNW-A1, PUHY-EM-YNW-A1

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Model			PUHY-M200YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	22.4
(Nominal)		BTU/h	76,400
	Power input	kW	5.53
	Current input	A	9.3-8.8-8.5
	EER	kW/kW	4.05
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	25.0
(Nominal)		BTU/h	85,300
	Power input	kW	5.70
	Current input	A	9.6-9.1-8.8
	COP	kW/kW	4.38
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit	Total capacity		50~130% of outdoor unit capacity
connectable	Model/Quantity		W/WL10~125/1~26
Sound pressure level (measured in anechoic room) *3		dB <A>	58.0/59.0
Sound power level (measured in anechoic room) *3		dB <A>	75.0/78.0
Refrigerant	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
piping diameter	Gas pipe	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	4.0
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	222 (490)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T604
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM250V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Cooling mode/Heating mode
4. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.
5. R32 is flammable, and certain restrictions apply to the installation of units.
   When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
   For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M250YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		BTU/h	95,500
	Power input	kW	8.38
	Current input	A	14.1-13.4-12.9
	EER	kW/kW	3.34
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		BTU/h	107,500
	Power input	kW	8.18
	Current input	A	13.8-13.1-12.6
	COP	kW/kW	3.85
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/1~32
Sound pressure level (measured in anechoic room) *3		dB <A>	60.0/61.0
Sound power level (measured in anechoic room) *3		dB <A>	78.0/80.0
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	6.3
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	222 (490)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T604
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM250V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M300YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	33.5
		BTU/h	114,300
	Power input	kW	9.85
	Current input	A	16.6-15.7-15.2
	EER	kW/kW	3.40
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	37.5
		BTU/h	128,000
	Power input	kW	9.66
	Current input	A	16.3-15.4-14.9
	COP	kW/kW	3.88
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~39
Sound pressure level (measured in anechoic room) *3		dB <A>	61.0/64.5
Sound power level (measured in anechoic room) *3		dB <A>	80.0/83.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	240
		L/s	4,000
		cfm	8,474
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	7.6
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	223 (492)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T604
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM350V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M350YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	40.0
		BTU/h	136,500
	Power input	kW	12.15
	Current input	A	20.5-19.4-18.7
	EER	kW/kW	3.29
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	45.0
		BTU/h	153,500
	Power input	kW	12.16
	Current input	A	20.5-19.5-18.7
	COP	kW/kW	3.70
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~45
Sound pressure level (measured in anechoic room) *3		dB <A>	62.0/64.0
Sound power level (measured in anechoic room) *3		dB <A>	80.5/83.0
Refrigerant piping diameter	Liquid pipe	mm (in.)	12.7 (1/2) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	270
		L/s	4,500
		cfm	9,534
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	9.6
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 9.8 kg (22 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	270 (596)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T605
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM350V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M400YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	45.0
(Nominal)		BTU/h	153,500
	Power input	kW	14.65
	Current input	A	24.7-23.4-22.6
	EER	kW/kW	3.07
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	50.0
(Nominal)		BTU/h	170,600
	Power input	kW	13.69
	Current input	A	23.1-21.9-21.1
	COP	kW/kW	3.65
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit	Total capacity		50~130% of outdoor unit capacity
connectable	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	65.0/67.0
Sound power level (measured in anechoic room) *3		dB <A>	82.5/86.0
Refrigerant	Liquid pipe	mm (in.)	12.7 (1/2) Brazed
piping diameter	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	300
		L/s	5,000
		cfm	10,593
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	11.8
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 9.8 kg (22 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	273 (602)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T605
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Cooling mode/Heating mode
4. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.
5. R32 is flammable, and certain restrictions apply to the installation of units.
   When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
   For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M450YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	14.70
	Current input	A	24.8-23.5-22.7
	EER	kW/kW	3.40
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	16.00
	Current input	A	27.0-25.6-24.7
	COP	kW/kW	3.50
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	65.5/69.5
Sound power level (measured in anechoic room) *3		dB <A>	83.5/88.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	305
		L/s	5,083
		cfm	10,770
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	12.9
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	290 (640)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T605
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-M500YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	17.72
	Current input	A	29.9-28.4-27.3
	EER	kW/kW	3.16
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	63.0
		BTU/h	215,000
	Power input	kW	17.07
	Current input	A	28.8-27.3-26.3
	COP	kW/kW	3.69
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	63.5/66.5
Sound power level (measured in anechoic room) *3		dB <A>	82.0/85.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	365
		L/s	6,083
		cfm	12,888
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	13.5
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	329 (726)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T606
	Wiring		WKE94G769
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM200YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	22.4
		BTU/h	76,400
	Power input	kW	5.00
	Current input	A	8.4-8.0-7.7
	EER	kW/kW	4.48
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	25.0
		BTU/h	85,300
	Power input	kW	5.50
	Current input	A	9.2-8.8-8.5
	COP	kW/kW	4.54
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/1~26
Sound pressure level (measured in anechoic room) *3		dB <A>	58.0/59.0
Sound power level (measured in anechoic room) *3		dB <A>	75.0/78.0
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	3.8
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	228 (503)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T607
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM250V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM250YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		BTU/h	95,500
	Power input	kW	7.31
	Current input	A	12.3-11.7-11.2
	EER	kW/kW	3.83
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		BTU/h	107,500
	Power input	kW	7.89
	Current input	A	13.3-12.6-12.1
	COP	kW/kW	3.99
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/1~32
Sound pressure level (measured in anechoic room) *3		dB <A>	60.0/61.0
Sound power level (measured in anechoic room) *3		dB <A>	78.0/80.0
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	5.9
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	228 (503)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T607
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM250V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Cooling mode/Heating mode
4. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.
5. R32 is flammable, and certain restrictions apply to the installation of units.
   When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
   For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM300YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	33.5
		BTU/h	114,300
	Power input	kW	8.48
	Current input	A	14.3-13.5-13.1
	EER	kW/kW	3.95
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	37.5
		BTU/h	128,000
	Power input	kW	9.30
	Current input	A	15.6-14.9-14.3
	COP	kW/kW	4.03
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~39
Sound pressure level (measured in anechoic room) *3		dB <A>	61.0/64.5
Sound power level (measured in anechoic room) *3		dB <A>	80.0/83.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	9.52 (3/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	240
		L/s	4,000
		cfm	8,474
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	7.1
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 6.5 kg (15 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	229 (505)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T607
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM350V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

3.Cooling mode/Heating mode

4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM350YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	40.0
(Nominal)		BTU/h	136,500
	Power input	kW	11.29
	Current input	A	19.0-18.1-17.4
	EER	kW/kW	3.54
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	45.0
(Nominal)		BTU/h	153,500
	Power input	kW	12.12
	Current input	A	20.4-19.4-18.7
	COP	kW/kW	3.71
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit	Total capacity		50~130% of outdoor unit capacity
connectable	Model/Quantity		W/WL10~125/2~45
Sound pressure level (measured in anechoic room) *3		dB <A>	62.0/63.5
Sound power level (measured in anechoic room) *3		dB <A>	80.5/82.5
Refrigerant	Liquid pipe	mm (in.)	12.7 (1/2) Brazed
piping diameter	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	270
		L/s	4,500
		cfm	9,534
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	9.6
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 9.8 kg (22 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	276 (609)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T608
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM350V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM400YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	45.0
		BTU/h	153,500
	Power input	kW	12.82
	Current input	A	21.6-20.5-19.8
	EER	kW/kW	3.51
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	13.40
	Current input	A	22.6-21.4-20.7
	COP	kW/kW	3.73
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	65.0/65.5
Sound power level (measured in anechoic room) *3		dB <A>	82.5/84.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	12.7 (1/2) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	270
		L/s	4,500
		cfm	9,534
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	10.7
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	299 (660)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T608
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Cooling mode/Heating mode
4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM450YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	14.20
	Current input	A	23.9-22.7-21.9
	EER	kW/kW	3.52
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	15.68
	Current input	A	26.4-25.1-24.2
	COP	kW/kW	3.57
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	65.5/69.5
Sound power level (measured in anechoic room) *3		dB <A>	83.5/88.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	305
		L/s	5,083
		cfm	10,770
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	12.6
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	299 (660)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T608
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Cooling mode/Heating mode
4. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.
5. R32 is flammable, and certain restrictions apply to the installation of units.
   When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
   For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PUHY-EM500YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	17.07
	Current input	A	28.8-27.3-26.3
	EER	kW/kW	3.28
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	63.0
		BTU/h	215,000
	Power input	kW	16.75
	Current input	A	28.2-26.8-25.8
	COP	kW/kW	3.76
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~130% of outdoor unit capacity
	Model/Quantity		W/WL10~125/2~50
Sound pressure level (measured in anechoic room) *3		dB <A>	63.5/66.5
Sound power level (measured in anechoic room) *3		dB <A>	82.0/85.5
Refrigerant piping diameter	Liquid pipe	mm (in.)	15.88 (5/8) Brazed
	Gas pipe	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	365
		L/s	6,083
		cfm	12,888
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*4	External static press.		0 Pa (0 mmH_2O)
Compressor	Type		Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter
	Motor output	kW	12.9
	Case heater	kW	-
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		Hydro unit
Net weight		kg (lbs)	338 (746)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			Copper pipe, tube-in-tube structure
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T609
	Wiring		WKE94G769
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Hydro unit: CMH-WM500V-A
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

3.Cooling mode/Heating mode

4.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

5.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PUHY-M200, 250, 300YNW-A1(-BS)

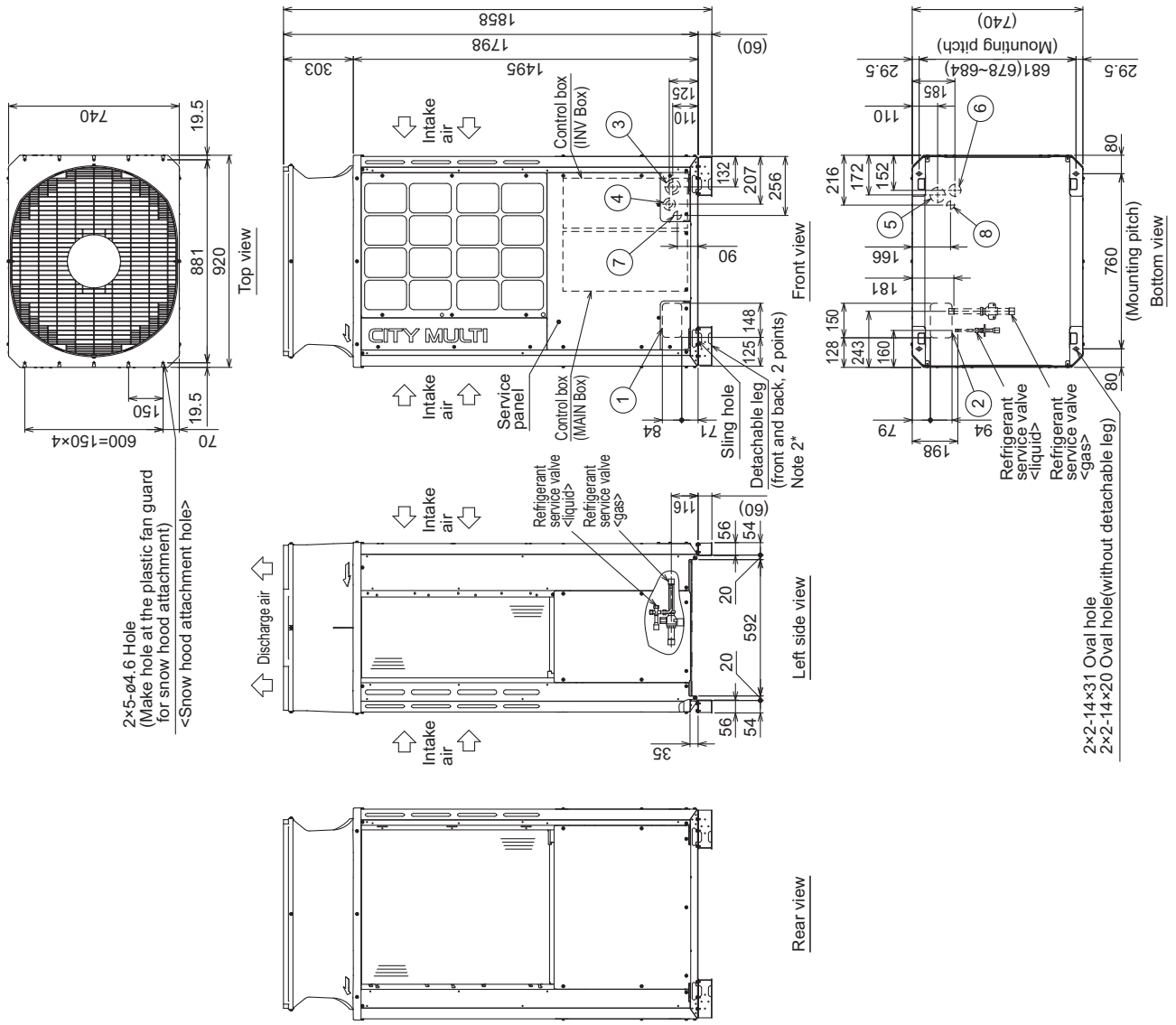
Unit: mm

Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
M200	ø9.52 Brazed	ø22.2 Brazed	ø9.52	ø22.2
M250				
M300				

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

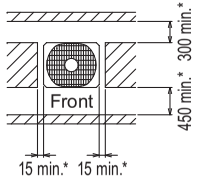


1. Required space around the unit

●In case of single installation

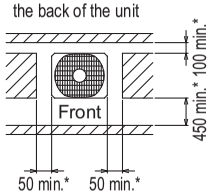
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

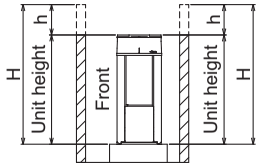
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

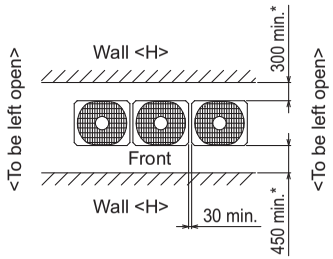
●In case of collective installation

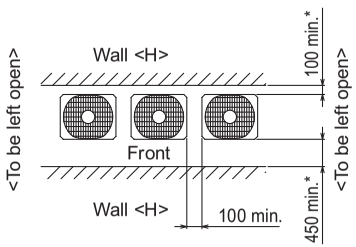
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

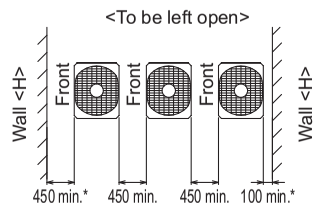
② At least two sides must be left open.

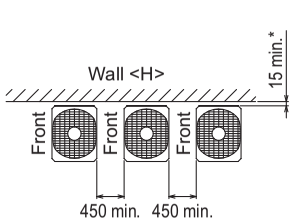
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

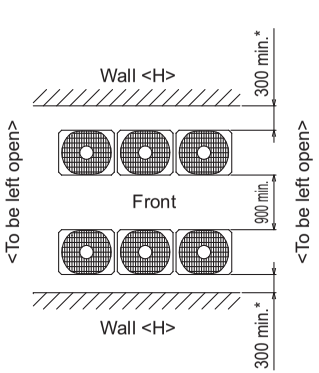
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

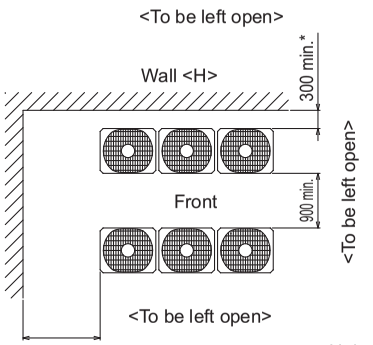












<Unit:mm>

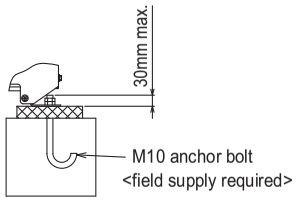


Fig.A (without detachable legs)

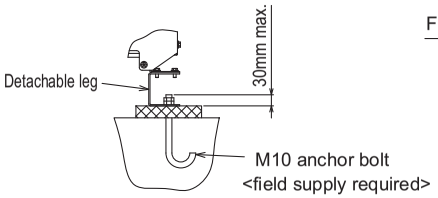


Fig.B (with detachable legs)

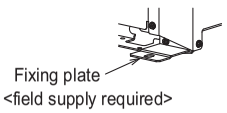


Fig.C (without detachable legs)

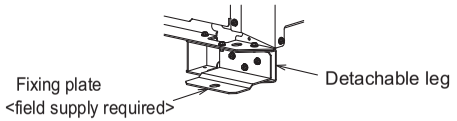


Fig.D (with detachable legs)

Unit: mm

PUHY-M350, 400, 450YNW-A1(-BS)

Unit: mm

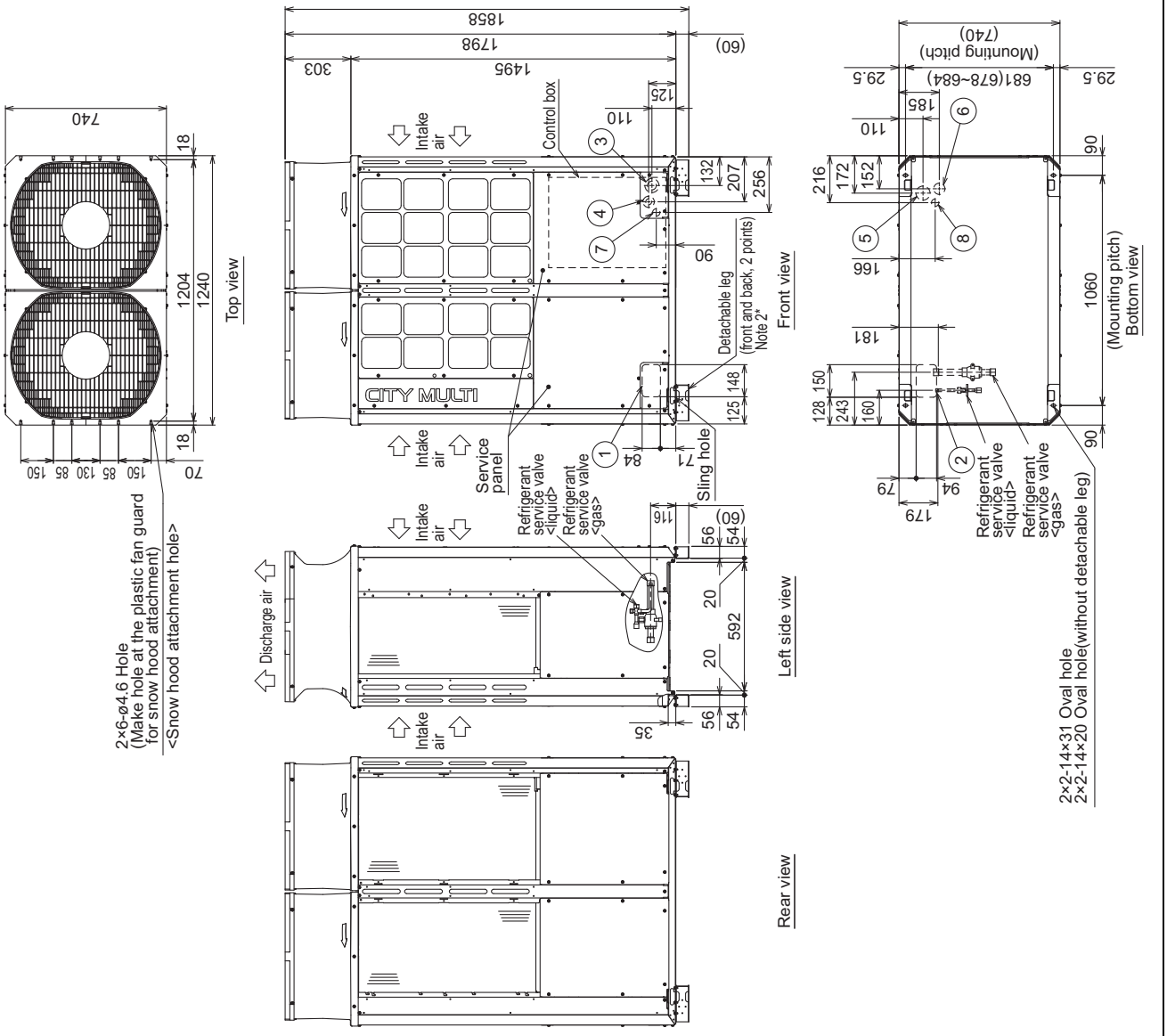
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
M350	ø12.7 Brazed	ø28.58 Brazed	ø12.7	ø28.58
M400				
M450	ø15.88 Brazed *1			

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

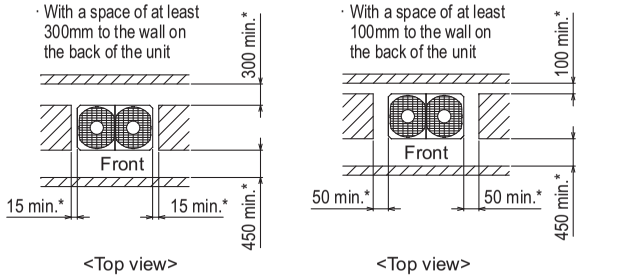
NO.	Usage	Specifications
①	For pipes	Front through hole: 148 × 84 Knockout hole
②		Bottom through hole: 150 × 94 Knockout hole
③	For wires	Front through hole: ø65 or ø40 Knockout hole
④		Front through hole: ø52 or ø27 Knockout hole
⑤		Bottom through hole: ø65 Knockout hole
⑥		Bottom through hole: ø52 Knockout hole
⑦	For transmission cables	Front through hole: ø34 Knockout hole
⑧		Bottom through hole: ø34 Knockout hole



1. Required space around the unit

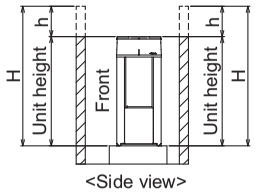
●In case of single installation

① Secure enough space around the unit as shown in the figure below.



<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

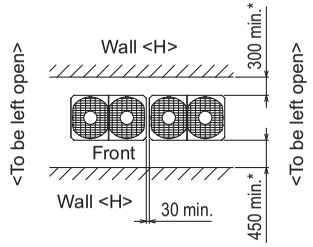
●In case of collective installation

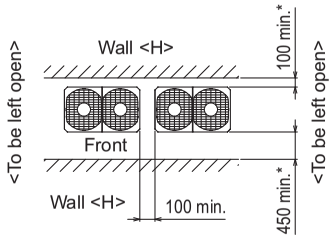
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

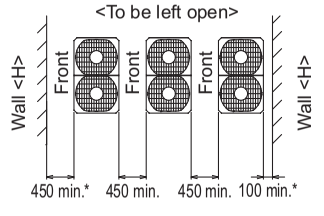
② At least two sides must be left open.

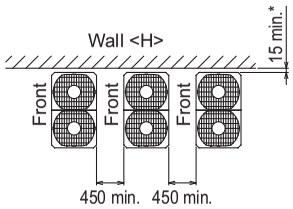
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

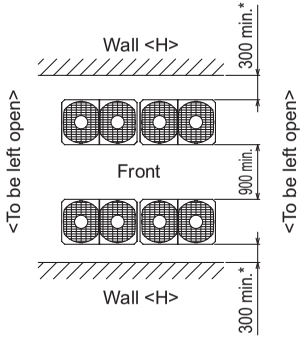
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

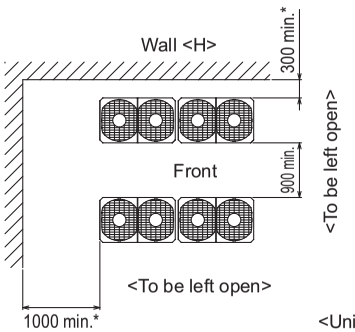












<Unit:mm>

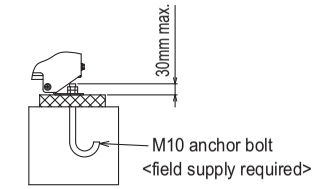


Fig.A (without detachable legs)

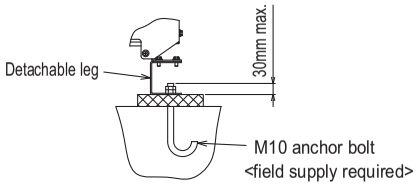


Fig.B (with detachable legs)

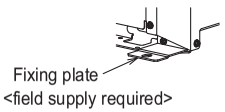


Fig.C (without detachable legs)

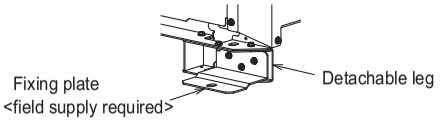


Fig.D (with detachable legs)

Unit: mm

PUHY-M500YNW-A1(-BS)

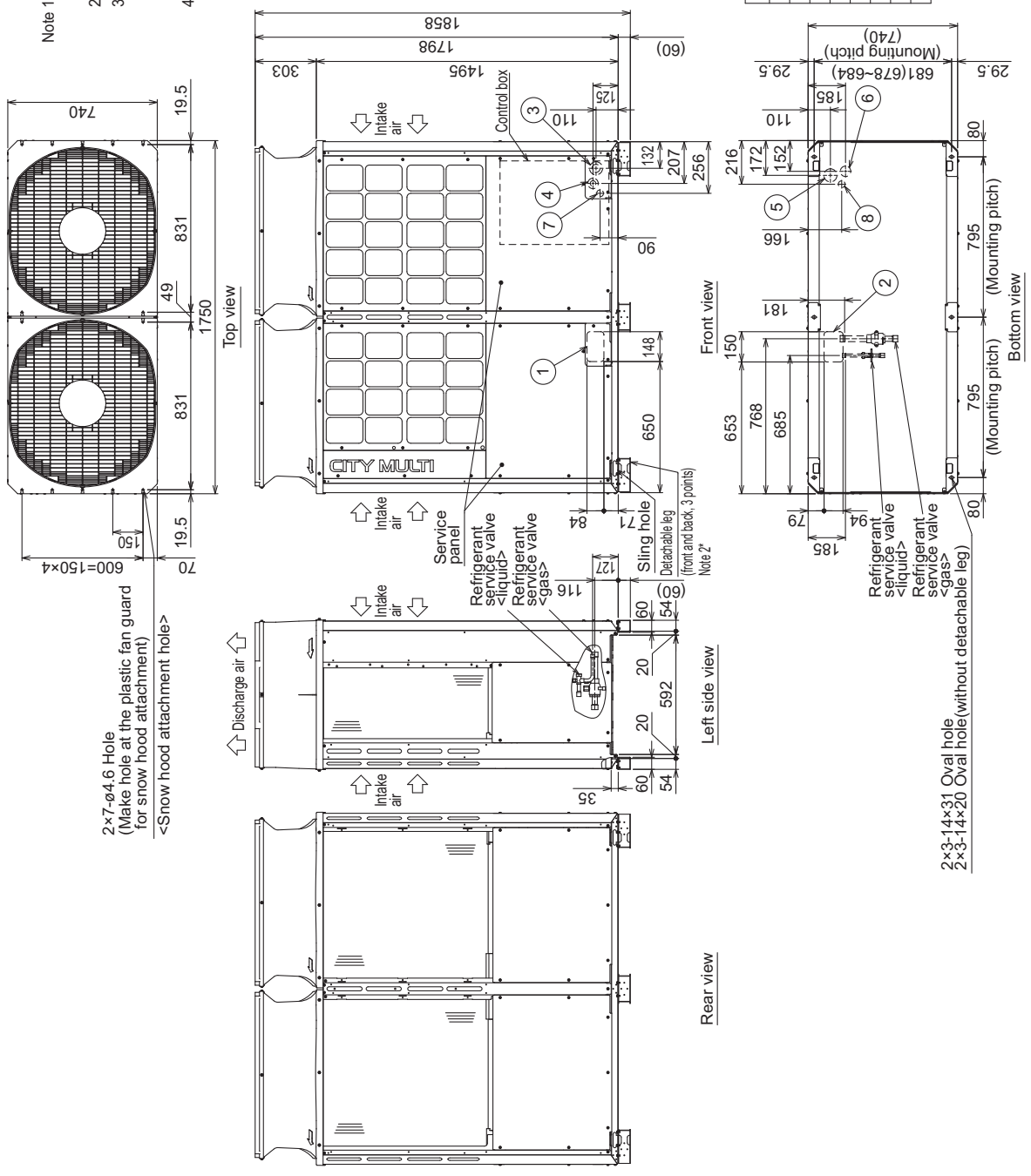
Unit: mm

Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
M500	ø15.88 Brazed	ø28.58 Brazed	ø15.88	ø28.58

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

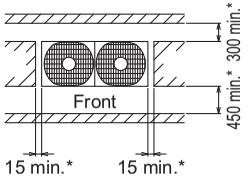


1. Required space around the unit

●In case of single installation

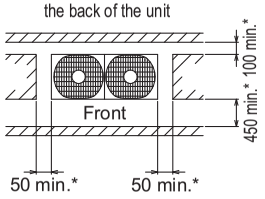
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

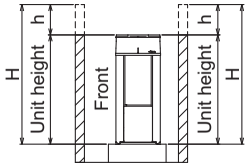
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use six fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

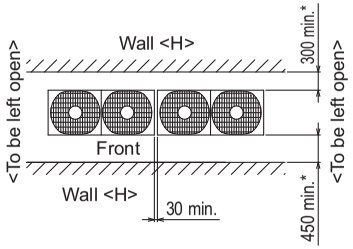
●In case of collective installation

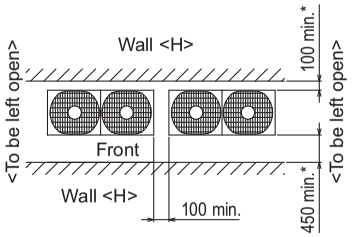
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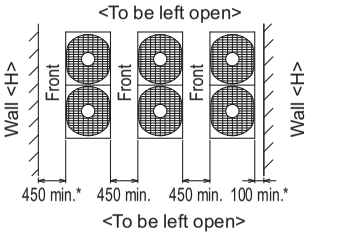
② At least two sides must be left open.

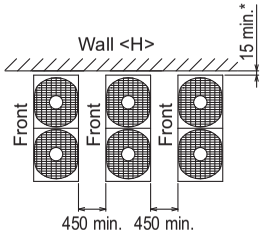
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

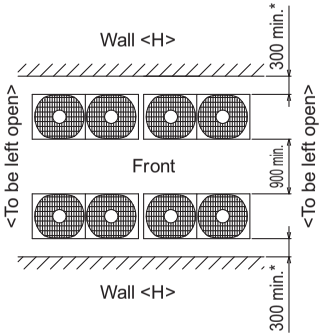
④ If there is a wall at both the front and the rear of the unit, install up to three units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each three units.

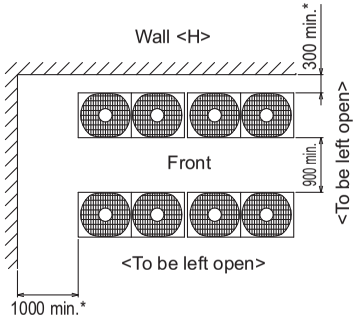












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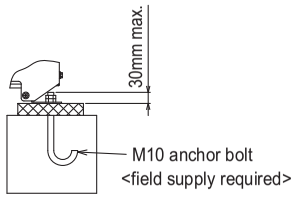


Fig.A (without detachable legs)

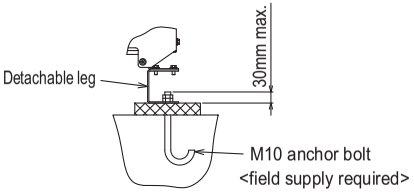


Fig.B (with detachable legs)



Fig.C (without detachable legs)

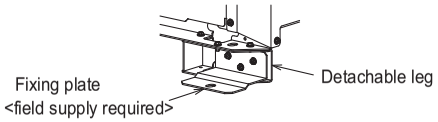


Fig.D (with detachable legs)

PUHY-EM200, 250, 300YNW-A1(-BS)

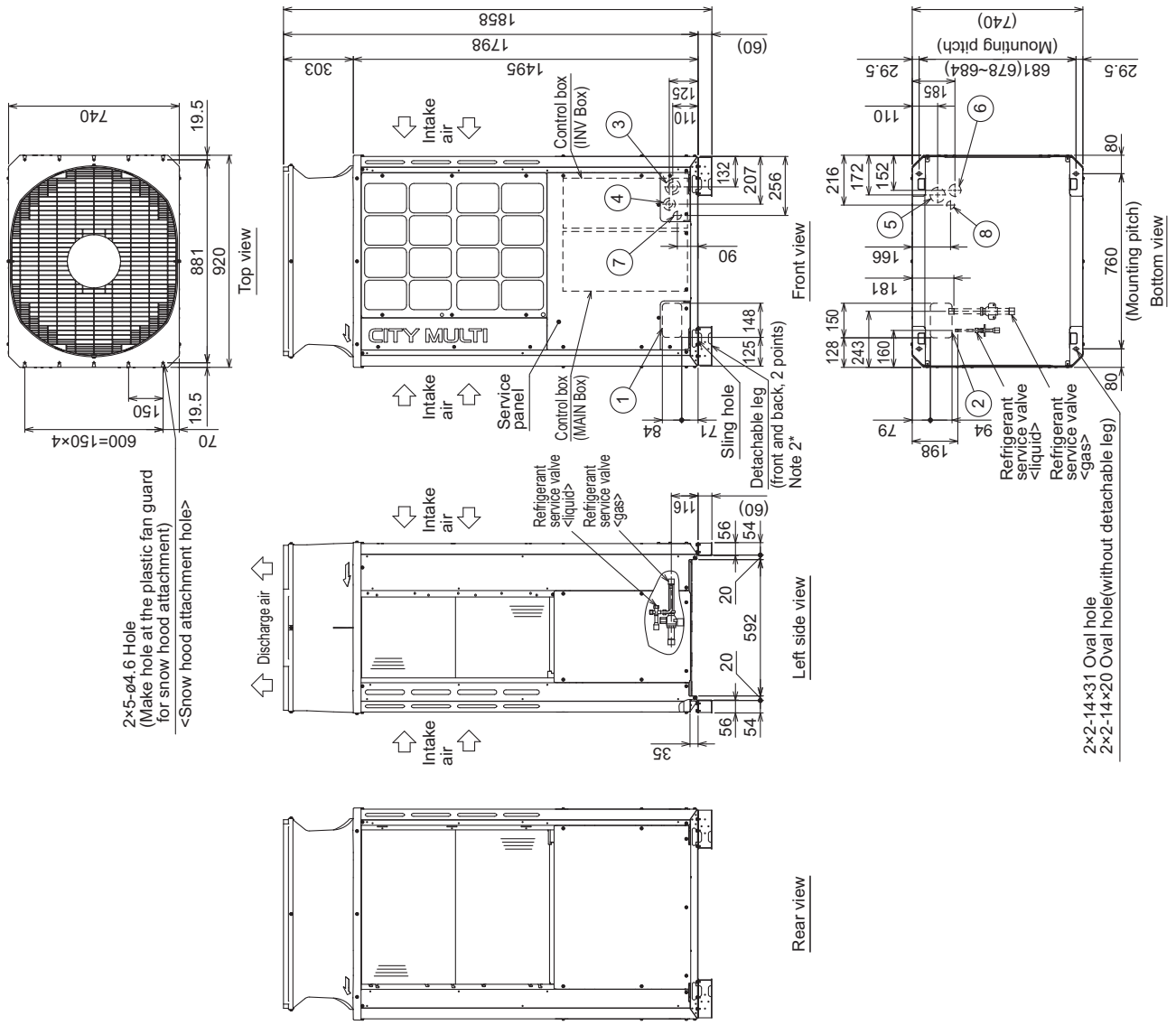
Unit: mm

Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
EM200	ø9.52 Brazed	ø22.2 Brazed	ø9.52	ø22.2
EM250				
EM300		ø28.58 Brazed		

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

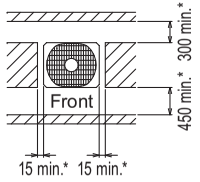


1. Required space around the unit

●In case of single installation

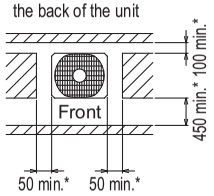
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

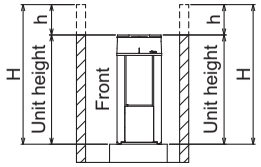
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

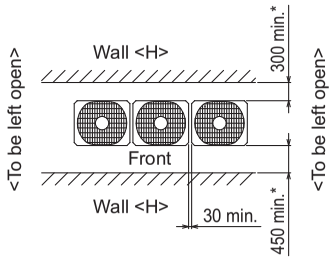
●In case of collective installation

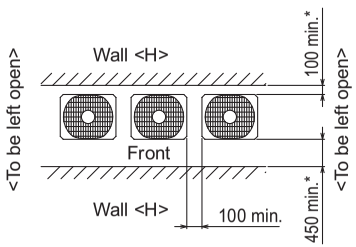
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

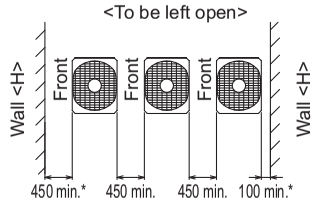
② At least two sides must be left open.

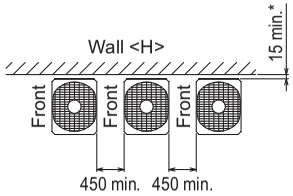
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

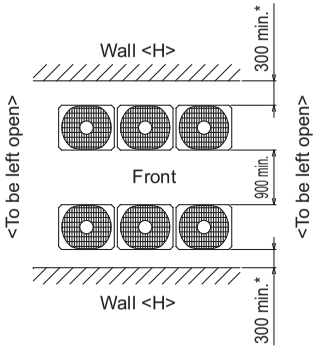
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

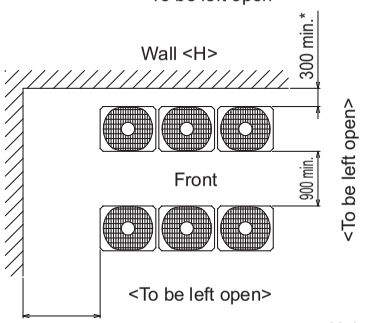












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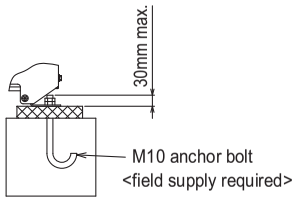


Fig.A (without detachable legs)

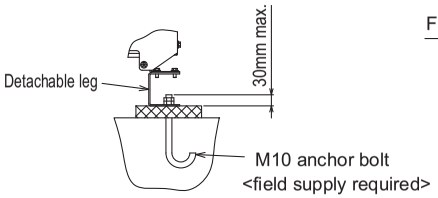


Fig.B (with detachable legs)

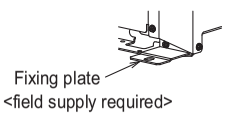


Fig.C (without detachable legs)

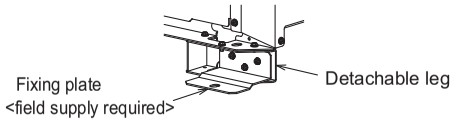


Fig.D (with detachable legs)

Unit: mm

PUHY-EM350, 400, 450YNW-A1(-BS)

Unit: mm

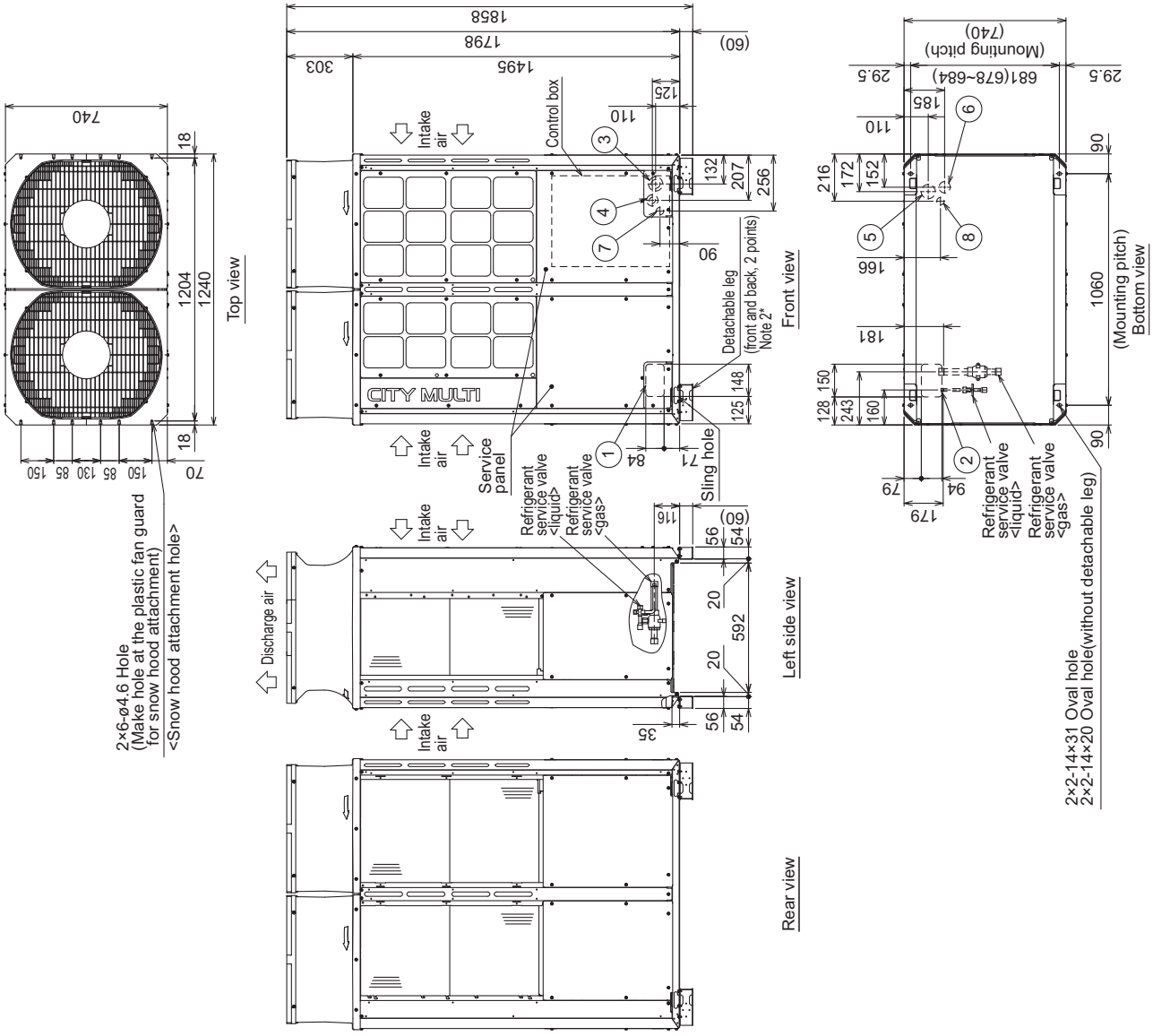
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
EM350	ø12.7 Brazed	ø28.58 Brazed	ø12.7	ø28.58
EM400				
EM450	ø15.88 Brazed *1			

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

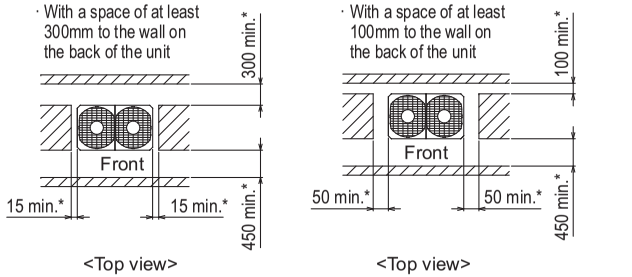
NO.	Usage	Specifications
①	For pipes	Front through hole: 148 × 84 Knockout hole
②		Bottom through hole: 150 × 94 Knockout hole
③	For wires	Front through hole: ø65 or ø40 Knockout hole
④		Front through hole: ø52 or ø27 Knockout hole
⑤		Bottom through hole: ø65 Knockout hole
⑥		Bottom through hole: ø52 Knockout hole
⑦	For transmission cables	Front through hole: ø34 Knockout hole
⑧		Bottom through hole: ø34 Knockout hole



1. Required space around the unit

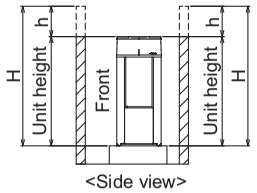
●In case of single installation

① Secure enough space around the unit as shown in the figure below.



<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

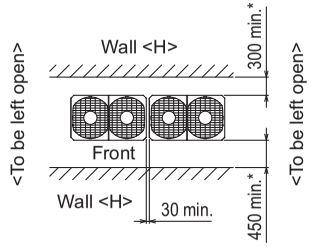
●In case of collective installation

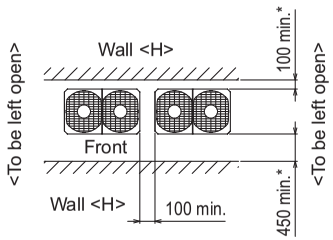
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

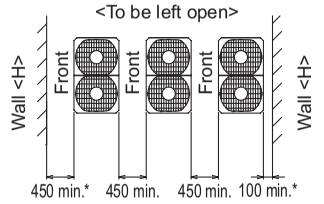
② At least two sides must be left open.

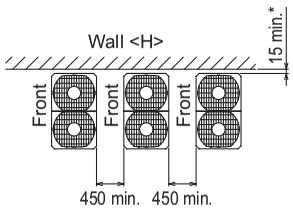
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

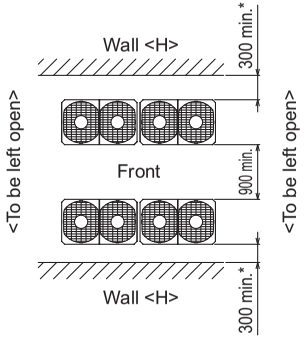
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

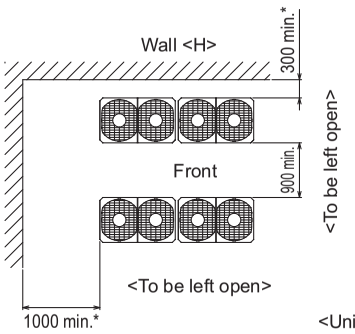












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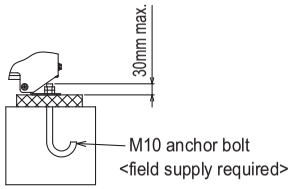


Fig.A (without detachable legs)

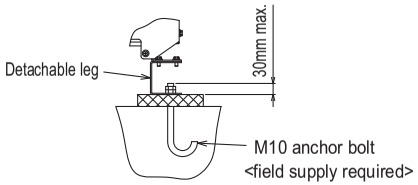


Fig.B (with detachable legs)

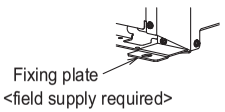


Fig.C (without detachable legs)

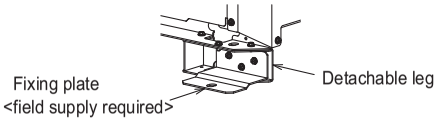


Fig.D (with detachable legs)

Unit: mm

PUHY-EM500YNW-A1(-BS)

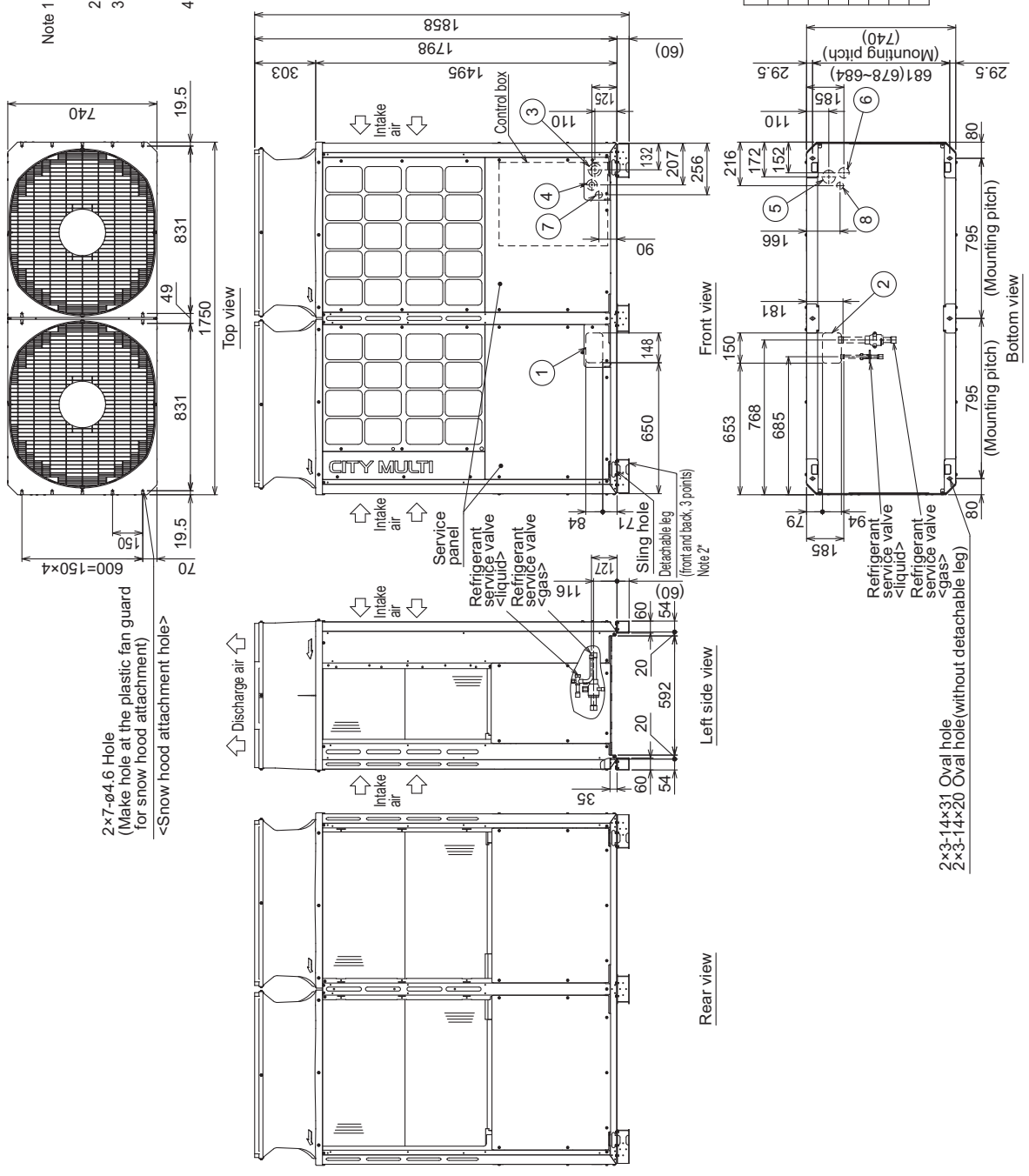
Unit: mm

Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	Liquid	Gas	Liquid	Gas
EM500	ø15.88 Brazed	ø28.58 Brazed	ø15.88	ø28.58

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

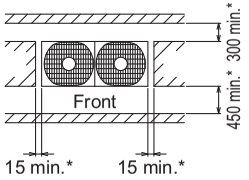


1. Required space around the unit

●In case of single installation

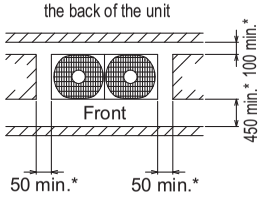
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

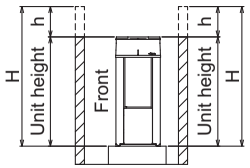
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use six fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

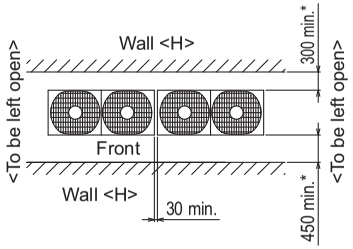
●In case of collective installation

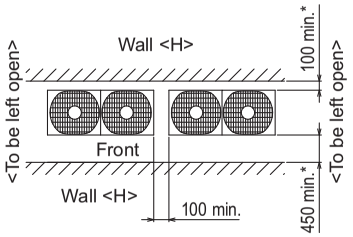
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

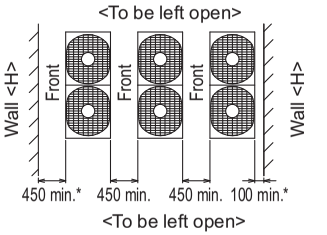
② At least two sides must be left open.

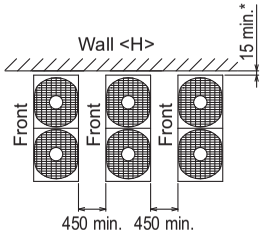
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

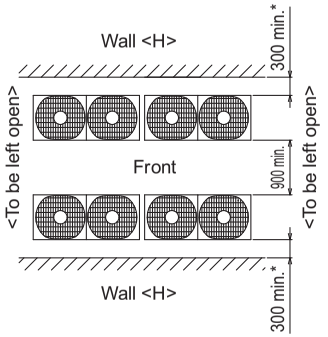
④ If there is a wall at both the front and the rear of the unit, install up to three units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each three units.

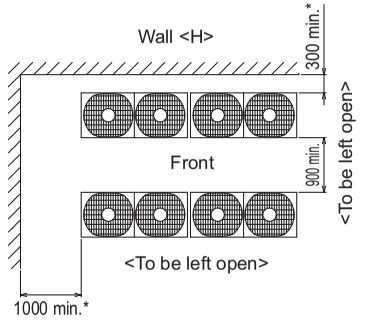












<Unit:mm>

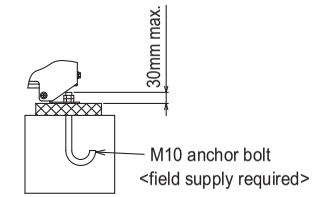


Fig.A (without detachable legs)

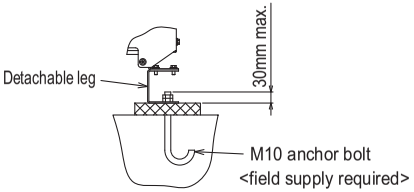


Fig.B (with detachable legs)

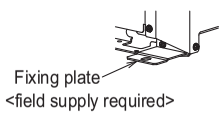


Fig.C (without detachable legs)

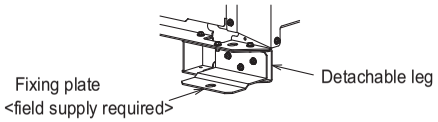
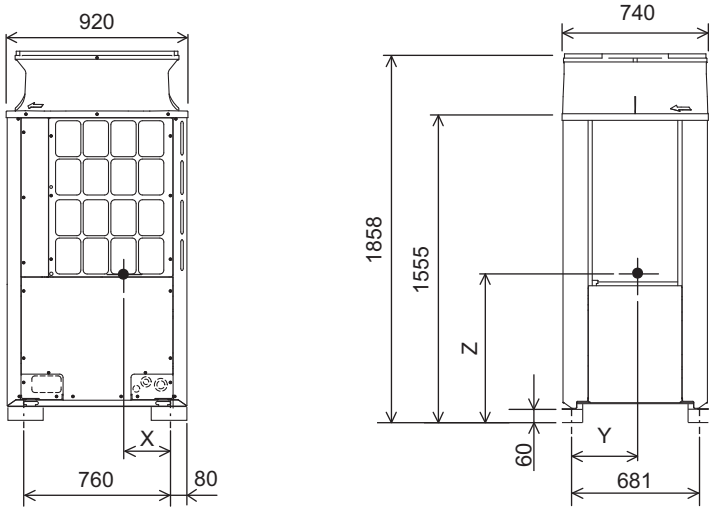


Fig.D (with detachable legs)

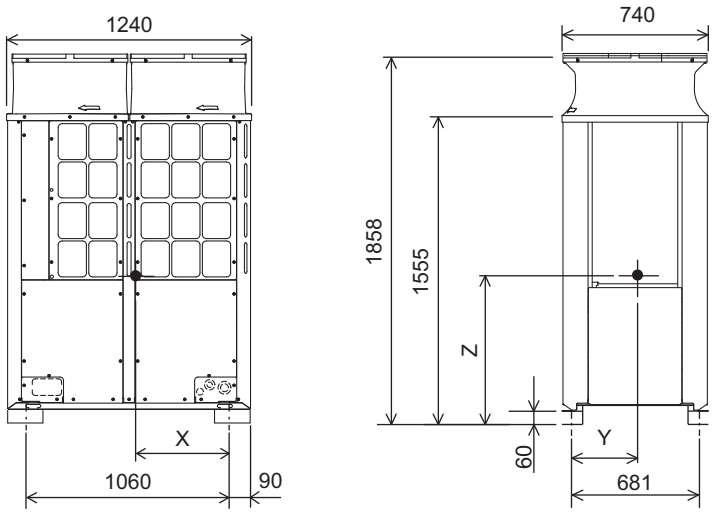
PUHY-M200, 250, 300YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-M200YNW-A1(-BS)	348	338	680
PUHY-M250YNW-A1(-BS)	348	338	680
PUHY-M300YNW-A1(-BS)	349	338	676

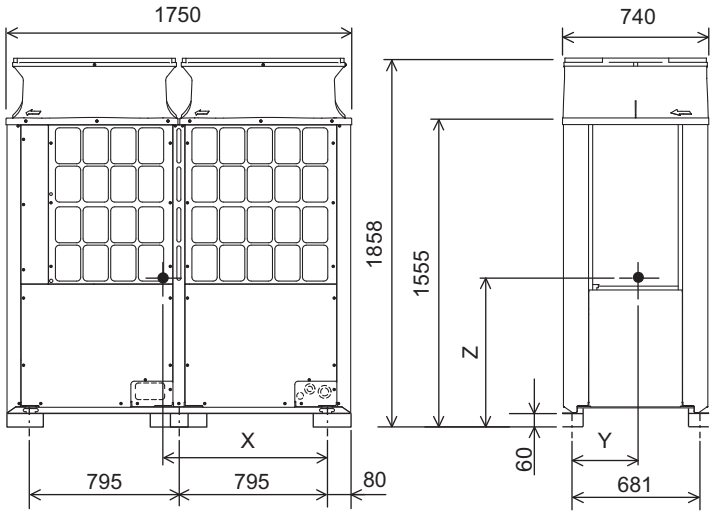
PUHY-M350, 400, 450YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-M350YNW-A1(-BS)	492	347	722
PUHY-M400YNW-A1(-BS)	492	347	722
PUHY-M450YNW-A1(-BS)	491	348	750

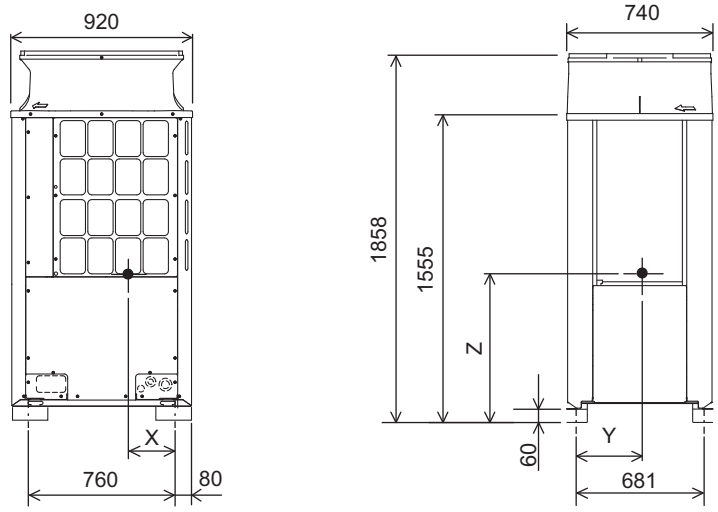
PUHY-M500YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-M500YNW-A1(-BS)	870	308	725

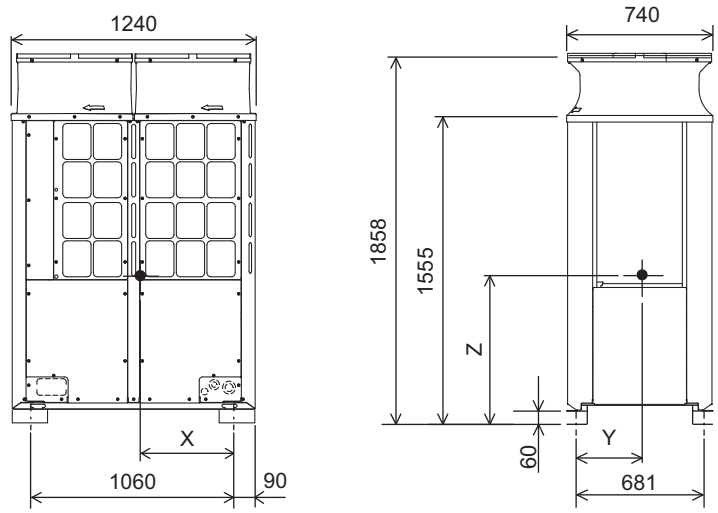
PUHY-EM200, 250, 300YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-EM200YNW-A1(-BS)	349	337	686
PUHY-EM250YNW-A1(-BS)	349	337	686
PUHY-EM300YNW-A1(-BS)	351	338	682

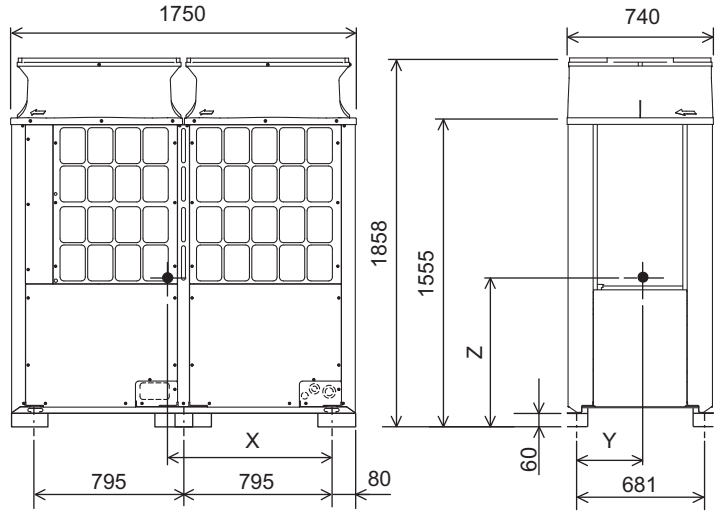
PUHY-EM350, 400, 450YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-EM350YNW-A1(-BS)	494	346	732
PUHY-EM400YNW-A1(-BS)	495	346	758
PUHY-EM450YNW-A1(-BS)	495	346	758

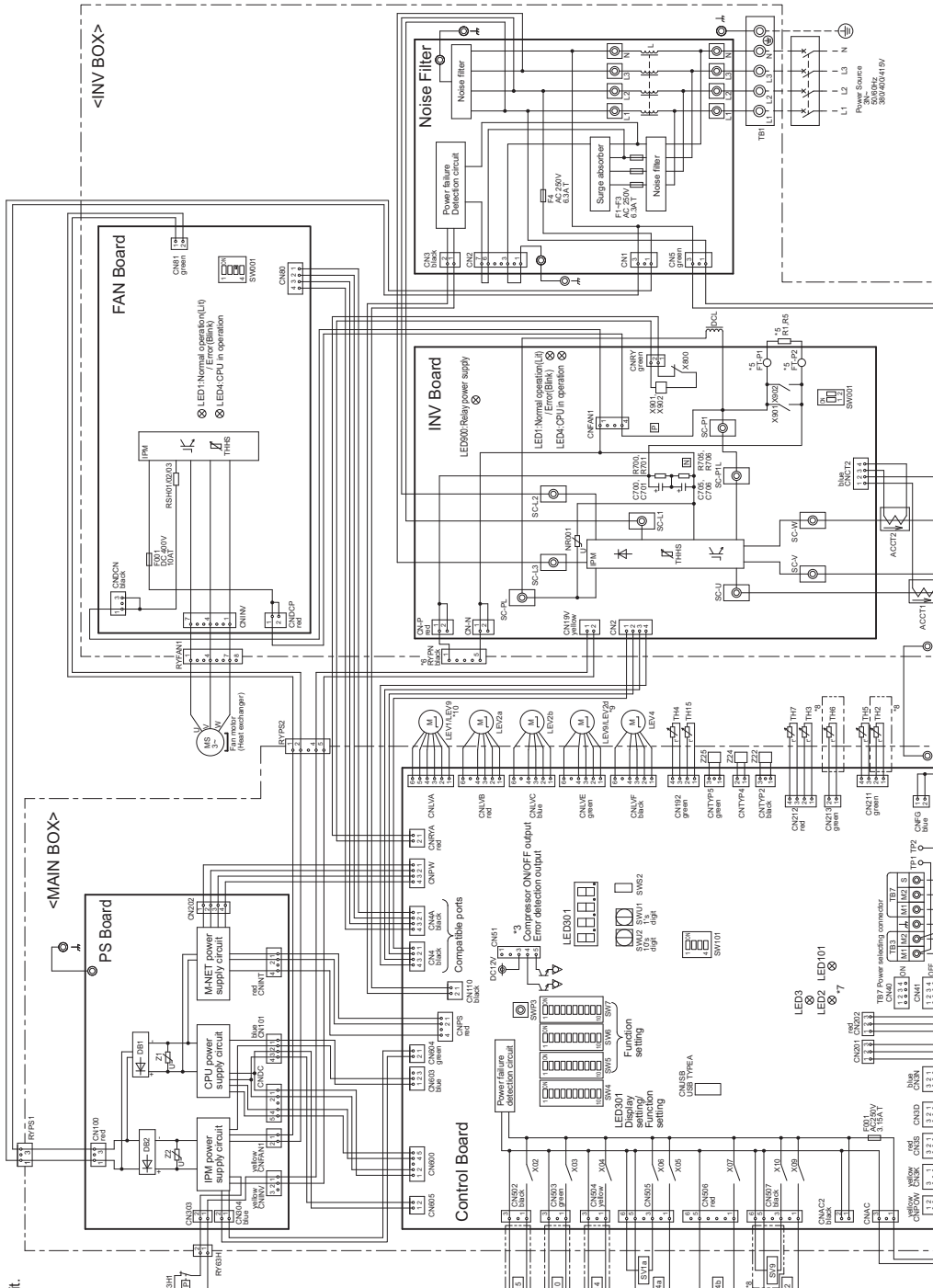
PUHY-EM500YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PUHY-EM500YNW-A1(-BS)	869	310	732

PUHY-(E)M200, 250, 300YNW-A1(-BS)



*1.Single-dotted lines indicate wiring not supplied with the unit.
*2.Dot-dash lines indicate the control box boundaries.
*3.Refer to the Data book for connecting input/output signal connectors.
*4.Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5.Faston terminals have a locking function.
Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6.Control box houses high-voltage parts.
Before inspecting the inside of the MAIN BOX or INV BOX, turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN on INV BOX has dropped to DC20V or less.
*7.Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unit)
LED101	Normal operation(Lit)/IC Error(Unit)	

*8.Difference of appliance.

Model name	Appliance
PUHY	*8 exist
PURY	*8 do not exist

*9.Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10.Difference of appliance.

Model name	Appliance
PUHY	LEV1
PURY	LEV9

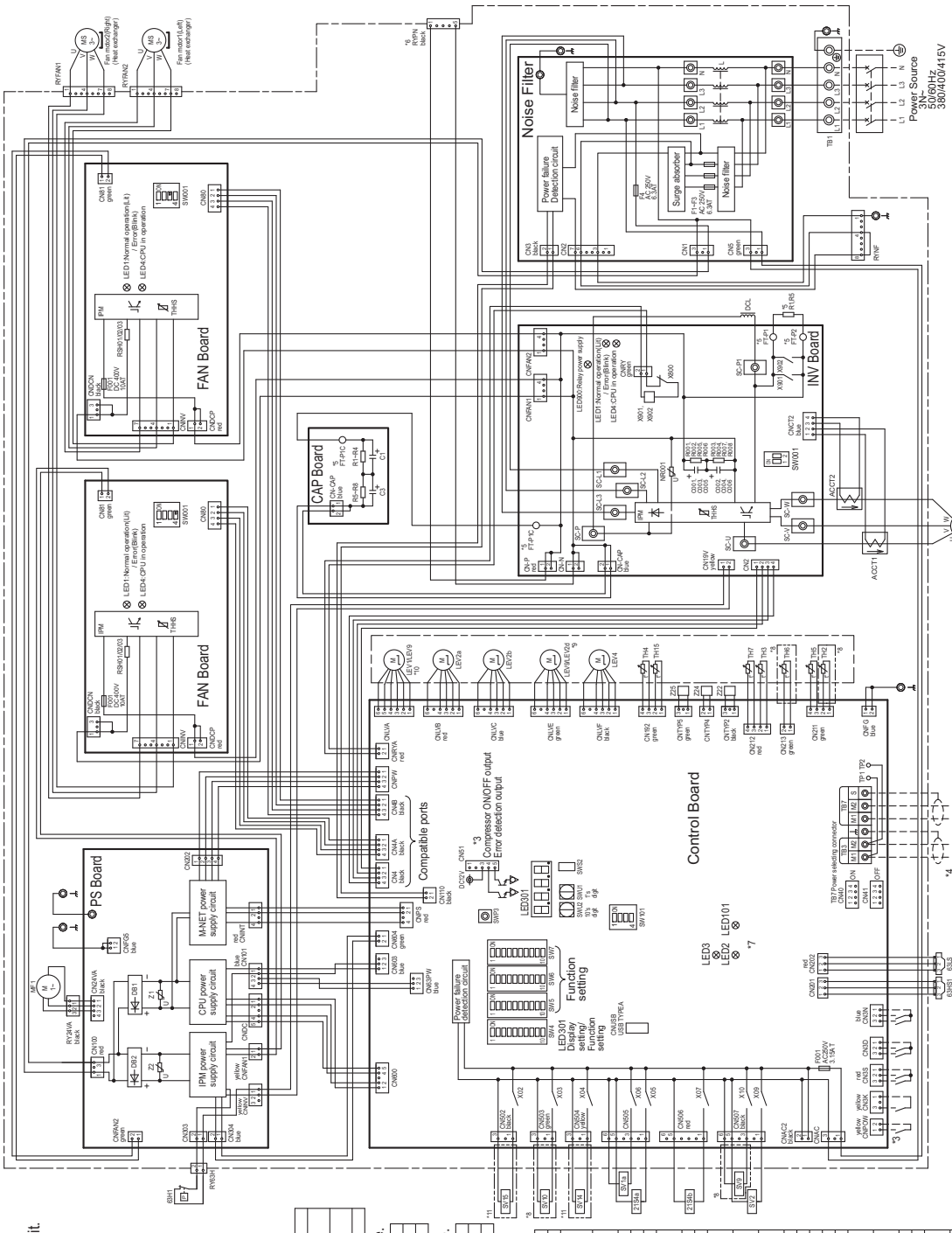
*11.Difference of appliance.

Model name	Appliance
PUHY,M,PURY	*11 do not exist
PUHY-EM	*11 exist

<Symbol explanation>

Symbol		Explanation
21S4a 21S4b	4-way valve	Cooling/Heating switching Heat exchanger capacity control(only PUHY-(E)M200) Cooling/heating switching
63H1	Pressure switch	High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS	Pressure sensor	Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C700,C701 C705,C706*	Capacitor(inverter main circuit)	
DCL	DC reactor	
L	Choke coil (for high frequency noise reduction)	
LEV1 *10	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV2a,b		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9,10		Heat exchanger for inverter
R1,5	Resistor	For inrush current prevention
RSH01/02/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the O/S
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10 *8		For continuous heating
SV14,15 *11		For changing refrigerant flow (cooling/heating)
TB1	Terminal	Power supply
TB3	block	Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X901,902	Magnetic relay	(Inverter main circuit)
Z22,24,25	Function setting connector	

PUHY-(E)M350, 400, 450YNW-A1(-BS)



*1.Single-dotted lines indicate wiring not supplied with the unit.
*2.Dot-dash lines indicate the control box boundaries.
*3.Refer to the Data book for connecting input/output signal connectors.
*4.Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5.Faston terminals have a locking function.
Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6.Control box houses high-voltage parts.
Before inspecting the inside of the control box,turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN has dropped to DC20V or less.
*7.Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unlit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unlit)
LED101	Normal operation(Lit)/IC Error(Unlit)	

*8.Difference of appliance.

Model name	Appliance
PUHY	*9 exist
PURY	*9 do not exist

*9.Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10.Difference of appliance.

Model name	Appliance
PUHY	LEV1
PURY	LEV9

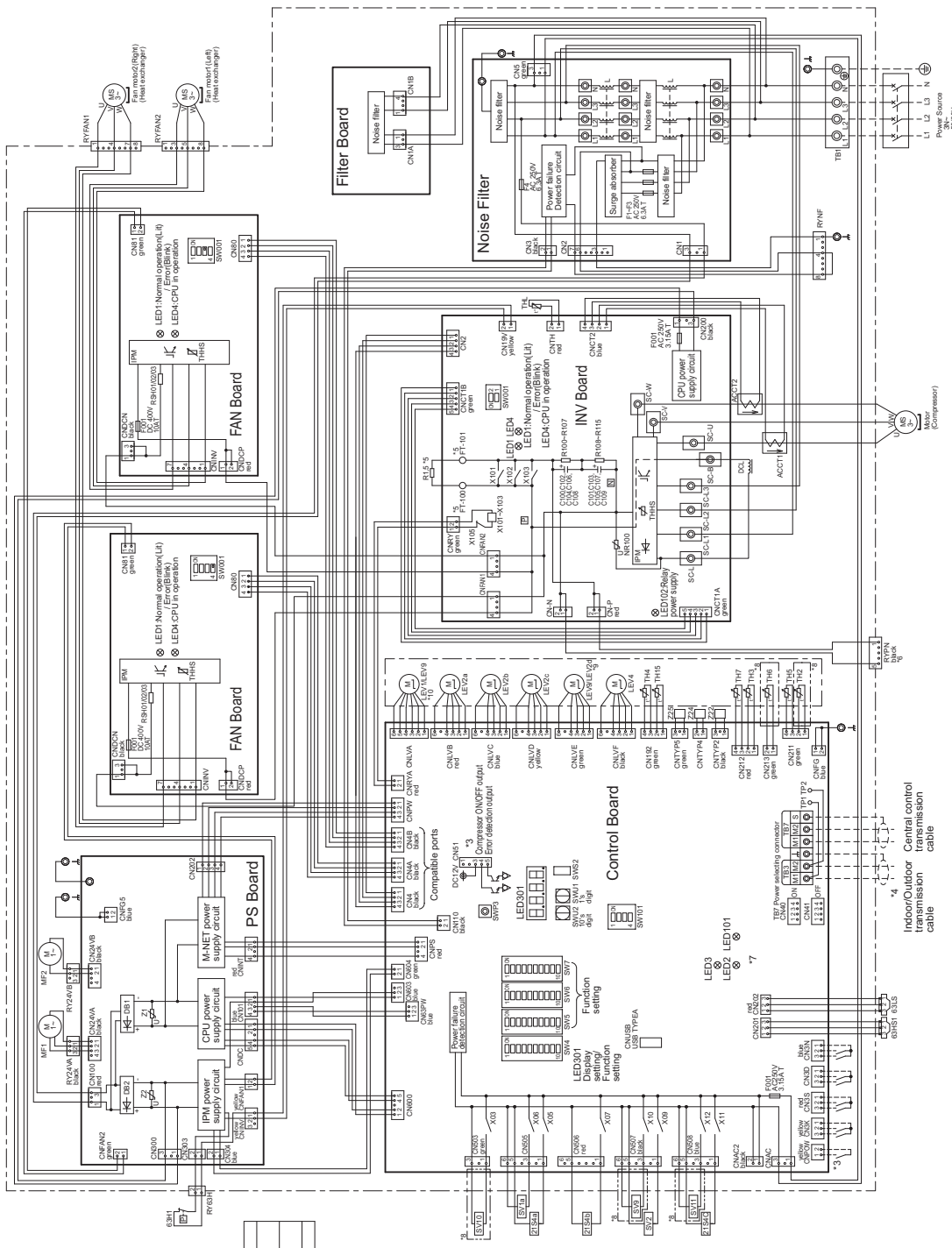
*11.Difference of appliance.

Model name	Appliance
PUHY-M,PURY	*11 do not exist
PUHY-EM	*11 exist

<Symbol explanation>

Symbol		Explanation
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control(only PUHY model)
63H1	Pressure switch	Cooling/Heating switching High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C1,C3, C001~C006	Capacitor (inverter main circuit)	
DCL	DC reactor	
L	Choke coil	(for high frequency noise reduction)
LEV1 *10	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV2a,b		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9,*10		Heat exchanger for inverter
MF1	Fan motor	(for cooling in control box)
R1,5	Resistor	For inrush current prevention
RSH01/02/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the HIC
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10 *8		For continuous heating
SV14,15 *11		For changing refrigerant flow (cooling/heating)
TB1	Terminal block	Power supply
TB3		Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X901,X902	Magnetic relay	(Inverter main circuit)
Z22,24,25	Function setting	connector

PUHY-(E)M500YNW-A1(-BS)



*1. Single-dotted lines indicate wiring not supplied with the unit.
*2. Dot-dash lines indicate the control box boundaries.
*3. Refer to the Data book for connecting input/output signal connectors.
*4. Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5. Faston terminals have a locking function.
Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6. Control box houses high-voltage parts.
Before inspecting the inside of the control box,turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN has dropped to DC20V or less.
*7. Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unit)
LED101	Normal operation(Lit)/IC Error(Unit)	

*8. Difference of appliance.

Model name	Appliance
PUHY	*8 exist
PURY	*8 do not exist

*9. Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10. Difference of appliance.

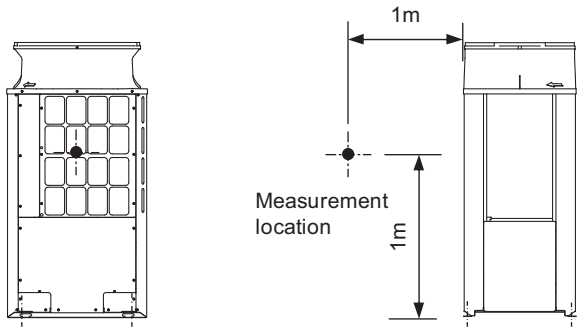
Model name	Appliance
PUHY	LEV1
PURY	LEV9

<Symbol explanation>

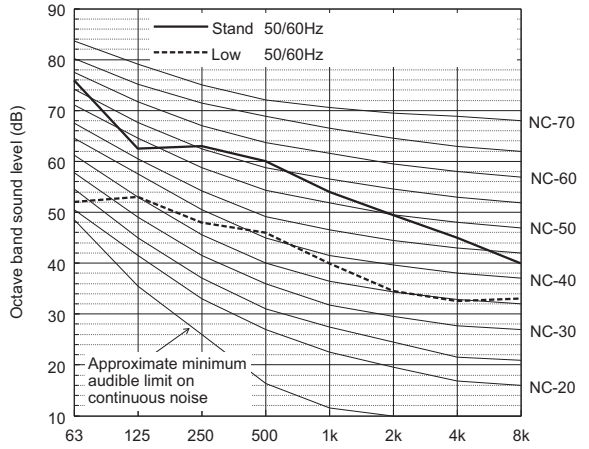
Symbol		Explanation
21S4a	4-way valve	Cooling/Heating switching
21S4b,c		Heat exchanger capacity control(only PHY) (Heat/Cool switching)
63H1	Pressure switch	High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C100~C109	Capacitor (inverter main circuit)	
DCL	DC reactor	
L	Choke coil (for high frequency noise reduction)	
LEV1 *10	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV2a,b,c		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9,10		Heat exchanger for inverter
MF1,2	Fan motor	(for cooling in control box)
R1,5	Resistor	For inrush current prevention
RSH0102/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the O/S
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10,11 *8		For continuous heating
TB1	Terminal block	Power supply
TB3		Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X101~X103	Magnetic relay(Inverter main circuit)	
Z22,24,25	Function setting connector	

5-1. Sound levels in cooling mode

Measurement condition
PUHY-M200, 250, 300YNW-A1(-BS)



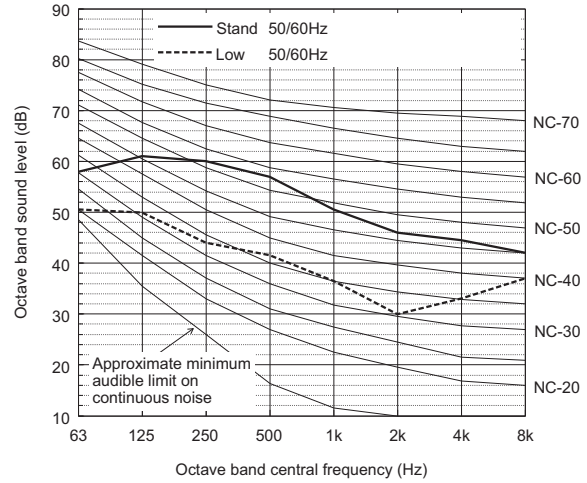
Sound level of PUHY-M300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.0	62.5	63.0	60.0	54.0	49.5	45.0	40.0	61.0
Low noise mode	50/60Hz	52.0	53.0	48.0	46.0	40.0	34.5	32.5	33.0	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

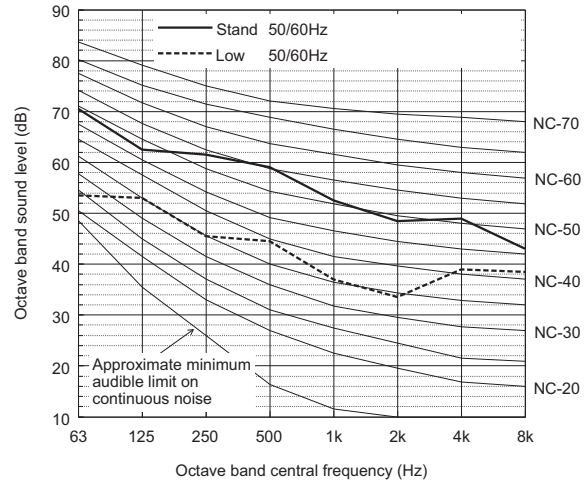
Sound level of PUHY-M200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	58.0	61.0	60.0	57.0	50.5	46.0	44.5	42.0	58.0
Low noise mode	50/60Hz	50.5	50.0	44.0	41.5	36.5	30.0	33.0	37.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-M250YNW-A1(-BS)

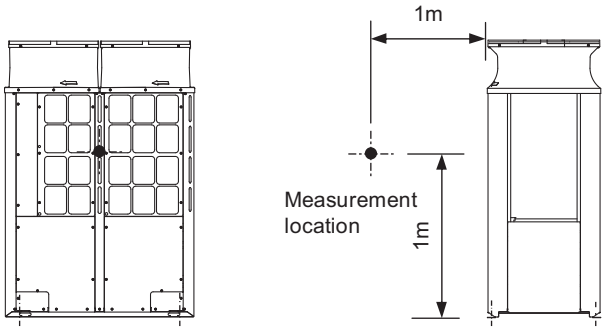


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	70.5	62.5	61.5	59.0	52.5	48.5	49.0	43.0	60.0
Low noise mode	50/60Hz	53.5	53.0	45.5	44.5	37.0	33.5	39.0	38.5	46.5

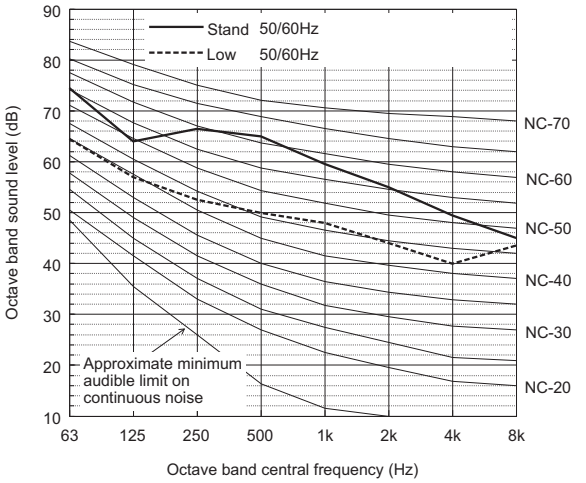
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-M350, 400, 450YNW-A1(-BS)



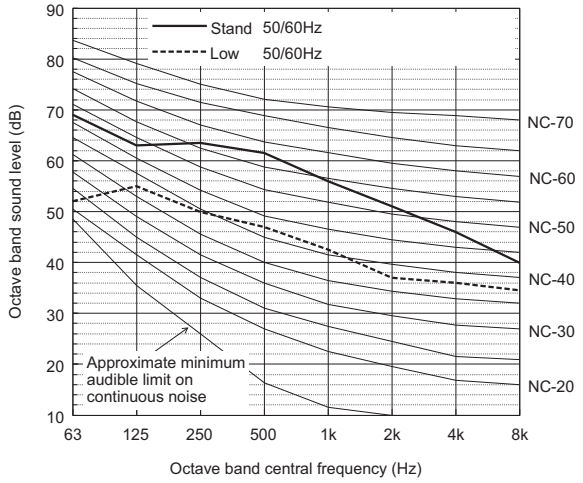
Sound level of PUHY-M450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	74.5	64.0	66.5	65.0	59.5	55.0	49.5	45.0	65.5
Low noise mode	50/60Hz	64.5	57.0	52.5	50.0	48.0	44.0	40.0	43.5	53.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

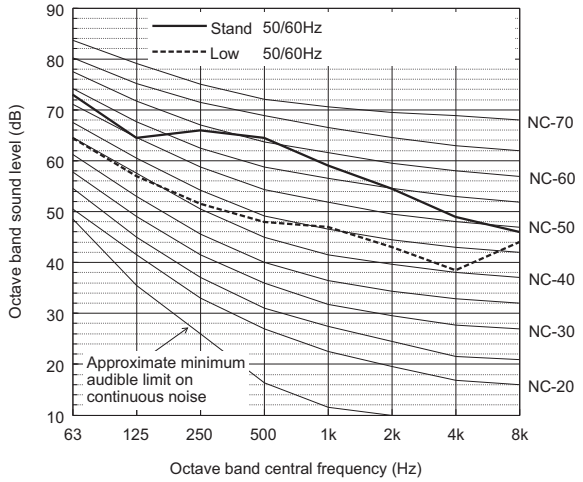
Sound level of PUHY-M350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	69.0	63.0	63.5	61.5	56.0	51.0	46.0	40.0	62.0
Low noise mode	50/60Hz	52.0	55.0	50.0	47.0	42.5	37.0	36.0	34.5	49.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-M400YNW-A1(-BS)

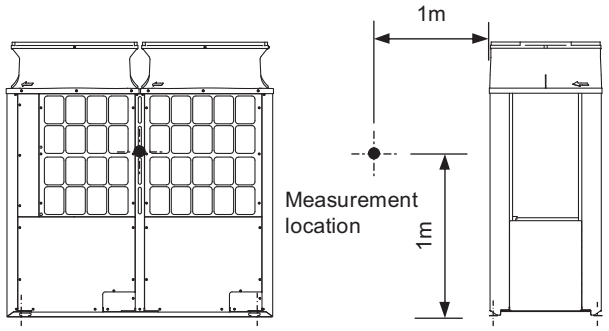


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.0	64.5	66.0	64.5	59.0	54.5	49.0	46.0	65.0
Low noise mode	50/60Hz	64.5	57.0	51.5	48.0	47.0	43.0	38.5	44.0	52.5

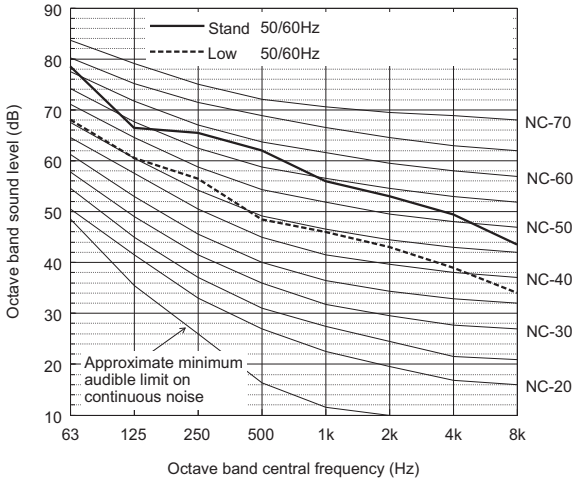
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-M500YNW-A1(-BS)



Sound level of PUHY-M500YNW-A1(-BS)

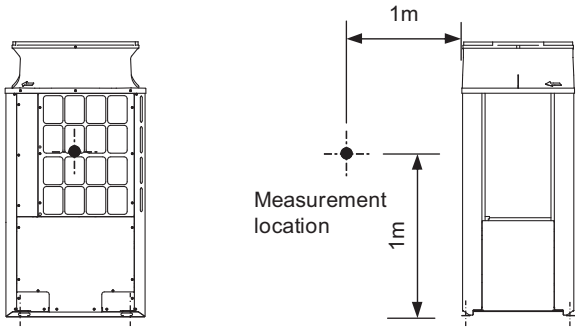


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	78.5	66.5	65.5	62.0	56.0	53.0	49.5	43.5	63.5
Low noise mode	50/60Hz	68.0	60.5	56.5	48.5	46.0	43.0	39.0	34.0	53.5

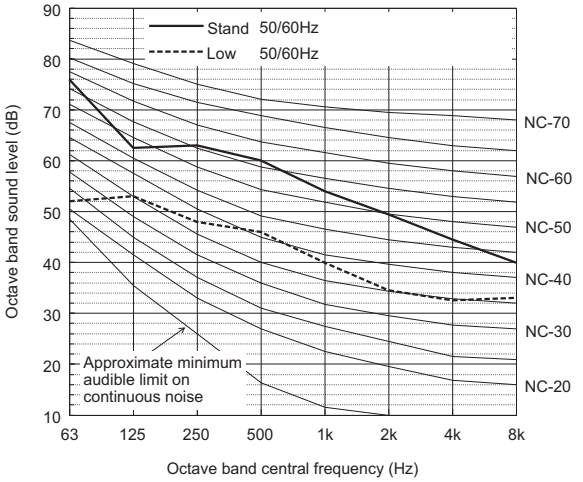
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM200, 250, 300YNW-A1(-BS)



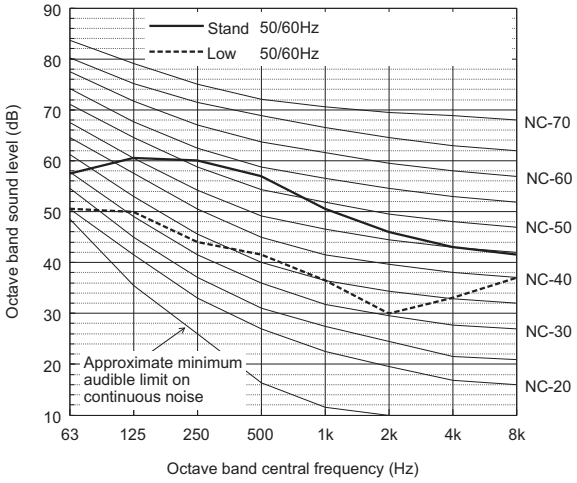
Sound level of PUHY-EM300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	76.0	62.5	63.0	60.0	54.0	49.5	44.5	40.0	61.0
Low noise mode	50/60Hz	52.0	53.0	48.0	46.0	40.0	34.5	32.5	33.0	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

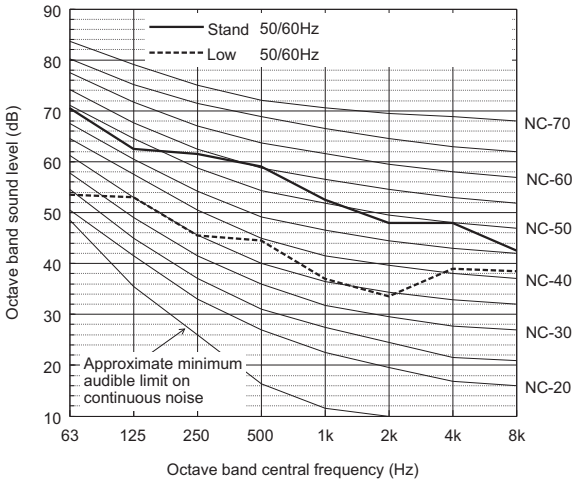
Sound level of PUHY-EM200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	57.5	60.5	60.0	57.0	50.5	46.0	43.0	41.5	58.0
Low noise mode	50/60Hz	50.5	50.0	44.0	41.5	36.5	30.0	33.0	37.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-EM250YNW-A1(-BS)

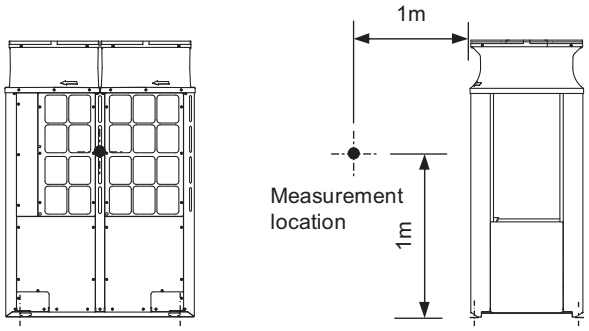


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	70.5	62.5	61.5	59.0	52.5	48.0	48.0	42.5	60.0
Low noise mode	50/60Hz	53.5	53.0	45.5	44.5	37.0	33.5	39.0	38.5	46.5

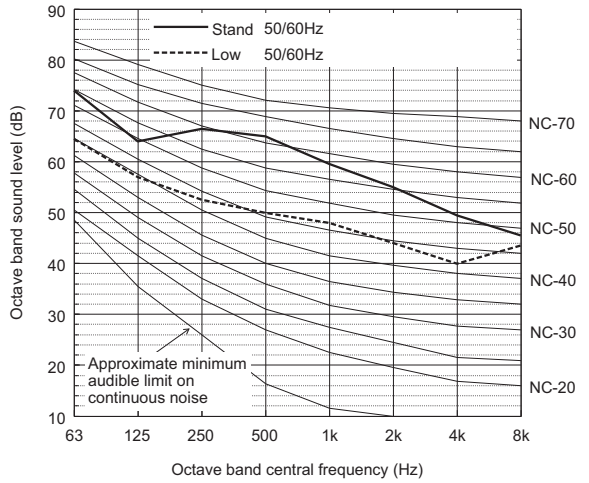
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM350, 400, 450YNW-A1(-BS)



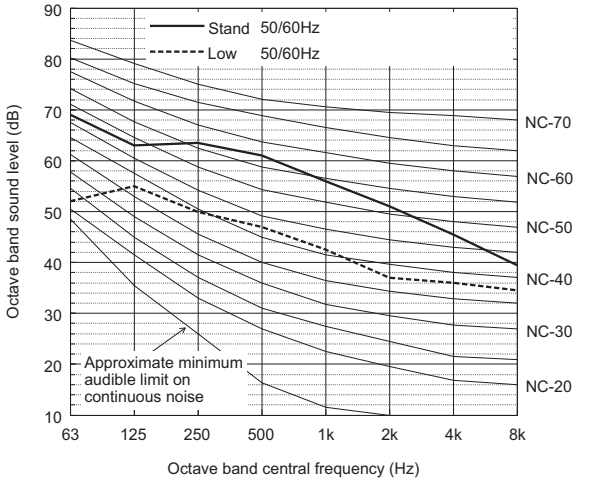
Sound level of PUHY-EM450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	74.0	64.0	66.5	65.0	59.5	55.0	49.5	45.5	65.5
Low noise mode	50/60Hz	64.5	57.0	52.5	50.0	48.0	44.0	40.0	43.5	53.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

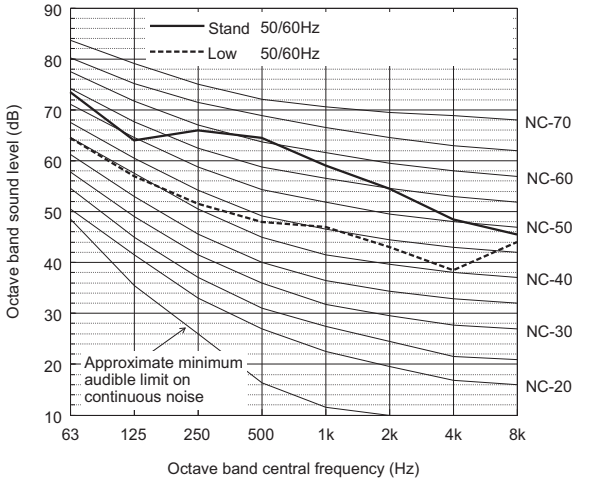
Sound level of PUHY-EM350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	69.0	63.0	63.5	61.0	56.0	51.0	45.5	39.5	62.0
Low noise mode	50/60Hz	52.0	55.0	50.0	47.0	42.5	37.0	36.0	34.5	49.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-EM400YNW-A1(-BS)

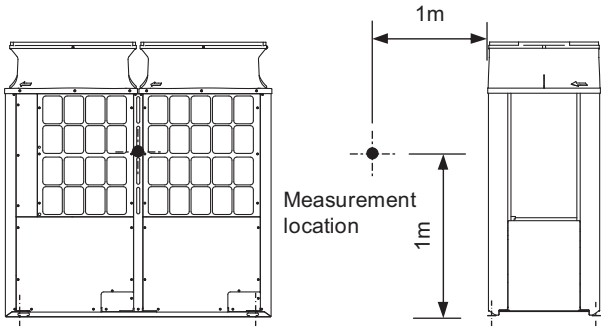


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	64.0	66.0	64.5	59.0	54.5	48.5	45.5	65.0
Low noise mode	50/60Hz	64.5	57.0	51.5	48.0	47.0	43.0	38.5	44.0	52.5

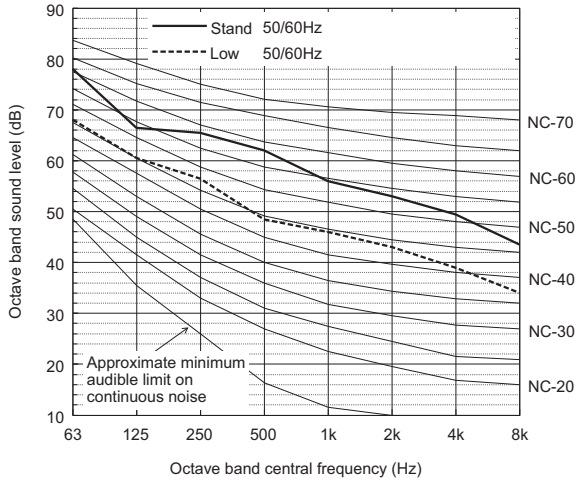
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM500YNW-A1(-BS)



Sound level of PUHY-EM500YNW-A1(-BS)



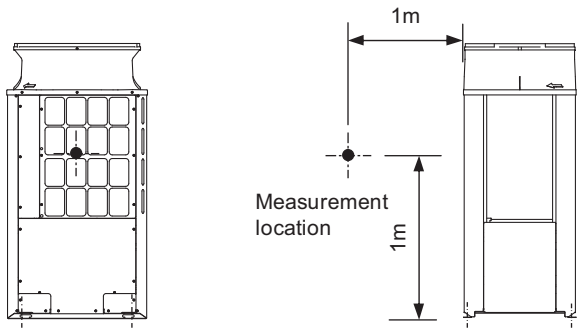
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	78.0	66.5	65.5	62.0	56.0	53.0	49.5	43.5	63.5
Low noise mode	50/60Hz	68.0	60.5	56.5	48.5	46.0	43.0	39.0	34.0	53.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

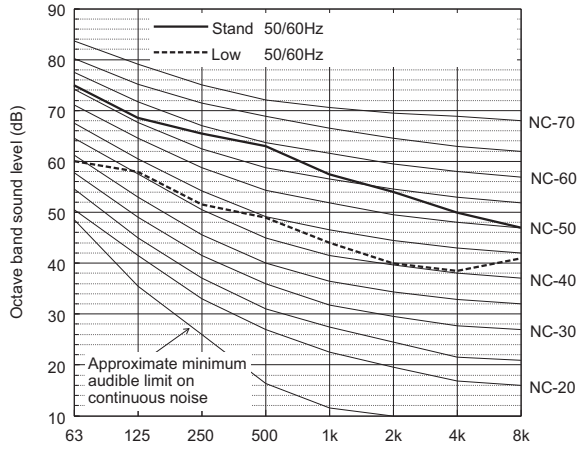
- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

5-2. Sound levels in heating mode

Measurement condition
PUHY-M200, 250, 300YNW-A1(-BS)



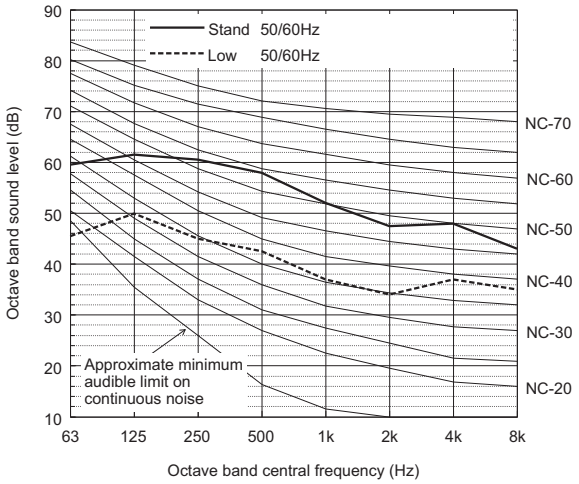
Sound level of PUHY-M300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.0	68.5	65.5	63.0	57.5	54.0	50.0	47.0	64.5
Low noise mode	50/60Hz	60.0	58.0	51.5	49.0	44.0	40.0	38.5	41.0	51.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

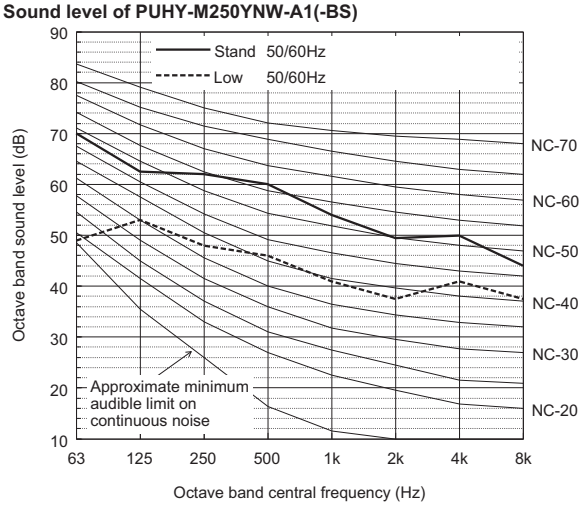
Sound level of PUHY-M200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.5	61.5	60.5	58.0	52.0	47.5	48.0	43.0	59.0
Low noise mode	50/60Hz	45.5	50.0	45.0	42.5	37.0	34.0	37.0	35.0	45.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-M250YNW-A1(-BS)

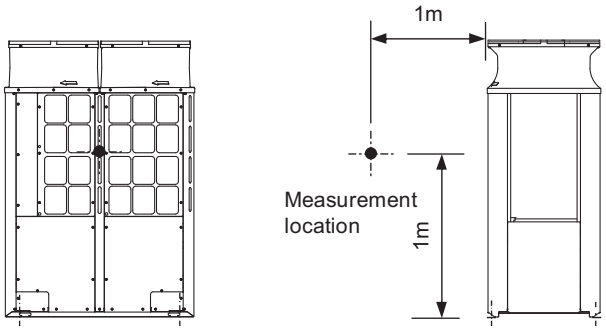


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	70.0	62.5	62.0	60.0	54.0	49.5	50.0	44.0	61.0
Low noise mode	50/60Hz	49.0	53.0	48.0	46.0	41.0	37.5	41.0	37.5	48.5

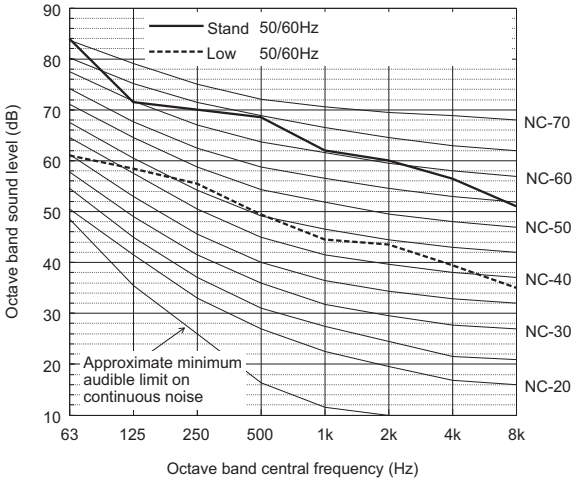
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-M350, 400, 450YNW-A1(-BS)



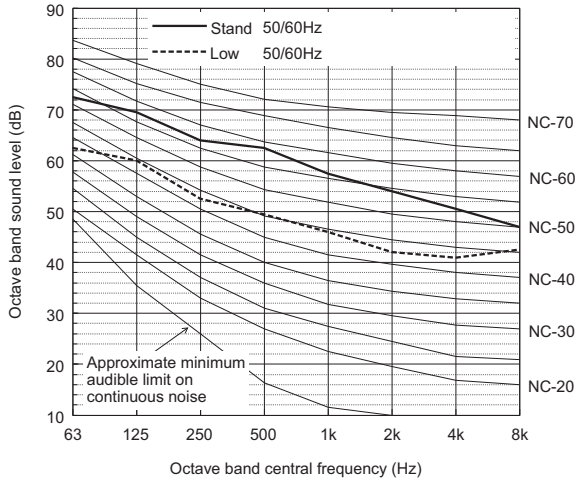
Sound level of PUHY-M450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	84.0	71.5	70.0	68.5	62.0	60.0	56.5	51.0	69.5
Low noise mode	50/60Hz	61.0	58.5	55.5	49.5	44.5	43.5	39.5	35.0	52.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

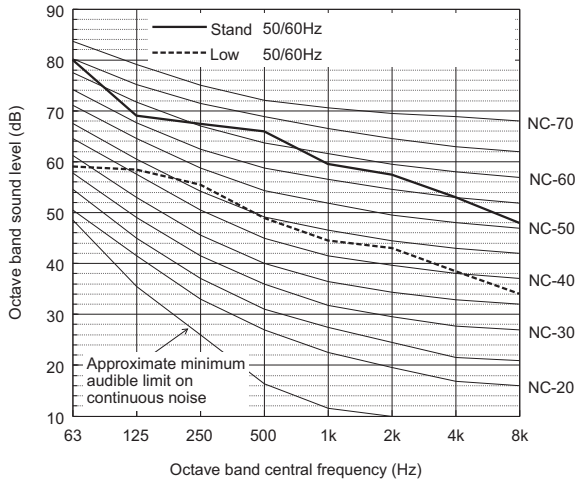
Sound level of PUHY-M350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	72.5	69.5	64.0	62.5	57.5	54.0	50.5	47.0	64.0
Low noise mode	50/60Hz	62.5	60.0	52.5	49.5	46.0	42.0	41.0	42.5	52.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-M400YNW-A1(-BS)

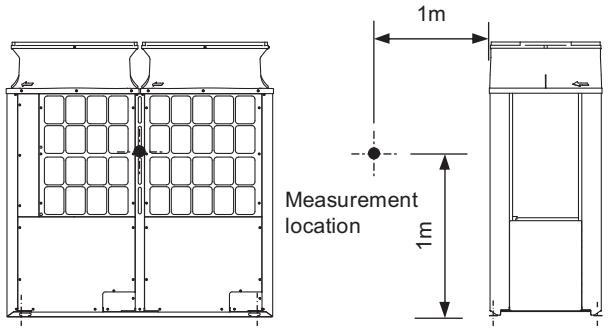


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	80.0	69.0	67.5	66.0	59.5	57.5	53.0	48.0	67.0
Low noise mode	50/60Hz	59.0	58.5	55.5	49.0	44.5	43.0	38.5	34.0	52.5

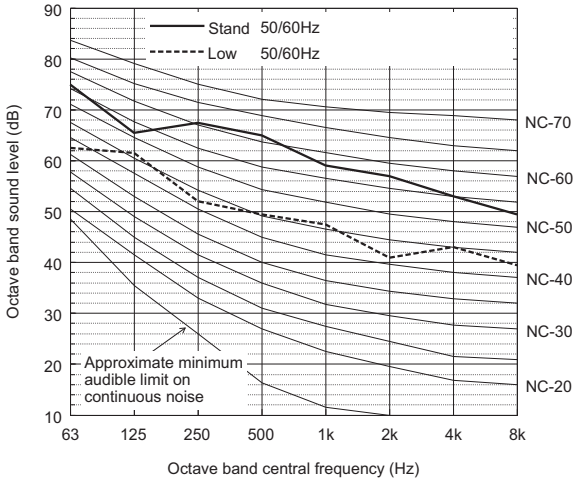
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-M500YNW-A1(-BS)



Sound level of PUHY-M500YNW-A1(-BS)

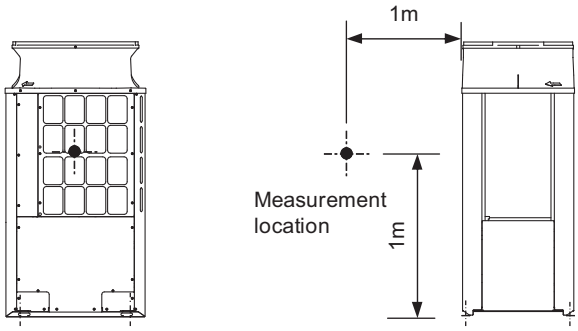


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.0	65.5	67.5	65.0	59.0	57.0	53.0	49.5	66.5
Low noise mode	50/60Hz	62.5	61.5	52.0	49.5	47.5	41.0	43.0	39.5	53.0

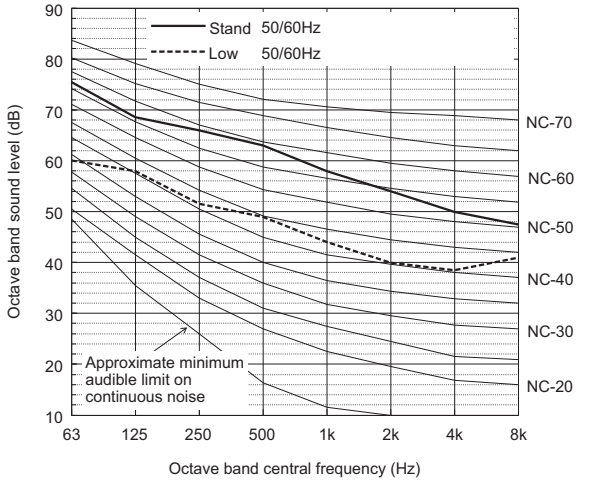
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM200, 250, 300YNW-A1(-BS)



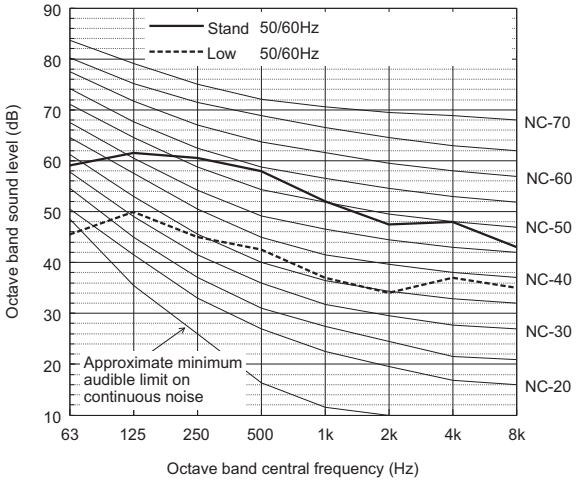
Sound level of PUHY-EM300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.5	68.5	66.0	63.0	58.0	54.0	50.0	47.5	64.5
Low noise mode	50/60Hz	60.0	58.0	51.5	49.0	44.0	40.0	38.5	41.0	51.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

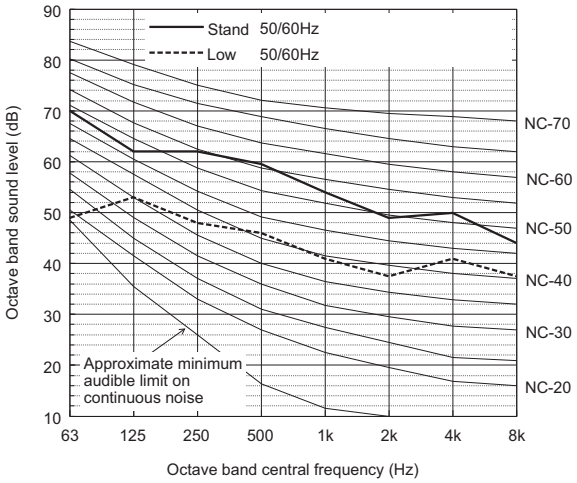
Sound level of PUHY-EM200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	59.0	61.5	60.5	58.0	52.0	47.5	48.0	43.0	59.0
Low noise mode	50/60Hz	45.5	50.0	45.0	42.5	37.0	34.0	37.0	35.0	45.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-EM250YNW-A1(-BS)

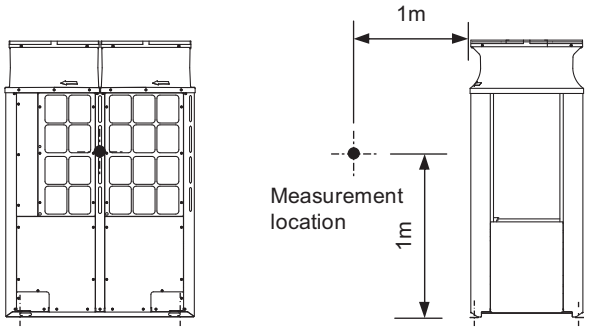


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	70.0	62.0	62.0	59.5	54.0	49.0	50.0	44.0	61.0
Low noise mode	50/60Hz	49.0	53.0	48.0	46.0	41.0	37.5	41.0	37.5	48.5

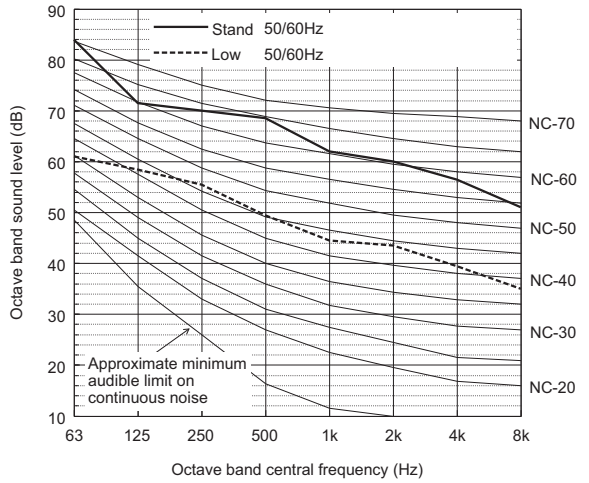
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM350, 400, 450YNW-A1(-BS)



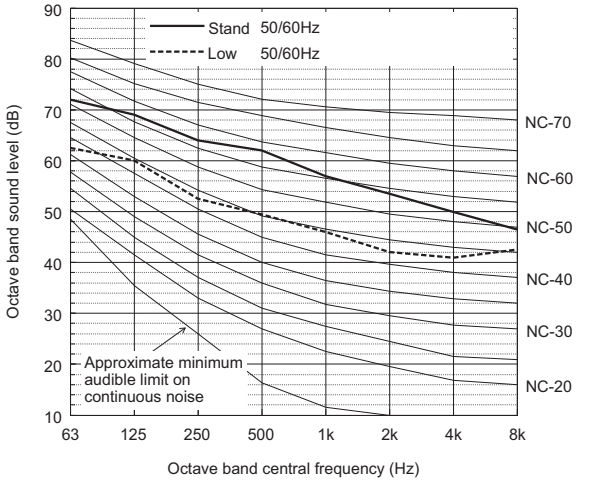
Sound level of PUHY-EM450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	84.0	71.5	70.0	68.5	62.0	60.0	56.5	51.0	69.5
Low noise mode	50/60Hz	61.0	58.5	55.5	49.5	44.5	43.5	39.5	35.0	52.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

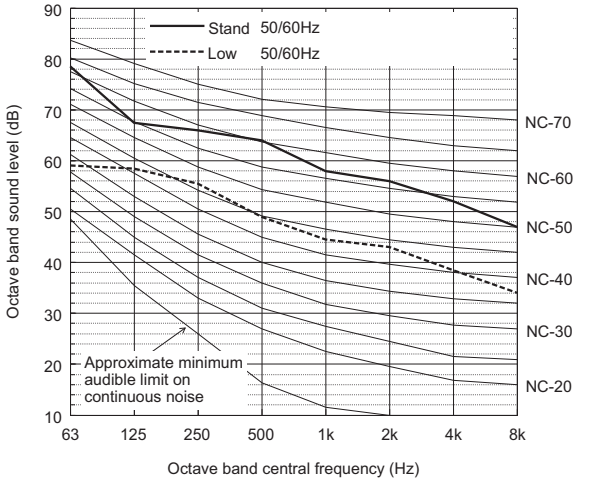
Sound level of PUHY-EM350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	72.0	69.0	64.0	62.0	57.0	53.5	50.0	46.5	63.5
Low noise mode	50/60Hz	62.5	60.0	52.5	49.5	46.0	42.0	41.0	42.5	52.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PUHY-EM400YNW-A1(-BS)

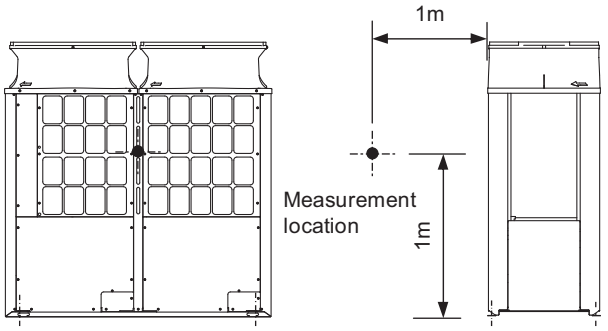


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	78.5	67.5	66.0	64.0	58.0	56.0	52.0	47.0	65.5
Low noise mode	50/60Hz	59.0	58.5	55.5	49.0	44.5	43.0	38.5	34.0	52.5

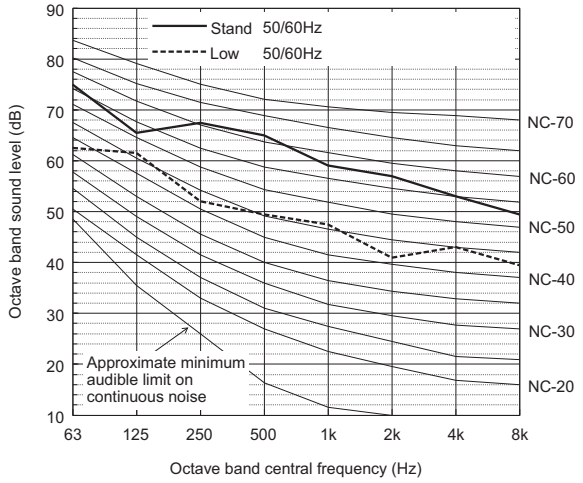
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PUHY-EM500YNW-A1(-BS)



Sound level of PUHY-EM500YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.0	65.5	67.5	65.0	59.0	57.0	53.0	49.5	66.5
Low noise mode	50/60Hz	62.5	61.5	52.0	49.5	47.5	41.0	43.0	39.5	53.0

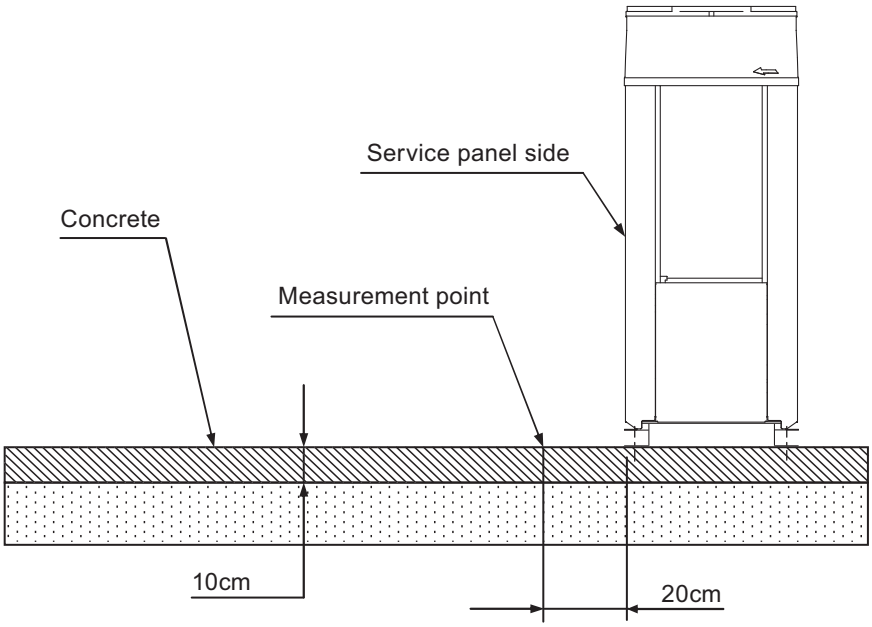
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

- Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

[PUHY-M200-500YNW, PUHY-EM200-500YNW]

Measurement condition

Measurement frequency: 1 Hz-80 Hz
Measurement point: Ground surface 20 cm away from the unit leg
Installation condition: Direct installation on the concrete floor
Power source: 3-phase 4-wire 380-400-415 V 50/60 Hz
Operation condition: JIS condition (cooling, heating)
Measurement device: Vibration level meter for vibration pollution VM-1220C (JIS-compliant product)

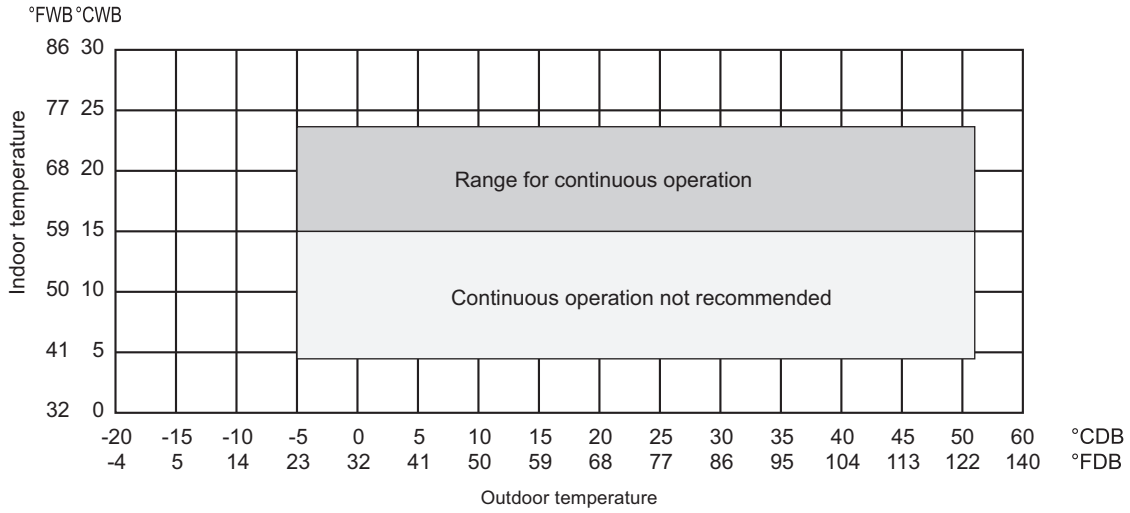


Vibration level

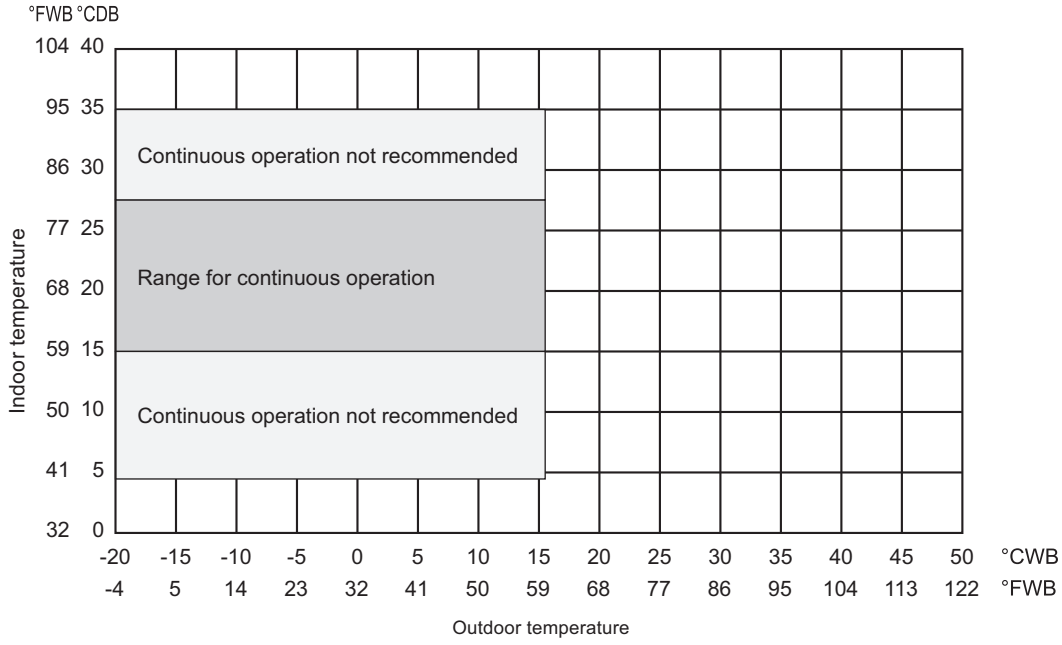
Model	Vibration level (dB)
PUHY-M200YNW-A1 (-BS)	45
PUHY-M250YNW-A1 (-BS)	46
PUHY-M300YNW-A1 (-BS)	47
PUHY-M350YNW-A1 (-BS)	47
PUHY-M400YNW-A1 (-BS)	47
PUHY-M450YNW-A1 (-BS)	47
PUHY-M500YNW-A1 (-BS)	48
PUHY-EM200YNW-A1 (-BS)	45
PUHY-EM250YNW-A1 (-BS)	46
PUHY-EM300YNW-A1 (-BS)	47
PUHY-EM350YNW-A1 (-BS)	47
PUHY-EM400YNW-A1 (-BS)	47
PUHY-EM450YNW-A1 (-BS)	47
PUHY-EM500YNW-A1 (-BS)	48

* Vibration level varies depending on the conditions of actual installation site.

• **Cooling only**



• **Heating only**



Section 8-1.
Shows an example of how to select the indoor and outdoor units according to the required heating/cooling load.

Section 8-2. through 8-5.
Show the actual correction data of indoor and outdoor units.

8-1. Correction by temperature

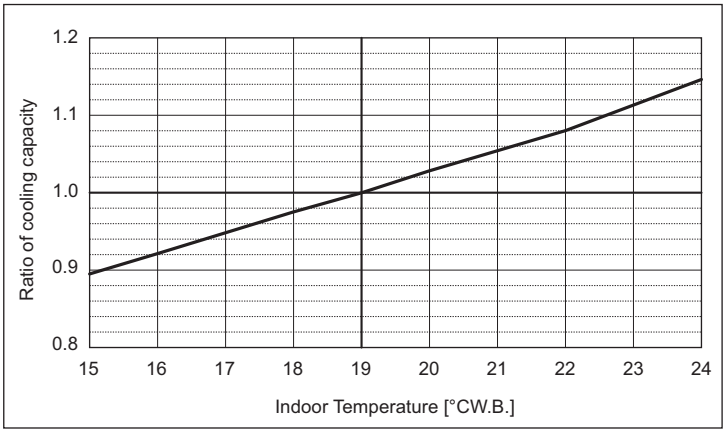
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

PUHY-		M200YNW-A1	M250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.53	8.38

PUHY-		EM200YNW-A1	EM250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.00	7.31

Indoor unit temperature correction

To be used to correct indoor unit capacity only

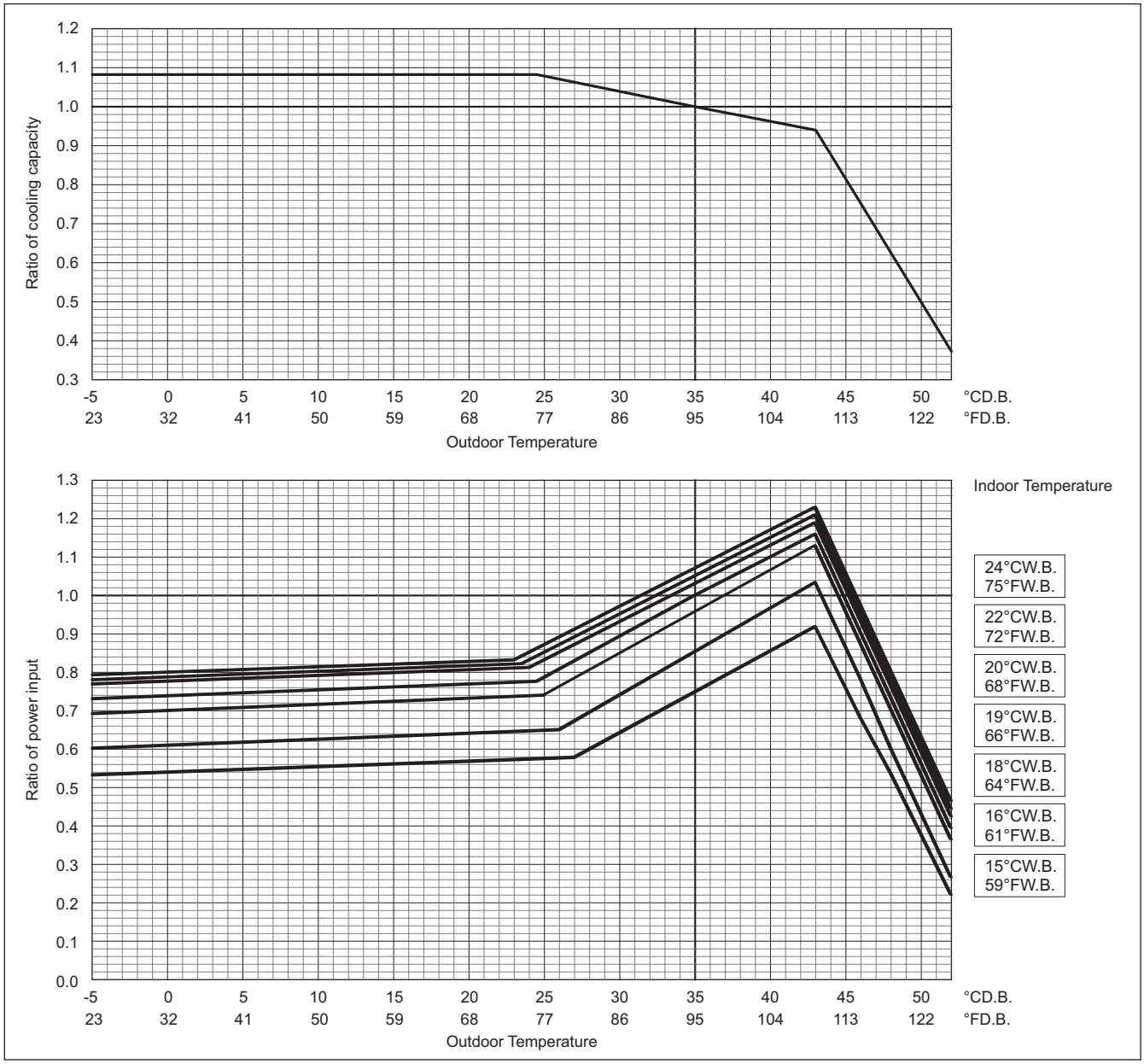


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

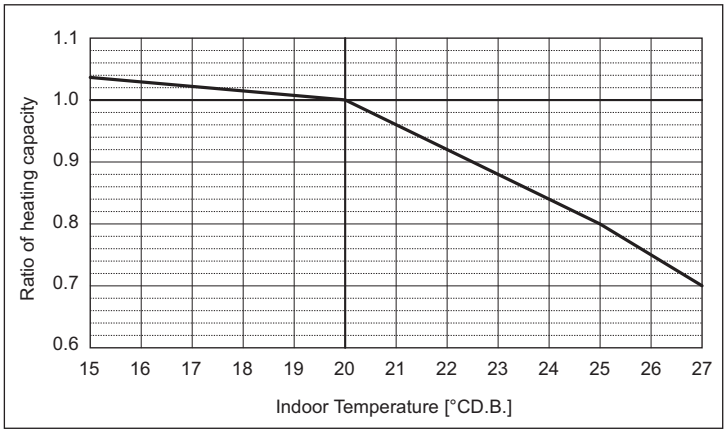


PUHY-		M200YNW-A1	M250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.70	8.18

PUHY-		EM200YNW-A1	EM250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.50	7.89

Indoor unit temperature correction

To be used to correct indoor unit capacity only

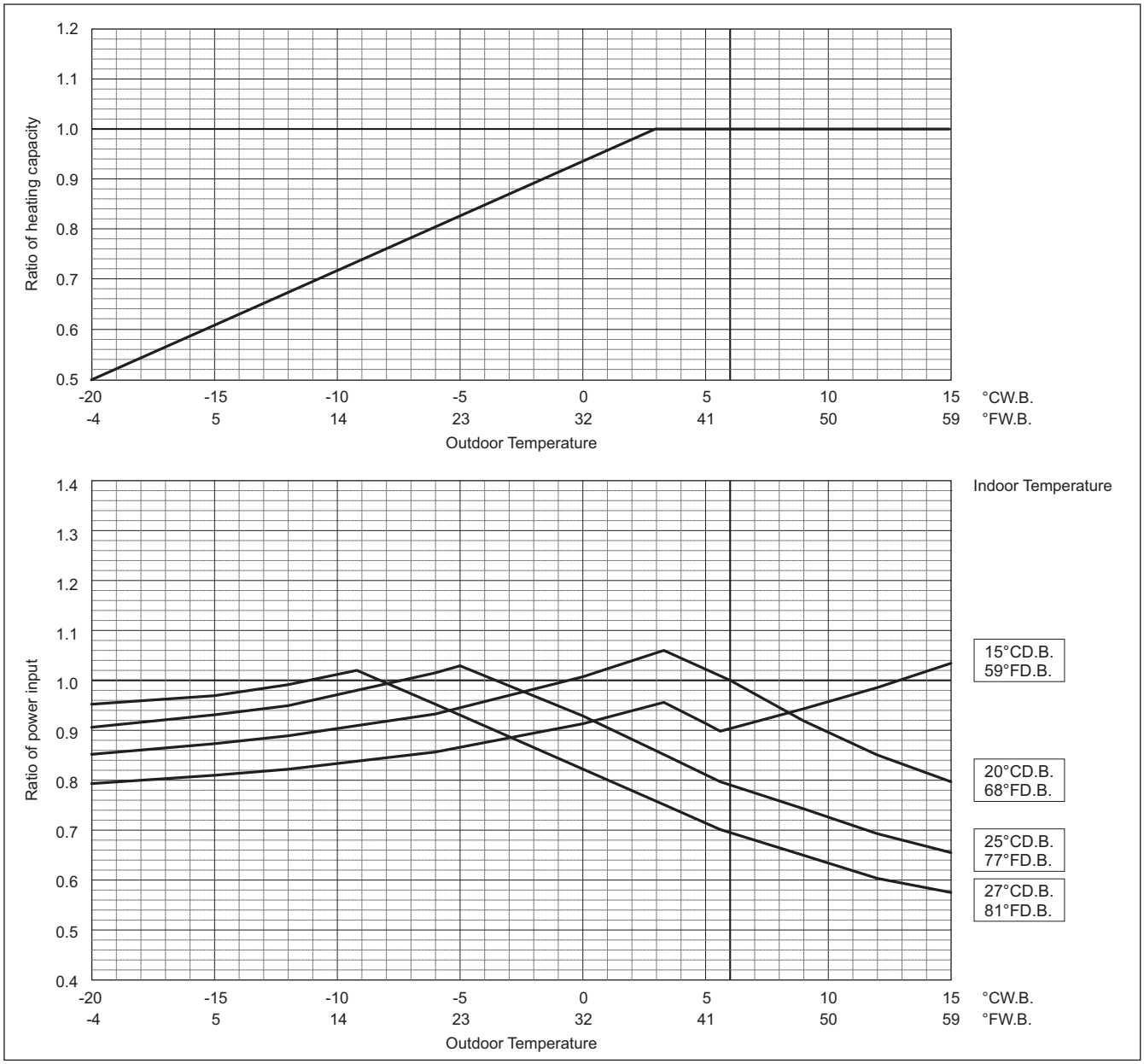


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

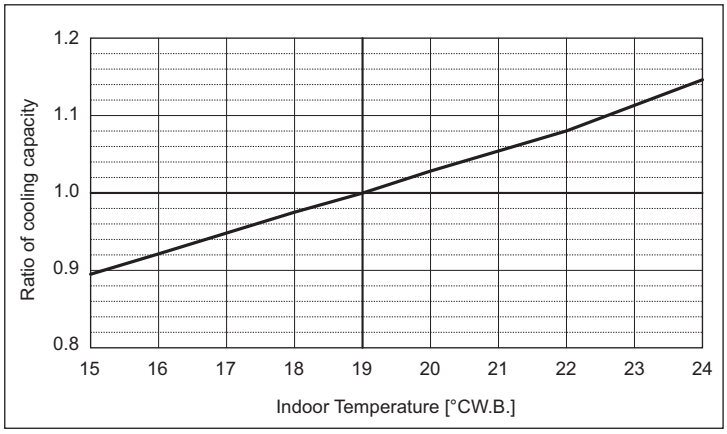


PUHY-		M300YNW-A1	M350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	9.85	12.15

PUHY-		EM300YNW-A1	EM350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	8.48	11.29

Indoor unit temperature correction

To be used to correct indoor unit capacity only

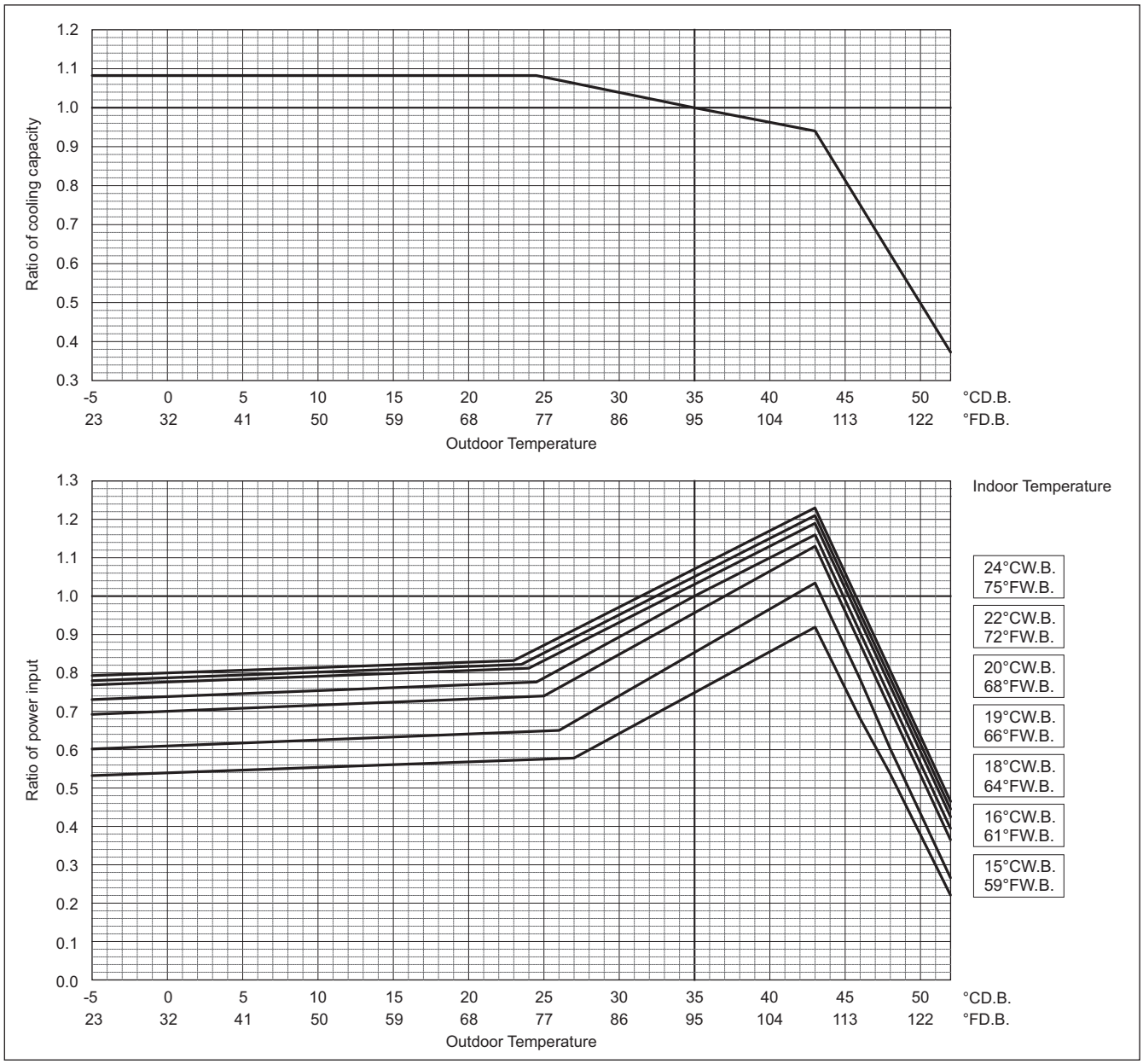


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

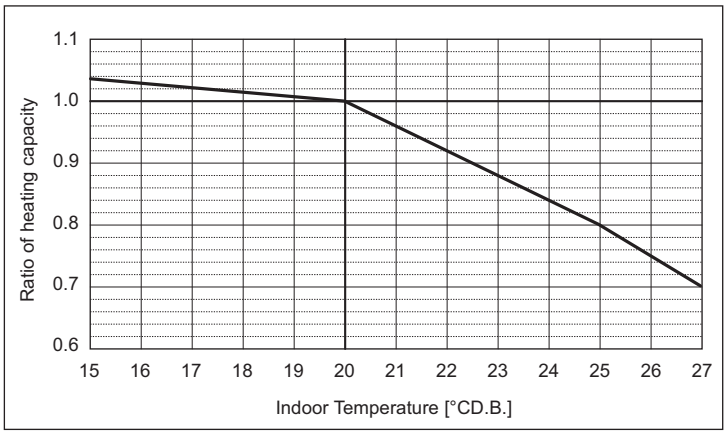


PUHY-		M300YNW-A1	M350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	9.66	12.16

PUHY-		EM300YNW-A1	EM350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	9.30	12.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

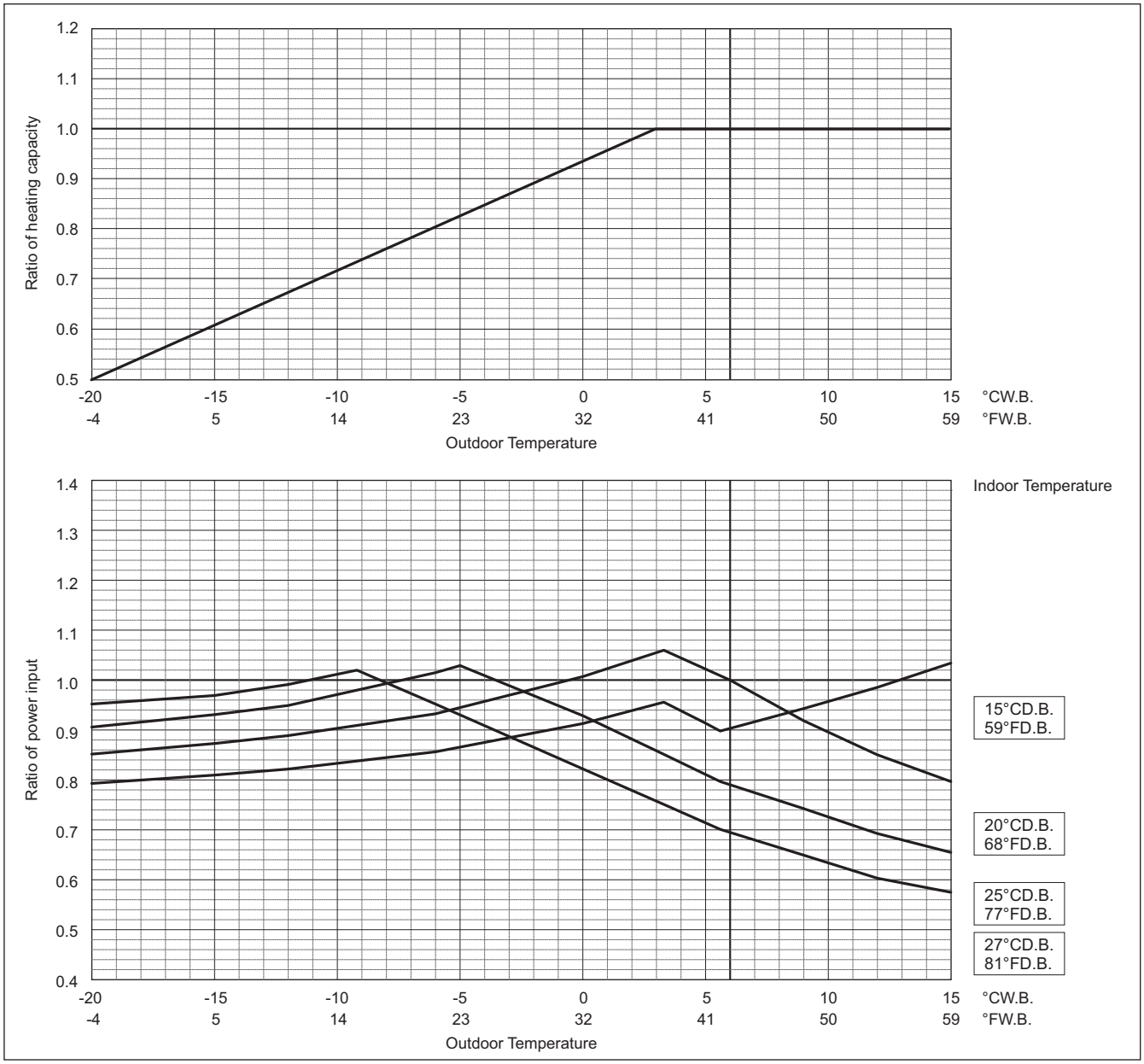


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

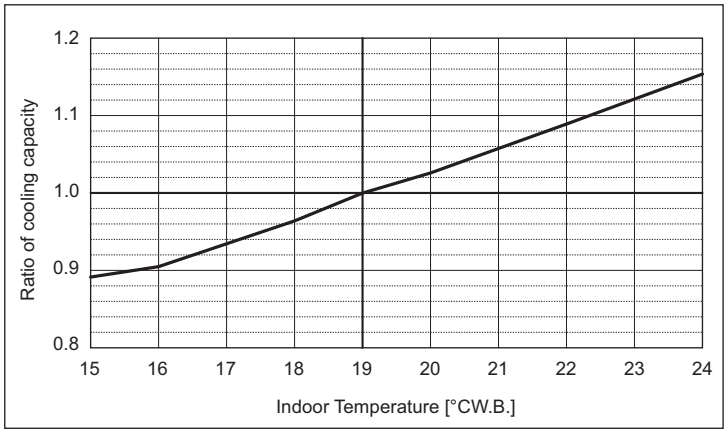


PUHY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	14.65	14.70	17.72

PUHY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	12.82	14.20	17.07

Indoor unit temperature correction

To be used to correct indoor unit capacity only

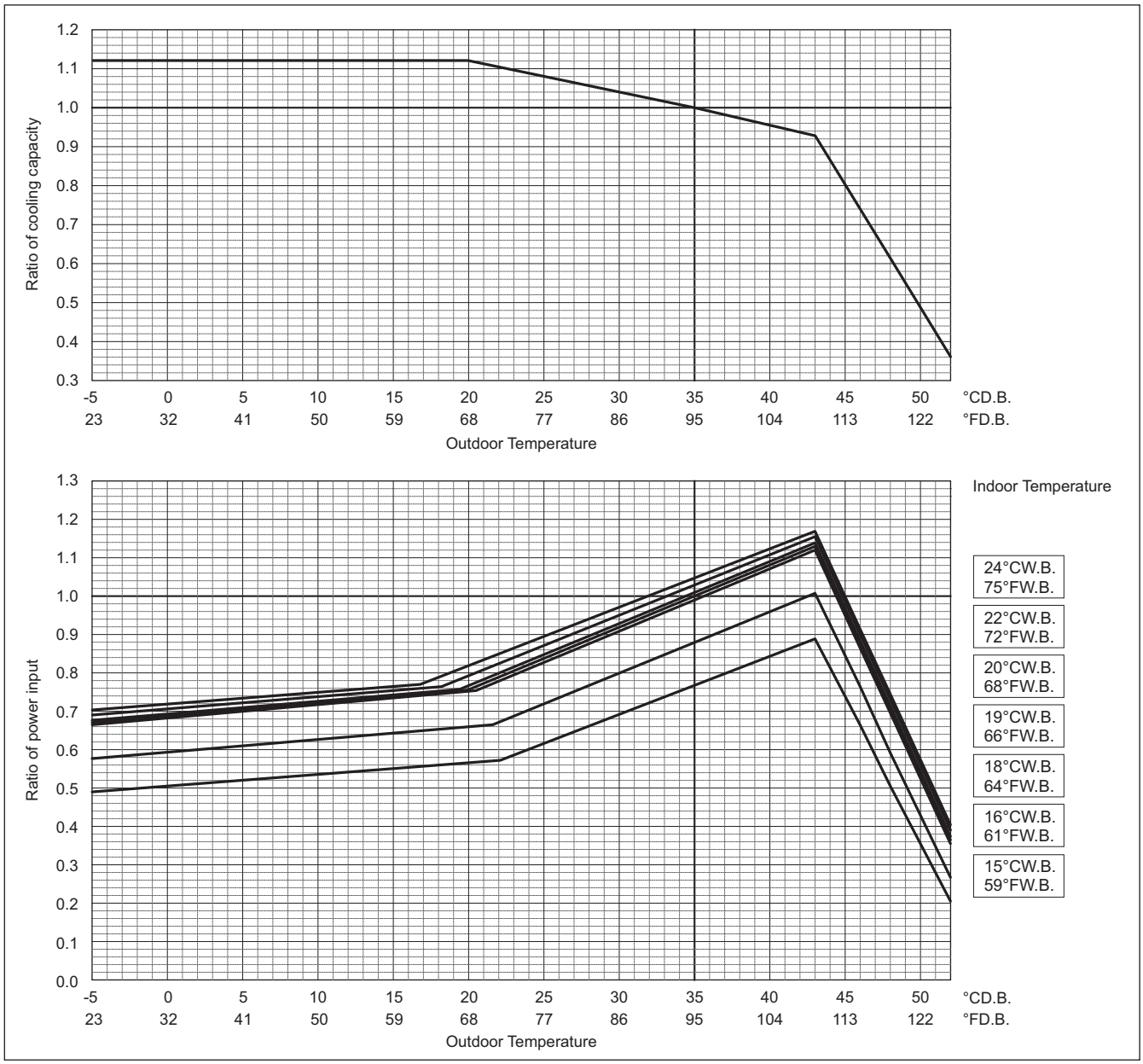


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

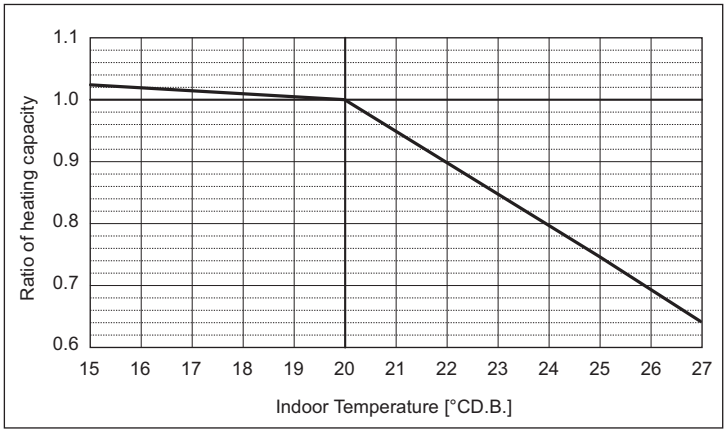


PUHY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.69	16.00	17.07

PUHY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.40	15.68	16.75

Indoor unit temperature correction

To be used to correct indoor unit capacity only

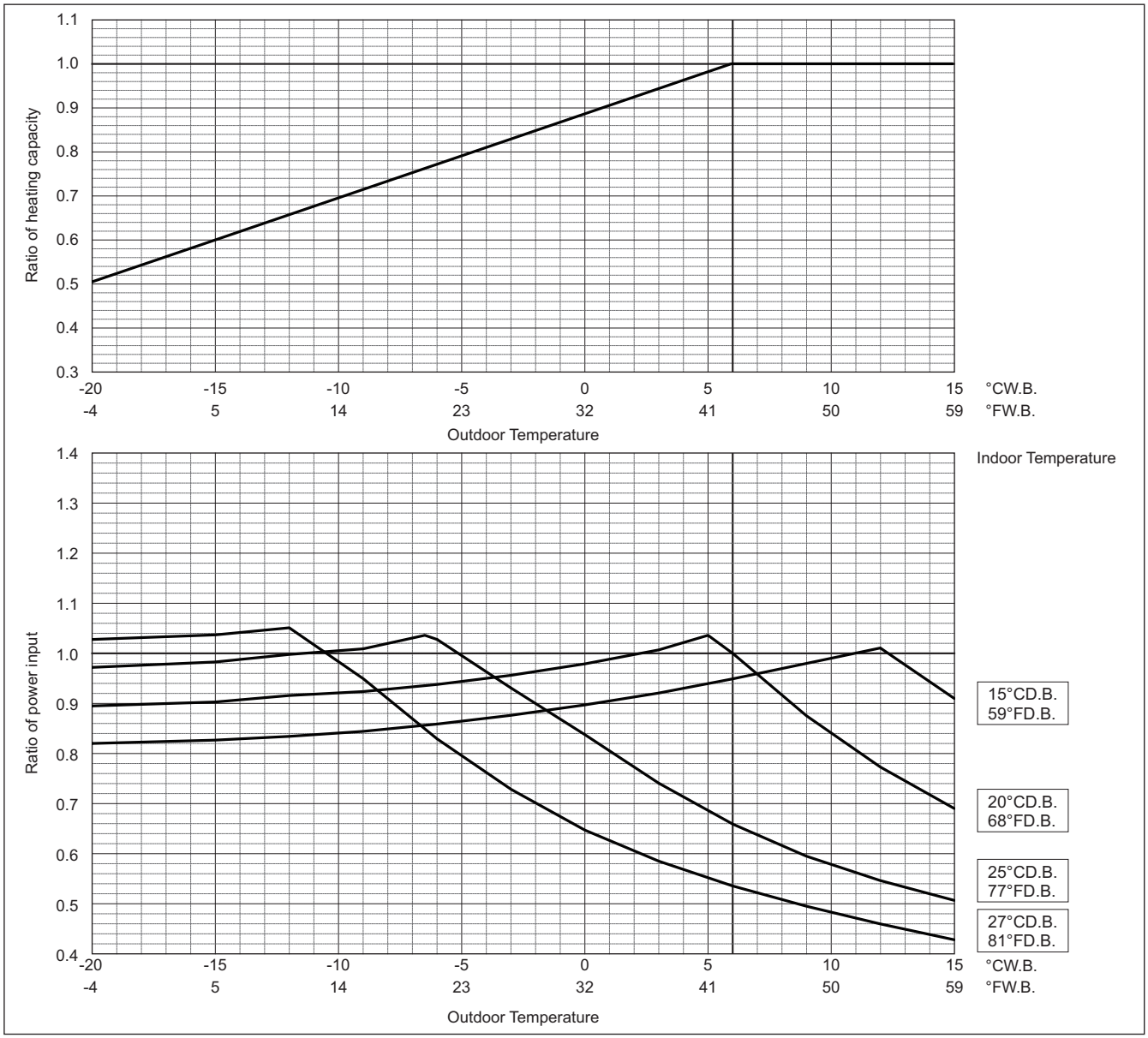


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



Correction by temperature (Capacity Priority Mode for heating)

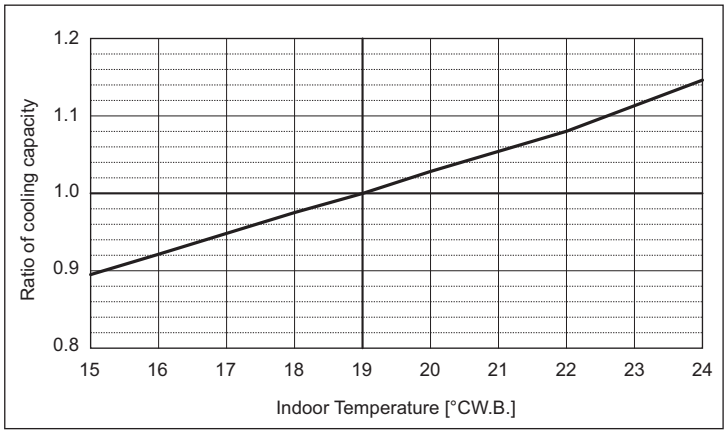
HYBRID CITY MULTI could have various capacities at different designing temperatures. Using the nominal cooling/heating capacity values and the ratios below, the capacity can be found for various temperatures.
To select capacity priority mode, DipSW 6-2 must be set to ON.

PUHY-		M200YNW-A1	M250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.53	8.38

PUHY-		EM200YNW-A1	EM250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.00	7.31

Indoor unit temperature correction

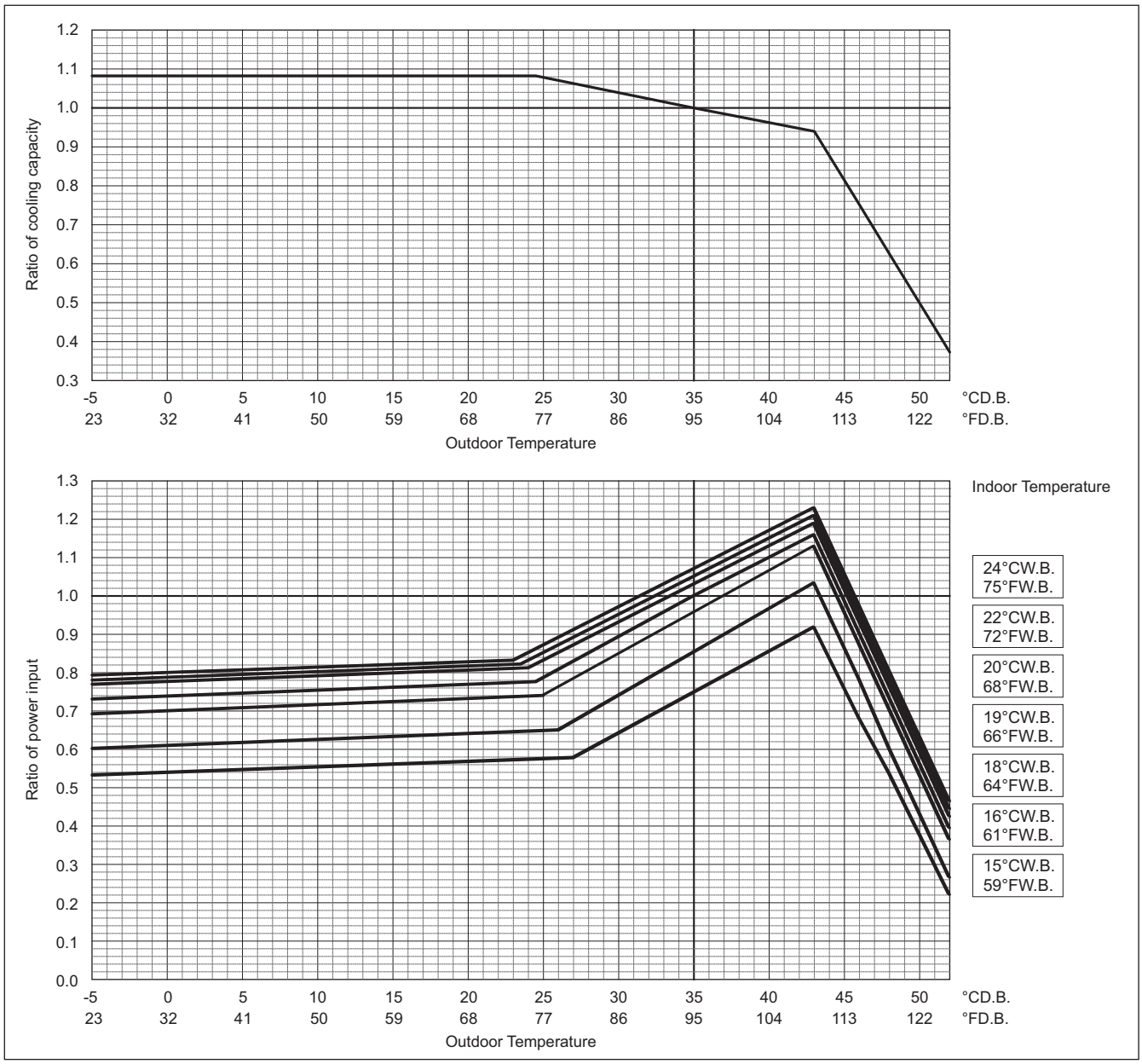
To be used to correct indoor unit capacity only



Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.
Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



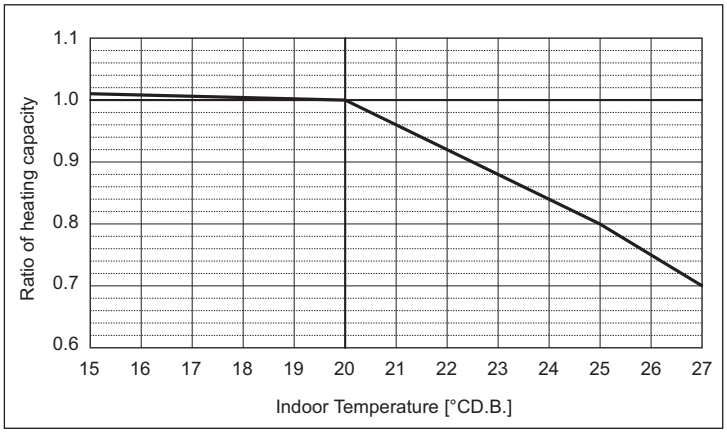
Capacity Priority Mode

PUHY-		M200YNW-A1	M250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.70	8.18

PUHY-		EM200YNW-A1	EM250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	5.50	7.89

Indoor unit temperature correction

To be used to correct indoor unit capacity only

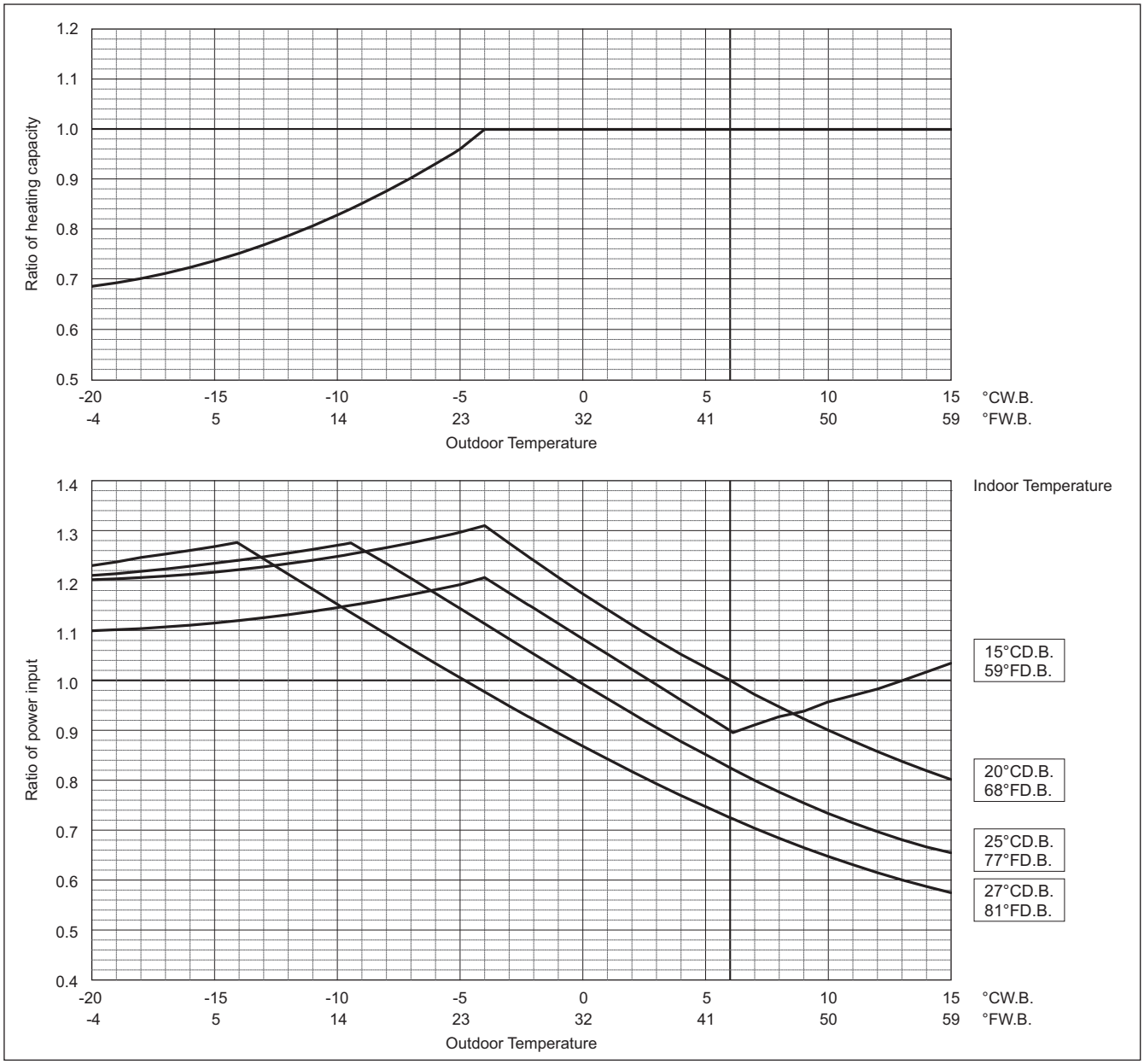


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

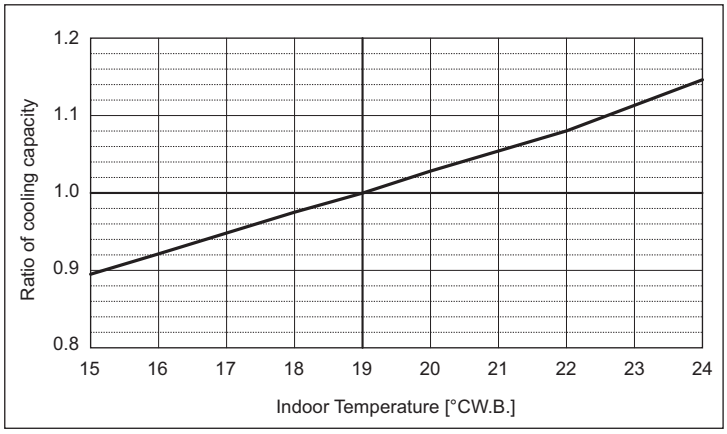


PUHY-		M300YNW-A1	M350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	9.85	12.15

PUHY-		EM300YNW-A1	EM350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	8.48	11.29

Indoor unit temperature correction

To be used to correct indoor unit capacity only

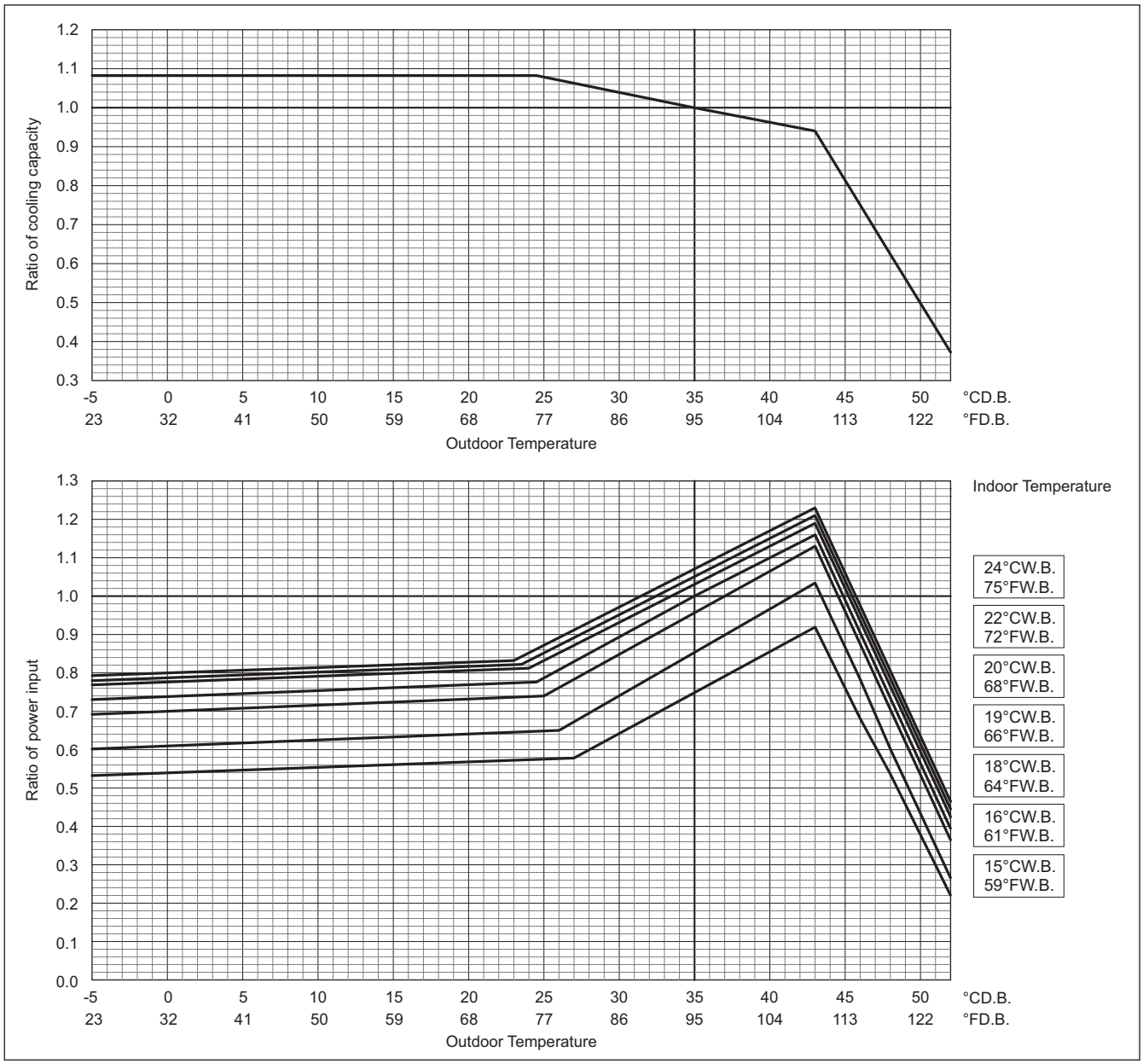


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



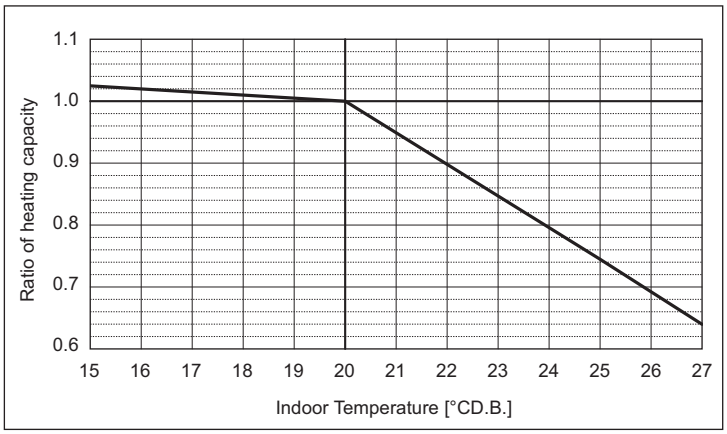
Capacity Priority Mode

PUHY-		M300YNW-A1	M350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	9.66	12.16

PUHY-		EM300YNW-A1	EM350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	9.30	12.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

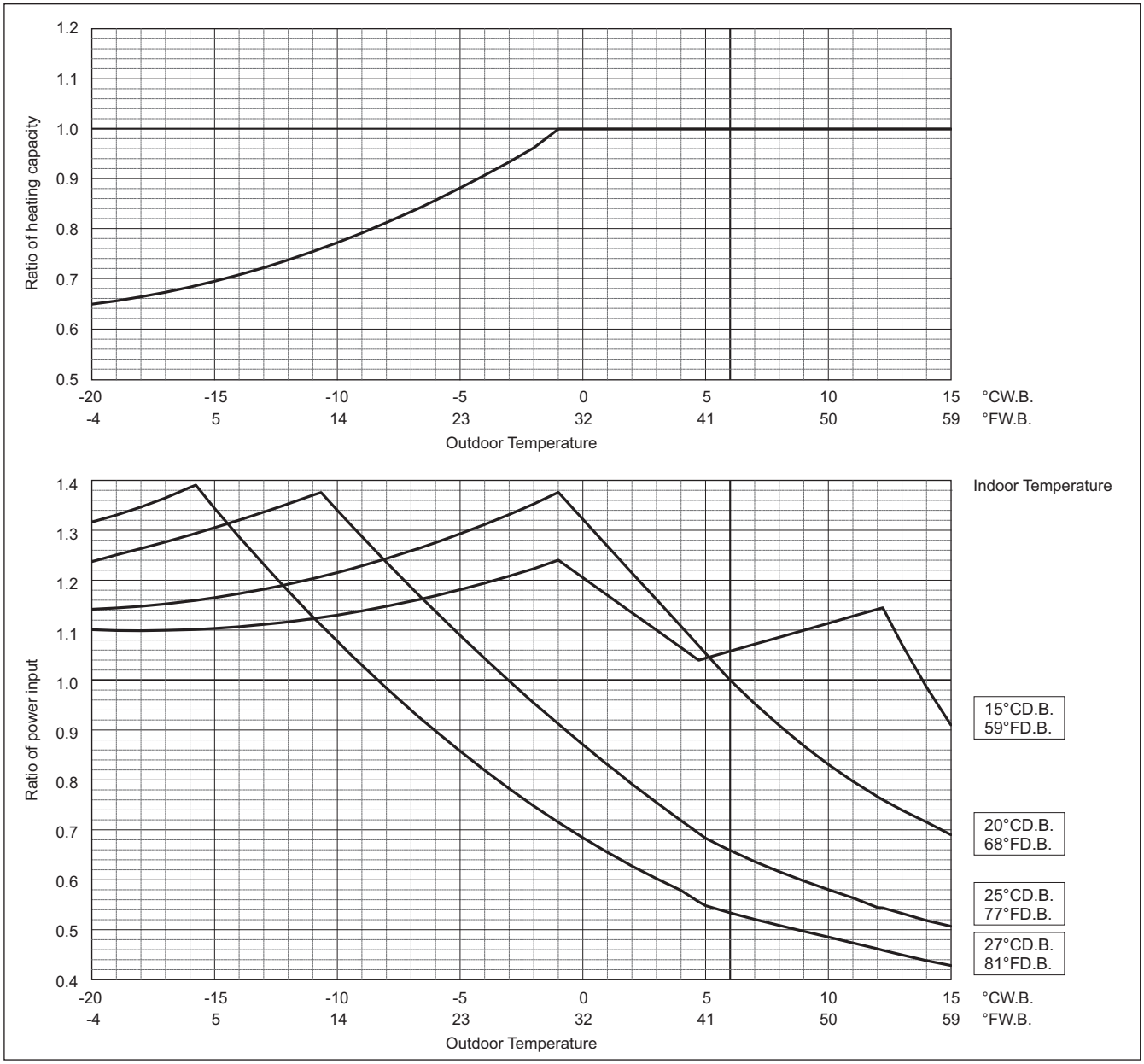


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

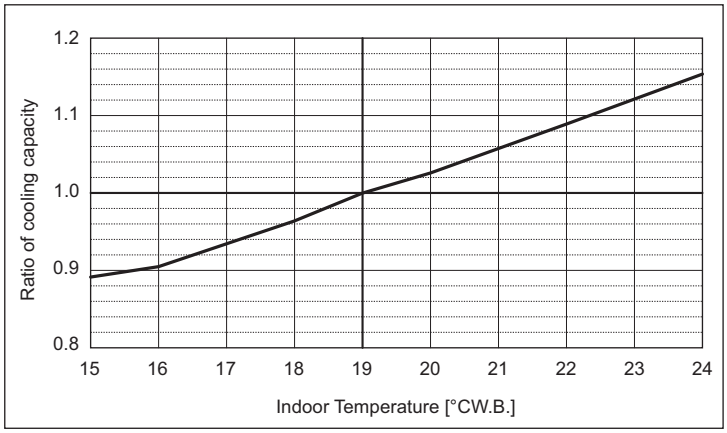


PUHY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	14.65	14.70	17.72

PUHY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	12.82	14.20	17.07

Indoor unit temperature correction

To be used to correct indoor unit capacity only

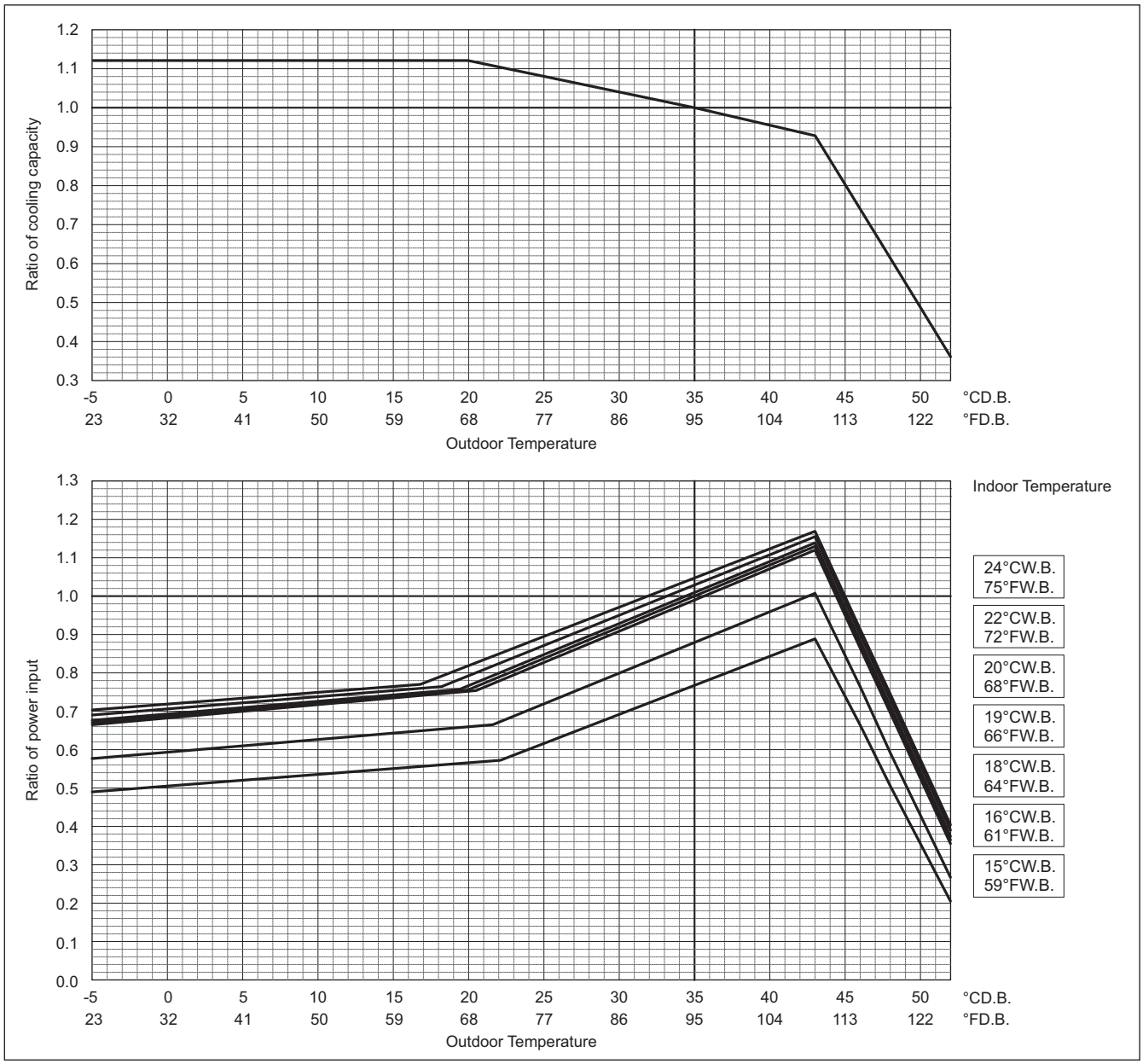


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



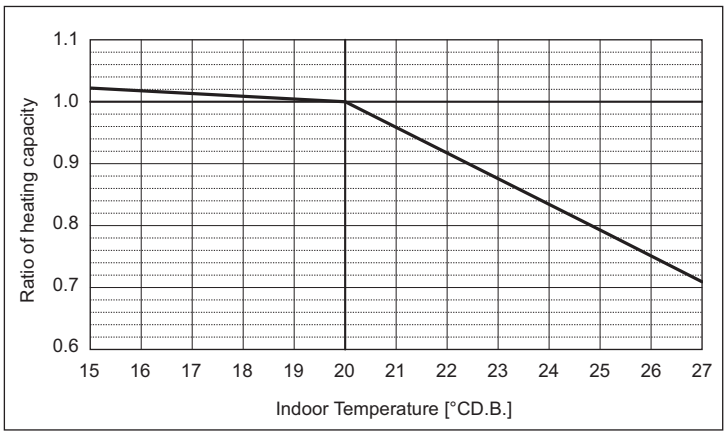
Capacity Priority Mode

PUHY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.69	16.00	17.07

PUHY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.40	15.68	16.75

Indoor unit temperature correction

To be used to correct indoor unit capacity only

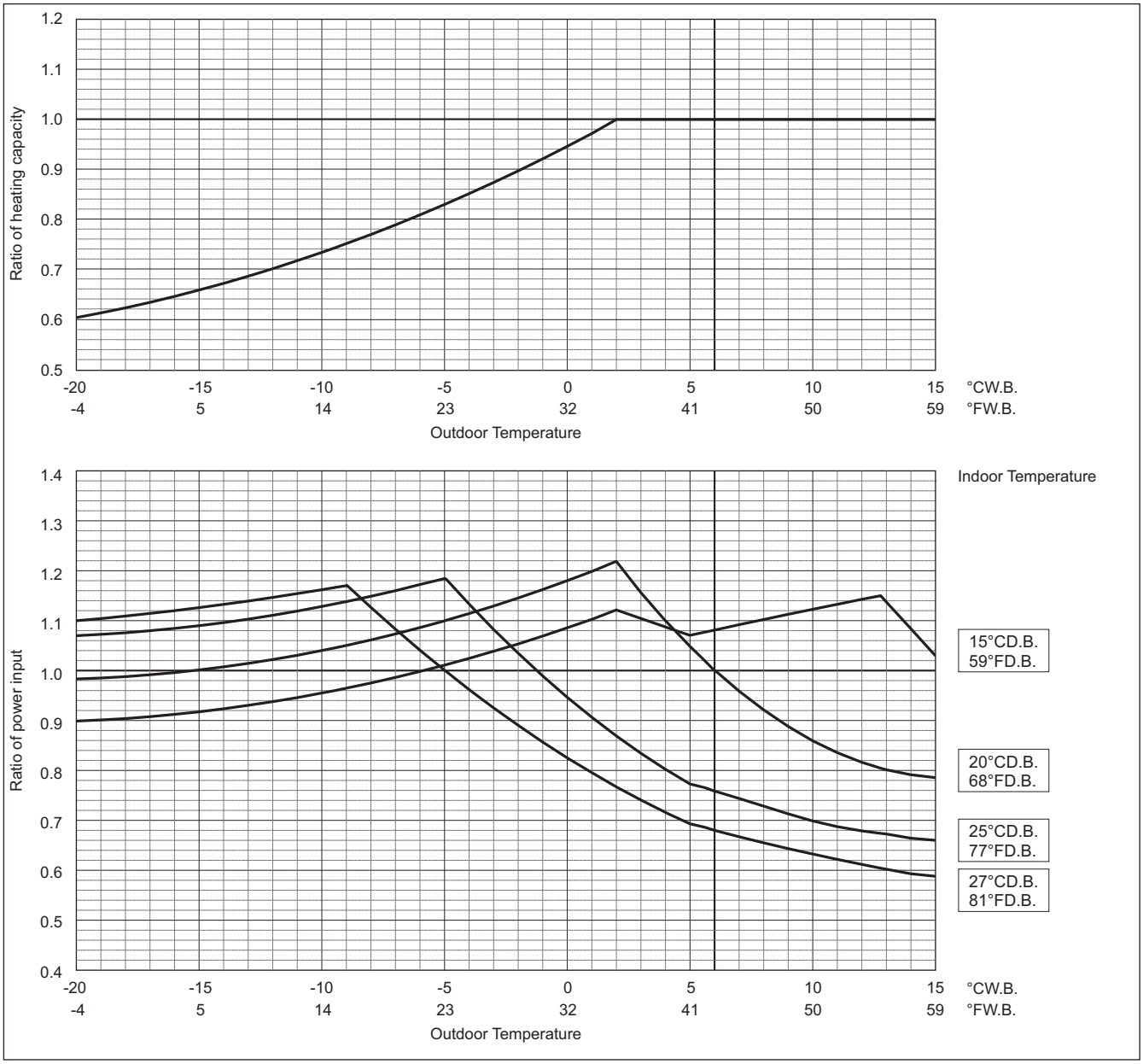


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



8-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

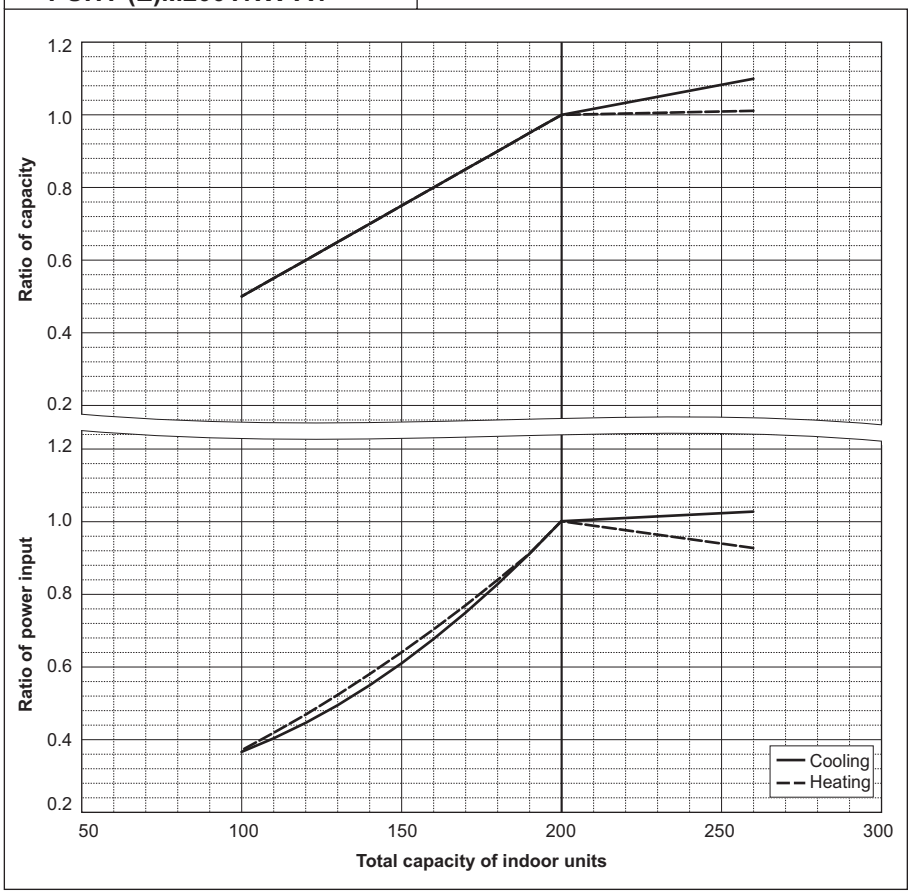
PUHY-M200YNW-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.53

PUHY-M200YNW-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	5.70

PUHY-EM200YNW-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.00

PUHY-EM200YNW-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	5.50

PUHY-(E)M200YNW-A1



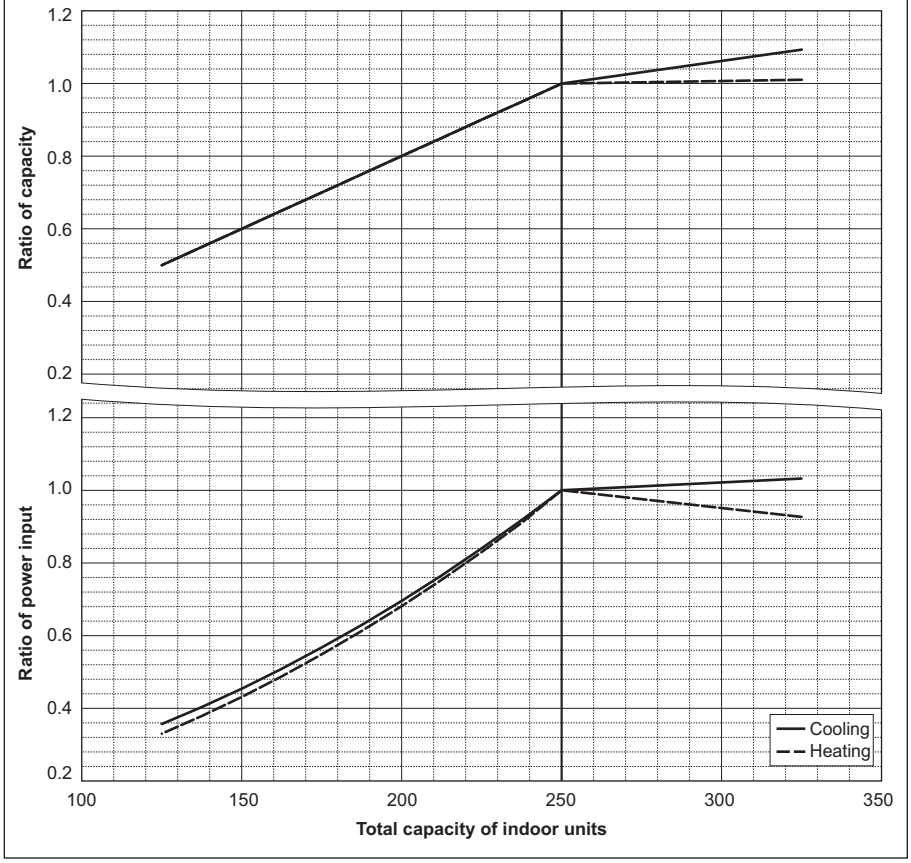
PUHY-M250YNW-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	8.38

PUHY-M250YNW-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	8.18

PUHY-EM250YNW-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	7.31

PUHY-EM250YNW-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	7.89

PUHY-(E)M250YNW-A1



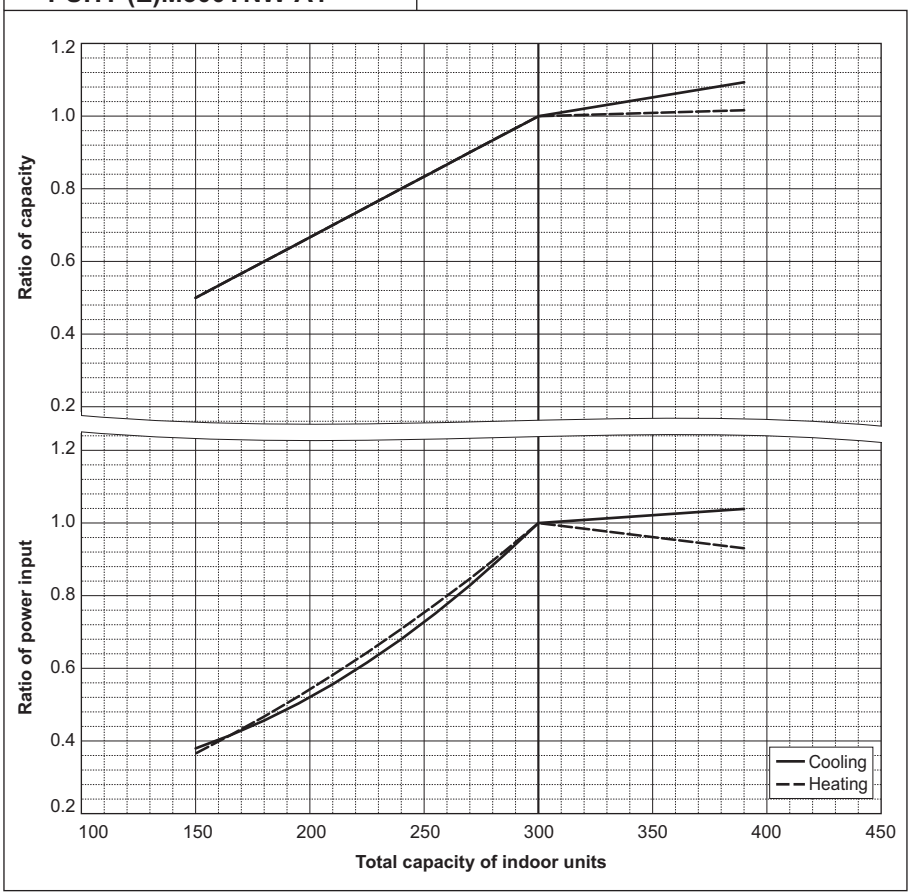
PUHY-M300YNW-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	9.85

PUHY-M300YNW-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	9.66

PUHY-EM300YNW-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	8.48

PUHY-EM300YNW-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	9.30

PUHY-(E)M300YNW-A1



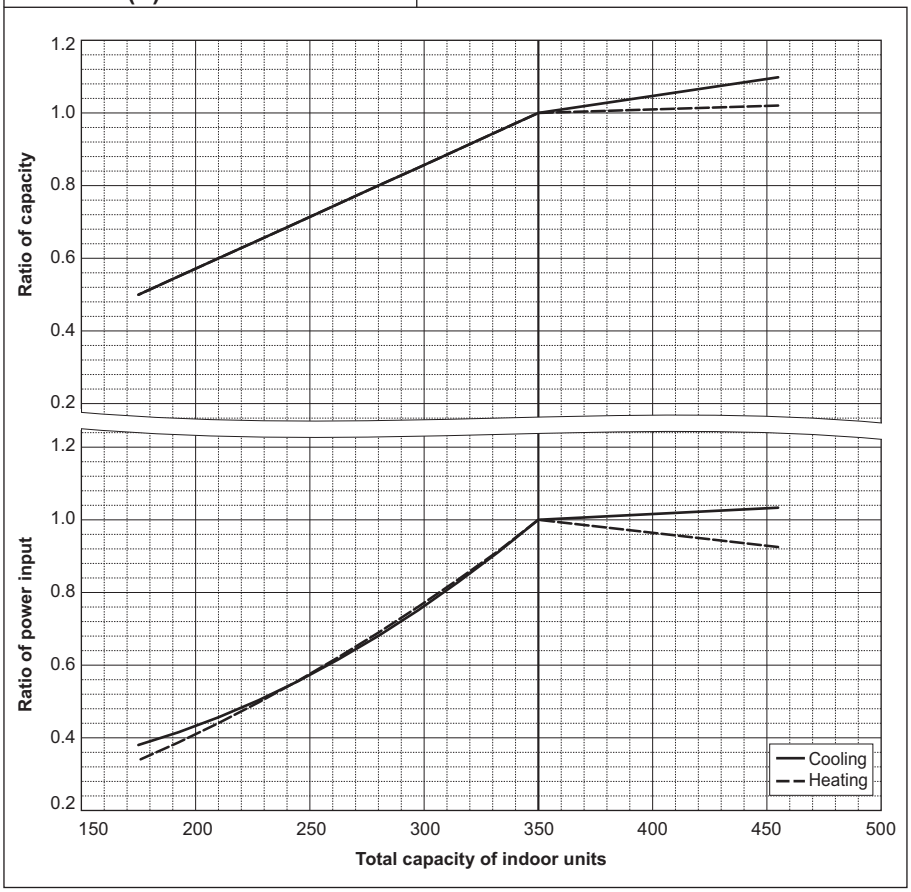
PUHY-M350YNW-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	12.15

PUHY-M350YNW-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	12.16

PUHY-EM350YNW-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	11.29

PUHY-EM350YNW-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	12.12

PUHY-(E)M350YNW-A1



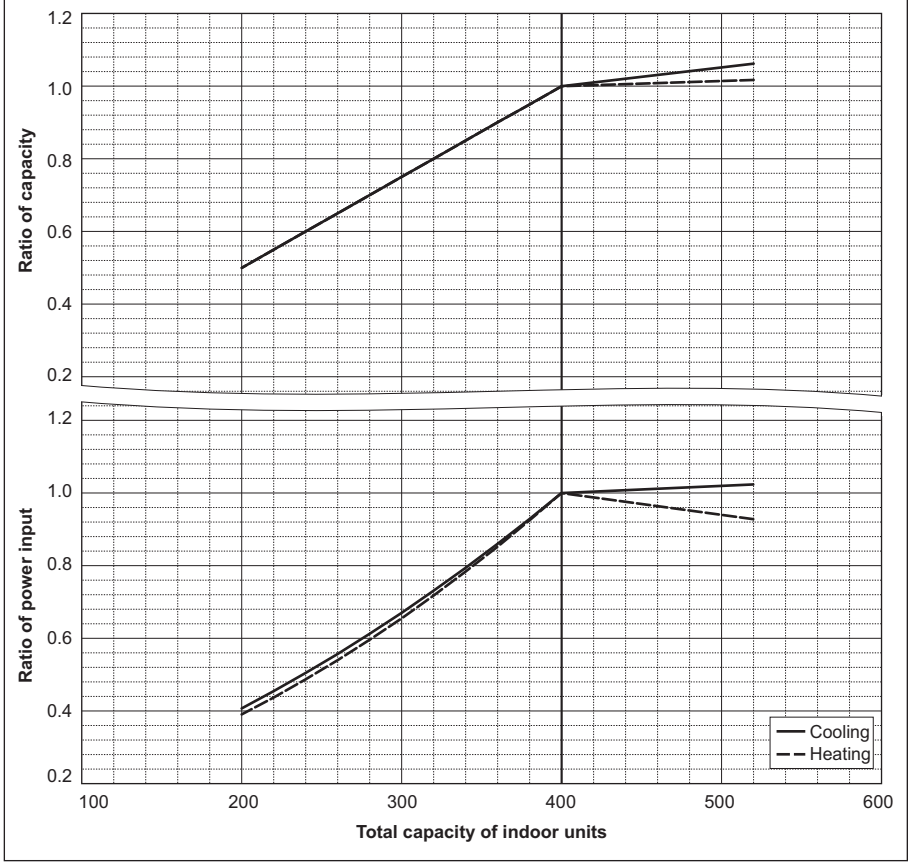
PUHY-M400YNW-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	14.65

PUHY-M400YNW-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	13.69

PUHY-EM400YNW-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	12.82

PUHY-EM400YNW-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	13.40

PUHY-(E)M400YNW-A1



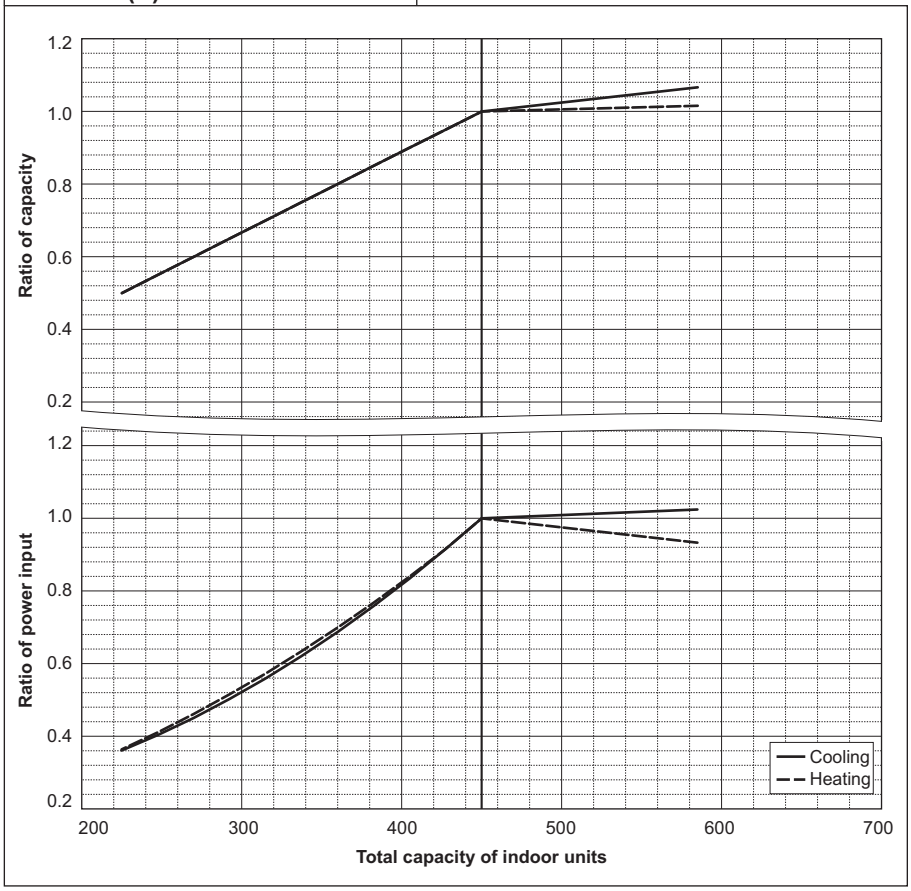
PUHY-M450YNW-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.70

PUHY-M450YNW-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	16.00

PUHY-EM450YNW-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.20

PUHY-EM450YNW-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	15.68

PUHY-(E)M450YNW-A1



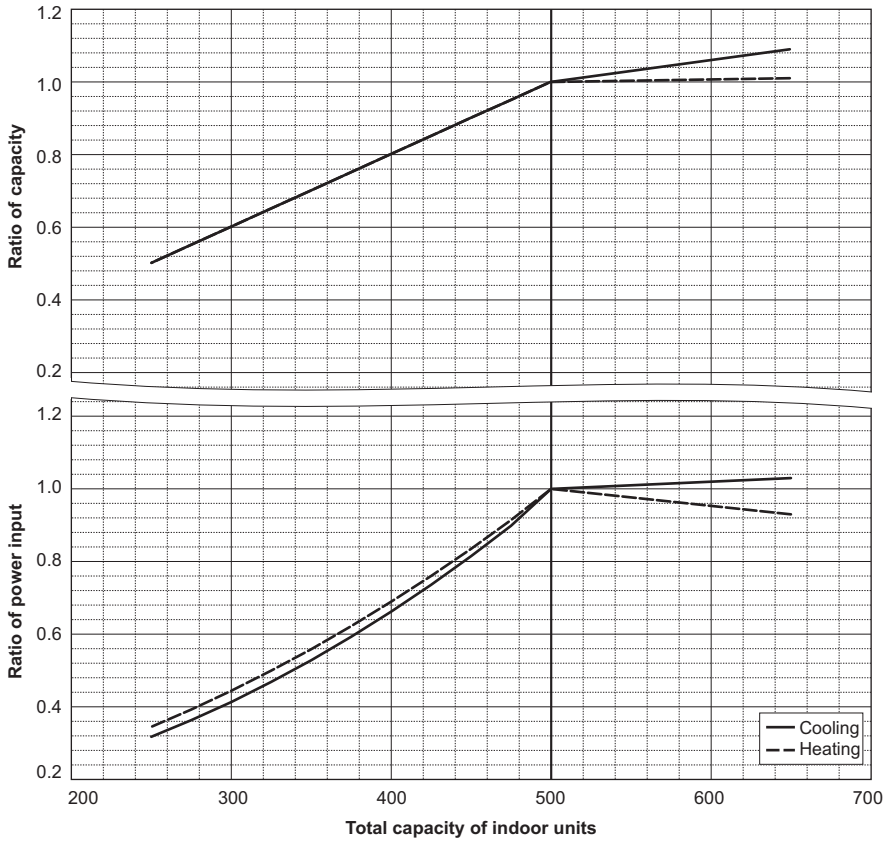
PUHY-M500YNW-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	17.72

PUHY-M500YNW-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	17.07

PUHY-EM500YNW-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	17.07

PUHY-EM500YNW-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	16.75

PUHY-(E)M500YNW-A1

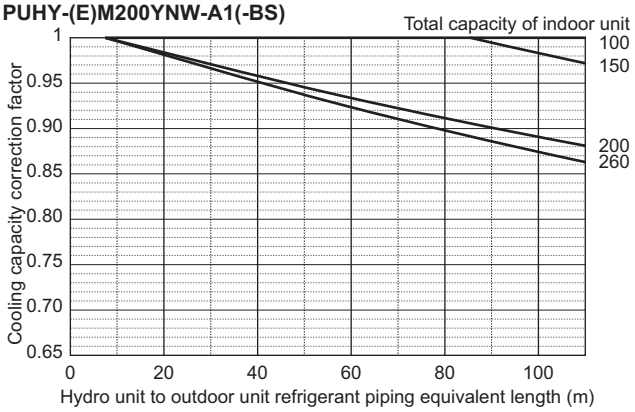


8-3. Correction by refrigerant piping length

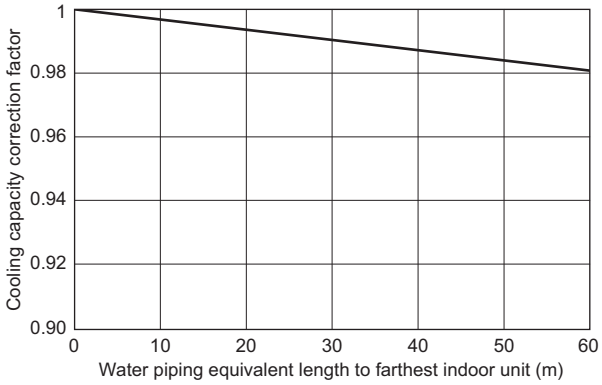
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 8-3-1 and 8-3-2 the capacity can be calculated. 8-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

8-3-1. Cooling capacity correction

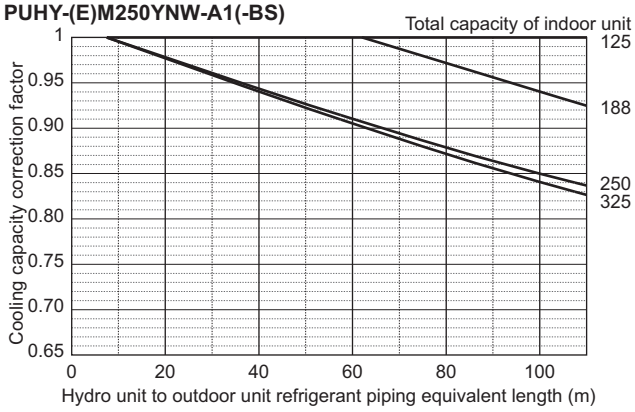
PUHY-(E)M200YNW-A1(-BS)



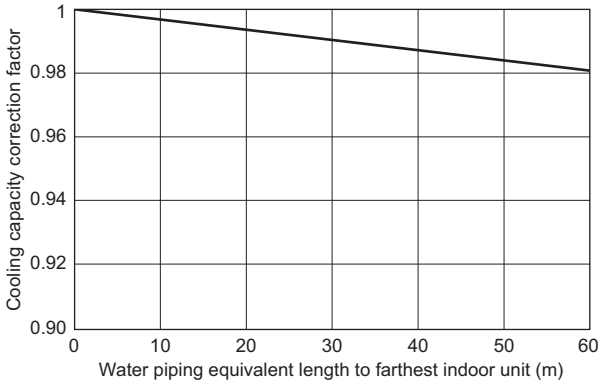
PUHY-(E)M200YNW-A1(-BS)



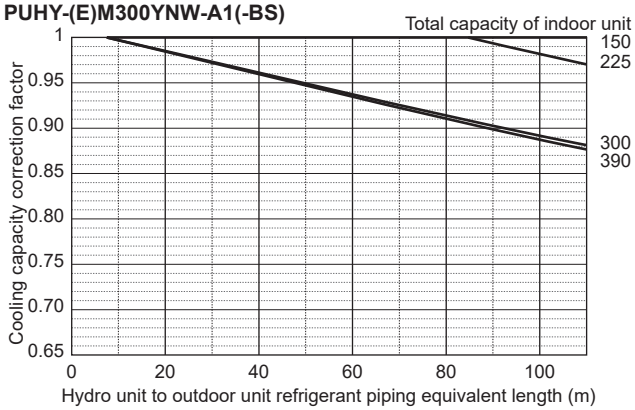
PUHY-(E)M250YNW-A1(-BS)



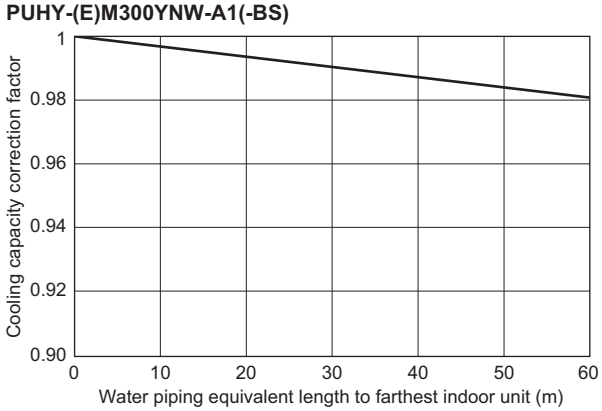
PUHY-(E)M250YNW-A1(-BS)



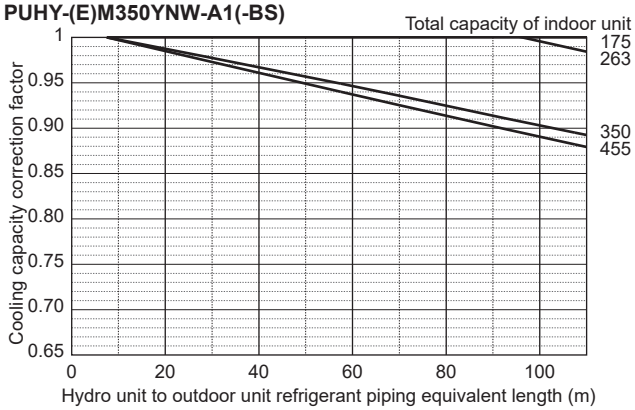
PUHY-(E)M300YNW-A1(-BS)



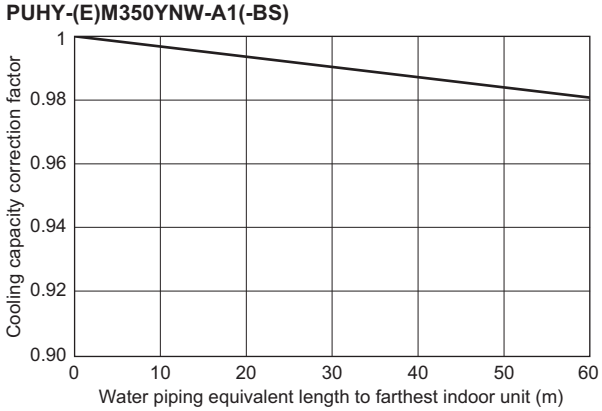
PUHY-(E)M300YNW-A1(-BS)



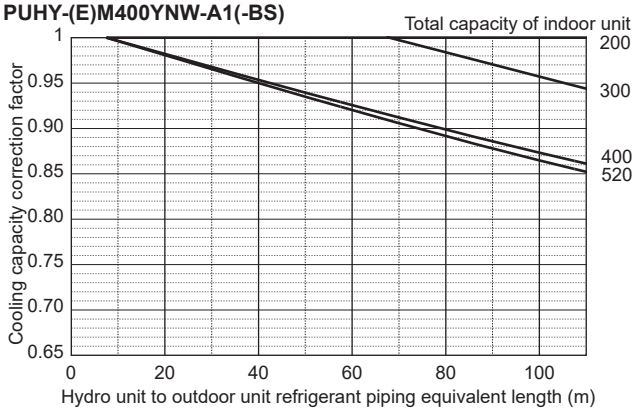
PUHY-(E)M350YNW-A1(-BS)



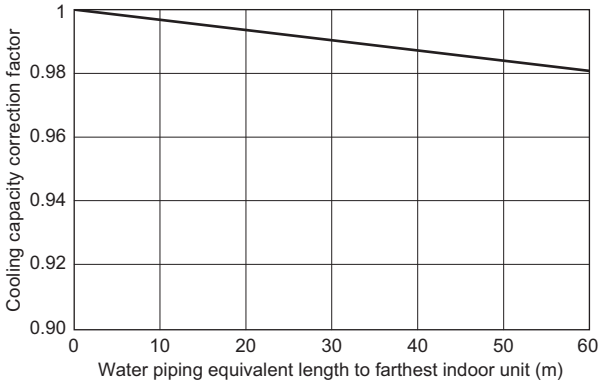
PUHY-(E)M350YNW-A1(-BS)



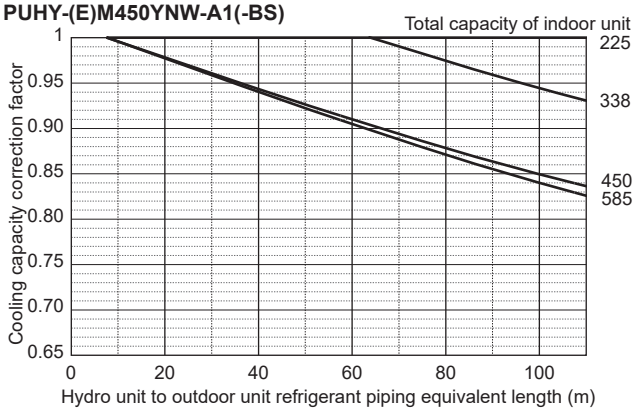
PUHY-(E)M400YNW-A1(-BS)



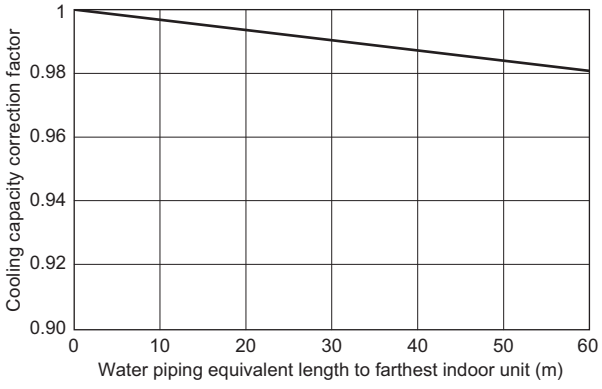
PUHY-(E)M400YNW-A1(-BS)



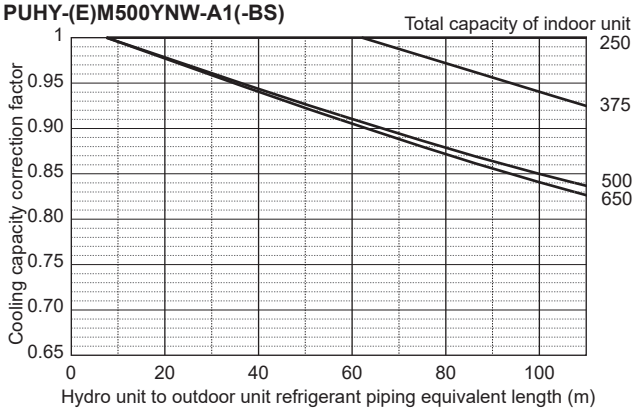
PUHY-(E)M450YNW-A1(-BS)



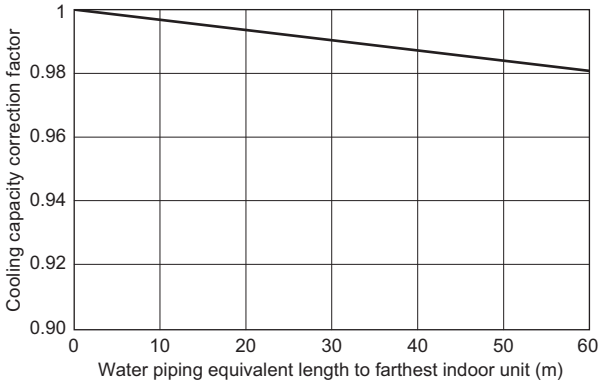
PUHY-(E)M450YNW-A1(-BS)



PUHY-(E)M500YNW-A1(-BS)

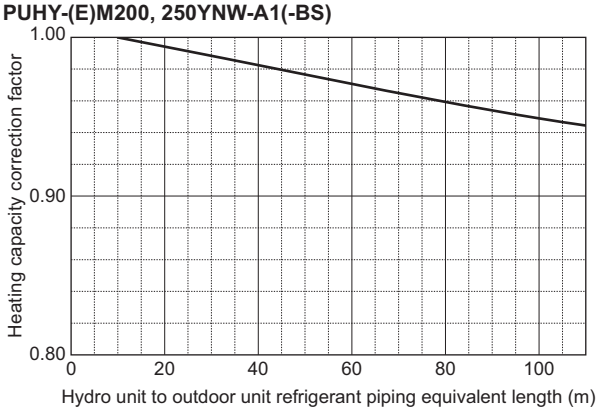


PUHY-(E)M500YNW-A1(-BS)

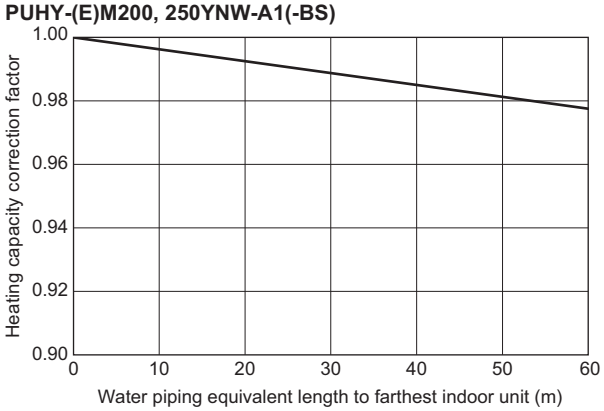


8-3-2. Heating capacity correction

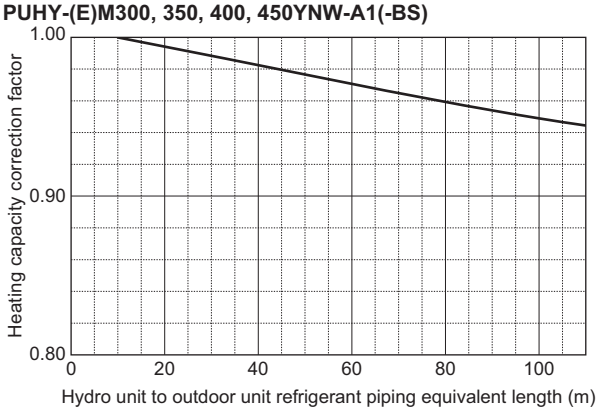
PUHY-(E)M200, 250YNW-A1(-BS)



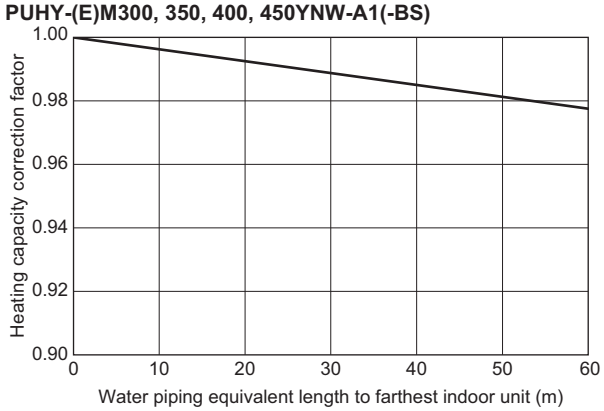
PUHY-(E)M200, 250YNW-A1(-BS)



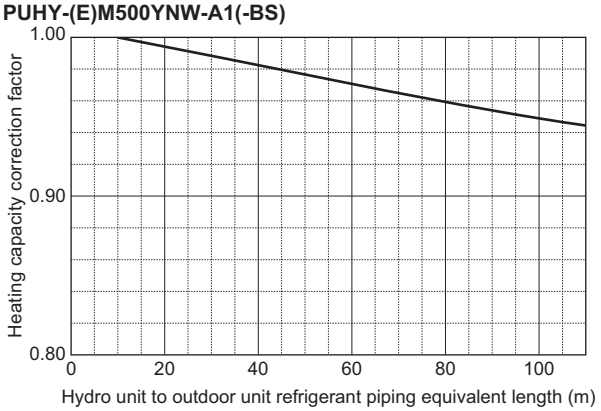
PUHY-(E)M300, 350, 400, 450YNW-A1(-BS)



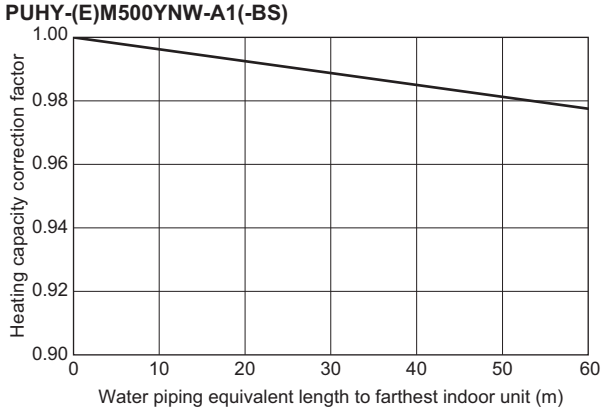
PUHY-(E)M300, 350, 400, 450YNW-A1(-BS)



PUHY-(E)M500YNW-A1(-BS)



PUHY-(E)M500YNW-A1(-BS)



8-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PUHY-(E)M200YNW-A1(-BS)
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

2. PUHY-(E)M250YNW-A1(-BS)
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PUHY-(E)M300YNW-A1(-BS)
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

4. PUHY-(E)M350YNW-A1(-BS)
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

5. PUHY-(E)M400, 450, 500YNW-A1(-BS)
Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

The equivalent piping length may vary depending on the system configuration, such as the pipe length, pipe diameter, number of pipe bends, number of joints, and capacities of indoor units, based on which the pressure loss in the pipes is calculated.
Use the Design Tool to design the piping system, and ensure that the equivalent piping length of the system is within the allowable range. If an error occurs on the Design Tool, review the piping length and piping routes to solve the system error.

8-4. Correction at frost and defrost

Due to frost at the outdoor heat exchanger and the automatic defrost operation, the heating capacity of the outdoor unit can be calculated by multiplying the correction factor shown in the table below.

Table of correction factor at frost and defrost

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PUHY-(E)M200YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-(E)M250YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-(E)M300YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-(E)M350YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PUHY-(E)M400YNW-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PUHY-(E)M450YNW-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PUHY-(E)M500YNW-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95

Note

- The high humidity condition (e.g., a foggy atmosphere) which causes frost forming on the heat exchanger will worsen the heating performance of the unit.
- The snow blowing to the heat exchanger will worsen the heating performance of the unit. Install a snow hood as a preventive measure.

8-5. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 8-5-1 for antifreeze solution concentration, 8-5-2 and 8-5-3 for capacity correction by antifreeze solution concentration.

8-5-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW011-4 and SW011-5) is required in Hydro unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

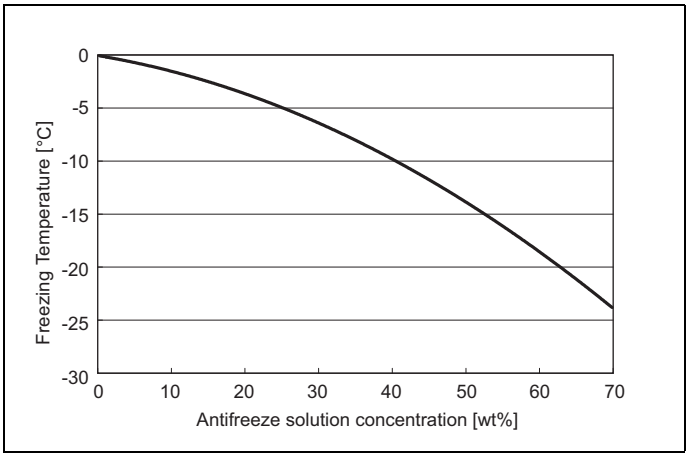
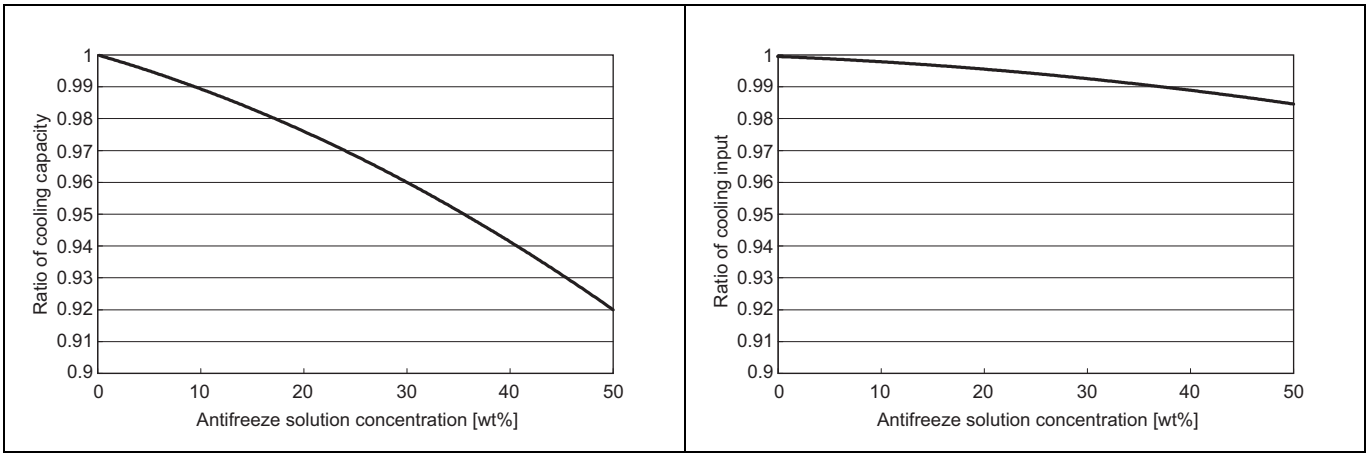


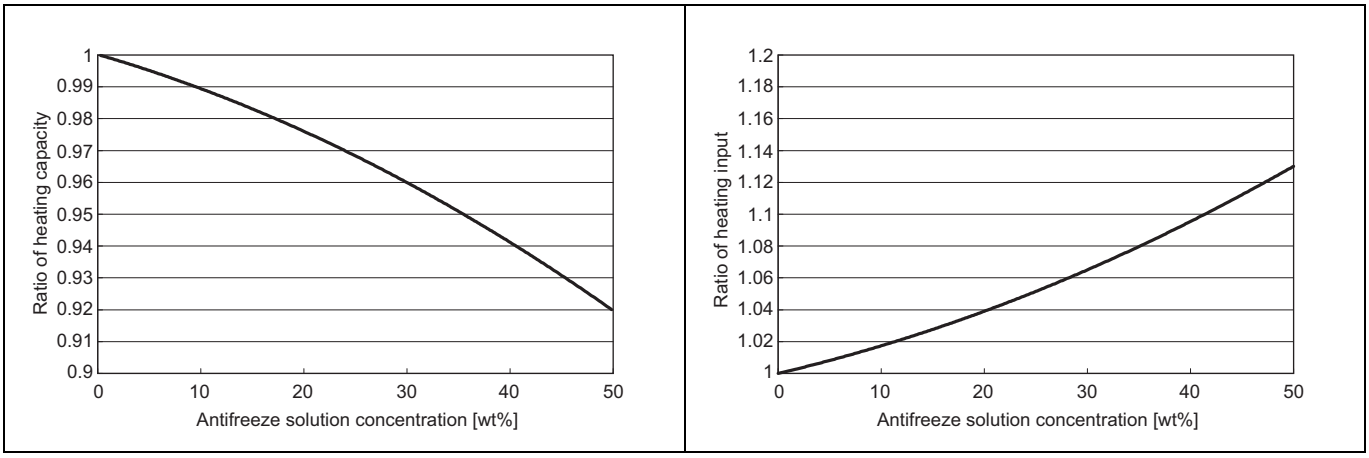
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW011-4		OFF	OFF	ON	ON
DipSW011-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

8-5-2. Capacity correction by antifreeze solution concentration (cooling)



8-5-3. Capacity correction by antifreeze solution concentration (heating)



9-1. Power supply for Outdoor unit

9-1-1. Electrical characteristics of the outdoor unit in cooling mode

Symbols: MCA: Max Circuit Amps
RLA: Rated Load Amps SC: Starting Current

PUHY-M-YNW-A1	Unit Combination	Units			Power supply	Compressor		FAN	RLA (A) (50/60Hz)	
		Hz	Volts	Voltage range	MCA (A)	Output (kW)	SC (A)	Output (kW)	Cooling	Heating
PUHY-M200YNW-A1(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	4.0	8	0.92	9.3/8.8/8.5	9.6/9.1/8.8
PUHY-M250YNW-A1(-BS)	-				21.8	6.3	8	0.92	14.1/13.4/12.9	13.8/13.1/12.6
PUHY-M300YNW-A1(-BS)	-				25.6	7.6	8	0.92	16.6/15.7/15.2	16.3/15.4/14.9
PUHY-M350YNW-A1(-BS)	-				31.6	9.6	8	0.46+0.46	20.5/19.4/18.7	20.5/19.5/18.7
PUHY-M400YNW-A1(-BS)	-				38.1	11.8	8	0.46+0.46	24.7/23.4/22.6	23.1/21.9/21.1
PUHY-M450YNW-A1(-BS)	-				38.7	12.9	8	0.46+0.46	24.8/23.5/22.7	27.0/25.6/24.7
PUHY-M500YNW-A1(-BS)	-				46.1	13.5	8	0.92+0.92	29.9/28.4/27.3	28.8/27.3/26.3

PUHY-EM-YNW-A1	Unit Combination	Units			Power supply	Compressor		FAN	RLA (A) (50/60Hz)	
		Hz	Volts	Voltage range	MCA (A)	Output (kW)	SC (A)	Output (kW)	Cooling	Heating
PUHY-EM200YNW-A1(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	3.8	8	0.92	8.4/8.0/7.7	9.2/8.8/8.5
PUHY-EM250YNW-A1(-BS)	-				19.5	5.9	8	0.92	12.3/11.7/11.2	13.3/12.6/12.1
PUHY-EM300YNW-A1(-BS)	-				22.4	7.1	8	0.92	14.3/13.5/13.1	15.6/14.9/14.3
PUHY-EM350YNW-A1(-BS)	-				29.8	9.6	8	0.46+0.46	19.0/18.1/17.4	20.4/19.4/18.7
PUHY-EM400YNW-A1(-BS)	-				33.3	10.7	8	0.46+0.46	21.6/20.5/19.8	22.6/21.4/20.7
PUHY-EM450YNW-A1(-BS)	-				37.8	12.6	8	0.46+0.46	23.9/22.7/21.9	26.4/25.1/24.2
PUHY-EM500YNW-A1(-BS)	-				44.4	12.9	8	0.92+0.92	28.8/27.3/26.3	28.2/26.8/25.8

9-2. Power cable specifications

Thickness of wire for main power supply, capacities of the switch and system impedance

	Model	Minimum wire thickness (mm^2)			Ground-fault interrupter *1	Local switch (A)		Breaker for wiring (A) (Non-fuse breaker)	Max. Permissive System Impedance
		Main cable	Branch	Ground		Capacity	Fuse		
Outdoor unit	PUHY-(E)M200YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	25	25	30	*2
	PUHY-(E)M250YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
	PUHY-(E)M300YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
	PUHY-(E)M350YNW-A1	6.0	-	6.0	40A 100mA 0.1sec. or less	40	40	40	0.27Ω
	PUHY-(E)M400YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.22Ω
	PUHY-(E)M450YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.19Ω
	PUHY-(E)M500YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.16Ω

*1 The Ground-fault interrupter should support Inverter circuit. The Ground-fault interrupter should combine using of local switch or wiring breaker.

*2 Meet technical requirements of IEC61000-3-3

1. Use dedicated power supplies for the outdoor unit and indoor unit. Ensure OC and OS are wired individually.
2. Bear in mind ambient conditions (ambient temperature, direct sunlight, rain water, etc.) when proceeding with the wiring and connections.
3. The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more than 10%. Make sure that the voltage imbalance between the phases is 2% or less.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57). For example, use wiring such as YZW.
6. A switch with at least 3 mm contact separation in each pole shall be provided when the Air Conditioner is installed.
7. For details on indoor unit wiring and breaker for current leakage, refer to the indoor unit Instruction Book and Installation Manual.

⚠WARNING

- Be sure to use specified wires for connections and ensure no external force is imparted to terminal connections. If connections are not fixed firmly, heating or fire may result.
- Be sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.

⚠CAUTION

- The breakers for current leakage should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent). If no earth leakage breaker is installed, it may cause an electric shock.
- Breakers for current leakage should combine using of switch.
- Do not use anything other than a breaker with the correct capacity. Using a breaker of too large capacity may cause malfunction or fire.
- If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the upstream side of the power supply system may both operate.
  Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

Note

- This device is intended for the connection to a power supply system with a maximum permissible system impedance shown in the above table at the interface point (power service box) of the user's supply.
- The user must ensure that this device is connected only to a power supply system which fulfils the requirement above.
  If necessary, the user can ask the public power supply company for the system impedance at the interface point.
- This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc (*2) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc (*2).

Ssc(*2)

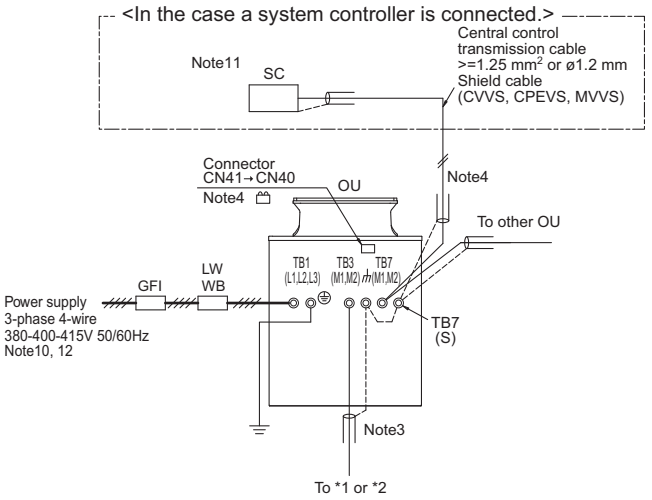
Model	Ssc (MVA)
PUHY-M200YNW-A1	1.25
PUHY-M250YNW-A1	1.38
PUHY-M300YNW-A1	1.76
PUHY-M350YNW-A1	2.05
PUHY-M400YNW-A1	2.48
PUHY-M450YNW-A1	2.88
PUHY-M500YNW-A1	3.39

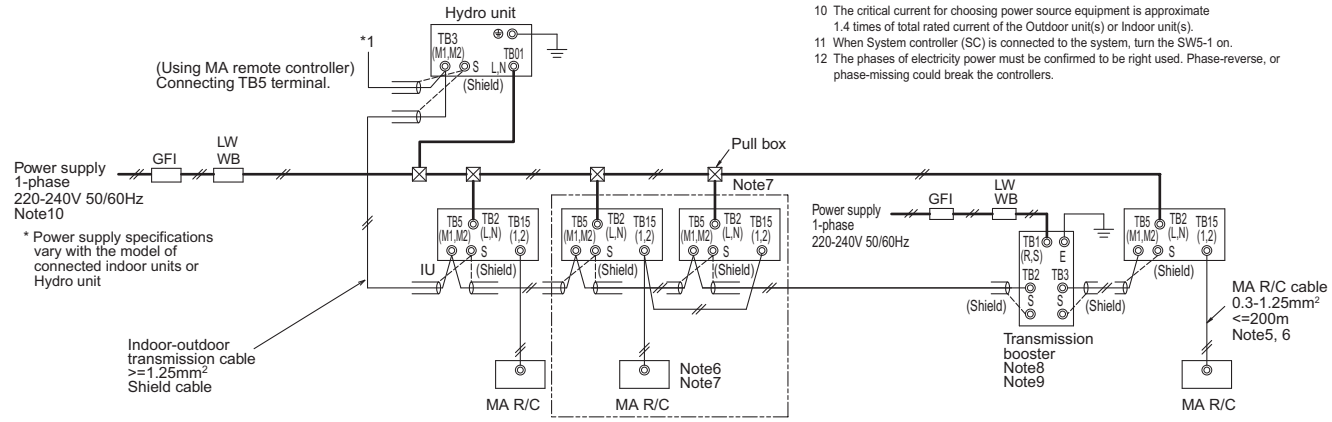
Model	Ssc (MVA)
PUHY-EM200YNW-A1	1.25
PUHY-EM250YNW-A1	1.27
PUHY-EM300YNW-A1	1.58
PUHY-EM350YNW-A1	1.87
PUHY-EM400YNW-A1	2.19
PUHY-EM450YNW-A1	2.62
PUHY-EM500YNW-A1	3.17

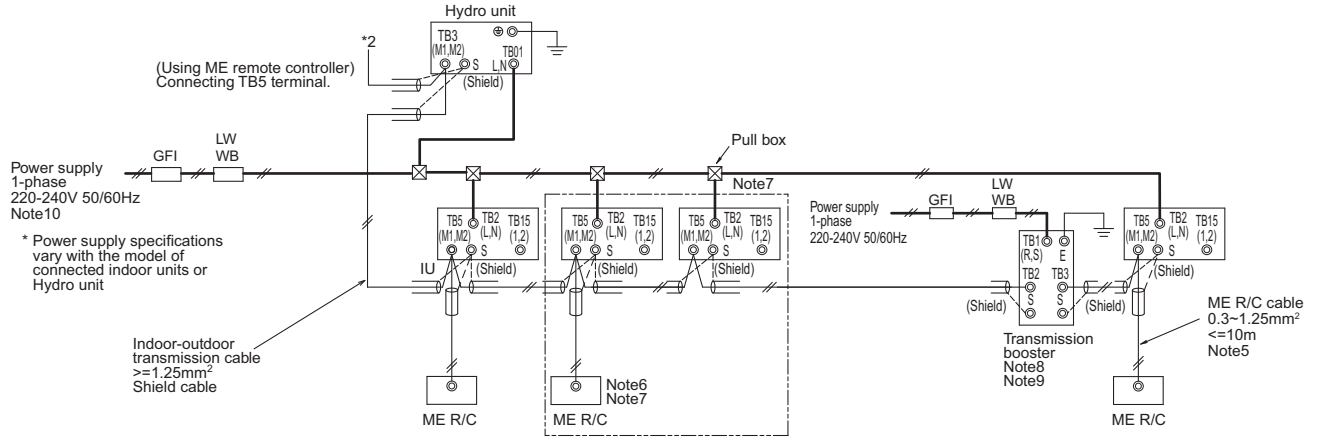
9-3. Power supply examples

The local standards and/or regulations is applicable at a higher priority.

PUHY-(E)M200, 250, 300, 350, 400, 450, 500YNW-A1







Note:
1 The transmission cable is not-polarity double-wire.
2 Symbol ◎ means a screw terminal for wiring.
3 The shield wire of transmission cable should be connected to the grounding terminal at Outdoor unit. All shield wire of M-Net transmission cable among Indoor units should be connected to the S terminal at Indoor unit or all shield wire should be connected together. The broken line at the scheme means shield wire.
4 When the Outdoor unit connected with system controller, power-supply to TB7 of the outdoor unit(s) is needed. The connector change from CN41 to CN40 at one of the outdoor units will enable the outdoor unit to supply power to TB7, or an extra power supplying unit PAC-SC51KUA should be used. The transmission cable (above 1.25mm², shielded, CVVS/CPEVS/MVVS) among Outdoor units and system controllers is called central control transmission cable. The shield wire of the central control transmission cable must be grounded at the Outdoor unit whose CN41 is changed to CN40. When the power supplying unit PAC-SC51KUA is used, connect the shielded cable to the ground terminal on the PAC-SC51KUA.
5 MA R/C transmission cable (0.3-1.25mm²) must be less than 200m in length, while ME R/C transmission cable (0.3-1.25mm²) must be less than 10m in length. But transmission cable to the ME R/C can be extend using a M-NET cable (>=1.25mm²) when the length is counted in the M-Net length.
6 MA remote controller and ME remote controller should not be grouped together. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.
7 If using 1 or 2 (main/sub) MA remote controller to control more than 1 Indoor unit, use MA transmission cable to connect all the TB15 terminals of the Indoor units. It is called "Grouping".
If using 1 or 2 (main/sub) ME remote controller control more than 1 indoor unit, set address to Indoor unit and ME remote controller. For the method, refer to 10-1. "Address setting".
8 Indoor board consumes power from TB3.
9 If Transmission booster is needed, be sure to connect the shield wires to the both sides to the booster.
10 The critical current for choosing power source equipment is approximate 1.4 times of total rated current of the Outdoor unit(s) or Indoor unit(s).
11 When System controller (SC) is connected to the system, turn the SW5-1 on.
12 The phases of electricity power must be confirmed to be right used. Phase-reverse, or phase-missing could break the controllers.

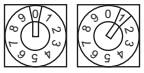
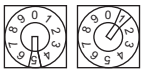
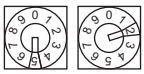
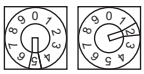
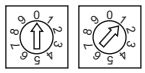
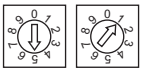
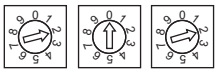
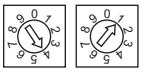
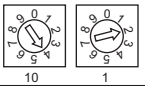
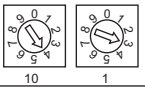
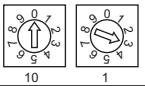
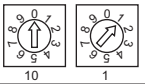
Symbol	
GFI	Ground-fault interrupter
LW	Local switch
BKC	Breaker capacity
OCP	Over-current protector
WB	Wiring breaker
NFB	Non-fuse breaker
OU	Outdoor unit
IU	Indoor unit
SC	System controller
MA R/C	MA remote controller
ME R/C	ME remote controller

Model	Ground-fault interrupter *1, *2, *4	Local switch		Wiring breaker *4	Minimum Wire thickness	
		BKC <A>	OCP*3, *4 <A>	(NFB) <A>	Power wire <mm²>	Earth wire <mm²>
PUHY-(E)M200YNW-A1	30A 100mA 0.1sec. or less	25	25	30	4	4
PUHY-(E)M250YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PUHY-(E)M300YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PUHY-(E)M350YNW-A1	40A 100mA 0.1sec. or less	40	40	40	6	6
PUHY-(E)M400YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PUHY-(E)M450YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PUHY-(E)M500YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10

*1 The Ground-fault interrupter should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent).
*2 Ground-fault interrupter should combine using of local switch or wiring breaker.
*3 It shows data for B-type fuse of the breaker for current leakage.
*4 If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the centralized controller side may both operate.
Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

10-1. Address setting

10-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50		Use the most recent address within the same group of indoor units.
Outdoor unit		51 ~ 99, 100 (Note1)		The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the outdoor units in one refrigerant circuit system. OC, OS1 and OS2 are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Hydro unit		52 ~ 99, 100		The address of the smallest address of outdoor unit connected to the hydro unit + 50 * Please reset one of them to an address between 52 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100		The address of the smallest address of indoor unit connected to the HBC controller +50 * Please reset one of them to an address between 52 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed 	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed 	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250		The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-C400E/EW-C50E AE-200E/AE-50E EW-50E AG-150A AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50		
	PAC-YG63MCA	01 ~ 50		
	PAC-YG66DCA	01 ~ 50		
LOSSNAY, OA processing unit		01 ~ 50		After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed 	

Note1: To set the address to "100", set it to "50"
Note2: Outdoor units OC, OS1 and OS2 in one refrigerant circuit system are automatically detected. OC, OS1 and OS2 are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

11-1. R32 Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R32 air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

Table 1. Copper pipe size and radial thickness for R32 HYBRID CITY MULTI.

Size (mm)	Size (in.)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R32 air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

11-2. Piping Design

11-2-1. Restrictions on pipe length

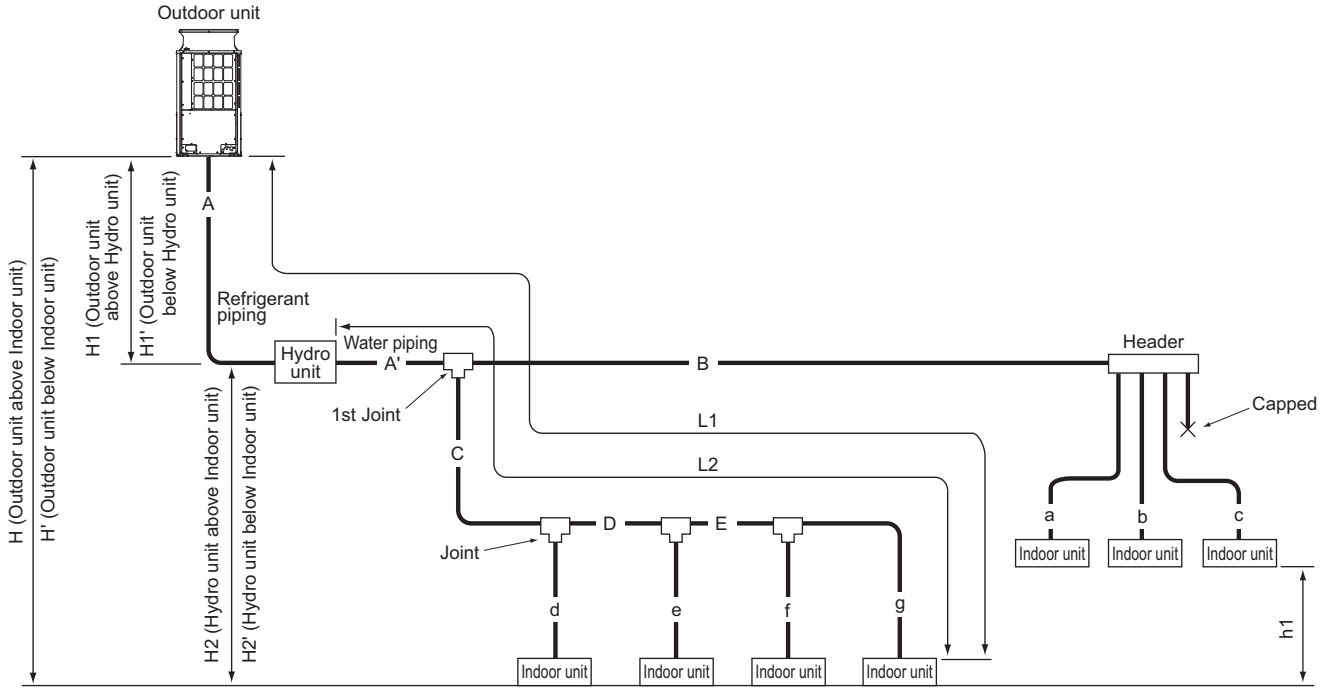


Fig. 11-2-1A Piping scheme

Piping length **(m [ft.])**

Item	Piping in the figure	Max. length	Max. equivalent length
Total piping length	A+A'+B+C+D+E+a+b+c+d+e+f+g	1000 [3280]	-
Between outdoor unit and hydro unit (refrigerant pipework)	A	110 [360]	110 [360]
Farthest indoor unit from outdoor unit (L1)	A+A'+C+D+E+g/A+B+c	165 [541]	190 [623]
Farthest indoor unit from hydro unit (L2)	A'+C+D+E+g/A'+B+c	60 [196]	60 [196]
Height between outdoor unit and indoor unit (outdoor unit above indoor unit)	H	90 [295]	-
Height between outdoor unit and indoor unit (outdoor unit below indoor unit)	H'	60 [196]	-
Height between outdoor unit and hydro unit (outdoor unit above hydro unit)	H1	50 [164] *1	-
Height between outdoor unit and hydro unit (outdoor unit below hydro unit)	H1'	40 [131] *2	-
Height between hydro unit and indoor unit (hydro unit above indoor unit)	H2	50 [164]	-
Height between hydro unit and indoor unit (hydro unit below indoor unit)	H2'	40 [131]	-
Height between indoor units	h1	30 [98]	-

*1 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.

*2 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.

1. Refrigerant and water pipe size

(1) Size of hydro unit's end connection piping

Hydro units connectable to outdoor units

Standard models

Outdoor unit	Hydro unit
PUHY-M200	CMH-WM250V-A
PUHY-M250	
PUHY-M300	CMH-WM350V-A
PUHY-M350	
PUHY-M400	CMH-WM500V-A
PUHY-M450	
PUHY-M500	

High-efficient models

Outdoor unit	Hydro unit
PUHY-EM200	CMH-WM250V-A
PUHY-EM250	
PUHY-EM300	CMH-WM350V-A
PUHY-EM350	
PUHY-EM400	CMH-WM500V-A
PUHY-EM450	
PUHY-EM500	

Connecting pipe diameter of outdoor unit

Standard models

Outdoor unit	Liquid	Gas
PUHY-M200	ø9.52 (ø3/8) Brazed	ø22.2 (ø7/8) Brazed
PUHY-M250	ø9.52 (ø3/8) Brazed	
PUHY-M300	ø9.52 (ø3/8) Brazed	
PUHY-M350	ø12.7 (ø1/2) Brazed	ø28.58 (ø1-1/8) Brazed
PUHY-M400	ø12.7 (ø1/2) Brazed	
PUHY-M450	ø15.88 (ø5/8) Brazed	
PUHY-M500	ø15.88 (ø5/8) Brazed	

High-efficient models

Outdoor unit	Liquid	Gas
PUHY-EM200	ø9.52 (ø3/8) Brazed	ø22.2 (ø7/8) Brazed
PUHY-EM250	ø9.52 (ø3/8) Brazed	
PUHY-EM300	ø9.52 (ø3/8) Brazed	ø28.58 (ø1-1/8) Brazed
PUHY-EM350	ø12.7 (ø1/2) Brazed	
PUHY-EM400	ø12.7 (ø1/2) Brazed	
PUHY-EM450	ø15.88 (ø5/8) Brazed	
PUHY-EM500	ø15.88 (ø5/8) Brazed	

Connecting pipe diameter of hydro unit

	Liquid	Gas
CMH-WM250V-A	ø9.52 (ø3/8) Brazed	ø22.2 (ø7/8) Brazed
CMH-WM350V-A	ø12.7 (ø1/2) Brazed	ø25.4 (ø1) Brazed *1
CMH-WM500V-A	ø15.88 (ø5/8) Brazed	(ø28.6 (ø1-1/8) Brazed)

*1 Using difference diameter pipe joint.

If the connecting pipe diameter of hydro unit differs from that of outdoor unit, expand or reduce the pipe diameter at the inlet of the hydro unit.

(2) Water pipe between hydro unit and indoor units

Indoor unit	Connection size		Field pipe size	
	Water inlet	Water outlet	Water return	Water out
PEFY-W20-50VMA-A	O.D. 22.0 mm	O.D. 22.0 mm	I.D. 20 mm	I.D. 20 mm

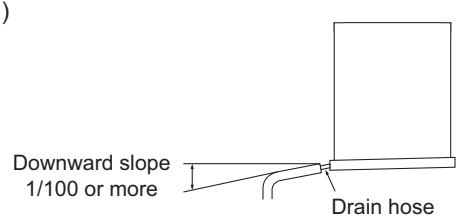
* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
  Refer to the indoor unit's DATA BOOK for details.

11-2-2. Drain piping work

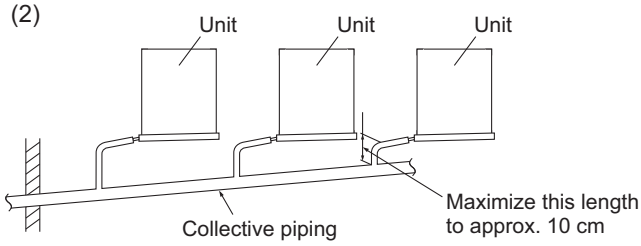
1. Drain piping work

- Ensure that the drain piping is downward (sloped gradient of more than 1/100) to the outdoor (discharge) side. If it is impossible to take any downward pitch, use an optionally available drain-up mechanism to obtain a downward pitch of more than 1/100.
- Ensure that any cross-wise drain piping is less than 20 m. If the drain piping is long, support it with metal brackets to prevent it from bending, warping, or vibrating.
- Ensure that collected pipes are 10 cm lower than the unit body's drain port as shown in (2).
- Do not put the end of the drain piping in any drain where ionic gases are generated. (Drain pan: optional parts)
- Do not use any odor trap around the discharge port.

(1)



(2)



*A drain pan is separately sold (for indoor use only).

- Set the end of drain piping in a place without any risk of odor generation.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

2. Discharge test

After completing drain piping work, test drain discharge using a small amount of water.
Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

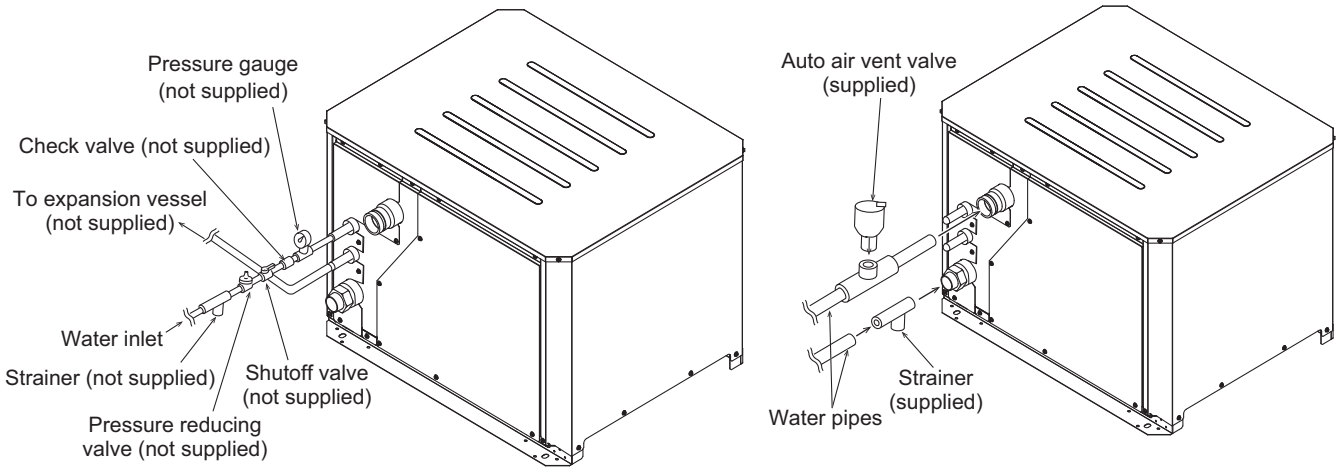
11-2-3. Connecting water pipe work

Please observe the following precautions during installation.

11-2-3-1 Important notes on water pipework installation

- The design pressure of the hydro unit water system is 0.8MPa.
- Use water pipe-work with a design pressure of at least 0.8MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.8MPa.
- Perform a pressure test on the field-installed water pipes at a pressure equal to 1.5 times the design pressure. Before performing a pressure test, isolate the pipes from hydro unit and indoor units.
- Please connect the water pipework of each indoor unit to the correct port on the hydro unit. Failure to do so will result in incorrect running.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- After the completion of test run, make sure not to reintroduce air into the pipe.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping especially when connecting the hydro unit. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the hydro unit water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Use copper, plastic, steel, or stainless steel pipes for the water circuit. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life. When using iron or stainless-steel pipework, ensure that rust from the pipework does not enter the unit.
- Connect the pipe and the unit so that the pipe does not interfere with maintenance and sufficient space is left for maintenance.
- Add water pressure gauge to see if the water pressure in hydro unit is correct or not.
- **Be sure to braze the water pipes after covering a wet cloth to the insulation pipes of the units in order to prevent them from burning and shrinking by heat.** (There are some plastic parts in hydro unit.)
- **Install the unit so that external force is not applied to the water pipes.**
- **Do not operate the pump before the pipes are filled with water.**

Example of hydro unit installation



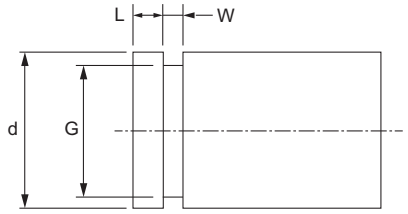
Hydro unit sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

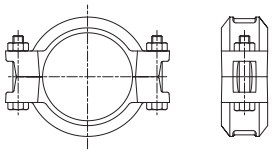
(Connecting the pipes using coupling housings)

• Connect the pipes as follows when connecting them with coupling housings. The hydro-unit side of the pipe has a groove so that it can be connected to the unit with coupling housings.

1. Machine a groove on a nipple on site.
   Machine a groove in the size listed below on the on-site pipe for fitting coupling housings.



	Pipe size	
	40A	50A
d	ø48.6	ø60.3 ± 0.61
G	$ø44.8^{+0}_{-0.7}$	$ø57.15^{+0}_{-0.38}$
W	8 ± 0.5	7.95 ± 0.76
L	$15^{+0.8}_{-0}$	15.88 ± 0.76



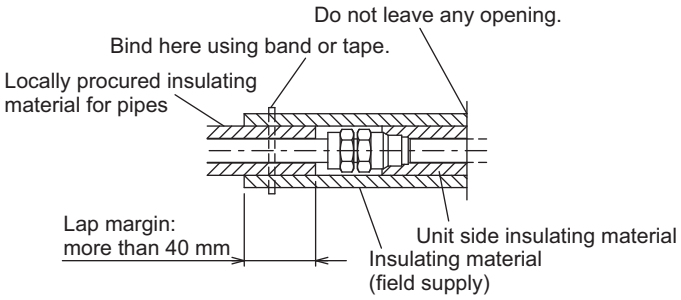
2. Apply soap water to the chiller-side pipe, and fit the rubber ring in the groove, using caution not to damage the ring.
3. Insert the pipe with the grooved nipple into the rubber ring, using caution not to damage the rubber ring.
   Hold the pipe into place so that the pipe will not sag to keep the rubber packing from being damaged.
4. Fit the housings in the grooves on the chiller-side pipe and the on-site pipe, and hold them together with bolts and nuts.

Note:

• Use caution not to mix up the water inlet and outlet.
• Install a coupling valve on the pipe to allow access for maintenance.
• Install a flexible joint on the pipe to keep the vibration of the unit from being transmitted to the pipe.
• Install the supplied strainer in the inlet pipe on the unit to keep foreign objects (e.g., bolts and stones) out of the water-side heat exchanger.
• Route the piping so that the pipes will not interfere with replacement of internal components (e.g., pumps) of the unit.

11-2-3-2 Water pipe insulation

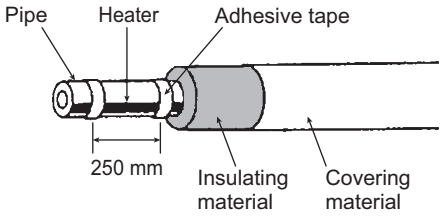
1. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



• Insulation materials for the pipes to be added on site must meet the following specifications:

Hydro unit -indoor unit	20 mm or more

• This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
• Thermal insulation materials should have a thickness of 20 mm or larger.
• Install a heater on site when pipes are installed outside where a temperature is 0°C or below and when the breaker may be turned off.
• After installing the heater, check that the temperatures at the inlet and outlet pipe couplings are 20C° or higher than the outside temperature (e.g., 0 C° or higher at the pipe couplings when the outside temperature is -20 C°).
• Select a heater of 30 W/m or greater and in consideration of adhesiveness and safety factor.
• Select a heater with an auto temperature adjustment function according to the pipe material used on the site to prevent overheating.



• Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
• When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

2. Expansion vessel
• Install an expansion tank to accommodate expanded water.
Expansion vessel selection criteria:
Water containment volume of the hydro unit
• Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

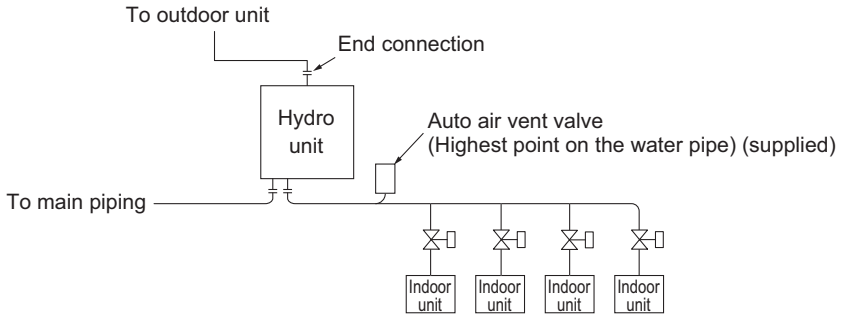
Unit model		Water volume
Hydro unit	CMH-WM250V-A	9.2
	CMH-WM350V-A	10.5
	CMH-WM500V-A	14.3

• The maximum water temperature is 60°C.
• The minimum water temperature is 5°C.
• The circuit protection valve set pressure is 0.8-0.96MPa.
• The circulation pump head pressure is 0.2MPa. (CMH-WM250/350/500V-A)
• The design pressure of the expansion vessel is the charged water pressure (the reading of the pressure gauge) and pump head.

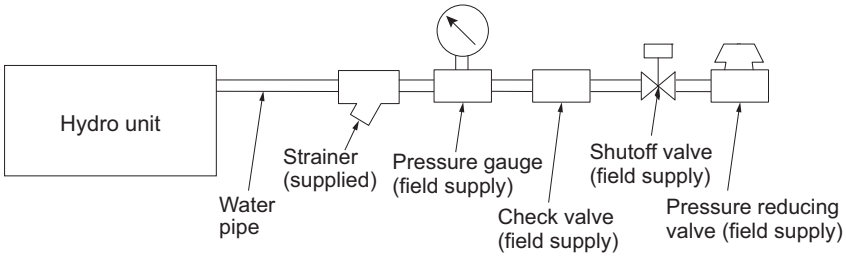
3. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
4. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
5. Add a drain valve so that the unit and pipework can be drained.
6. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
7. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
8. Hydro unit water pipe connection sizes and pipe sizes.

Indoor unit	Connection size		Field pipe size	
	Water inlet	Water outlet	Water return	Water out
PEFY-W20-50VMA-A	O.D. 22.0 mm	O.D. 22.0 mm	I.D. 20 mm	I.D. 20 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.



9. Please refer to the figure below when connecting the water supply.



10. Use formula 0.1 [MPa] < 0.01 + 0.01 × A < 0.16 [MPa] for the supply pressure range to be used.
(A: Head pressure (m) between the hydro unit and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
If the head pressure is unknown, set it to 0.16 MPa.
11. Before performing a pressure test on the pipes in the water circuit, be sure to install a shutoff valve on the inlet/outlet water pipes of the indoor units. Also, install a strainer on the field-installed water pipes for easy operation and maintenance.
12. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
13. When installing the hydro unit in an environment which may drop below 0°C (e.g. outdoor), please add antifreeze (Propylene Glycol only) to the circulating water. For the antifreeze solution selection, refer to 8-5. "Correction by antifreeze solution concentration".

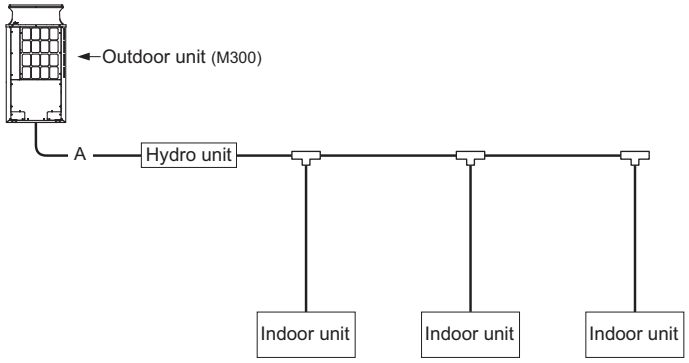
11-2-3-3 Water treatment and quality control

To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

- Removing of foreign objects or impurities within the pipes.
During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.
- Water Quality Processing
Depending on the quality of the cold-temperature water used in the airconditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1mg/ℓ.

11-3. Refrigerant charging calculation

Example



■ Sample calculation

Outdoor M300
Hydro WM350 A: ø12.7 40 m

The length of liquid line is as follows:
ø12.7: A = 40 m
Therefore,
<Calculation example>
Additional refrigerant charge
= 40 × 0.10 + 0 + 3.0
= 7.0 kg
* All pipe work except A is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
M200YNW	6.5
M250YNW	6.5
M300YNW	6.5
M350YNW	9.8
M400YNW	9.8
M450YNW	10.8
M500YNW	10.8

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EM200YNW	6.5
EM250YNW	6.5
EM300YNW	6.5
EM350YNW	9.8
EM400YNW	9.8
EM450YNW	10.8
EM500YNW	10.8

■ Calculation formula

<Formula>

• When the piping length from the outdoor unit to the farthest hydro unit is 10 m (32 ft) or shorter

Amount of additional charge (kg) = ø19.05 total length × 0.29 (kg/m) + ø15.88 total length × 0.2 (kg/m) + ø12.7 total length × 0.12 (kg/m) + ø9.52 total length × 0.06 (kg/m) + ø6.35 total length × 0.024 (kg/m)

+

Outdoor unit model	Amount (kg)
(E)M200	0
(E)M250	0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

+

Hydro unit model	Amount (kg)
WM250	3.0
WM350	3.0
WM500	3.0

* Amount of refrigerant to be charged for single-module units

• When the piping length from the outdoor unit to the farthest hydro unit is longer than 10 m (32 ft)

Amount of additional charge (kg) = ø19.05 total length × 0.24 (kg/m) + ø15.88 total length × 0.16 (kg/m) + ø12.7 total length × 0.10 (kg/m) + ø9.52 total length × 0.050 (kg/m) + ø6.35 total length × 0.019 (kg/m)

+

Outdoor unit model	Amount (kg)
(E)M200	0
(E)M250	0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

+

Hydro unit model	Amount (kg)
WM250	3.0
WM350	3.0
WM500	3.0

* Amount of refrigerant to be charged for single-module units

Round up the calculation result to the nearest 0.1kg. (Example: 18.04kg to 18.1kg)

■ Limitation of the amount of refrigerant to be charged

The above calculation result of the amount of refrigerant to be charged must become below the value in the table below.

Total index of the outdoor units			M200 YNW	M250 YNW	M300 YNW	M350 YNW	M400 YNW	M450 YNW	M500 YNW	EM200 YNW	EM250 YNW	EM300 YNW	M350 YNW	EM400 YNW	EM450 YNW	EM500 YNW
Maximum refrigerant charge	Factory charged	kg	6.5	6.5	6.5	9.8	9.8	10.8	10.8	6.5	6.5	6.5	9.8	10.8	10.8	10.8
	Charged on site	kg	8.5	8.5	8.5	14.0	14.0	19.0	19.0	8.5	8.5	8.5	14.0	14.0	19.0	19.0
	Total for system	kg	15.0	15.0	15.0	23.8	23.8	29.8	29.8	15.0	15.0	15.0	23.8	24.8	29.8	29.8

11-4. Water piping

11-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   The design pressure of the hydro unit water system is 0.8 MPa.
   Use a water pipe that is strong enough to withstand the design pressure (0.8 MPa).
2. Water pipe type
   Use copper, plastic, steel, or stainless steel pipes for the water circuit.
   Furthermore, when using copper pipe-work, use a non-oxidative brazing method.
   Oxidation of the pipe-work will reduce the pump life. When using iron or stainless-steel pipework, ensure that rust from the pipework does not enter the unit.
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Ensure that the drain piping is downward (sloped gradient of more than 1/100) to the outdoor (discharge) side.
   To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for Hydro unit branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

11-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items			Lower mid-range temperature water system		Tendency	
			Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])		7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity	(mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion	(mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion	(mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8)	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness	(mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica	(mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron	(mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper	(mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion	(mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion	(mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine	(mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide	(mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index		6.0 ~ 7.0	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

CMH-WM-V-A

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Model name			CMH-WM250V-A			
Power source			1-phase 220-230-240 V			
			50 Hz		60 Hz	
Power input	Cooling	kW	0.74/0.74/0.74		0.74/0.74/0.74	
(220/230/240)	Heating	kW	0.74/0.74/0.74		0.74/0.74/0.74	
Current input	Cooling	A	3.84/3.67/3.52		3.84/3.67/3.52	
(220/230/240)	Heating	A	3.84/3.67/3.52		3.84/3.67/3.52	
Sound pressure level (measured in anechoice room)		dB <A>	60			
Applicable temperature range of installation site		°C (D.B.)	-5~52			
External finish			Pre-coated galvanized steel sheets (Lower part drain pan: Pre-coated galvanized sheets + powder coating)			
Connectable outdoor/heat source unit capacity			(E)M200~250			
External dimension H x W x D		mm	660 x 920 x 740			
		in.	25-63/64 x 36-7/32 x 29-9/64			
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity			
			M200	M250	EM200	EM250
	Liquid pipe	mm (in.) O.D.	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)	9.52 (3/8)
			Brazed	Brazed	Brazed	Brazed
	Gas pipe	mm (in.) O.D.	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)	22.2 (7/8)
			Brazed	Brazed	Brazed	Brazed
Water piping diameter (To Indoor unit)						
Connection size	Inlet	mm (in.) I.D.	40 (1-1/2) housing joint			
	Outlet	mm (in.) I.D.	40 (1-1/2) housing joint			
Field pipe size	Inlet	mm (in.) I.D.	40 (1-1/2)			
	Outlet	mm (in.) I.D.	40 (1-1/2)			
Net weight		kg (lbs)	112 (247) [119 (263) with water]			
Standard attachment	Document		–			
	Accessories		Y-type strainer, Auto air vent valve, Joint, Elbow, Pipe			
Optional parts			Drain pan (PAC-SH01DP-E)			

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for R32 refrigerant.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the Hydro unit at least 5 m away from any indoor units.)

4.Please install the Hydro unit in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Use copper, plastic, steel, or stainless steel pipes for the water circuit. Furthermore, when using copper pipe-work use a non-oxidative brazing method.
Oxidation of the pipe-work will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please install a pressure reducing valve and a strainer on the water supply to the Hydro unit.

10.Please refer to the databook or the installation manual for the specified water quality.

11.Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.

12.Please do not use ground water and well water.

13.When installing the Hydro unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the data-book and the installation manual).

14.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room,
ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

15.Drain or condensation water will be discharged from hydro units during test run. If this will be a problem, install a separately sold drain pan.

16.Do not install the unit where it could be salt-damaged.

Model name			CMH-WM350V-A			
Power source			1-phase 220-230-240 V			
			50 Hz		60 Hz	
Power input (220/230/240)	Cooling	kW	0.90/0.90/0.90		0.90/0.90/0.90	
	Heating	kW	0.90/0.90/0.90		0.90/0.90/0.90	
Current input (220/230/240)	Cooling	A	4.69/4.48/4.30		4.69/4.48/4.30	
	Heating	A	4.69/4.48/4.30		4.69/4.48/4.30	
Sound pressure level (measured in anechoice room)		dB <A>	60			
Applicable temperature range of installation site		°C (D.B.)	-5~52			
External finish			Pre-coated galvanized steel sheets (Lower part drain pan: Pre-coated galvanized sheets + powder coating)			
Connectable outdoor/heat source unit capacity			(E)M300~350			
External dimension H x W x D		mm	660 x 920 x 740			
		in.	25-63/64 x 36-7/32 x 29-9/64			
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity			
			M300	M350	EM300	EM350
	Liquid pipe	mm (in.) O.D.	9.52 (3/8)	12.7 (1/2)	9.52 (3/8)	12.7 (1/2)
			Brazed	Brazed	Brazed	Brazed
	Gas pipe	mm (in.) O.D.	22.2 (7/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)
			Brazed	Brazed	Brazed	Brazed
Water piping diameter (To Indoor unit)						
Connection size	Inlet	mm (in.) I.D.	40 (1-1/2) housing joint			
	Outlet	mm (in.) I.D.	40 (1-1/2) housing joint			
Field pipe size	Inlet	mm (in.) I.D.	40 (1-1/2)			
	Outlet	mm (in.) I.D.	40 (1-1/2)			
Net weight		kg (lbs)	117 (258) [126 (278) with water]			
Standard attachment	Document		–			
	Accessories		Y-type strainer, Auto air vent valve, Joint, Elbow, Pipe			
Optional parts			Drain pan (PAC-SH01DP-E)			

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for R32 refrigerant.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the Hydro unit at least 5 m away from any indoor units.)

4.Please install the Hydro unit in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Use copper, plastic, steel, or stainless steel pipes for the water circuit. Furthermore, when using copper pipe-work use a non-oxidative brazing method.
Oxidation of the pipe-work will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please install a pressure reducing valve and a strainer on the water supply to the Hydro unit.

10.Please refer to the databook or the installation manual for the specified water quality.

11.Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.

12.Please do not use ground water and well water.

13.When installing the Hydro unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the data-book and the installation manual).

14.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room,
ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

15.Drain or condensation water will be discharged from hydro units during test run. If this will be a problem, install a separately sold drain pan.

16.Do not install the unit where it could be salt-damaged.

Model name			CMH-WM500V-A			
Power source			1-phase 220-230-240 V			
			50 Hz		60 Hz	
Power input	Cooling	kW	1.06/1.06/1.06		1.06/1.06/1.06	
(220/230/240)	Heating	kW	1.06/1.06/1.06		1.06/1.06/1.06	
Current input	Cooling	A	5.47/5.23/5.02		5.47/5.23/5.02	
(220/230/240)	Heating	A	5.47/5.23/5.02		5.47/5.23/5.02	
Sound pressure level (measured in anechoice room)		dB <A>	60			
Applicable temperature range of installation site		°C (D.B.)	-5~52			
External finish			Pre-coated galvanized steel sheets (Lower part drain pan: Pre-coated galvanized sheets + powder coating)			
Connectable outdoor/heat source unit capacity			(E)M400~500			
External dimension H x W x D		mm	660 x 920 x 740			
		in.	25-63/64 x 36-7/32 x 29-9/64			
Refrigerant piping diameter	To outdoor/heat source unit		Connectable outdoor/heat source unit capacity			
			M400	M450/500	EM400	EM450/500
	Liquid pipe	mm (in.) O.D.	12.7 (1/2)	15.88 (5/8)	12.7 (1/2)	15.88 (5/8)
			Brazed	Brazed	Brazed	Brazed
	Gas pipe	mm (in.) O.D.	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)	28.58 (1-1/8)
			Brazed	Brazed	Brazed	Brazed
Water piping diameter (To Indoor unit)						
Connection size	Inlet	mm (in.) I.D.	50 (2) housing joint			
	Outlet	mm (in.) I.D.	50 (2) housing joint			
Field pipe size	Inlet	mm (in.) I.D.	50 (2)			
	Outlet	mm (in.) I.D.	50 (2)			
Net weight		kg (lbs)	143 (316) [157 (347) with water]			
Standard attachment	Document		–			
	Accessories		Y-type strainer, Auto air vent valve, Joint, Elbow, Pipe			
Optional parts			Drain pan (PAC-SH01DP-E)			

Note

1.Works not included:
Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items are not specified in this specifications.

2.The equipment is for R32 refrigerant.

3.Install this product in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors.
(For use in quiet environments with low background noise, position the Hydro unit at least 5 m away from any indoor units.)

4.Please install the Hydro unit in a place where noise will not be an issue.

5.Please attach an expansion vessel (field supply).

6.Use copper, plastic, steel, or stainless steel pipes for the water circuit. Furthermore, when using copper pipe-work use a non-oxidative brazing method.
Oxidation of the pipe-work will reduce the pump life.

7.When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.

8.Please install an air purge valve where air will gather in the water circuit.

9.Please install a pressure reducing valve and a strainer on the water supply to the Hydro unit.

10.Please refer to the databook or the installation manual for the specified water quality.

11.Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.

12.Please do not use ground water and well water.

13.When installing the Hydro unit in an environment which may drop below 0 °C, please add antifreeze to the circulating water.
(Refer to the data-book and the installation manual).

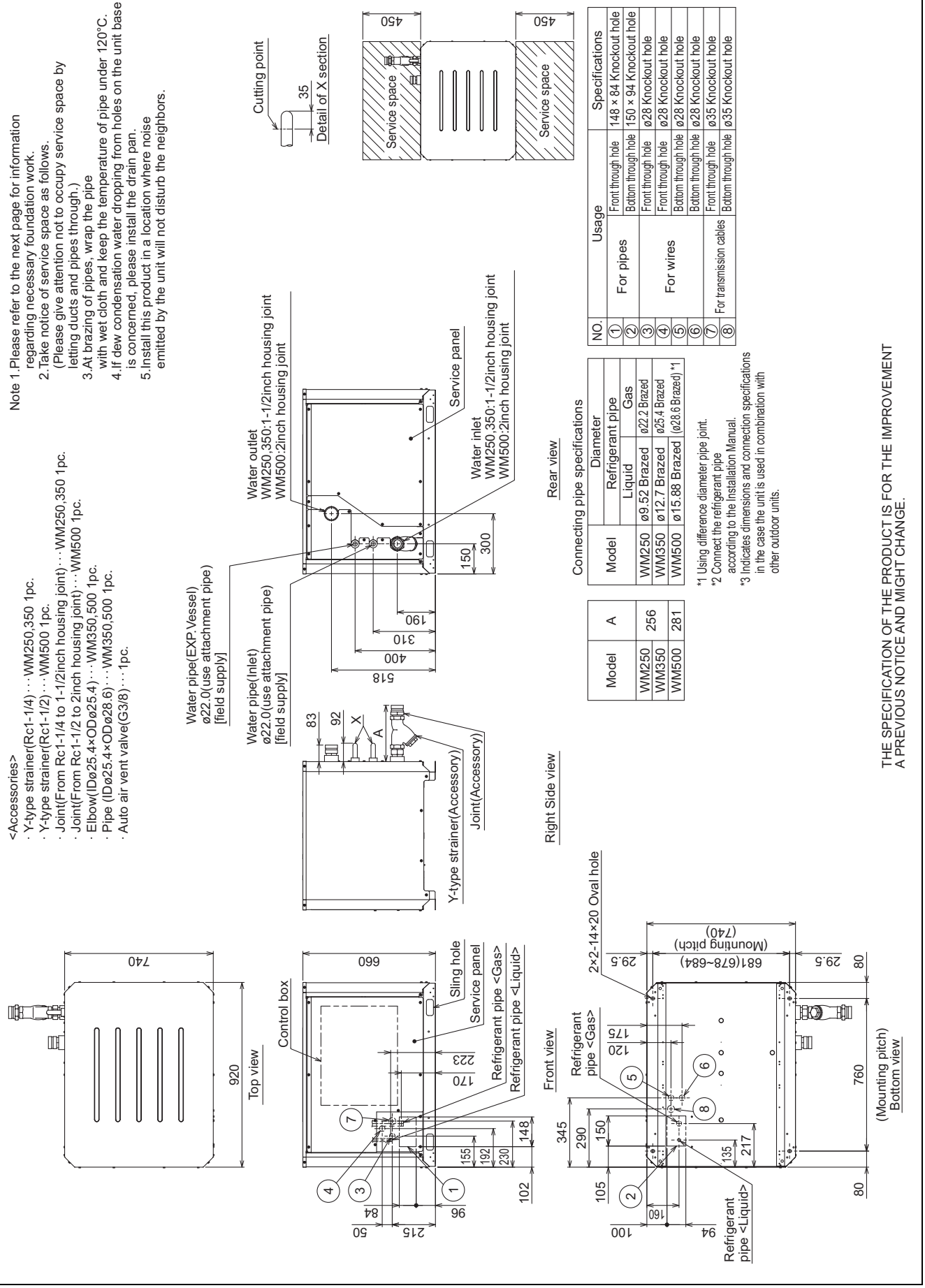
14.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room,
ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

15.Drain or condensation water will be discharged from hydro units during test run. If this will be a problem, install a separately sold drain pan.

16.Do not install the unit where it could be salt-damaged.

CMH-WM250, 350, 500V-A

Unit: mm



Model	A
WM250	256
WM350	
WM500	281

Connecting pipe specifications

Model	Diameter	
	Refrigerant pipe	
	Liquid	Gas
WM250	ø9.52 Brazed	ø22.2 Brazed
WM350	ø12.7 Brazed	ø25.4 Brazed
WM500	ø15.88 Brazed	(ø28.6 Brazed) *1

*1 Using difference diameter pipe joint.
*2 Connect the refrigerant pipe according to the Installation Manual.
*3 Indicates dimensions and connection specifications in the case the unit is used in combination with other outdoor units.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø28 Knockout hole
④		Front through hole	ø28 Knockout hole
⑤		Bottom through hole	ø28 Knockout hole
⑥		Bottom through hole	ø28 Knockout hole
⑦	For transmission cables	Front through hole	ø35 Knockout hole
⑧		Bottom through hole	ø35 Knockout hole

CMH-WM250, 350, 500V-A

Unit: mm

1. Foundation work

①Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

②Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A)

④Use four fixing plates as shown in the right figure <field supply required> when using post-installed anchor bolts.(Fig.B)

⑤To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

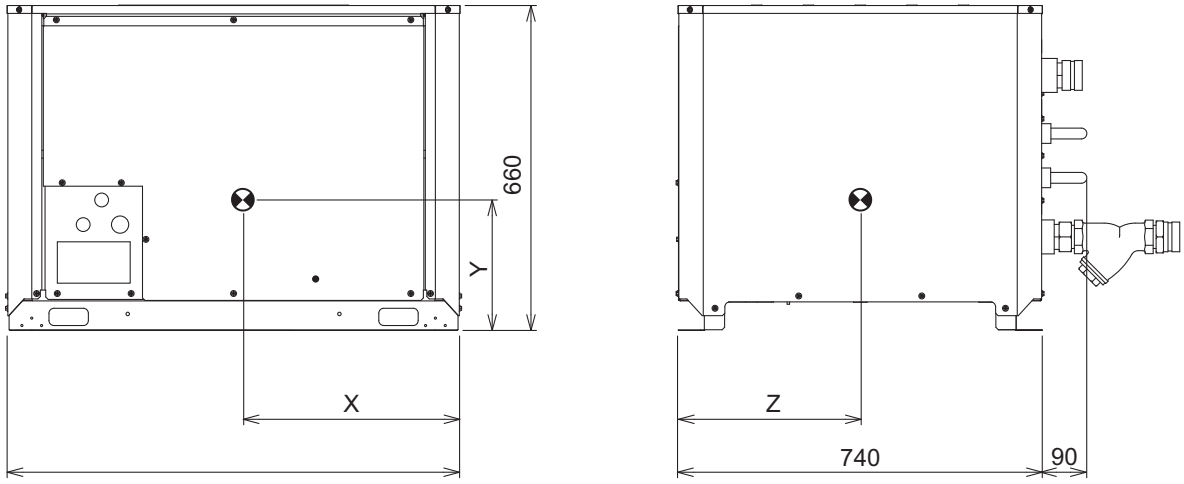
⑥When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦Refer to the Installation Manual when installing units on an installation base.

Fig.A

Fig.B

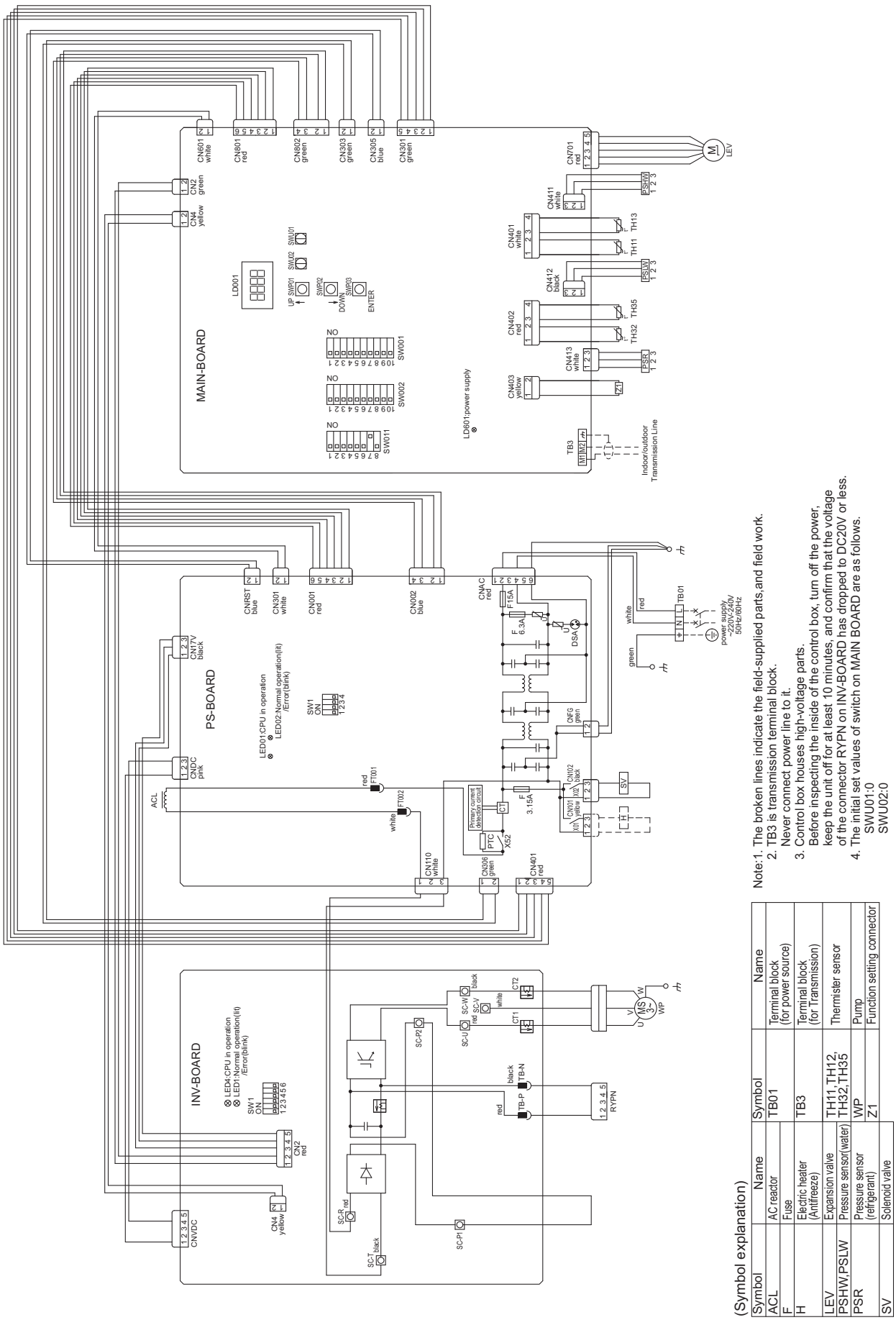
CMH-WM250, 350, 500V-A



Unit: mm

Model	X	Y	Z
CMH-WM250V-A	443	256	398
CMH-WM350V-A	433	256	394
CMH-WM500V-A	392	260	406

CMH-WM250, 350, 500V-A



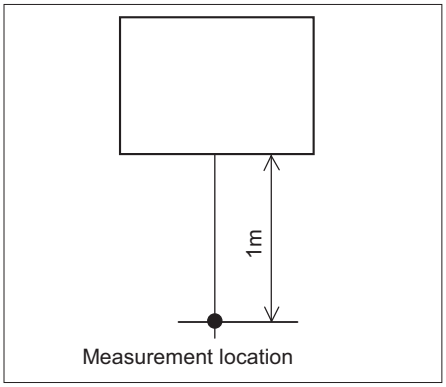
Note:1. The broken lines indicate the field-supplied parts,and field work.
2. TB3 is transmission terminal block.
Never connect power line to it.
3. Control box houses high-voltage parts.
Before inspecting the inside of the control box, turn off the power, keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN on INV-BOARD has dropped to DC20V or less.
4. The initial set values of switch on MAIN BOARD are as follows.
SWU01:0
SWU02:0

(Symbol explanation)

Symbol	Name	Symbol	Name
ACL	AC reactor	TB01	Terminal block (for power source)
F	Fuse		
H	Electric heater (Antifreeze)	TB3	Terminal block (for Transmission)
LEV	Expansion valve	TH11,TH12, TH32,TH35	Thermister sensor
PSHW,PSLW	Pressure sensor(water)		
PSR	Pressure sensor (refrigerant)	WP	Pump
		Z1	Function setting connector
SV	Solenoid valve		

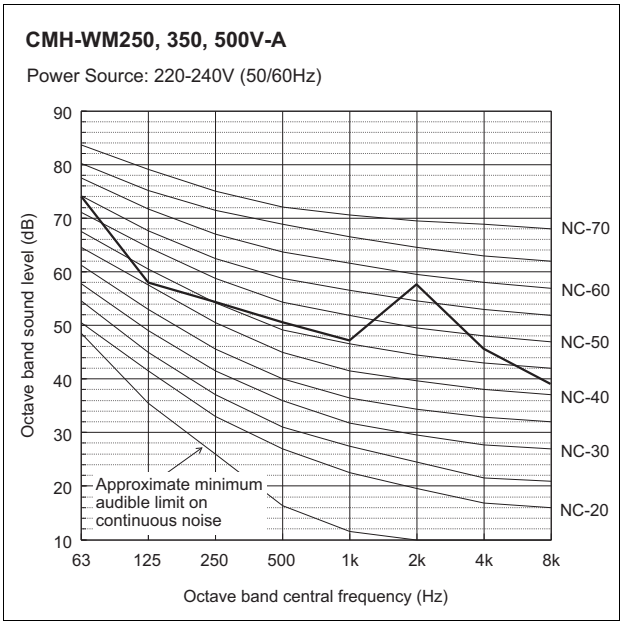
5-1. Sound levels

(Measured point)



*Measured in anechoic room.

5-2. NC curves



Symbols: MCA: Max. Circuit Amps, MFA: Max. Fuse Amps, RLA: Rated Load Amps

Hydro unit	Power supply					RLA(A)
	Hz	Volts	Range+-10%	MCA(A)	MFA(A)	
CMH-WM250V-A	50/60	220	Max.: 264V Min.: 198V	4.40	15	3.84
		230				3.67
		240				3.52
CMH-WM350V-A	50/60	220	Max.: 264V Min.: 198V	5.38	15	4.69
		230				4.48
		240				4.30
CMH-WM500V-A	50/60	220	Max.: 264V Min.: 198V	6.28	15	5.47
		230				5.23
		240				5.02

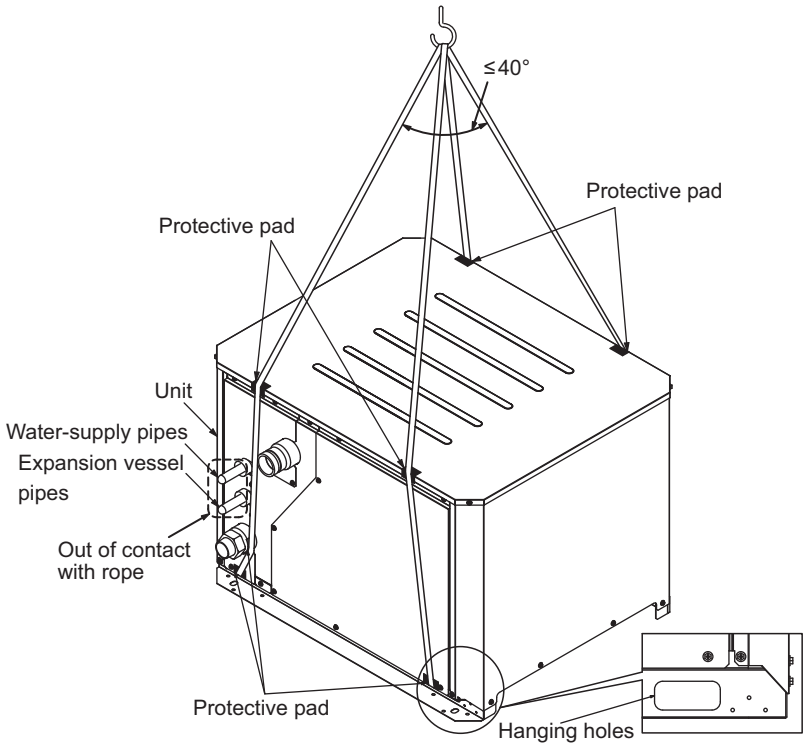
7-1. Lifting method

When hanging the unit for transportation

- Use hanging holes to hang the unit.

⚠WARNING

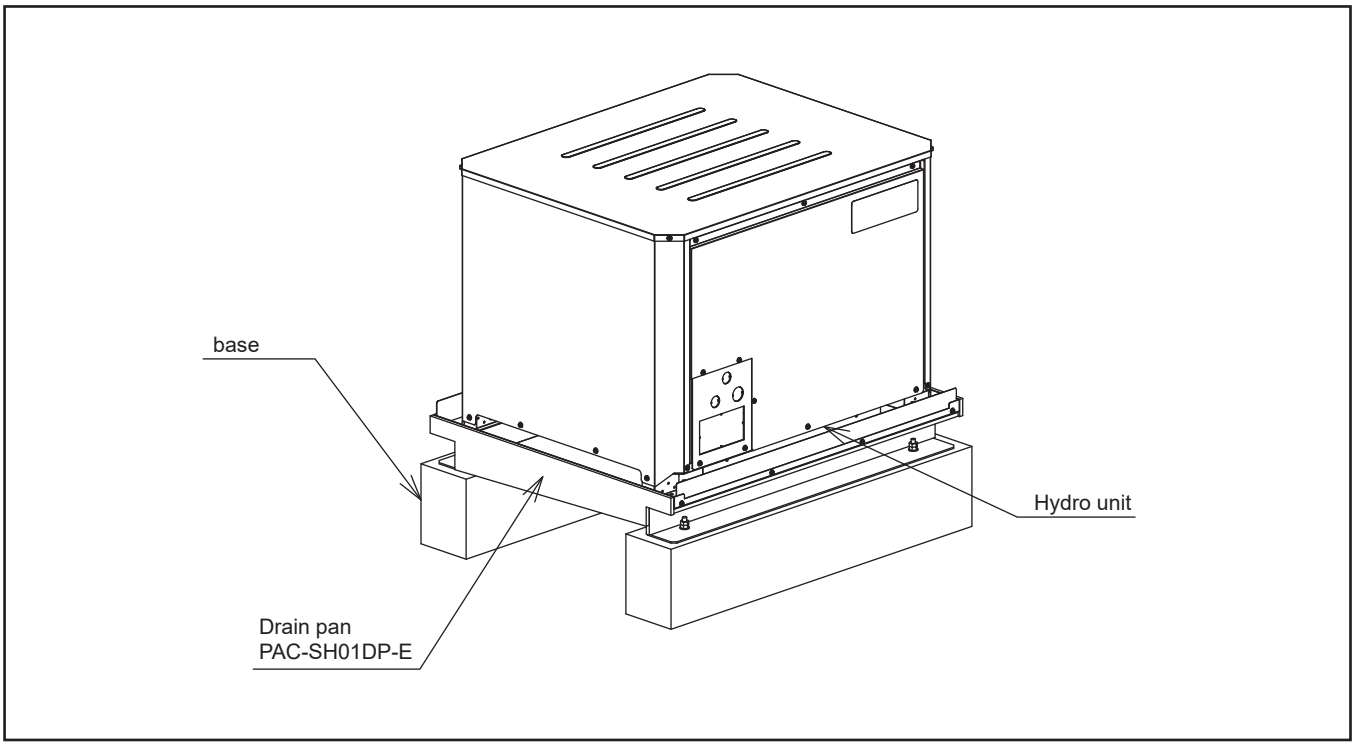
- Keep the ropes from coming into contact with the water supply and expansion vessel pipes while the unit is being hung.



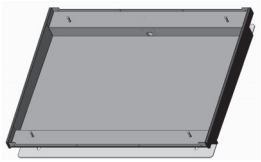
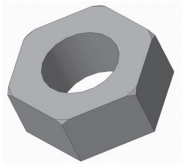
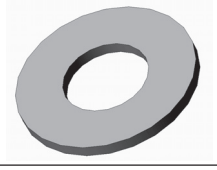
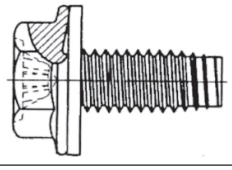
8-1. Drain pan

	Drain pan
CMH-WM250, 350, 500V-A	PAC-SH01DP-E

CMH-WM-V-A



PAC-SH01DP-E

Item	Drain pan	Additional panel	Nut M10
Quantity	1	2	10 (Spare included)
Shape			
Item	Washer M10	Screw 5 × 10 KNURLED	
Quantity	5 (Spare included)	12 (Spare included)	
Shape			

Detailed installation information should be referred to its Installation Manual.

9-1. Water pipe size

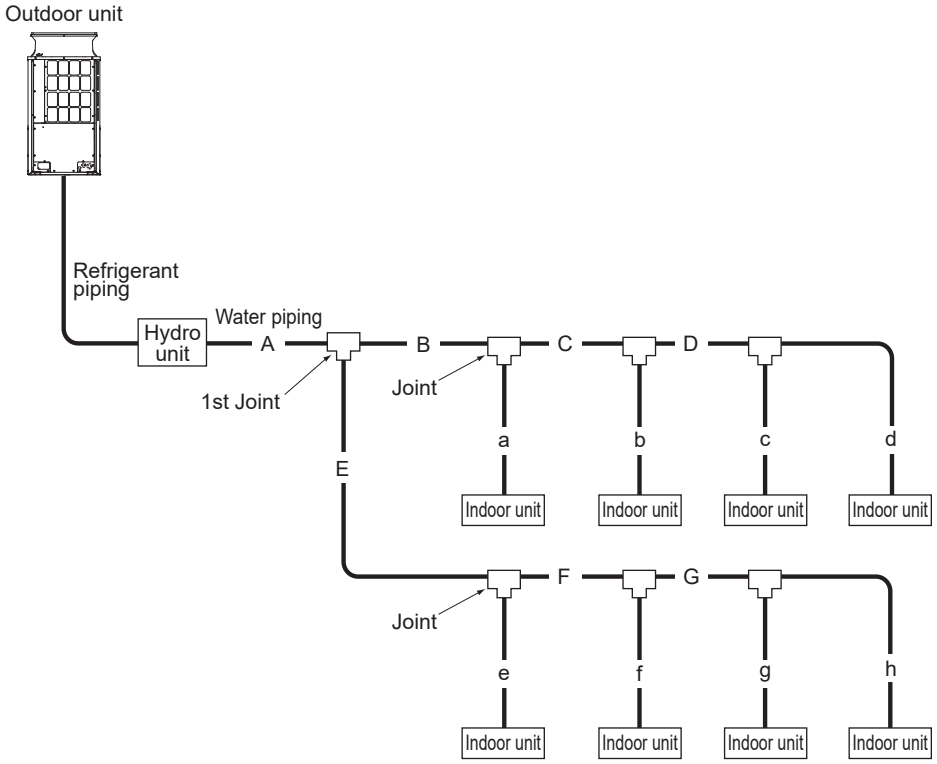


Table 1 Piping "A" size selection rule

Hydro unit	Water pipe size (I.D.)
CMH-WM250V-A	40A
CMH-WM350V-A	40A
CMH-WM500V-A	50A

Table 2 Piping "B", "C", "D", "E", "F", "G" size selection rule

Total down-stream indoor capacity	Water pipe size (I.D.)
~ W(L)50	20A
W(L)51 ~ W(L)150	32A
W(L)151 ~ W(L)350	40A
W(L)351 ~	50A

Table 3 Piping "a", "b", "c", "d", "e", "f", "g", "h" size selection rule

Indoor unit size	Water pipe size (I.D.)
W(L)10 ~ W(L)50	20A
W(L)63 ~ W(L)140	32A

9-2. Water pipe length

The equivalent piping length may vary depending on the system configuration, such as the pipe length, pipe diameter, number of pipe bends, number of joints, and capacities of indoor units, based on which the pressure loss in the pipes is calculated.
Use the Design Tool to design the piping system, and ensure that the equivalent piping length of the system is within the allowable range. If an error occurs on the Design Tool, review the piping length and piping routes to solve the system error.

PURY-M-YNW-A1, PURY-EM-YNW-A1

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Model			PURY-M200YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	22.4
		BTU/h	76,400
	Power input	kW	5.53
	Current input	A	9.3-8.8-8.5
	EER	kW/kW	4.05
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	25.0
		BTU/h	85,300
	Power input	kW	6.39
	Current input	A	10.7-10.2-9.8
	COP	kW/kW	3.91
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~30
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	4.6
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	227 (501)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T598
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M250YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		BTU/h	95,500
	Power input	kW	8.40
	Current input	A	14.1-13.4-12.9
	EER	kW/kW	3.33
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		BTU/h	107,500
	Power input	kW	9.15
	Current input	A	15.4-14.6-14.1
	COP	kW/kW	3.44
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	7.0
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	227 (501)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T598
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M300YNW-A1 (-BS)	
Number of HBC			Single HBC (Horizontal type)	Double HBC (Horizontal type)/Single HBC (Vertical type)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1 (Nominal)		kW	33.5	
		BTU/h	114,300	
	Power input	kW	11.65	9.88
	Current input	A	19.6-18.6-18.0	16.6-15.8-15.2
	EER	kW/kW	2.87	3.39
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2 (Nominal)		kW	37.5	
		BTU/h	128,000	
	Power input	kW	11.00	10.33
	Current input	A	18.5-17.6-17.0	17.4-16.5-15.9
	COP	kW/kW	3.40	3.63
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room) *4		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80.0/86.5	
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	
	Low pressure	mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	8.0	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)	
	Control		HBC	
Net weight		kg (lbs)	227 (501)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKL94T598	
	Wiring		WKE94G770	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M350YNW-A1 (-BS)	
Number of HBC			Single HBC (Horizontal type)	Double HBC (Horizontal type)/Single HBC (Vertical type)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1 (Nominal)		kW	40.0	
		BTU/h	136,500	
	Power input	kW	14.93	12.15
	Current input	A	25.2-23.9-23.0	20.5-19.4-18.7
	EER	kW/kW	2.67	3.29
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2 (Nominal)		kW	45.0	
		BTU/h	153,500	
	Power input	kW	13.14	12.16
	Current input	A	22.1-21.0-20.3	20.5-19.5-18.7
	COP	kW/kW	3.42	3.70
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room) *4		dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4		dB <A>	81.0/83.0	
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity		Propeller fan x 2	
	Air flow rate	m^3/min	250	
		L/s	4,167	
		cfm	8,828	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.46 x 2	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	9.6	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 8.0 kg (18 lbs)	
	Control		HBC	
Net weight		kg (lbs)	270 (596)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKL94T599	
	Wiring		WKE94G771	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M400YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	45.0
		BTU/h	153,500
	Power input	kW	15.15
	Current input	A	25.5-24.2-23.4
	EER	kW/kW	2.97
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	14.08
	Current input	A	23.7-22.5-21.7
	COP	kW/kW	3.55
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.0/69.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/88.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	12.2
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 8.0 kg (18 lbs)
	Control		HBC
Net weight		kg (lbs)	273 (602)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T599
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M450YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal) *1		kW	50.0
		BTU/h	170,600
	Power input	kW	15.47
	Current input	A	26.1-24.8-23.9
	EER	kW/kW	3.23
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal) *2		kW	56.0
		BTU/h	191,100
	Power input	kW	16.18
	Current input	A	27.3-25.9-25.0
	COP	kW/kW	3.46
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/89.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	317
		L/s	5,283
		cfm	11,193
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	13.1
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	293 (646)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T599
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-M500YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	22.25
	Current input	A	37.5-35.6-34.3
	EER	kW/kW	2.51
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	63.0
		BTU/h	215,000
	Power input	kW	18.26
	Current input	A	30.8-29.2-28.2
	COP	kW/kW	3.45
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	63.5/64.5
Sound power level (measured in anechoic room) *4		dB <A>	82.0/84.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	295
		L/s	4,917
		cfm	10,416
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	17.4
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	337 (743)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T600
	Wiring		WKE94G769
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM200YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal) *1		kW	22.4
		BTU/h	76,400
	Power input	kW	5.13
	Current input	A	8.6-8.2-7.9
	EER	kW/kW	4.36
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal) *2		kW	25.0
		BTU/h	85,300
	Power input	kW	6.23
	Current input	A	10.5-9.9-9.6
	COP	kW/kW	4.01
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~30
Sound pressure level (measured in anechoic room) *4		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76.0/78.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	4.5
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	231 (510)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T601
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM250YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	28.0
		BTU/h	95,500
	Power input	kW	7.69
	Current input	A	12.9-12.3-11.8
	EER	kW/kW	3.64
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	31.5
		BTU/h	107,500
	Power input	kW	8.84
	Current input	A	14.9-14.1-13.6
	COP	kW/kW	3.56
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room) *4		dB <A>	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	78.5/80.0
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	6.7
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	231 (510)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)
Drawing	External		WKL94T601
	Wiring		WKE94G770
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM300YNW-A1 (-BS)	
Number of HBC			Single HBC (Horizontal type)	Double HBC (Horizontal type)/Single HBC (Vertical type)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
(Nominal)		BTU/h	114,300	
	Power input	kW	10.03	8.52
	Current input	A	16.9-16.0-15.5	14.3-13.6-13.1
	EER	kW/kW	3.33	3.93
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling *3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	37.5	
(Nominal)		BTU/h	128,000	
	Power input	kW	10.46	9.93
	Current input	A	17.6-16.7-16.1	16.7-15.9-15.3
	COP	kW/kW	3.58	3.77
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating *3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit	Total capacity		50~150% of outdoor unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room) *4		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80.0/86.5	
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed	
piping diameter	Low pressure	mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	7.7	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 5.2 kg (12 lbs)	
	Control		HBC	
Net weight		kg (lbs)	231 (510)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKL94T601	
	Wiring		WKE94G770	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM350YNW-A1 (-BS)	
Number of HBC			Single HBC (Horizontal type)	Double HBC (Horizontal type)/Single HBC (Vertical type)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1 (Nominal)		kW	40.0	
		BTU/h	136,500	
	Power input	kW	13.91	11.33
	Current input	A	23.4-22.3-21.5	19.1-18.1-17.5
	EER	kW/kW	2.87	3.53
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2 (Nominal)		kW	45.0	
		BTU/h	153,500	
	Power input	kW	13.10	12.16
	Current input	A	22.1-21.0-20.2	20.5-19.5-18.7
	COP	kW/kW	3.43	3.70
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room) *4		dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4		dB <A>	81.0/83.0	
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed	
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity		Propeller fan x 2	
	Air flow rate	m^3/min	250	
		L/s	4,167	
		cfm	8,828	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.46 x 2	
*5	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	9.6	
	Case heater	kW	- (- V)	
	Lubricant		MEL46EH	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R32 x 8.0 kg (18 lbs)	
	Control		HBC	
Net weight		kg (lbs)	276 (609)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle, Hot gas)	
Drawing	External		WKL94T602	
	Wiring		WKE94G771	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM350F-AA Sub-HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM400YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	45.0
		BTU/h	153,500
	Power input	kW	13.84
	Current input	A	23.3-22.1-21.3
	EER	kW/kW	3.25
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	13.88
	Current input	A	23.4-22.2-21.4
	COP	kW/kW	3.60
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.0/69.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/88.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	11.1
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 8.0 kg (18 lbs)
	Control		HBC
Net weight		kg (lbs)	280 (618)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T602
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM450YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1 (Nominal)		kW	50.0
		BTU/h	170,600
	Power input	kW	15.24
	Current input	A	25.7-24.4-23.5
	EER	kW/kW	3.28
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2 (Nominal)		kW	56.0
		BTU/h	191,100
	Power input	kW	15.77
	Current input	A	26.6-25.2-24.3
	COP	kW/kW	3.55
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83.0/89.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	12.7
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	305 (673)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T602
	Wiring		WKE94G771
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EM500YNW-A1 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal) *1		kW	56.0
		BTU/h	191,100
	Power input	kW	18.06
	Current input	A	30.4-28.9-27.9
	EER	kW/kW	3.10
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity (Nominal) *2		kW	63.0
		BTU/h	215,000
	Power input	kW	17.45
	Current input	A	29.4-27.9-26.9
	COP	kW/kW	3.61
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4		dB <A>	63.5/64.5
Sound power level (measured in anechoic room) *4		dB <A>	82.0/84.0
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	295
		L/s	4,917
		cfm	10,416
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*5	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	13.8
	Case heater	kW	- (- V)
	Lubricant		MEL46EH
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R32 x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	348 (768)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKL94T603
	Wiring		WKE94G769
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main-HBC: CMB-WM108,1016V-AA, CMB-WM500F-AA Sub-HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.
6.R32 is flammable, and certain restrictions apply to the installation of units.
When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed.
For detail, refer to the section in the Databook on installation restrictions.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PURY-M200, 250, 300YNW-A1(-BS)

Unit: mm

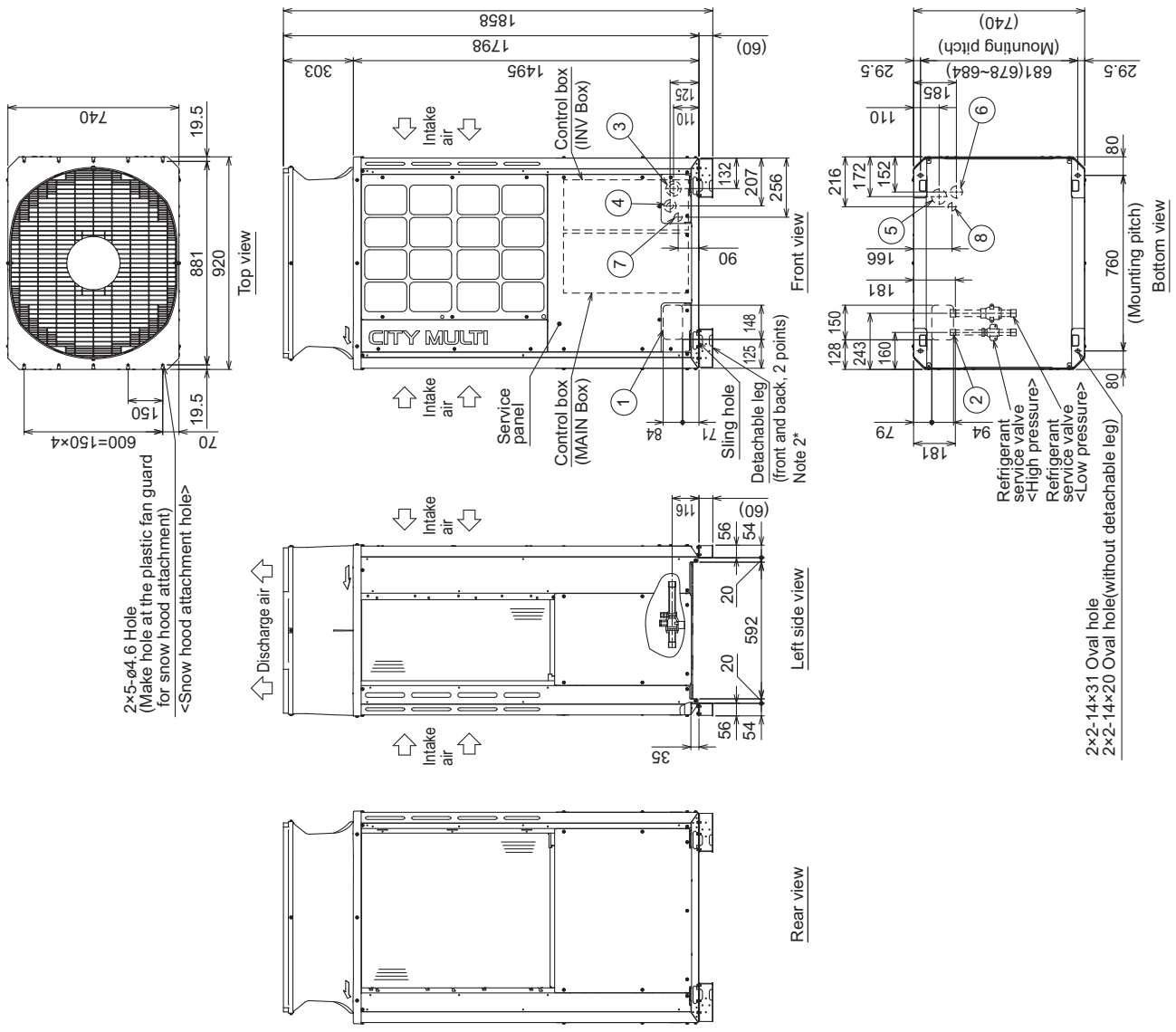
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
M200	ø15.88 Brazed *1	ø19.05 Brazed *1	ø22.2	ø28.58
M250		ø22.2 Brazed *1		
M300				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

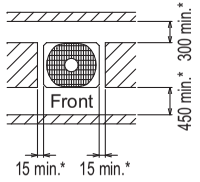


1. Required space around the unit

●In case of single installation

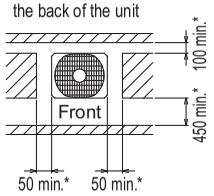
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

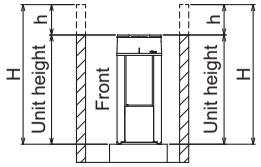
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

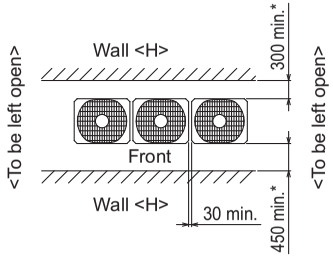
●In case of collective installation

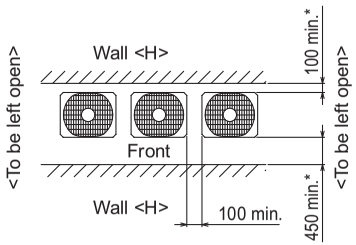
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

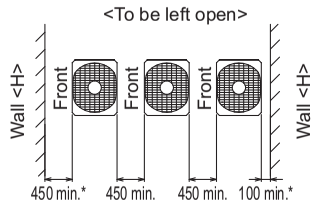
② At least two sides must be left open.

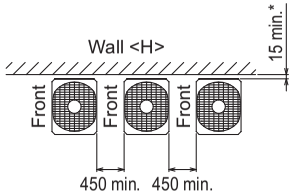
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

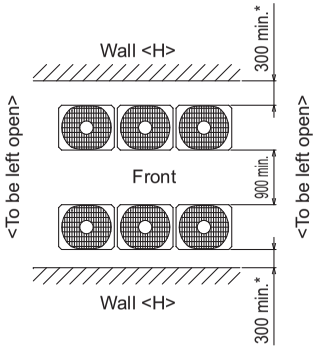
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

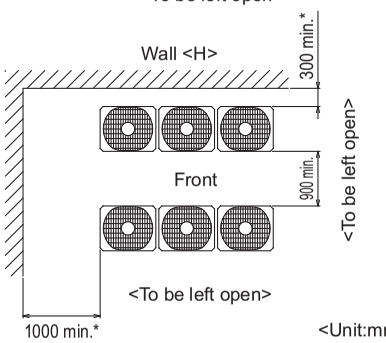












<Unit:mm>

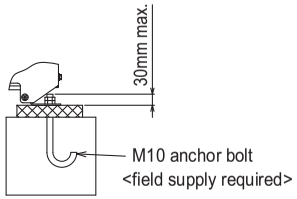


Fig.A (without detachable legs)

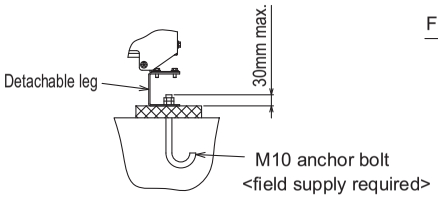


Fig.B (with detachable legs)

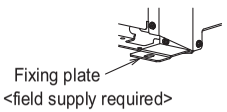


Fig.C (without detachable legs)

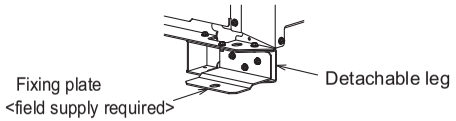


Fig.D (with detachable legs)

Unit: mm

PURY-M350,400,450YNW-A1(-BS)

Unit: mm

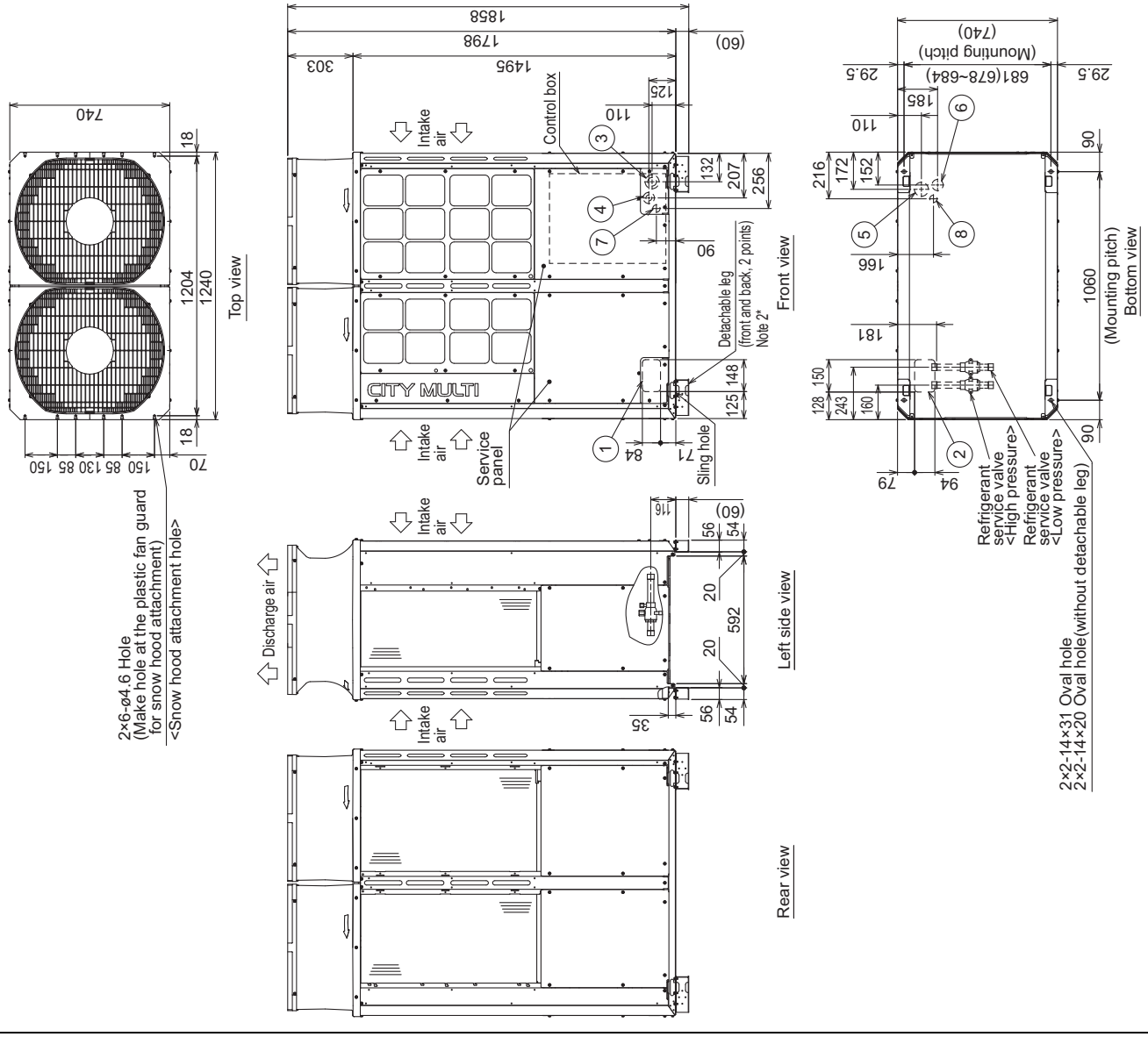
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
M350	ø15.88 Brazed *1	ø28.58 Brazed	ø28.58	ø28.58
M400	ø19.05 Brazed *1			
M450				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

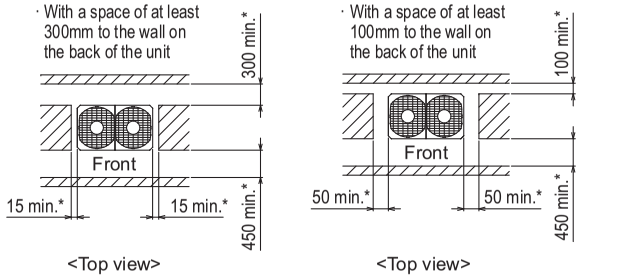
NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole



1. Required space around the unit

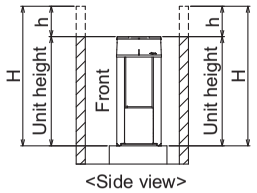
●In case of single installation

① Secure enough space around the unit as shown in the figure below.



<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

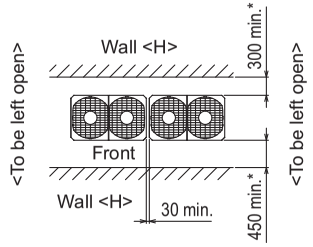
●In case of collective installation

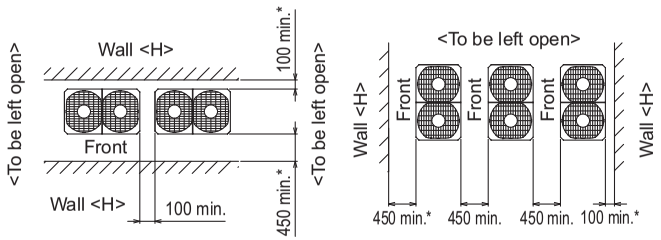
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

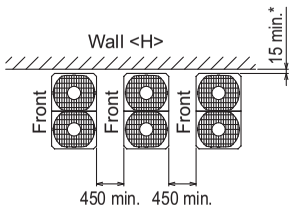
② At least two sides must be left open.

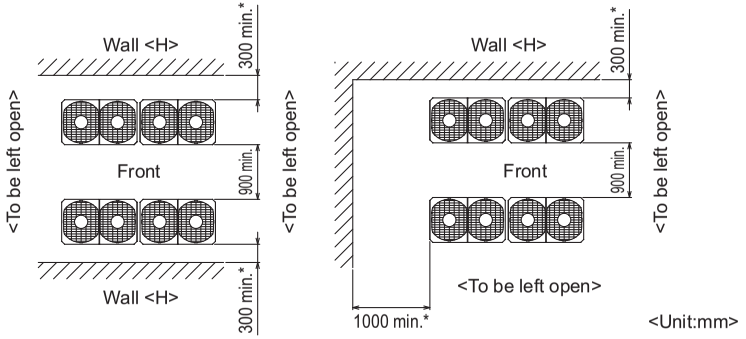
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.









<Unit:mm>

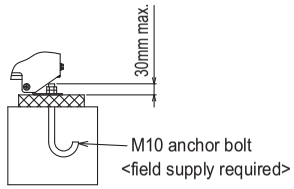


Fig.A (without detachable legs)

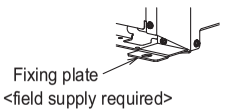


Fig.C (without detachable legs)

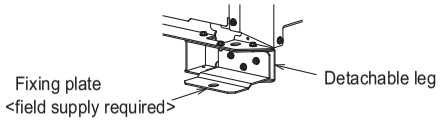


Fig.D (with detachable legs)

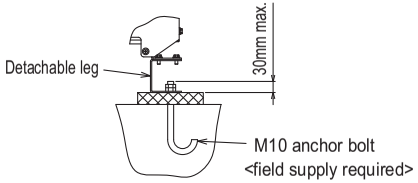


Fig.B (with detachable legs)

Unit: mm

PURY-M500YNW-A1(-BS)

Unit: mm

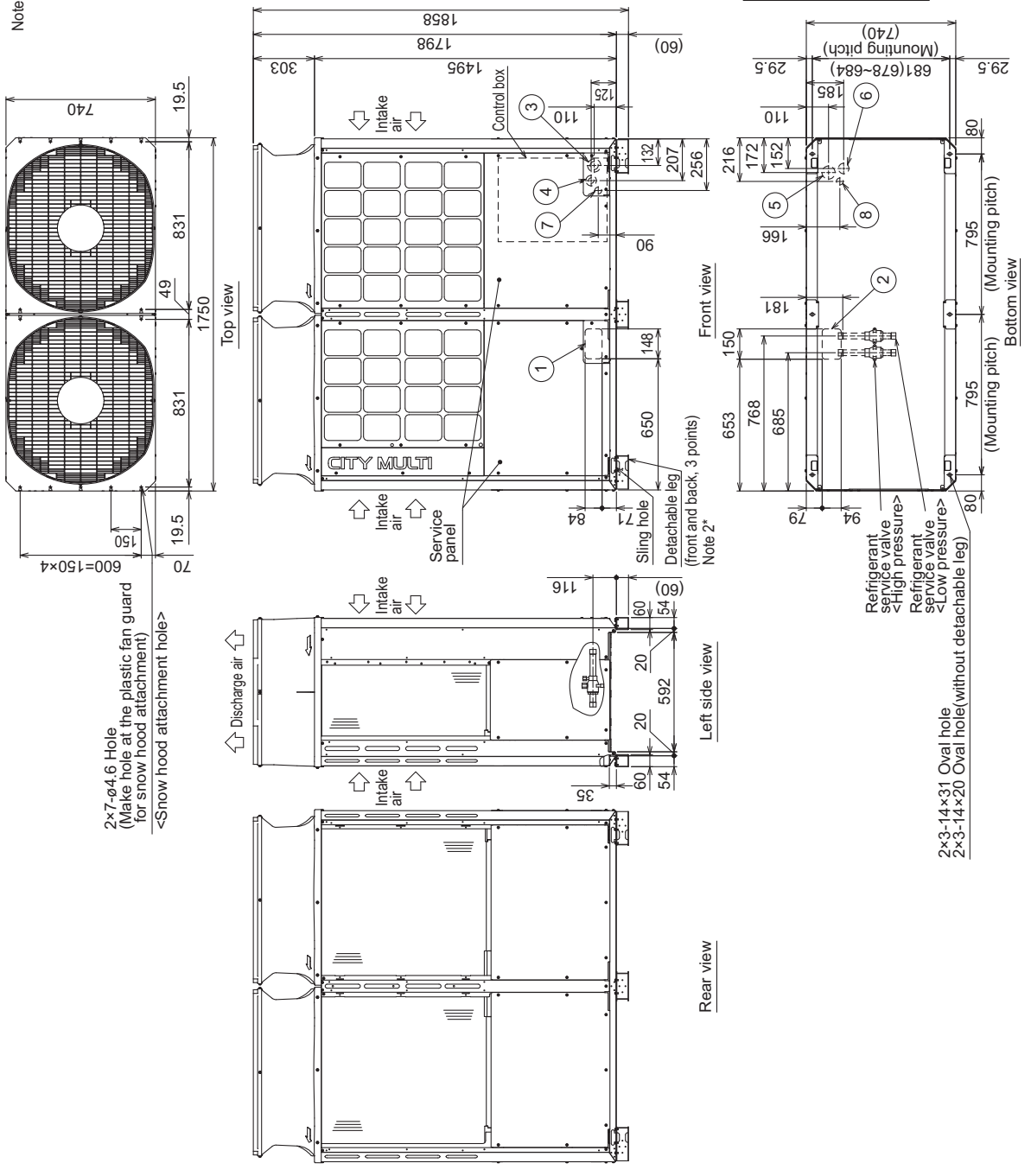
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
M500	ø19.05 Brazed *1	ø28.58 Brazed	ø28.58	ø28.58

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

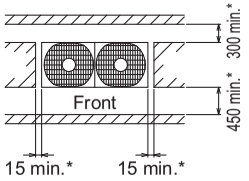


1. Required space around the unit

●In case of single installation

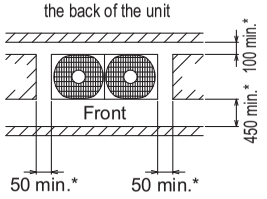
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

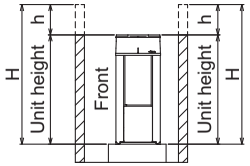
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use six fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

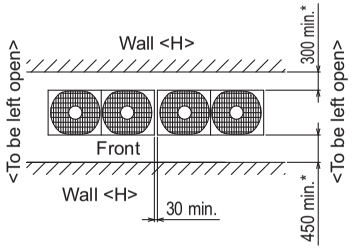
●In case of collective installation

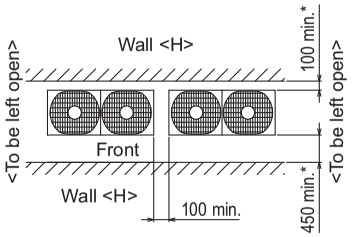
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

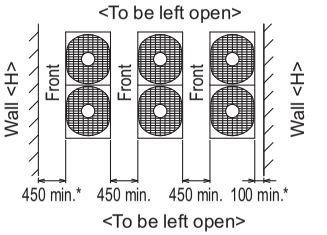
② At least two sides must be left open.

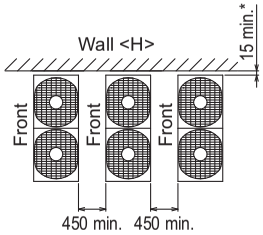
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

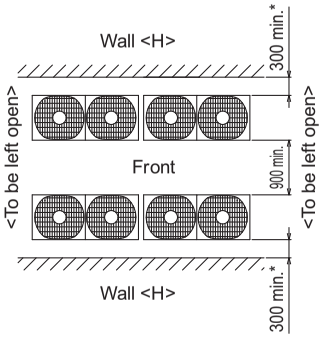
④ If there is a wall at both the front and the rear of the unit, install up to three units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each three units.

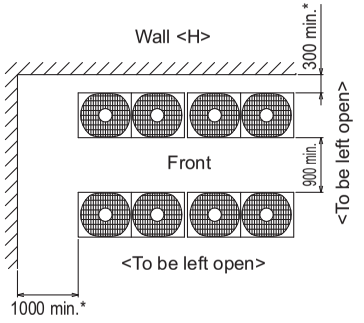












<Unit:mm>

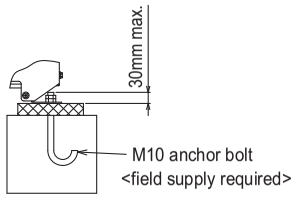


Fig.A (without detachable legs)

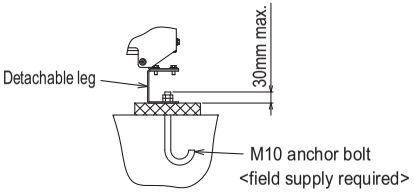


Fig.B (with detachable legs)



Fig.C (without detachable legs)

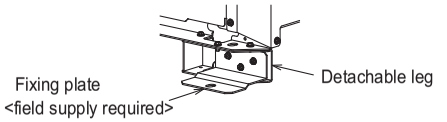


Fig.D (with detachable legs)

PURY-EM200, 250, 300YNW-A1(-BS)

Unit: mm

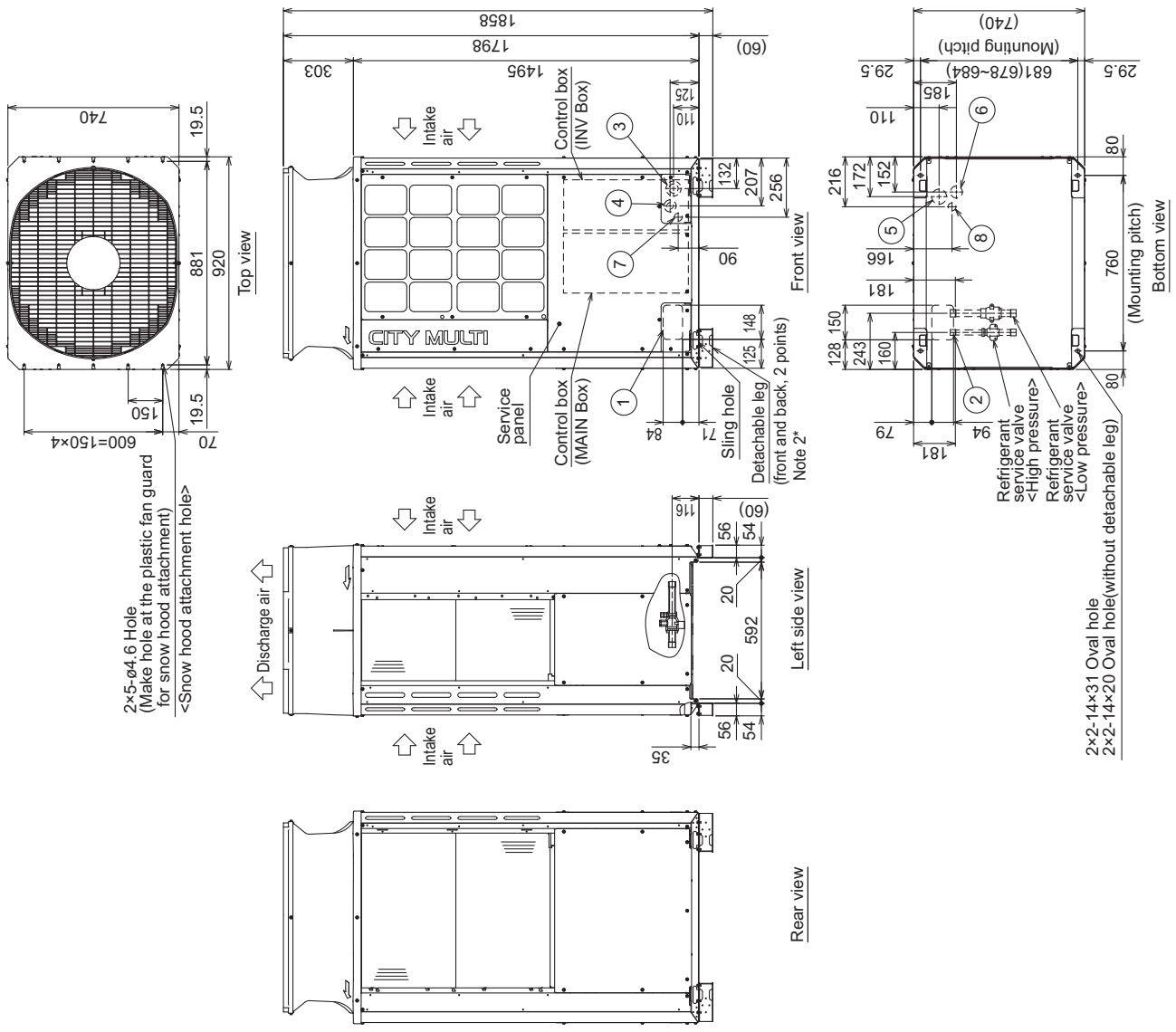
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
EM200	ø15.88 Brazed *1	ø19.05 Brazed *1	ø22.2	ø28.58
EM250		ø22.2 Brazed *1		
EM300				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

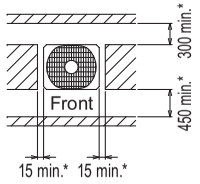


1. Required space around the unit

●In case of single installation

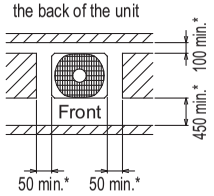
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

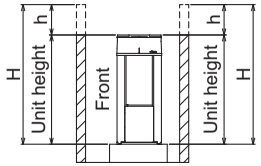
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

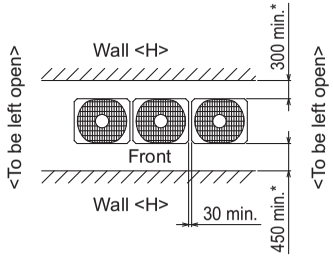
●In case of collective installation

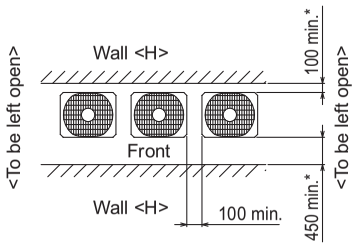
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

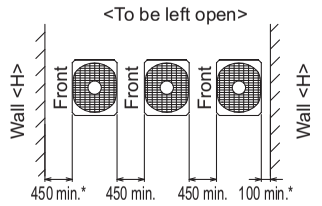
② At least two sides must be left open.

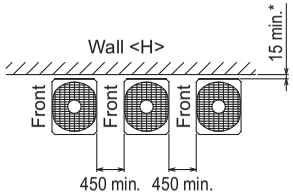
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

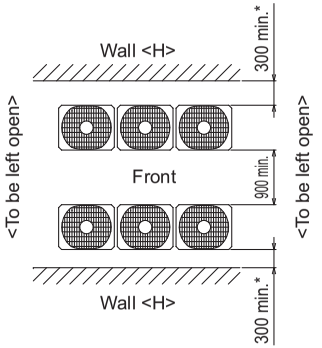
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

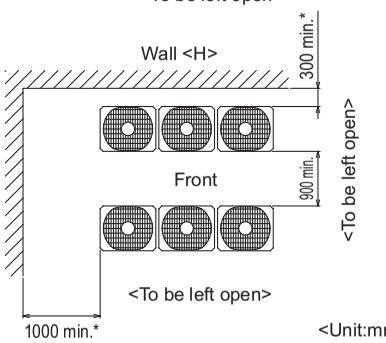












<Unit:mm>

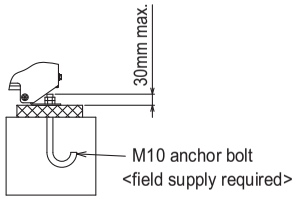


Fig.A (without detachable legs)

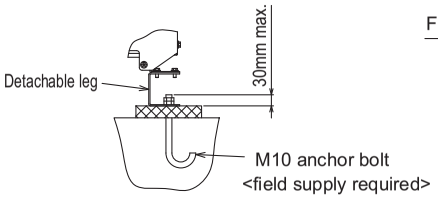


Fig.B (with detachable legs)

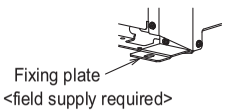


Fig.C (without detachable legs)

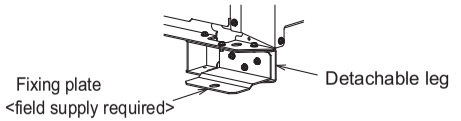


Fig.D (with detachable legs)

Unit: mm

PURY-EM350,400,450YNW-A1(-BS)

Unit: mm

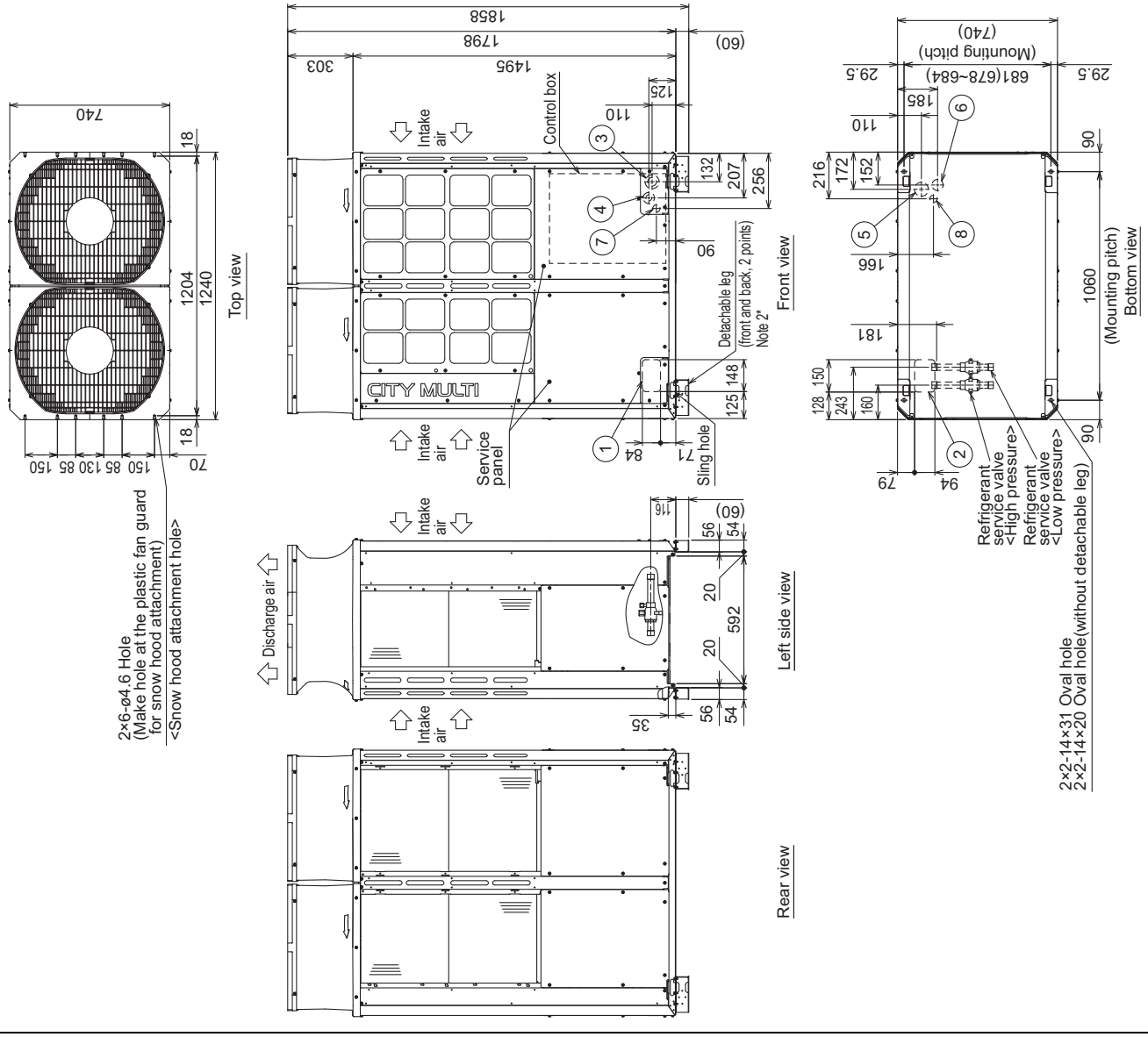
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
EM350	ø15.88 Brazed *1	ø28.58 Brazed	ø28.58	ø28.58
EM400	ø19.05 Brazed *1			
EM450				

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

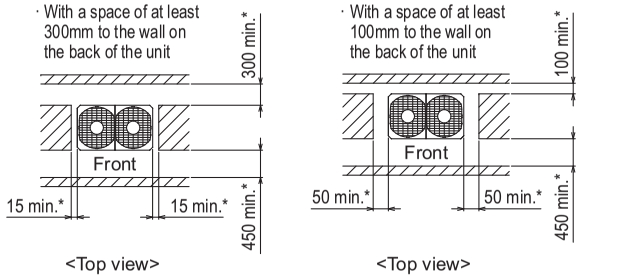
NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole



1. Required space around the unit

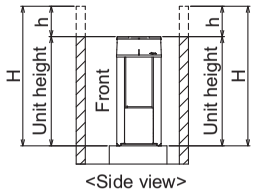
●In case of single installation

① Secure enough space around the unit as shown in the figure below.



<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use four fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

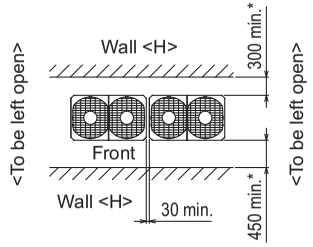
●In case of collective installation

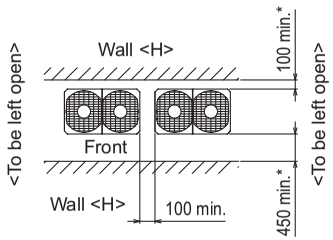
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

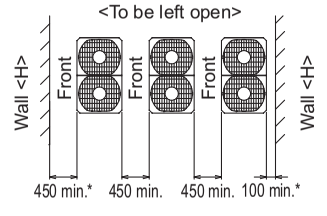
② At least two sides must be left open.

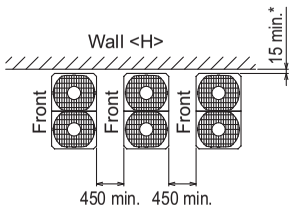
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

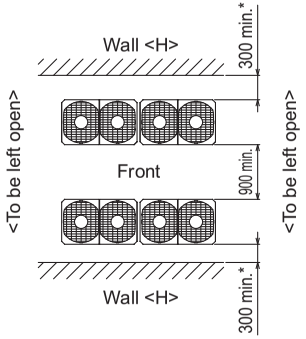
④ If there is a wall at both the front and the rear of the unit, install up to six units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each six units.

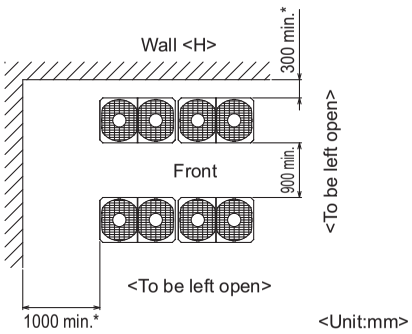












<Unit:mm>

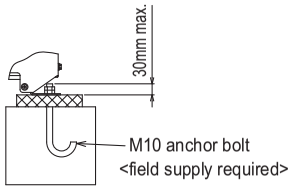


Fig.A (without detachable legs)

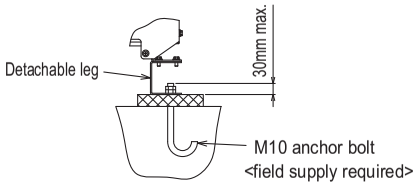


Fig.B (with detachable legs)

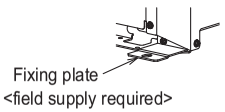


Fig.C (without detachable legs)

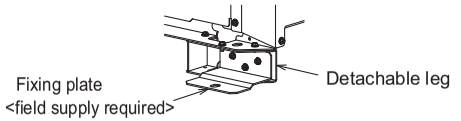


Fig.D (with detachable legs)

Unit: mm

PURY-EM500YNW-A1(-BS)

Unit: mm

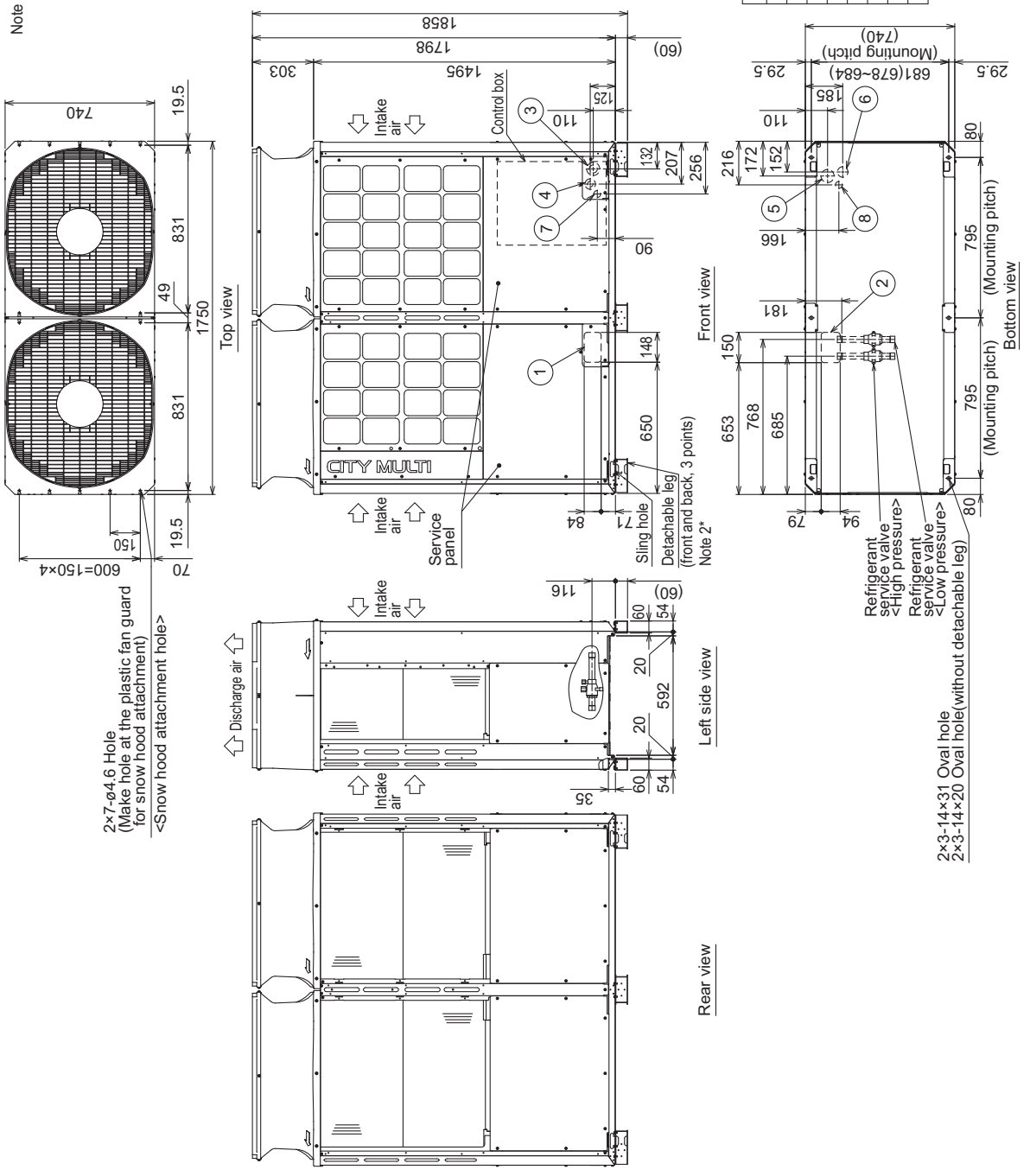
Note 1.Please refer to the next page for information regarding necessary spacing around the unit and foundation work.
2.The detachable leg can be removed at site.
3.At brazing of pipes, wrap the refrigerant service valve with wet cloth and keep the temperature of refrigerant service valve under 120°C.
4.This unit has restrictions for the safety, so refer to SAFETY HANDLING FOR R32 or the Installation Manual.

Connecting pipe specifications

Model	Diameter			
	Refrigerant pipe		Service valve	
	High pressure	Low pressure	High pressure	Low pressure
EM500	ø19.05 Brazed *1	ø28.58 Brazed	ø28.58	ø28.58

*1 Connect the refrigerant pipe to the service valve according to the Installation Manual.

NO.	Usage		Specifications
①	For pipes	Front through hole	148 × 84 Knockout hole
②		Bottom through hole	150 × 94 Knockout hole
③	For wires	Front through hole	ø65 or ø40 Knockout hole
④		Front through hole	ø52 or ø27 Knockout hole
⑤		Bottom through hole	ø65 Knockout hole
⑥		Bottom through hole	ø52 Knockout hole
⑦	For transmission cables	Front through hole	ø34 Knockout hole
⑧		Bottom through hole	ø34 Knockout hole

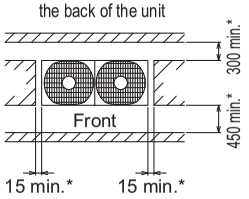


1. Required space around the unit

●In case of single installation

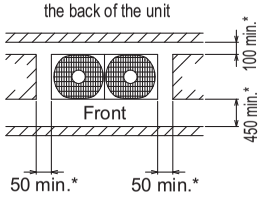
① Secure enough space around the unit as shown in the figure below.

· With a space of at least 300mm to the wall on the back of the unit



<Top view>

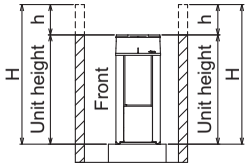
· With a space of at least 100mm to the wall on the back of the unit



<Top view>

<Unit:mm>

② When the height of the walls on the front, back or on the sides<H> exceeds the wall height limit as defined below add the height that exceeds the height limit <h> to the figures that are marked with an asterisk.



<Side view>

<Wall height limit> Front :Up to the unit height
Back :Up to the unit height
Side :Up to the unit height

2. Foundation work

① Take into consideration the surface strength, water drainage route, piping route, and wiring route when preparing the installation site.
<Note that the drain water comes out of the unit during operation.>

② Build the foundation in such way that the corner of the installation leg is securely supported as shown in the right figure.(Fig.A,B)
When using a rubber isolating cushion, please ensure it is large enough to cover the entire width of each of the unit's legs.

③ The protrusion length of the anchor bolt must not exceed 30mm.(Fig.A,B)

④ Use six fixing plates as shown in the right figure <field supply required> when using M12 hole-in anchor bolts <field supply required>.(Fig.C,D)

⑤ To prevent small animals and water and snow from entering the unit and damaging its parts, close the gap around the edges of through holes for pipes and wires with filler plates <field supply required>.

⑥ When the pipes or cables are routed at the bottom of the unit, make sure that the through hole at the base of the unit does not get blocked with the installation base.

⑦ Refer to the Installation Manual when installing units on an installation base.

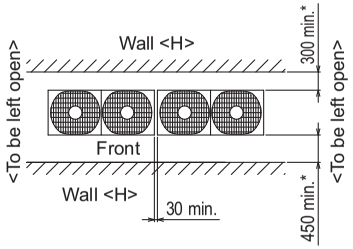
●In case of collective installation

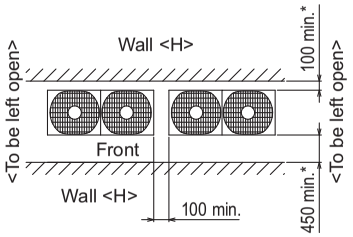
① When multiple units are installed adjacent to each other, secure enough space to allow for air circulation and walkway between groups of units as shown in the figures below.

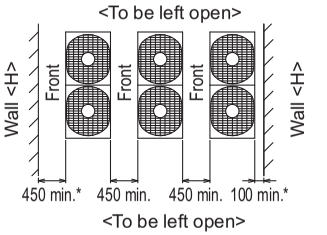
② At least two sides must be left open.

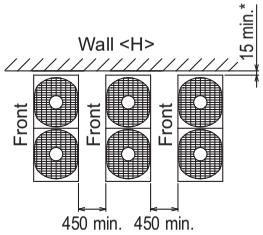
③ As with the single installation, add the height that exceeds the height limit<h> to the figures that are marked with an asterisk.

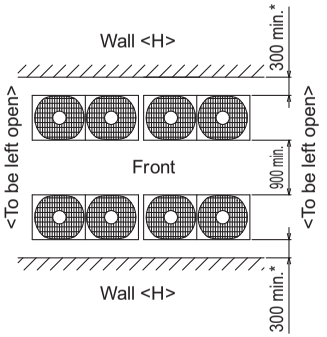
④ If there is a wall at both the front and the rear of the unit, install up to three units consecutively in the side direction and provide a space of 1000mm or more as inlet space/ passage space for each three units.

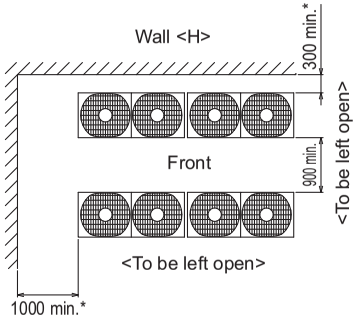












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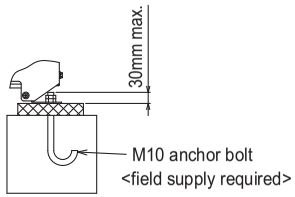


Fig.A (without detachable legs)

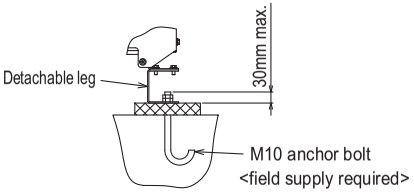


Fig.B (with detachable legs)



Fig.C (without detachable legs)

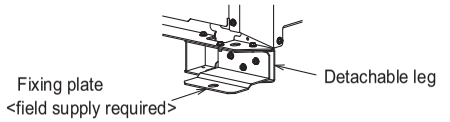
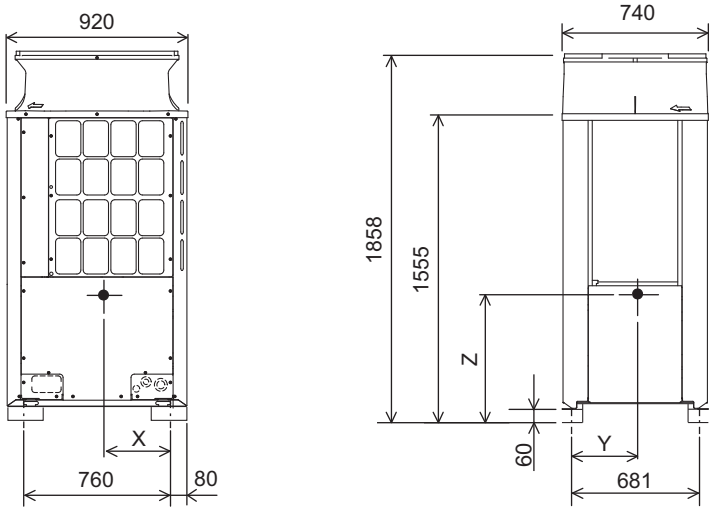


Fig.D (with detachable legs)

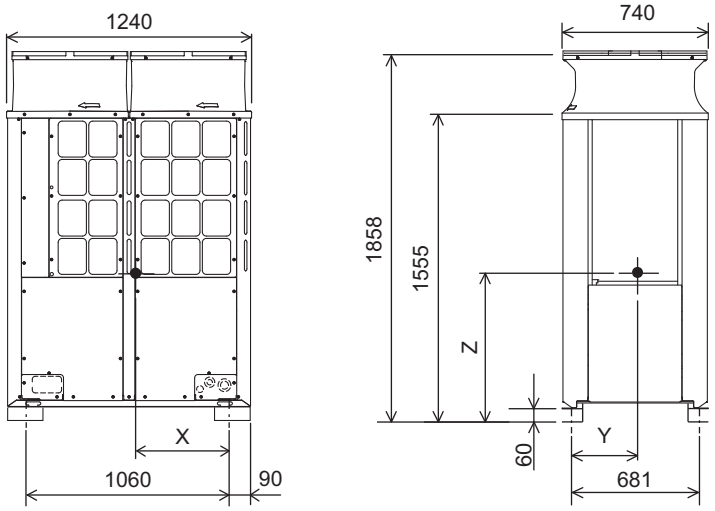
PURY-M200, 250, 300YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-M200YNW-A1(-BS)	357	338	664
PURY-M250YNW-A1(-BS)	357	338	664
PURY-M300YNW-A1(-BS)	357	338	664

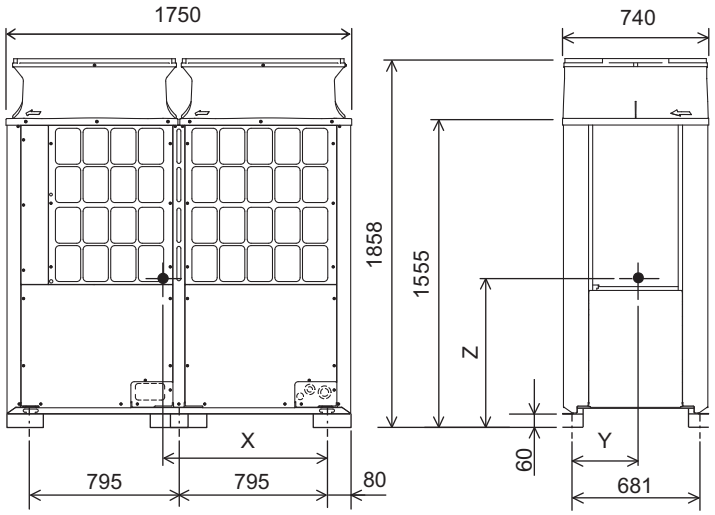
PURY-M350, 400, 450YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-M350YNW-A1(-BS)	502	344	714
PURY-M400YNW-A1(-BS)	502	344	714
PURY-M450YNW-A1(-BS)	501	345	741

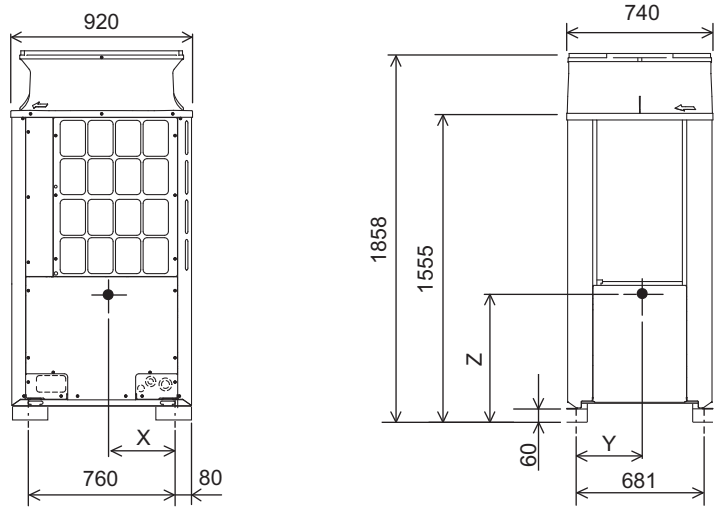
PURY-M500YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-M500YNW-A1(-BS)	871	305	720

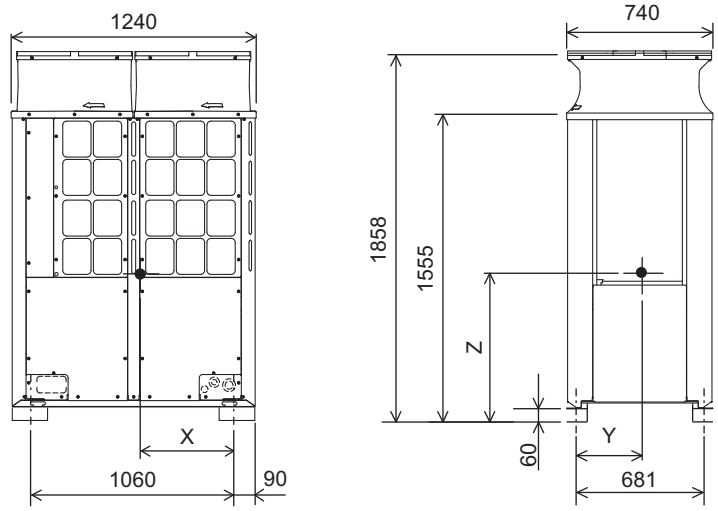
PURY-EM200, 250, 300YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-EM200YNW-A1(-BS)	355	339	678
PURY-EM250YNW-A1(-BS)	355	339	678
PURY-EM300YNW-A1(-BS)	355	339	678

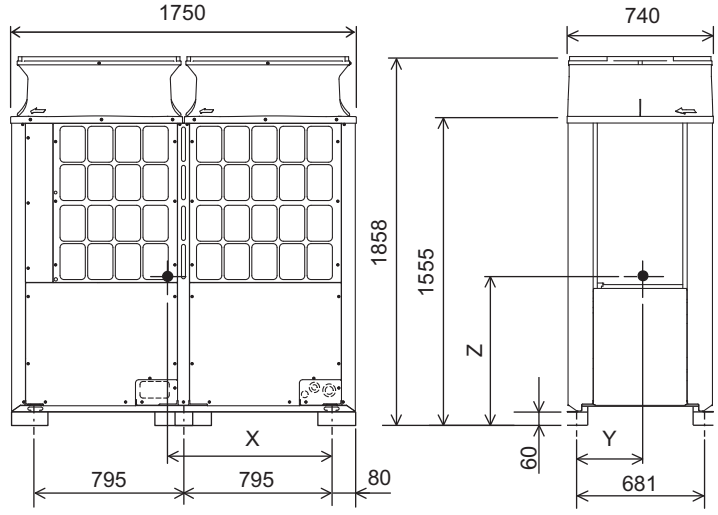
PURY-EM350, 400, 450YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-EM350YNW-A1(-BS)	501	344	729
PURY-EM400YNW-A1(-BS)	502	346	727
PURY-EM450YNW-A1(-BS)	503	346	755

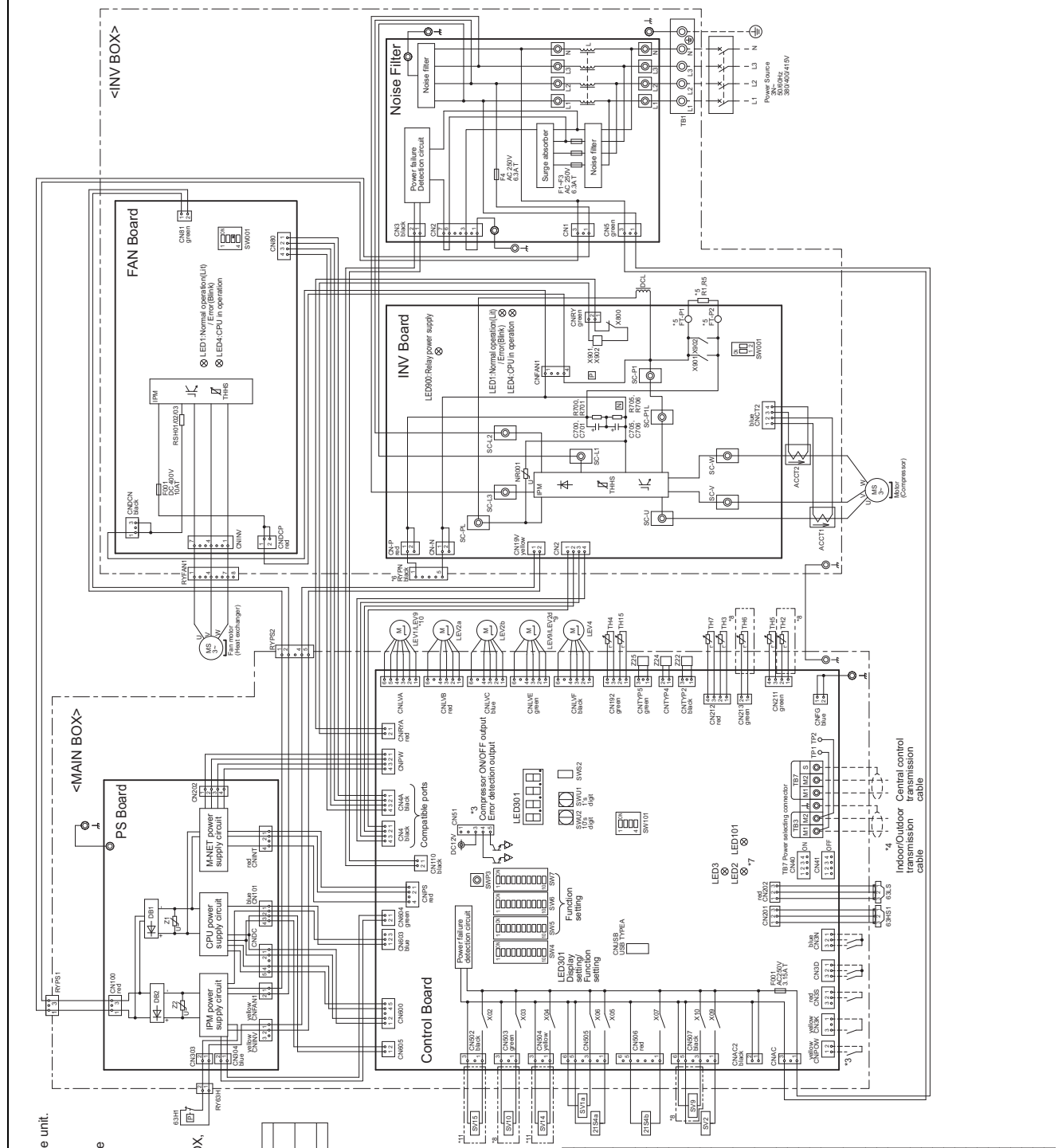
PURY-EM500YNW-A1 (-BS)



Unit: mm

Model	X	Y	Z
PURY-EM500YNW-A1(-BS)	867	307	730

PURY-(E)M200, 250, 300YNW-A1(-BS)



*1.Single-dotted lines indicate wiring not supplied with the unit.
*2.Dot-dash lines indicate the control box boundaries.
*3.Refer to the Data book for connecting input/output signal connectors.
*4.Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5.Faston terminals have a locking function. Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6.Control box houses high-voltage parts. Before inspecting the inside of the MAIN BOX or INV BOX, turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN on INV BOX has dropped to DC20V or less.
*7.Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unit)
LED1011	Normal operation(Lit)/I/C Error(Unit)	

*8.Difference of appliance.

Model name	Appliance
PUHY	*8 exist
PURY	*8 do not exist

*9.Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10.Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV9

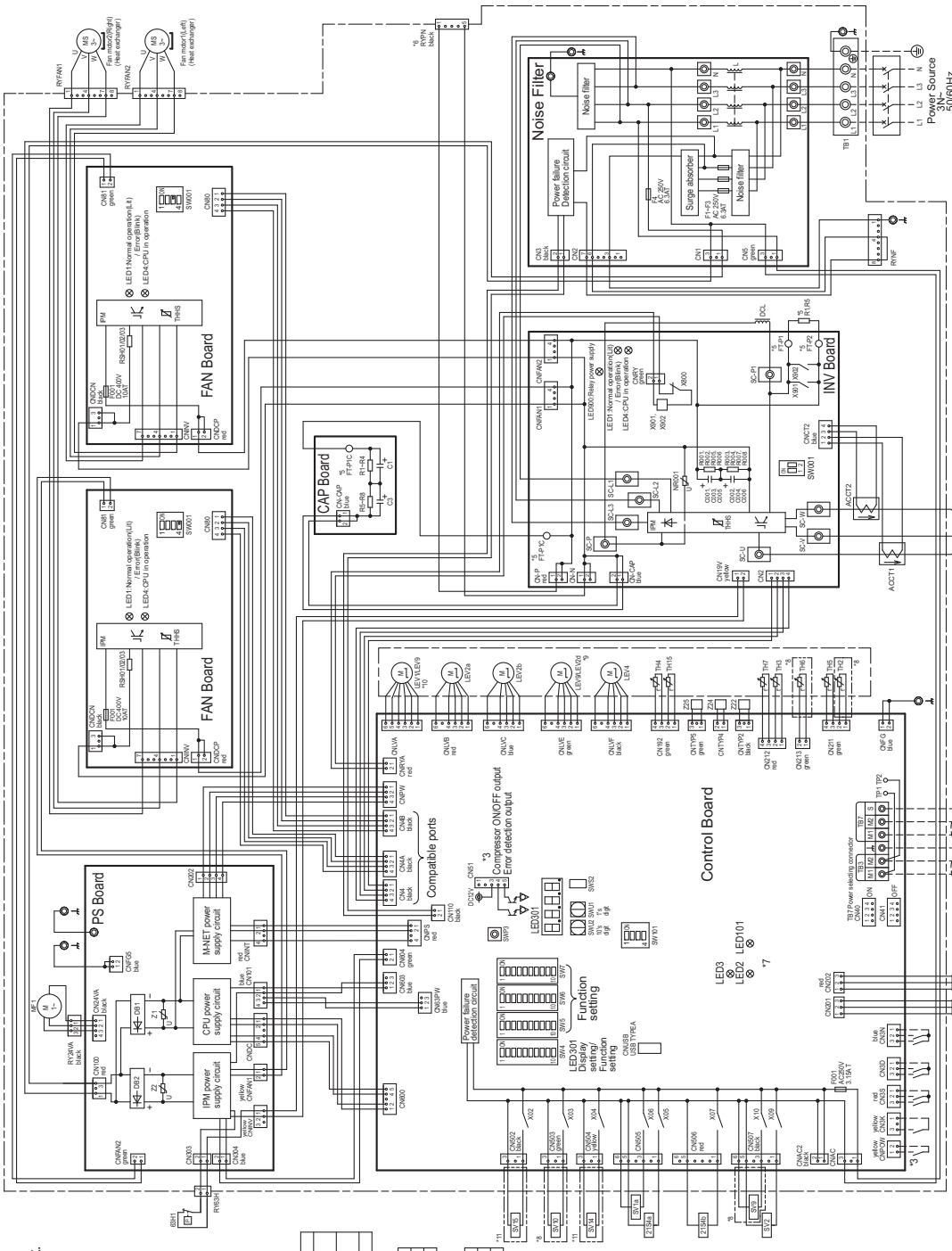
*11.Difference of appliance.

Model name	Appliance
PUHY-M,PURY	*11 do not exist
PUHY-EM	*11 exist

<Symbol explanation>

Symbol		Explanation
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control(only PUHY model).
63H1	Pressure switch	Cooling/heating switching High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2		Current sensor(AC)
C700,C701, C705,C706		Capacitor(inverter main circuit)
DCL		DC reactor
L		Choke coil (for high frequency noise reduction)
LEV1 *10	Linear expansion valve	HIC bypass Controls refrigerant flow in HIC circuit
LEV2a,b		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9,10		Heat exchanger for inverter
R1,5	Resistor	For inrush current prevention
RSH01/02/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the O/S
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10 *8		For continuous heating
SV14,15 *11		For changing refrigerant flow (cooling/heating)
TB1	Terminal	Power supply
TB3	block	Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X901,902	Magnetic relay	(Inverter main circuit)
Z22,24,25	Function setting connector	

PURY-(E)M350, 400, 450YNW-A1(-BS)



*1.Single-dotted lines indicate wiring not supplied with the unit.
*2.Dot-dash lines indicate the control box boundaries.
*3.Refer to the Data book for connecting input/output signal connectors.
*4.Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5.Faston terminals have a locking function.
Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6.Control box houses high-voltage parts.
Before inspecting the inside of the control box,turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN has dropped to DC20V or less.
*7.Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unlit)
	SW6-10 is ON	Function setting by SW4
LED101	Normal operation(Lit)/IC Error(Unlit)	enable(Lit)/disable(Unlit)

*8.Difference of appliance.

Model name	Appliance
PUHY	*9 exist
PURY	*9 do not exist

*9.Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10.Difference of appliance.

Model name	Appliance
PUHY	LEV1
PURY	LEV9

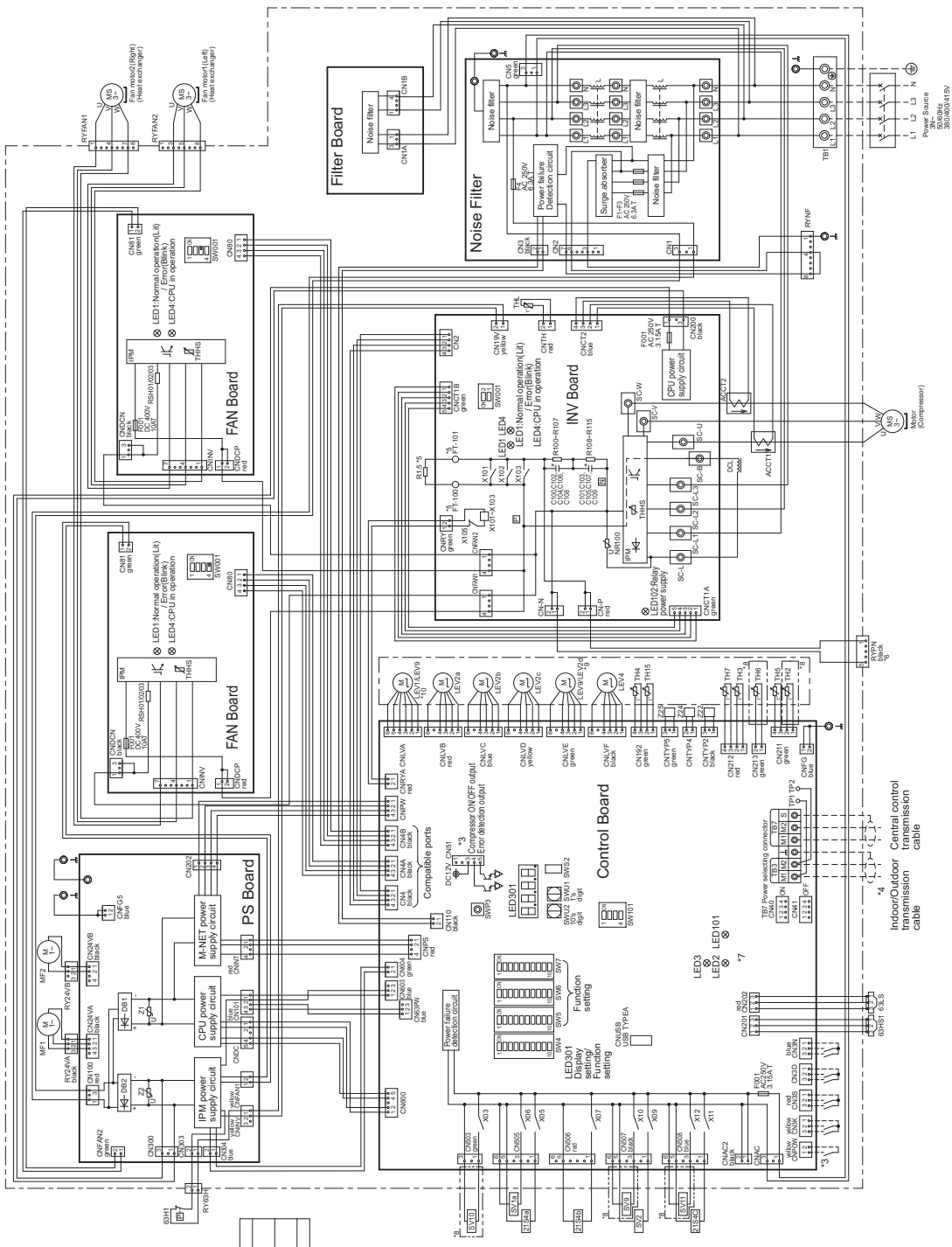
*11.Difference of appliance.

Model name	Appliance
PUHY-M,PURY	*11 do not exist
PUHY-E/M	*11 exist

<Symbol explanation>

Symbol		Explanation
21S4a	4-way valve	Cooling/Heating switching
21S4b		Heat exchanger capacity control(only PUHY model)
63H1	Pressure switch	Cooling/Heating switching High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C1,C3, C001~C006	Capacitor (inverter main circuit)	
DCL	DC reactor	
L	Choke coil	(for high frequency noise reduction)
LEV1 *10	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV2a,b		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9, *10		Heat exchanger for inverter
MF1	Fan motor	(for cooling in control box)
R1,5	Resistor	For inrush current prevention
RSH01/02/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the HIC
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10 *8		For continuous heating
SV14,15 *11		For changing refrigerant flow (cooling/heating)
TB1	Terminal block	Power supply
TB3		Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X901,X902	Magnetic relay(Inverter main circuit)	
Z22,24,25	Function setting connector	

PURY-(E)M500YNW-A1(-BS)



*1. Single-dotted lines indicate wiring not supplied with the unit.
*2. Dot-dash lines indicate the control box boundaries.
*3. Refer to the Data book for connecting input/output signal connectors.
*4. Daisy-chain terminals (TB3) on the outdoor units in the same refrigerant system together.
*5. Faston terminals have a locking function.
Make sure the terminals are securely locked in place after insertion. Press the tab on the terminals to removed them.
*6. Control box houses high-voltage parts.
Before inspecting the inside of the control box,turn off the power,keep the unit off for at least 10 minutes, and confirm that the voltage of the connector RYPN has dropped to DC20V or less.
*7. Control board LED display.

LED2	Normal operation(Lit)/Error(Blink)	
LED3	SW6-10 is OFF and SW4-1~10 are OFF	In operation(Lit)/In stop(Unit)
	SW6-10 is ON	Function setting by SW4 enable(Lit)/disable(Unit)
LED101	Normal operation(Lit)/IC Error(Unit)	

*8. Difference of appliance.

Model name	Appliance
PUHY	*9 exist
PURY	*9 do not exist

*9. Difference of appliance.

Model name	Appliance
PUHY	LEV9
PURY	LEV2d

*10. Difference of appliance.

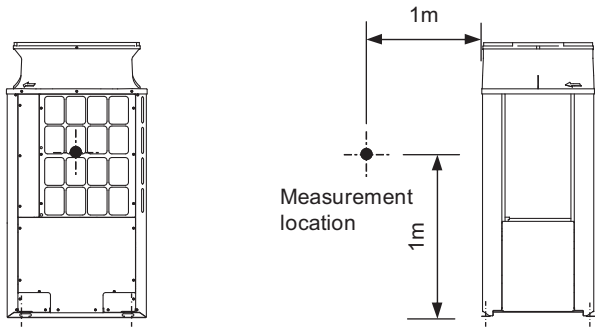
Model name	Appliance
PUHY	LEV1
PURY	LEV9

<Symbol explanation>

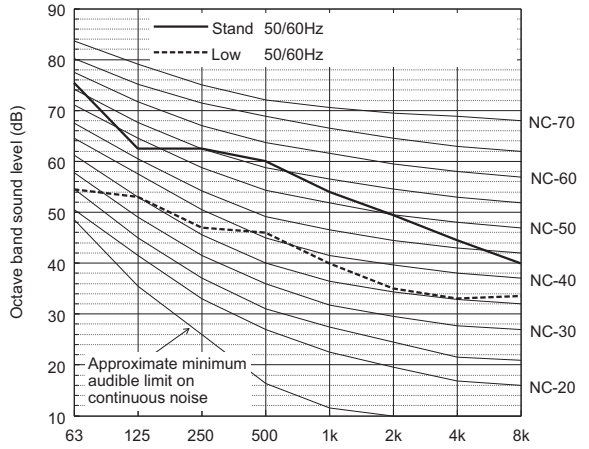
Symbol	Explanation	
21S4a	4-way valve	Cooling/Heating switching
21S4b,c		Heat exchanger capacity control(only PUHY model)
63H1	Pressure switch	Cooling/heating switching High pressure protection for the outdoor unit
63HS1	Pressure sensor	Discharge pressure
63LS		Low pressure
ACCT1,ACCT2	Current sensor(AC)	
C100~C109	Capacitor (inverter main circuit)	
DCL	DC reactor	
L	Choke coil (for high frequency noise reduction)	
LEV1 *10	Linear expansion valve	HIC bypass,Controls refrigerant flow in HIC circuit
LEV2a,b,c		Pressure control,Refrigerant flow rate control
LEV2d *9		Pressure control,Refrigerant flow rate control
LEV4		For opening/closing the injection circuit
LEV9 *9,10		Heat exchanger for inverter
MF1,2	Fan motor(for cooling in control box)	
R1,5	Resistor	For inrush current prevention
RSH0102/03		For current detection
SV1a	Solenoid valve	For opening/closing the bypass circuit under the OCS
SV2		For opening/closing the discharge suction bypass
SV9 *8		For opening/closing the bypass circuit
SV10,11 *8		For continuous heating
TB1	Terminal block	Power supply
TB3		Indoor/Outdoor transmission line
TB7		Central control transmission line
TH2 *8	Thermistor	Subcool bypass outlet temperature
TH3		Pipe temperature
TH4		Discharge pipe temperature
TH5		ACC inlet pipe temperature
TH6 *8		Subcooled liquid refrigerant temperature
TH7		OA temperature
TH15		Compressor shell bottom temperature
THHS		IPM temperature
X101~X103	Magnetic relay(inverter main circuit)	
Z22,24,25	Function setting connector	

5-1. Sound levels in cooling mode

Measurement condition
PURY-M200, 250, 300YNW-A1(-BS)



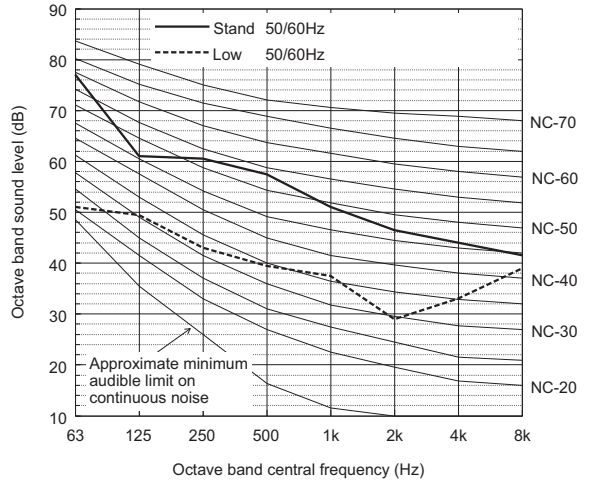
Sound level of PURY-M300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	75.5	62.5	62.5	60.0	54.0	49.5	44.5	40.0	61.0
Low noise mode	50/60Hz	54.5	53.0	47.0	46.0	40.0	35.0	33.0	33.5	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

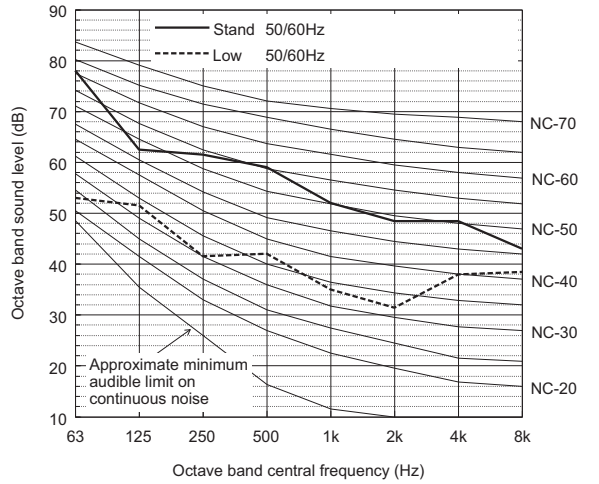
Sound level of PURY-M200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	77.0	61.0	60.5	57.5	51.0	46.5	44.0	41.5	59.0
Low noise mode	50/60Hz	51.0	49.5	43.0	39.5	37.5	29.0	33.0	39.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M250YNW-A1(-BS)

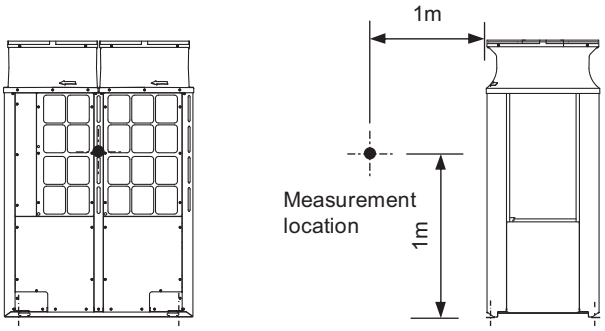


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	78.0	62.5	61.5	59.0	52.0	48.5	48.5	43.0	60.5
Low noise mode	50/60Hz	53.0	51.5	41.5	42.0	35.0	31.5	38.0	38.5	45.0

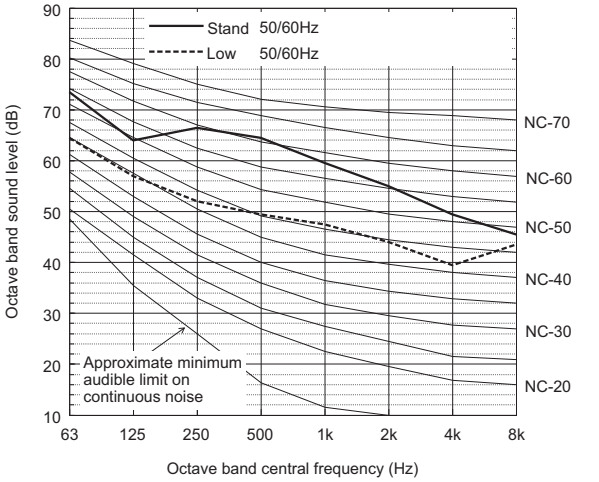
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-M350, 400, 450YNW-A1(-BS)



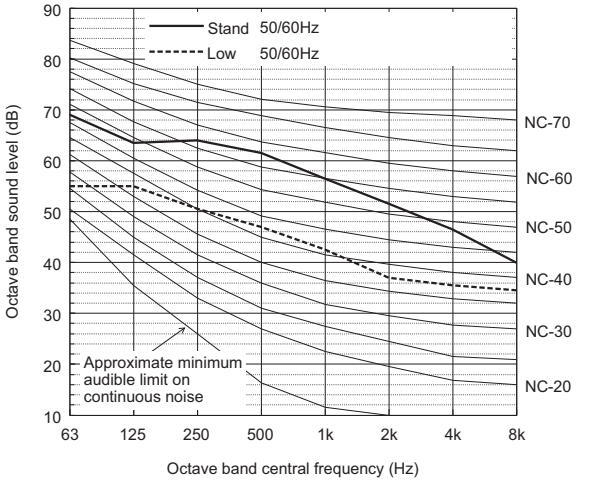
Sound level of PURY-M450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	64.0	66.5	64.5	59.5	55.0	49.5	45.5	65.5
Low noise mode	50/60Hz	64.5	57.0	52.0	49.5	47.5	44.0	39.5	43.5	53.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

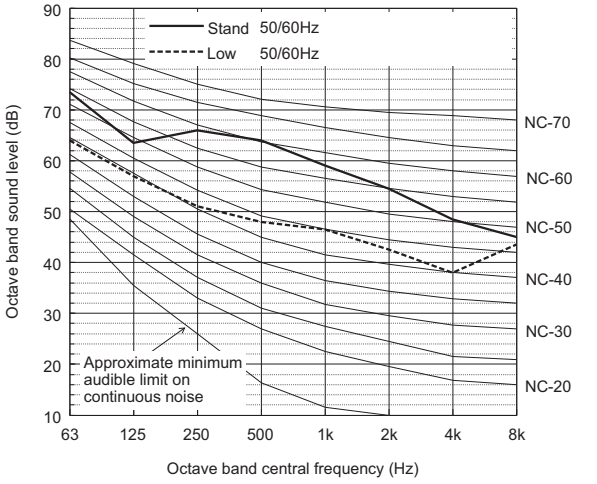
Sound level of PURY-M350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	69.0	63.5	64.0	61.5	56.5	51.5	46.5	40.0	62.5
Low noise mode	50/60Hz	55.0	55.0	50.5	47.0	42.5	37.0	35.5	34.5	49.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M400YNW-A1(-BS)

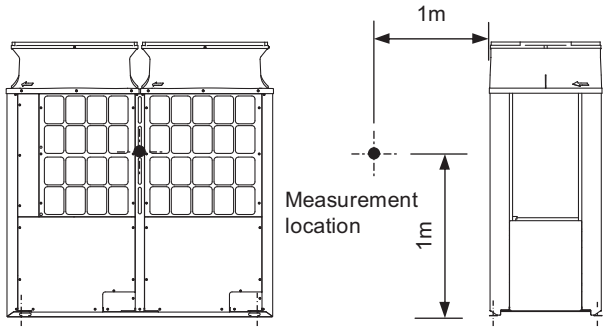


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	73.5	63.5	66.0	64.0	59.0	54.5	48.5	45.0	65.0
Low noise mode	50/60Hz	64.0	57.0	51.0	48.0	46.5	42.5	38.0	43.5	52.0

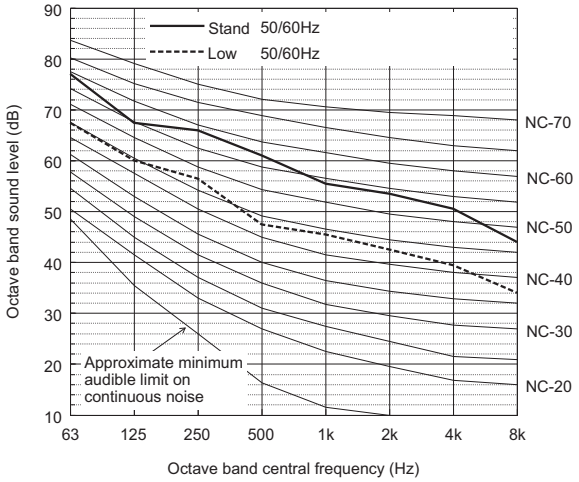
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-M500YNW-A1(-BS)



Sound level of PURY-M500YNW-A1(-BS)

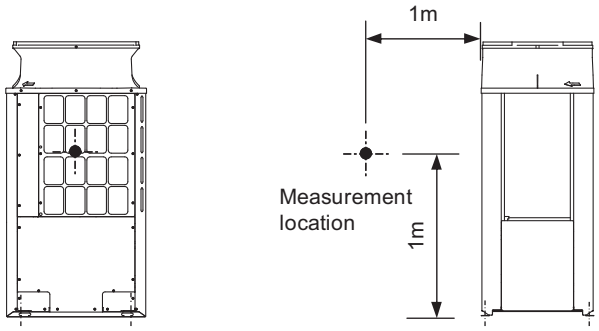


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	77.0	67.5	66.0	61.0	55.5	53.5	50.5	44.0	63.5
Low noise mode	50/60Hz	67.5	60.0	56.5	47.5	45.5	42.5	39.5	34.0	53.0

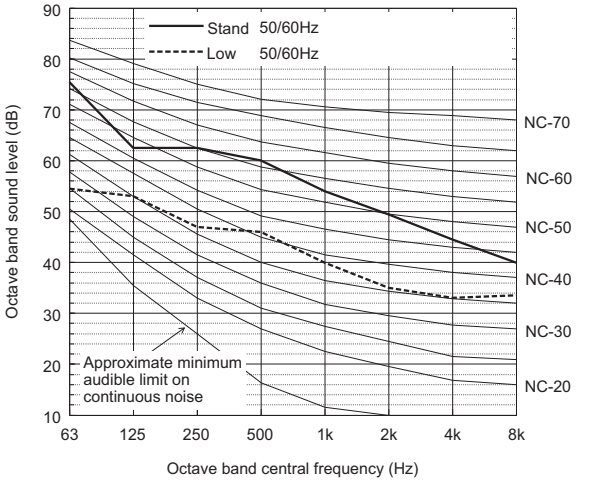
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM200, 250, 300YNW-A1(-BS)



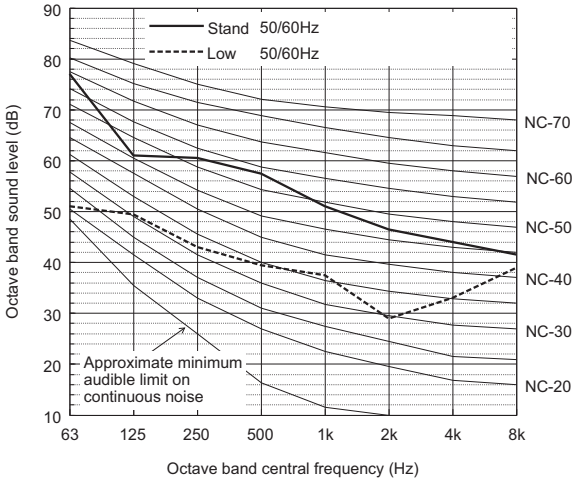
Sound level of PURY-EM300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	75.5	62.5	62.5	60.0	54.0	49.5	44.5	40.0	61.0
Low noise mode	50/60Hz	54.5	53.0	47.0	46.0	40.0	35.0	33.0	33.5	47.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

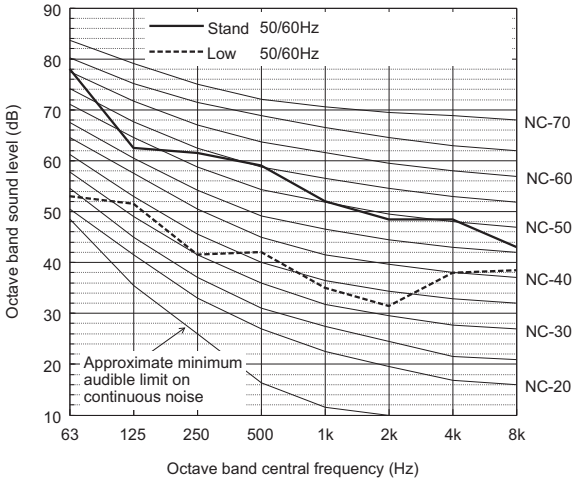
Sound level of PURY-EM200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	77.0	61.0	60.5	57.5	51.0	46.5	44.0	41.5	59.0
Low noise mode	50/60Hz	51.0	49.5	43.0	39.5	37.5	29.0	33.0	39.0	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM250YNW-A1(-BS)

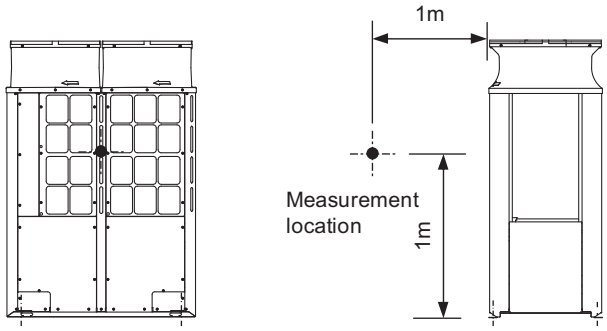


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard	50/60Hz	78.0	62.5	61.5	59.0	52.0	48.5	48.5	43.0	60.5
Low noise mode	50/60Hz	53.0	51.5	41.5	42.0	35.0	31.5	38.0	38.5	45.0

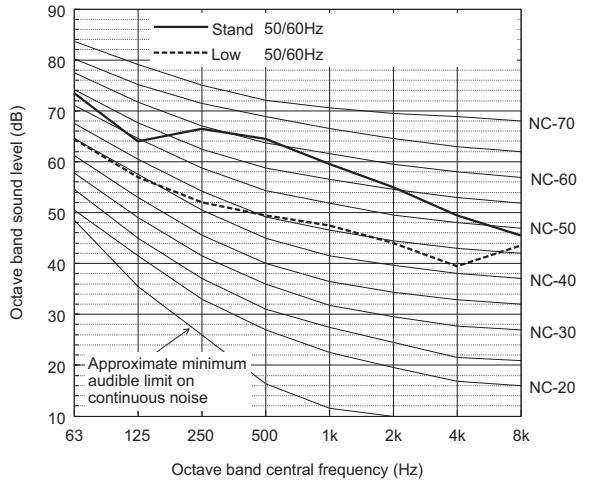
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM350, 400, 450YNW-A1(-BS)



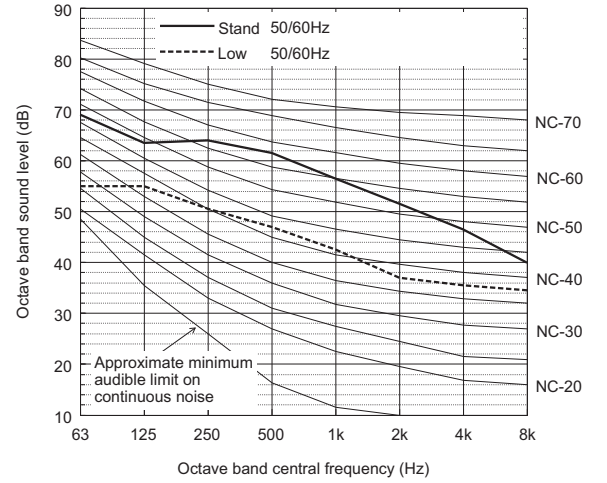
Sound level of PURY-EM450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	73.5	64.0	66.5	64.5	59.5	55.0	49.5	45.5	65.5
Low noise mode	50/60Hz	64.5	57.0	52.0	49.5	47.5	44.0	39.5	43.5	53.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

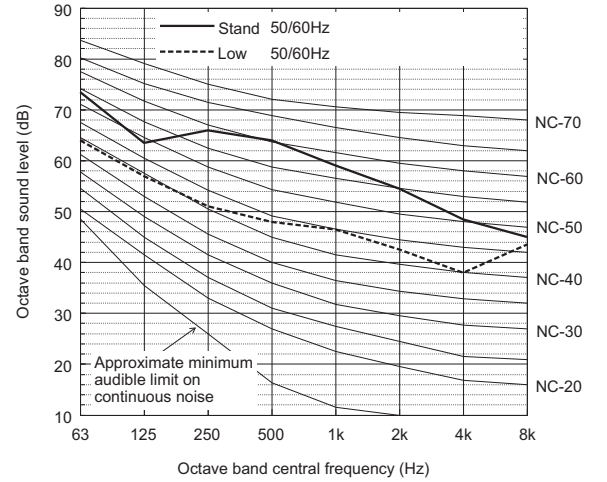
Sound level of PURY-EM350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	69.0	63.5	64.0	61.5	56.5	51.5	46.5	40.0	62.5
Low noise mode	50/60Hz	55.0	55.0	50.5	47.0	42.5	37.0	35.5	34.5	49.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM400YNW-A1(-BS)

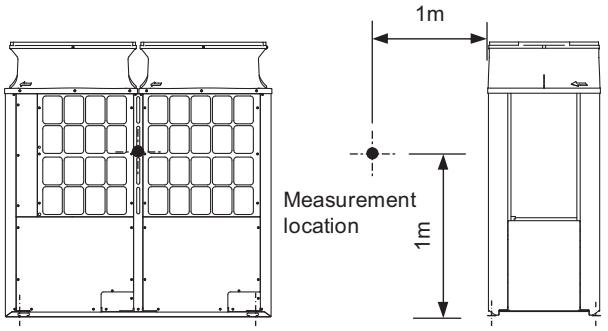


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	73.5	63.5	66.0	64.0	59.0	54.5	48.5	45.0	65.0
Low noise mode	50/60Hz	64.0	57.0	51.0	48.0	46.5	42.5	38.0	43.5	52.0

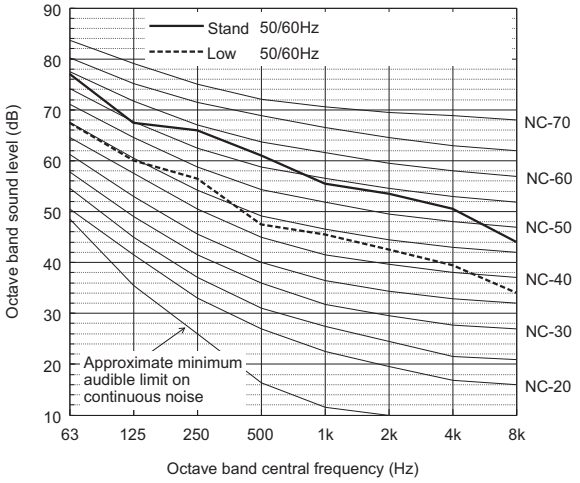
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM500YNW-A1(-BS)



Sound level of PURY-EM500YNW-A1(-BS)



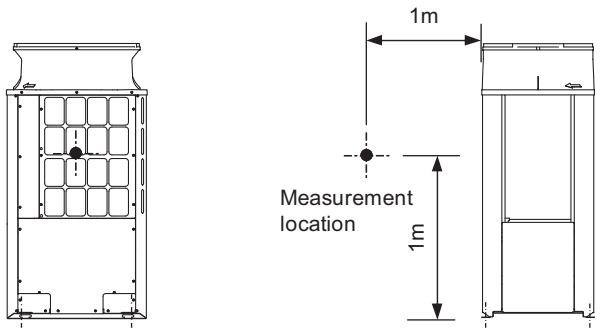
		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Cooling	50/60Hz	77.0	67.5	66.0	61.0	55.5	53.5	50.5	44.0	63.5
Low noise mode	50/60Hz	67.5	60.0	56.5	47.5	45.5	42.5	39.5	34.0	53.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

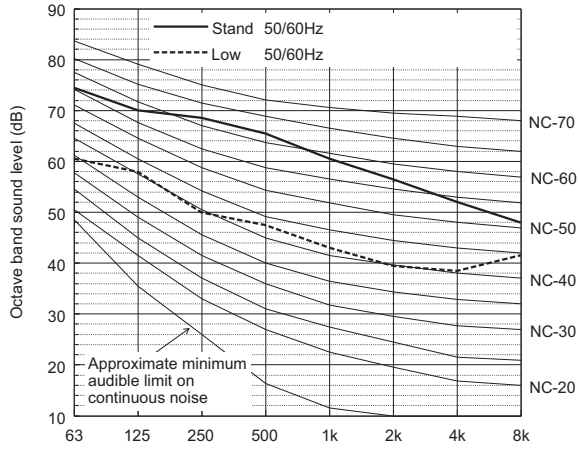
♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

5-2. Sound levels in heating mode

Measurement condition
PURY-M200, 250, 300YNW-A1(-BS)



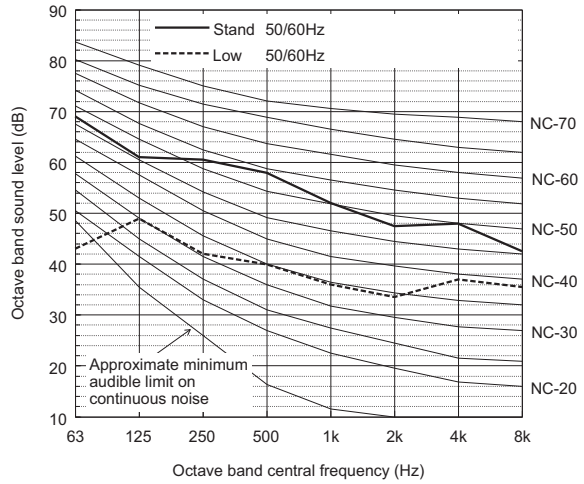
Sound level of PURY-M300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	74.5	70.0	68.5	65.5	60.5	56.5	52.0	48.0	67.0
Low noise mode	50/60Hz	60.5	58.0	50.0	47.5	43.0	39.5	38.5	41.5	50.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

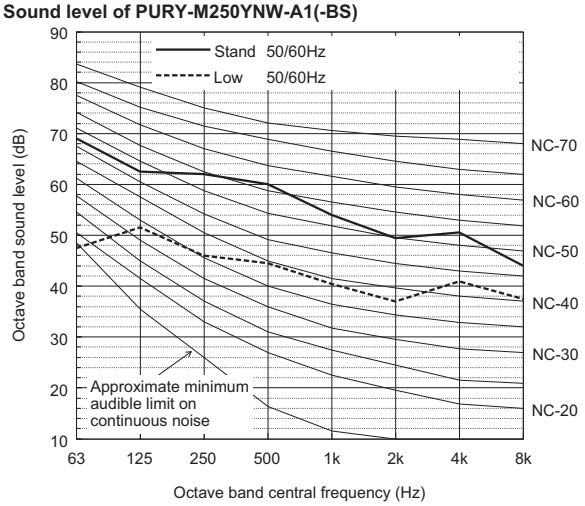
Sound level of PURY-M200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	61.0	60.5	58.0	52.0	47.5	48.0	42.5	59.0
Low noise mode	50/60Hz	43.0	49.0	42.0	40.0	36.0	33.5	37.0	35.5	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M250YNW-A1(-BS)

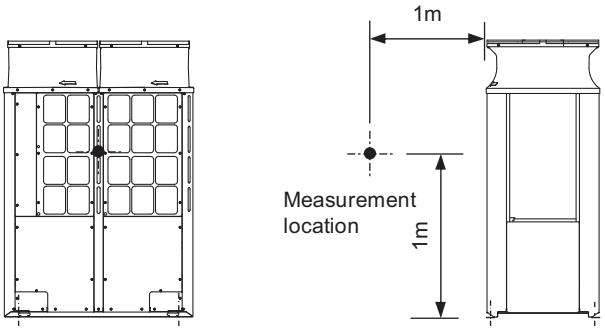


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	62.5	62.0	60.0	54.0	49.5	50.5	44.0	61.0
Low noise mode	50/60Hz	47.5	51.5	46.0	44.5	40.5	37.0	41.0	37.5	48.0

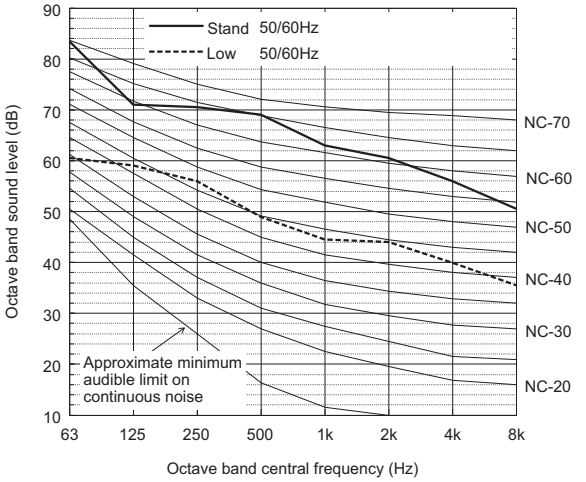
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-M350, 400, 450YNW-A1(-BS)



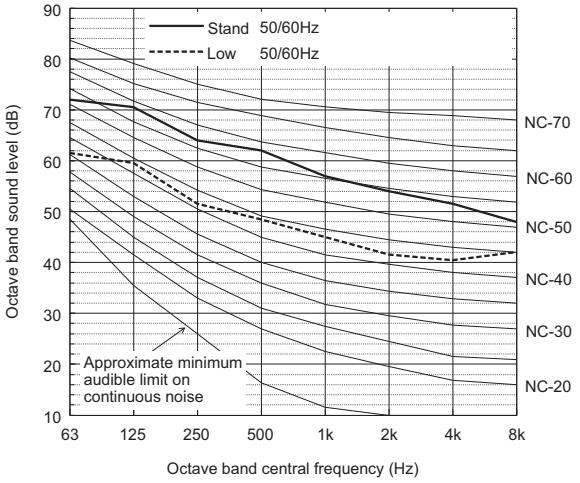
Sound level of PURY-M450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	83.5	71.0	70.5	69.0	63.0	60.5	56.0	50.5	70.0
Low noise mode	50/60Hz	60.5	59.0	56.0	49.0	44.5	44.0	40.0	35.5	53.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

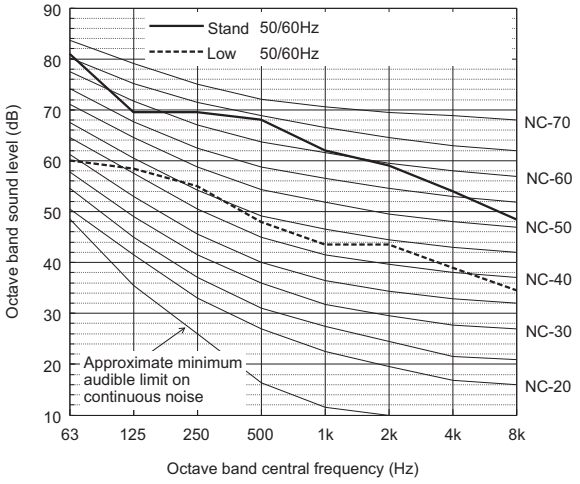
Sound level of PURY-M350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	72.0	70.5	64.0	62.0	57.0	54.0	51.5	48.0	64.0
Low noise mode	50/60Hz	61.5	59.5	51.5	48.5	45.0	41.5	40.5	42.0	52.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-M400YNW-A1(-BS)

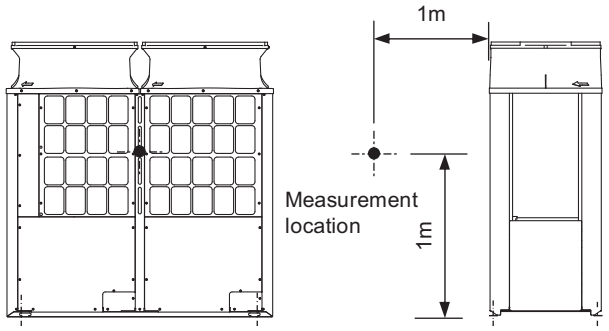


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	81.0	69.5	69.5	68.0	62.0	59.0	54.0	48.5	69.0
Low noise mode	50/60Hz	60.0	58.5	55.0	48.0	43.5	43.5	39.0	34.5	52.0

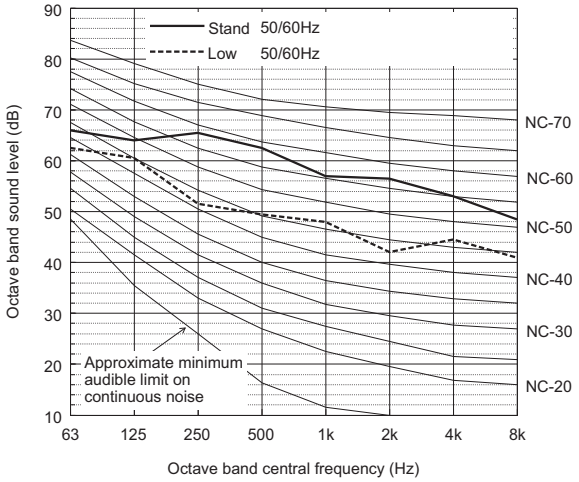
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-M500YNW-A1(-BS)



Sound level of PURY-M500YNW-A1(-BS)

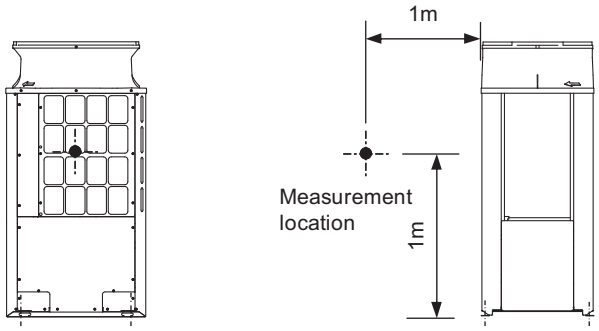


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	66.0	64.0	65.5	62.5	57.0	56.5	53.0	48.5	64.5
Low noise mode	50/60Hz	62.5	60.5	51.5	49.5	48.0	42.0	44.5	41.0	53.5

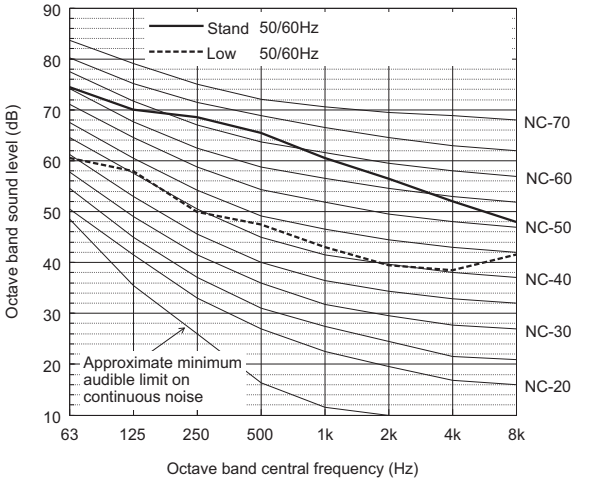
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM200, 250, 300YNW-A1(-BS)



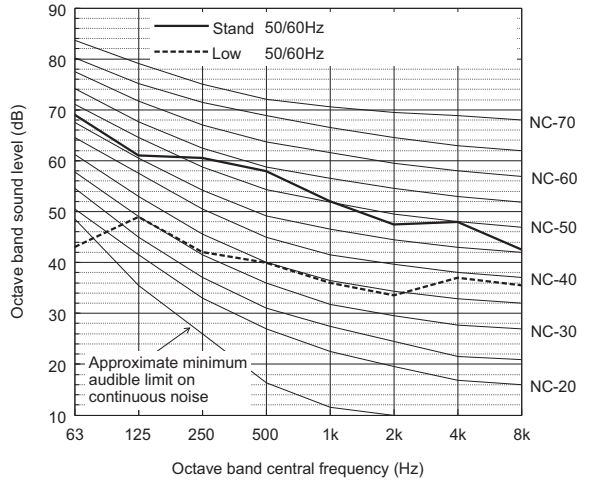
Sound level of PURY-EM300YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	74.5	70.0	68.5	65.5	60.5	56.5	52.0	48.0	67.0
Low noise mode	50/60Hz	60.5	58.0	50.0	47.5	43.0	39.5	38.5	41.5	50.5

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

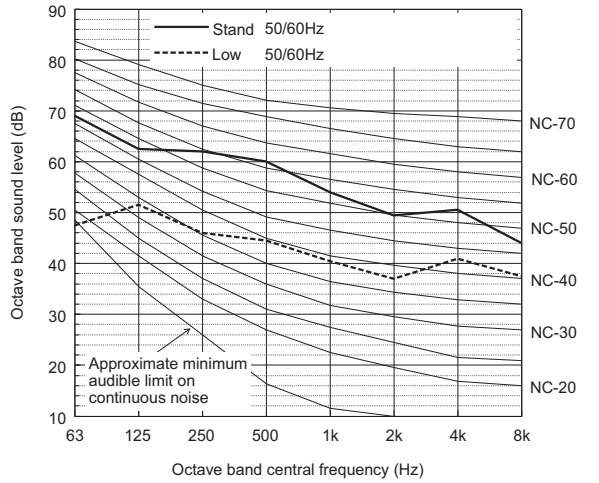
Sound level of PURY-EM200YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	61.0	60.5	58.0	52.0	47.5	48.0	42.5	59.0
Low noise mode	50/60Hz	43.0	49.0	42.0	40.0	36.0	33.5	37.0	35.5	44.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM250YNW-A1(-BS)

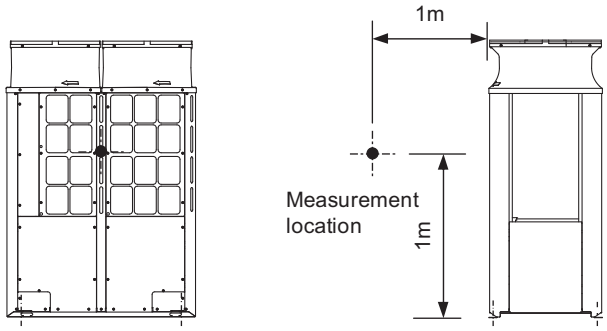


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	69.0	62.5	62.0	60.0	54.0	49.5	50.5	44.0	61.0
Low noise mode	50/60Hz	47.5	51.5	46.0	44.5	40.5	37.0	41.0	37.5	48.0

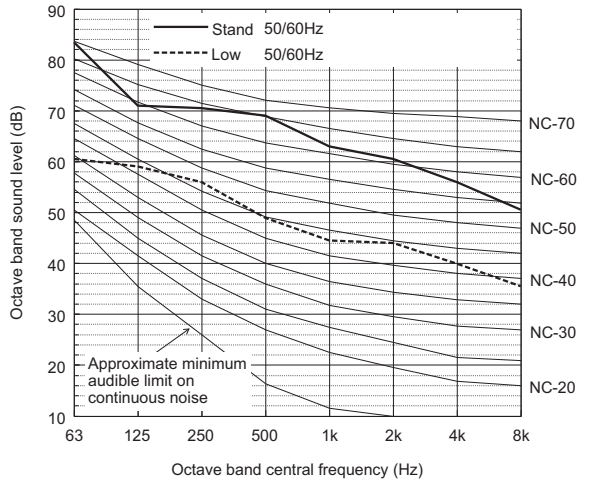
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM350, 400, 450YNW-A1(-BS)



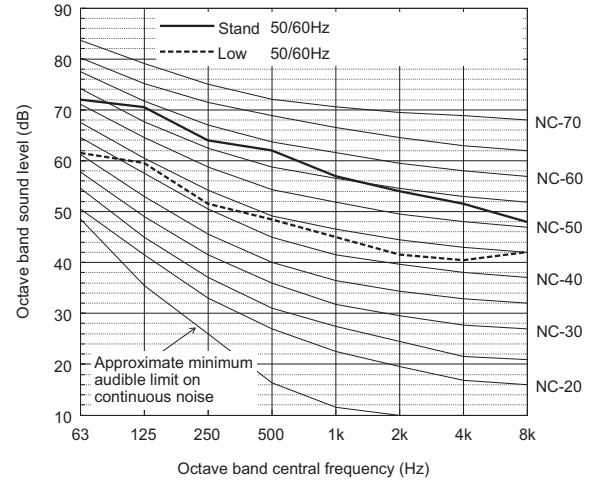
Sound level of PURY-EM450YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	83.5	71.0	70.5	69.0	63.0	60.5	56.0	50.5	70.0
Low noise mode	50/60Hz	60.5	59.0	56.0	49.0	44.5	44.0	40.0	35.5	53.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

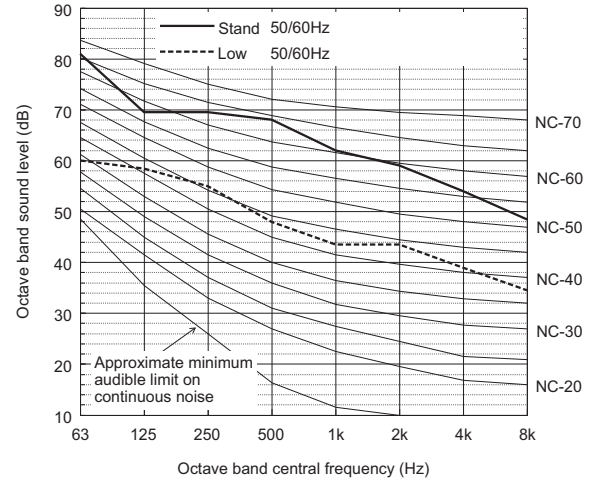
Sound level of PURY-EM350YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	72.0	70.5	64.0	62.0	57.0	54.0	51.5	48.0	64.0
Low noise mode	50/60Hz	61.5	59.5	51.5	48.5	45.0	41.5	40.5	42.0	52.0

When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

Sound level of PURY-EM400YNW-A1(-BS)

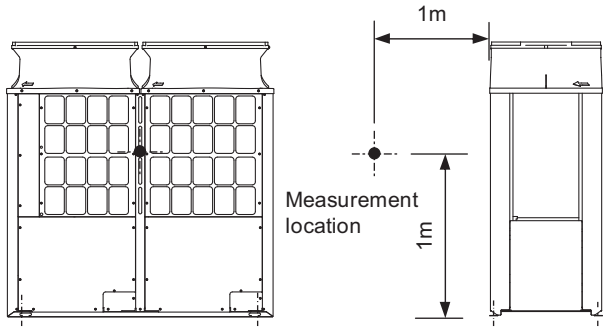


		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	81.0	69.5	69.5	68.0	62.0	59.0	54.0	48.5	69.0
Low noise mode	50/60Hz	60.0	58.5	55.0	48.0	43.5	43.5	39.0	34.5	52.0

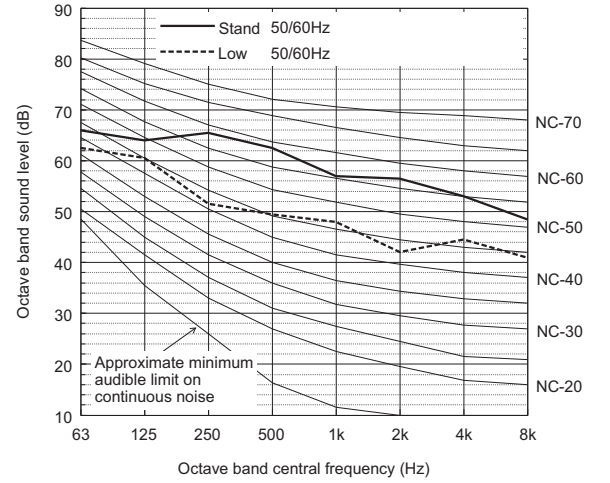
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

Measurement condition
PURY-EM500YNW-A1(-BS)



Sound level of PURY-EM500YNW-A1(-BS)



		63	125	250	500	1k	2k	4k	8k	dB(A)
Standard Heating	50/60Hz	66.0	64.0	65.5	62.5	57.0	56.5	53.0	48.5	64.5
Low noise mode	50/60Hz	62.5	60.5	51.5	49.5	48.0	42.0	44.5	41.0	53.5

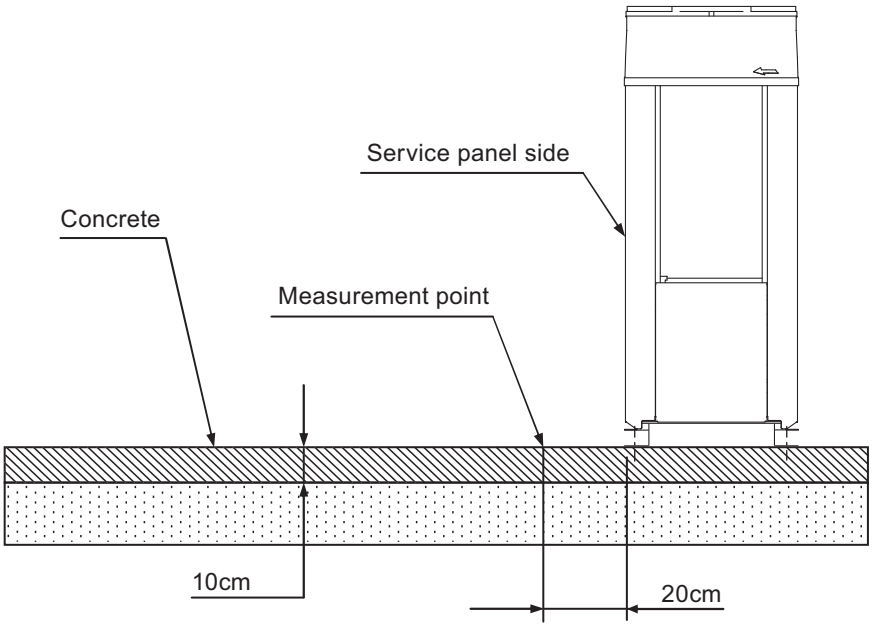
When Low noise mode is set,the A/C system's capacity is limited. The system could return to normal operation from Low noise mode automatically in the case that the operation condition is severe.

♦Depending on the operation conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes when operating normally. Please consider to avoid location where quietness is required.

[PURY-M200-500YNW, PURY-EM200-500YNW]

Measurement condition

Measurement frequency: 1 Hz-80 Hz
Measurement point: Ground surface 20 cm away from the unit leg
Installation condition: Direct installation on the concrete floor
Power source: 3-phase 4-wire 380-400-415 V 50/60 Hz
Operation condition: JIS condition (cooling, heating)
Measurement device: Vibration level meter for vibration pollution VM-1220C (JIS-compliant product)

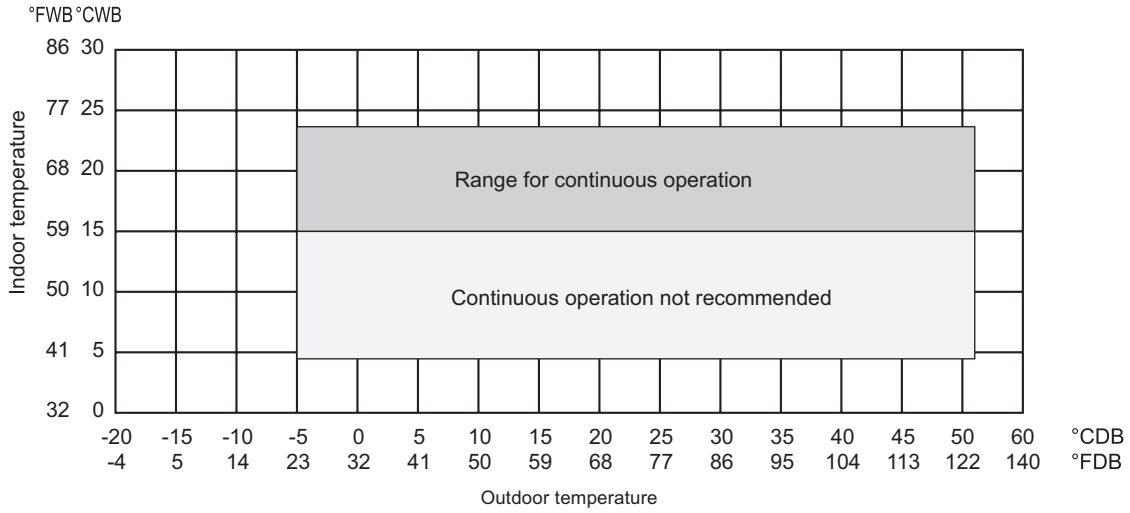


Vibration level

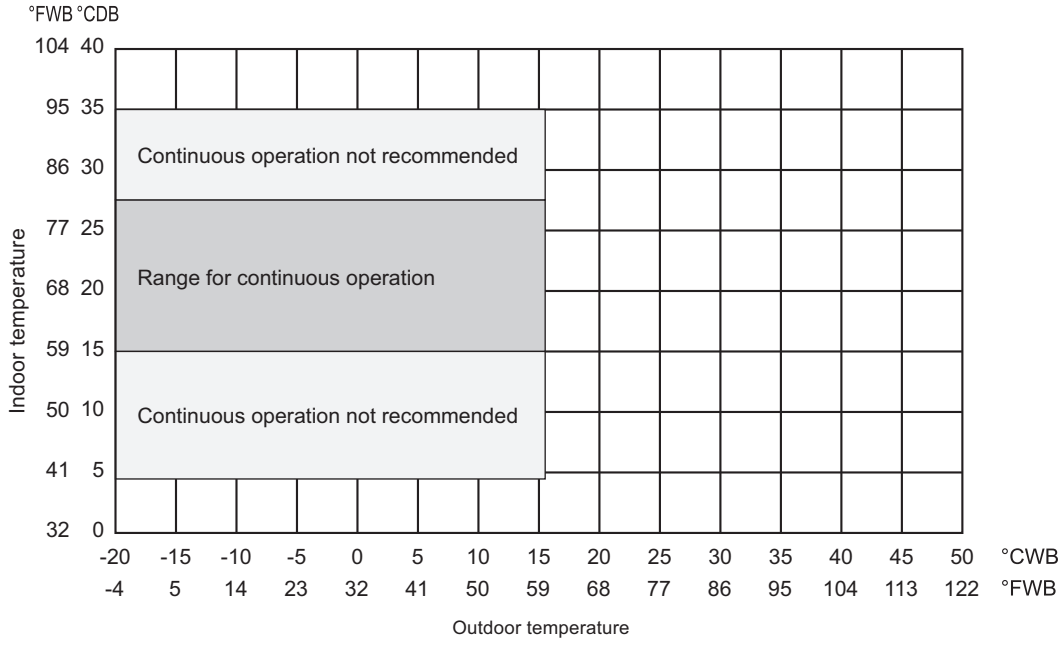
Model	Vibration level (dB)
PURY-M200YNW-A1 (-BS)	45
PURY-M250YNW-A1 (-BS)	46
PURY-M300YNW-A1 (-BS)	47
PURY-M350YNW-A1 (-BS)	47
PURY-M400YNW-A1 (-BS)	47
PURY-M450YNW-A1 (-BS)	47
PURY-M500YNW-A1 (-BS)	48
PURY-EM200YNW-A1 (-BS)	45
PURY-EM250YNW-A1 (-BS)	46
PURY-EM300YNW-A1 (-BS)	47
PURY-EM350YNW-A1 (-BS)	47
PURY-EM400YNW-A1 (-BS)	47
PURY-EM450YNW-A1 (-BS)	47
PURY-EM500YNW-A1 (-BS)	48

* Vibration level varies depending on the conditions of actual installation site.

• **Cooling only**



• **Heating only**



• **Combination of cooling/heating operation (Cooling main or Heating main)**

Outdoor temperature	Indoor temperature	
	Cooling	Heating
-10 to 21˚CDB (14 to 70˚FDB)	——	15 to 27˚CDB (59 to 81˚FDB)
-11 to 15.5˚CWB (12 to 60˚FWB)	15 to 24˚CWB (59 to 75˚FWB)	——

*During cooling operation, there is a risk in freezing water at HBC when the outdoor temperature is below the lower limit.
*The unit cannot be used when the outdoor temperature is outside the guaranteed operation range. If the unit is used in such condition, the unit may not go into the Thermo-ON mode.

Section 8-1.
Shows an example of how to select the indoor and outdoor units according to the required heating/cooling load.

Section 8-2. through 8-5.
Show the actual correction data of indoor and outdoor units.

8-1. Correction by temperature

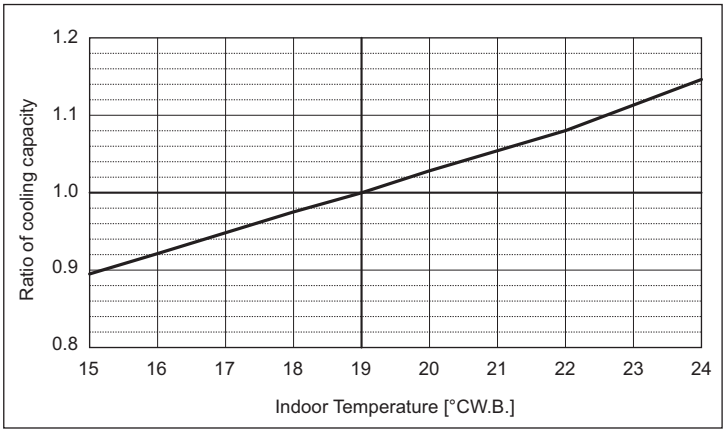
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

PURY-		M200YNW-A1	M250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.53	8.40

PURY-		EM200YNW-A1	EM250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.13	7.69

Indoor unit temperature correction

To be used to correct indoor unit capacity only

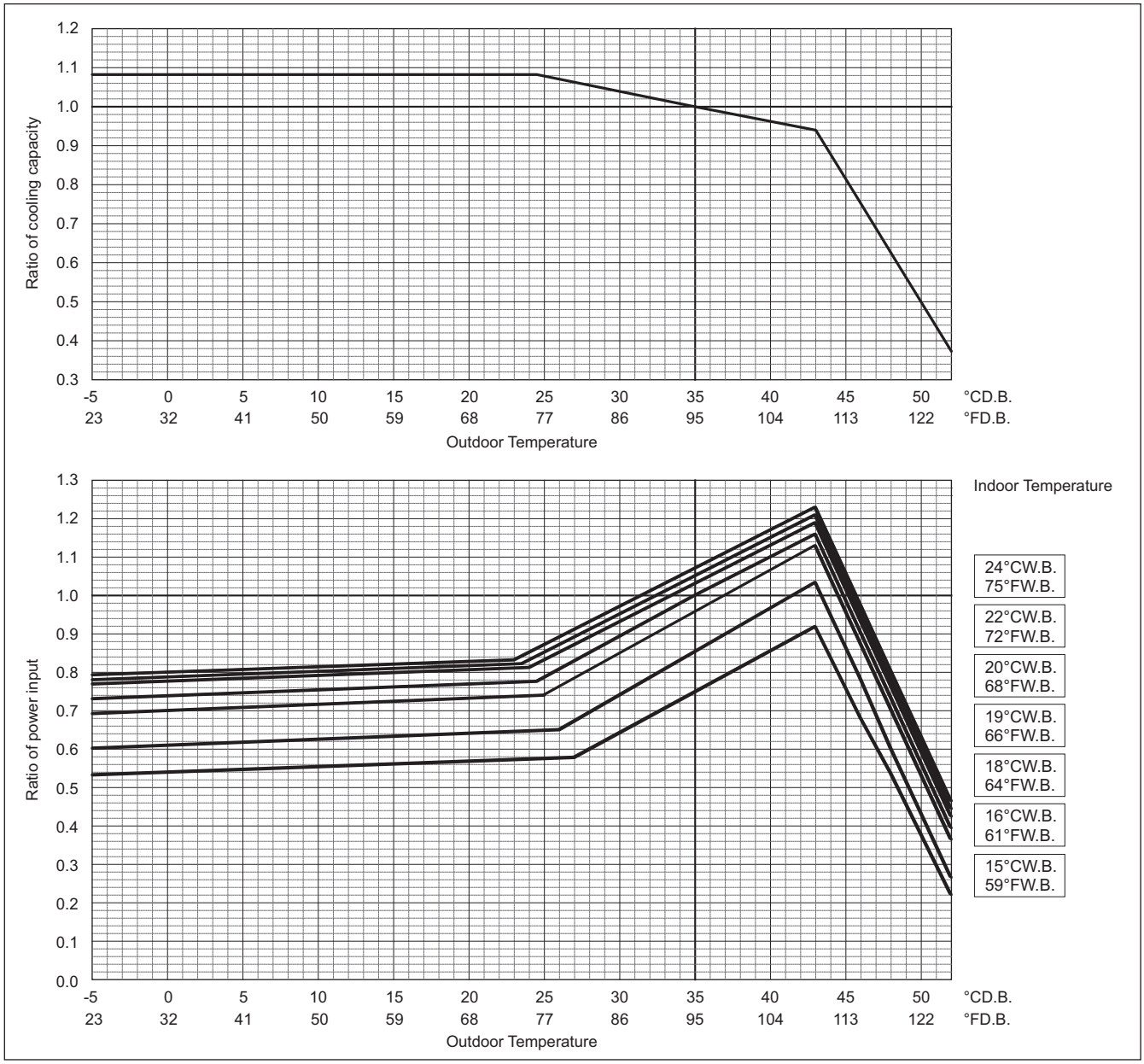


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

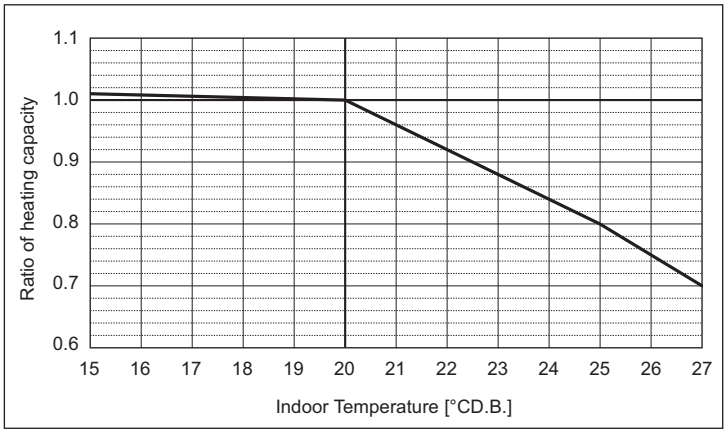


PURY-		M200YNW-A1	M250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.39	9.15

PURY-		EM200YNW-A1	EM250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.23	8.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

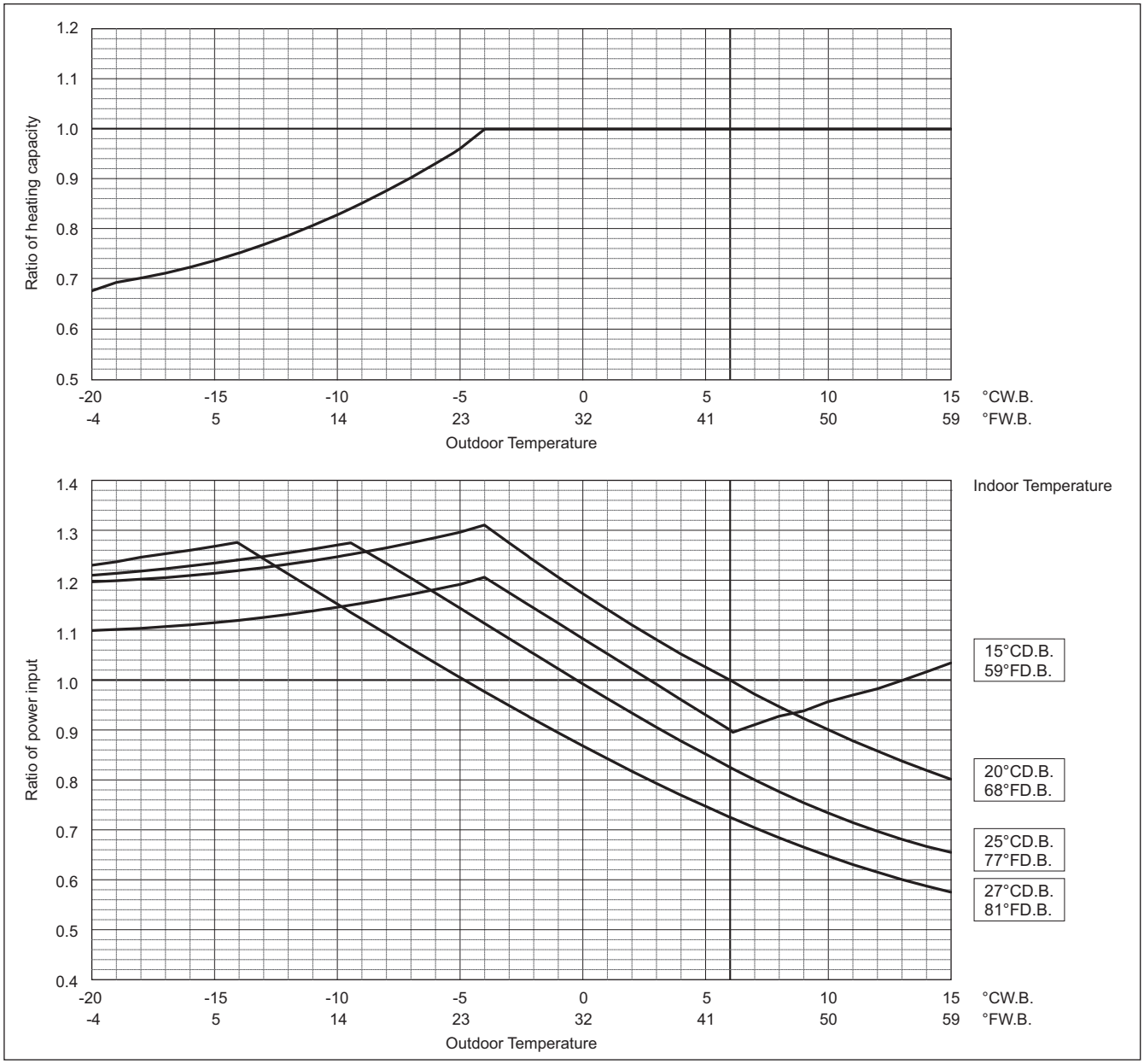


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

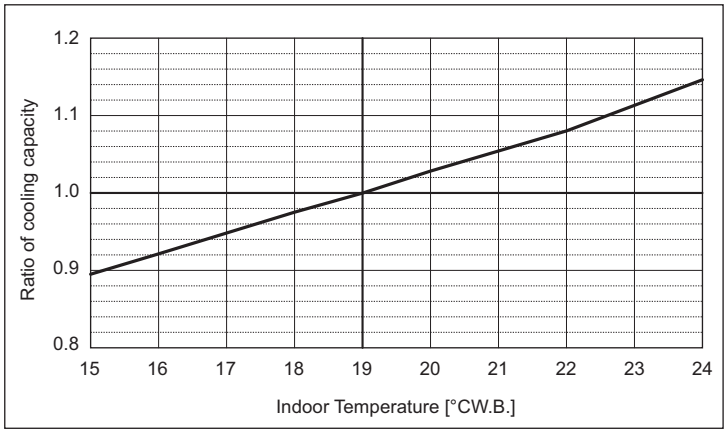


PURY-		M300YNW-A1	M350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	11.65	14.93

PURY-		EM300YNW-A1	EM350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	10.03	13.91

Indoor unit temperature correction

To be used to correct indoor unit capacity only

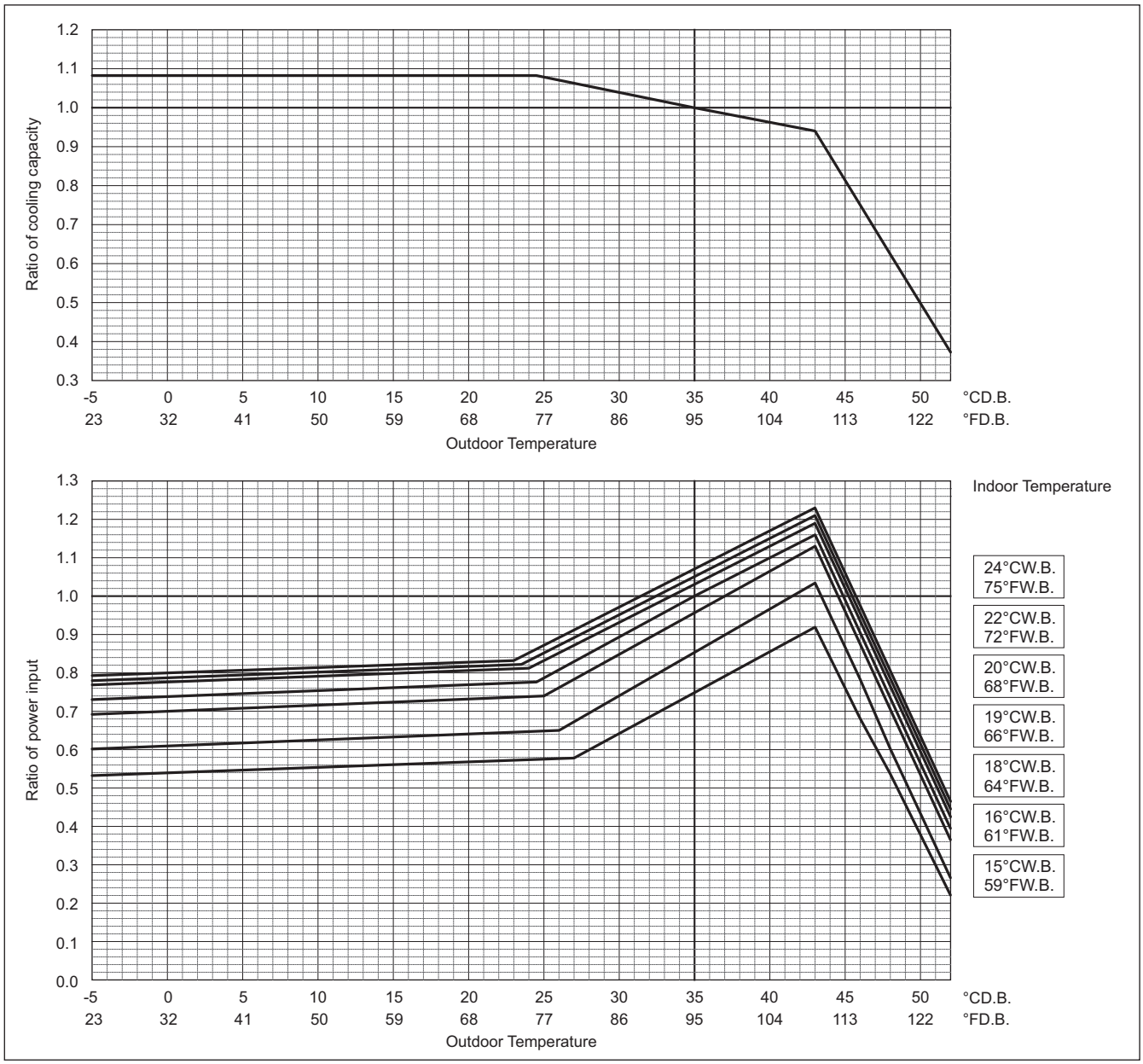


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

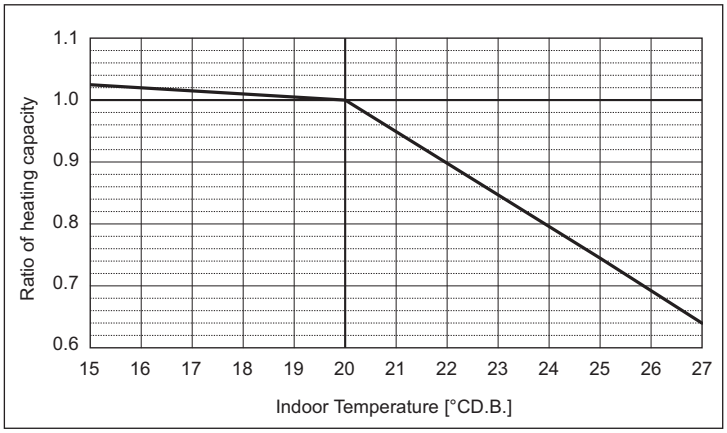


PURY-		M300YNW-A1	M350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	11.00	13.14

PURY-		EM300YNW-A1	EM350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	10.46	13.10

Indoor unit temperature correction

To be used to correct indoor unit capacity only

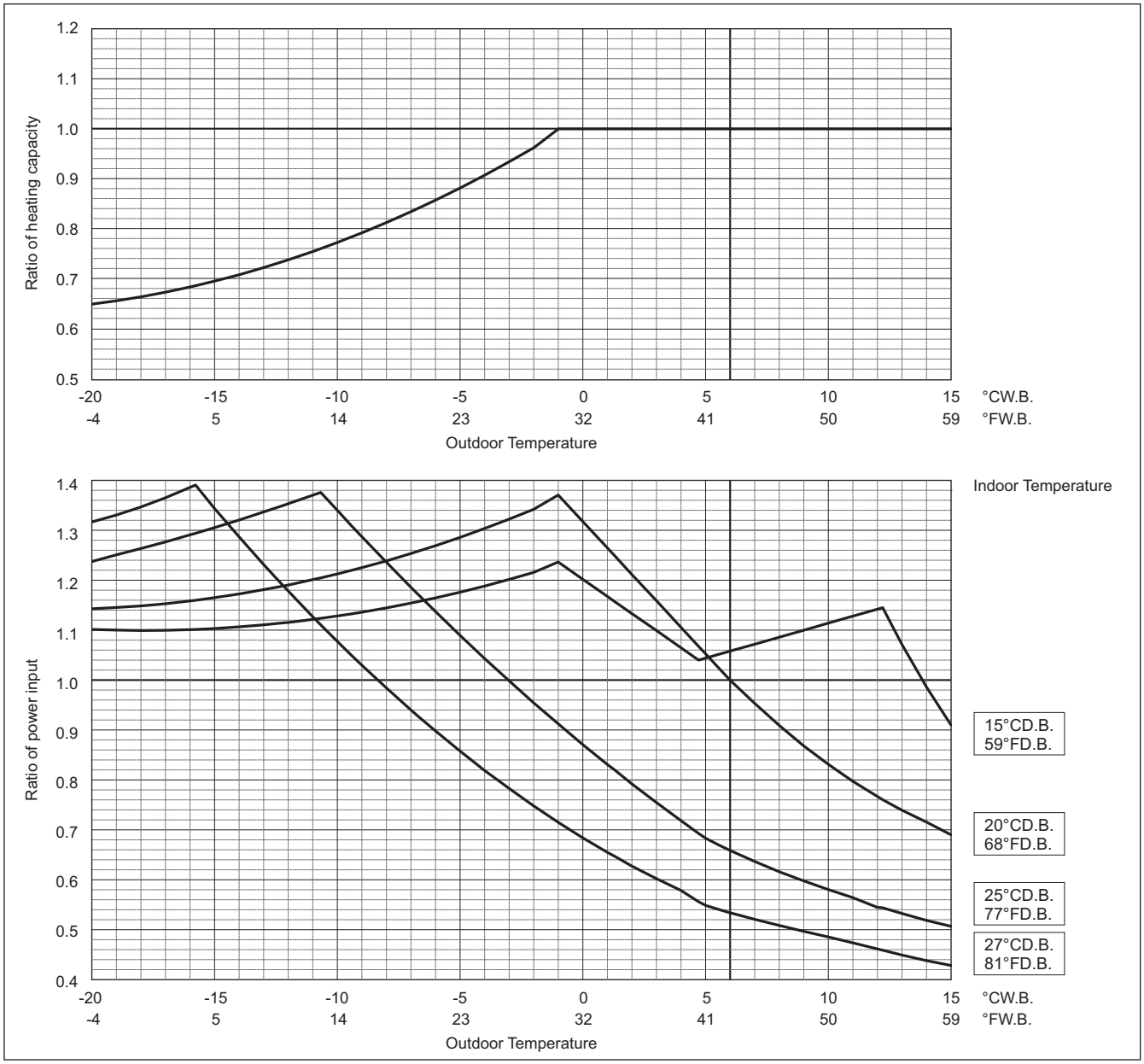


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

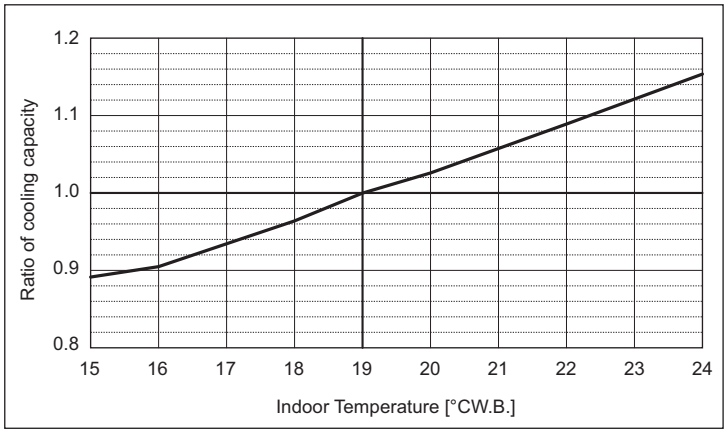


PURY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	15.15	15.47	22.25

PURY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	13.84	15.24	18.06

Indoor unit temperature correction

To be used to correct indoor unit capacity only

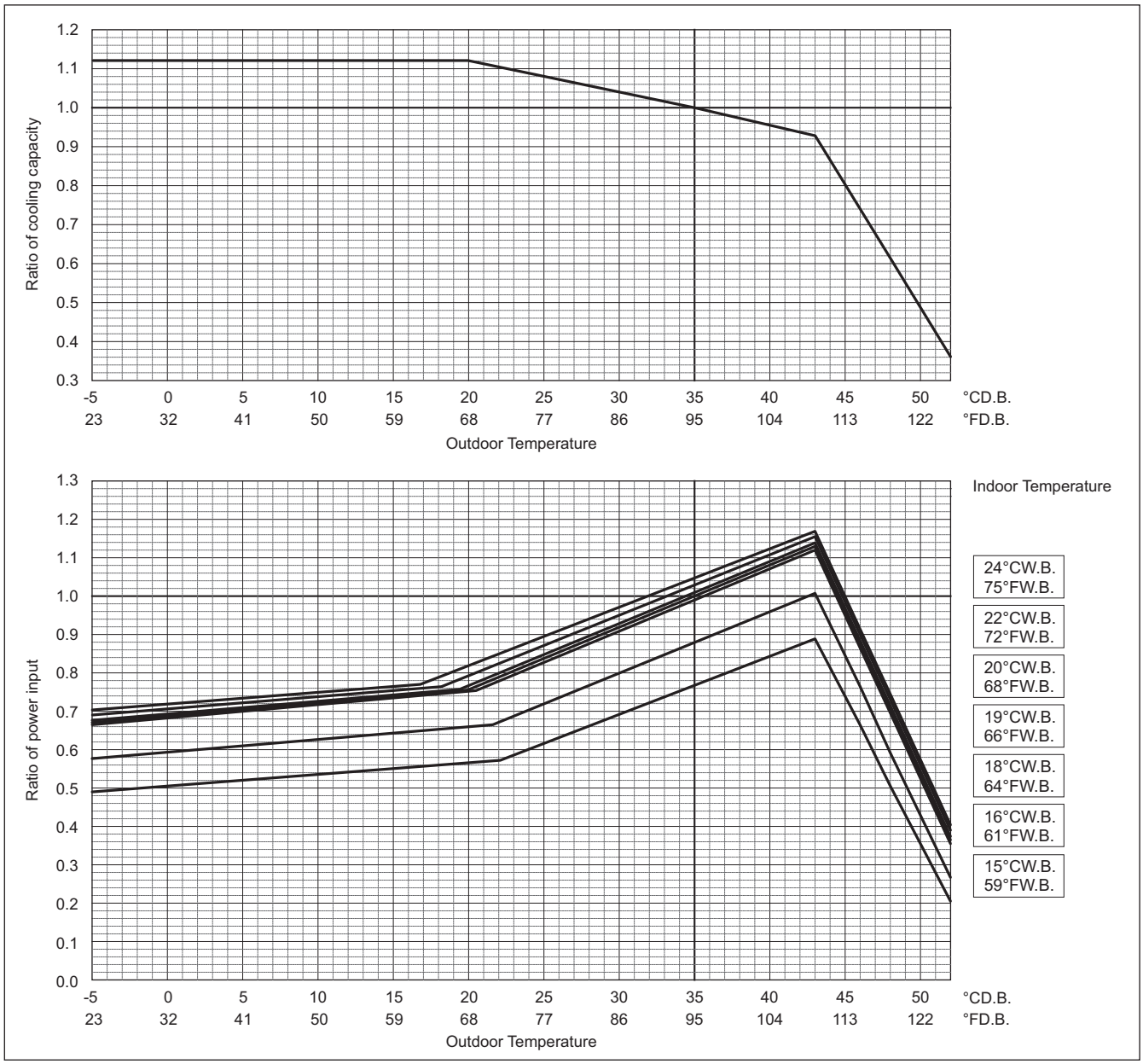


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

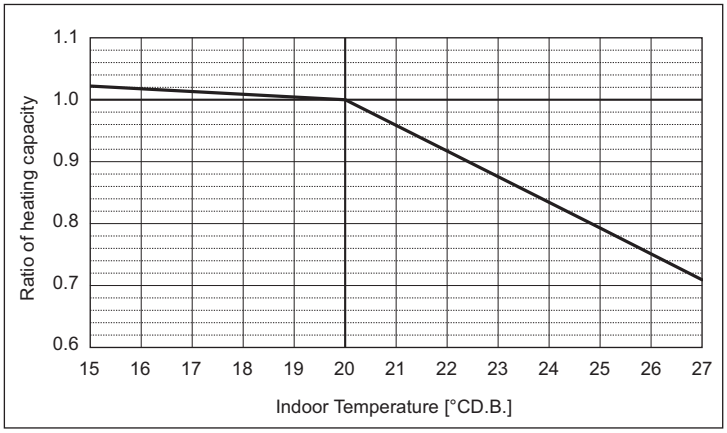


PURY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	14.08	16.18	18.26

PURY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.88	15.77	17.45

Indoor unit temperature correction

To be used to correct indoor unit capacity only

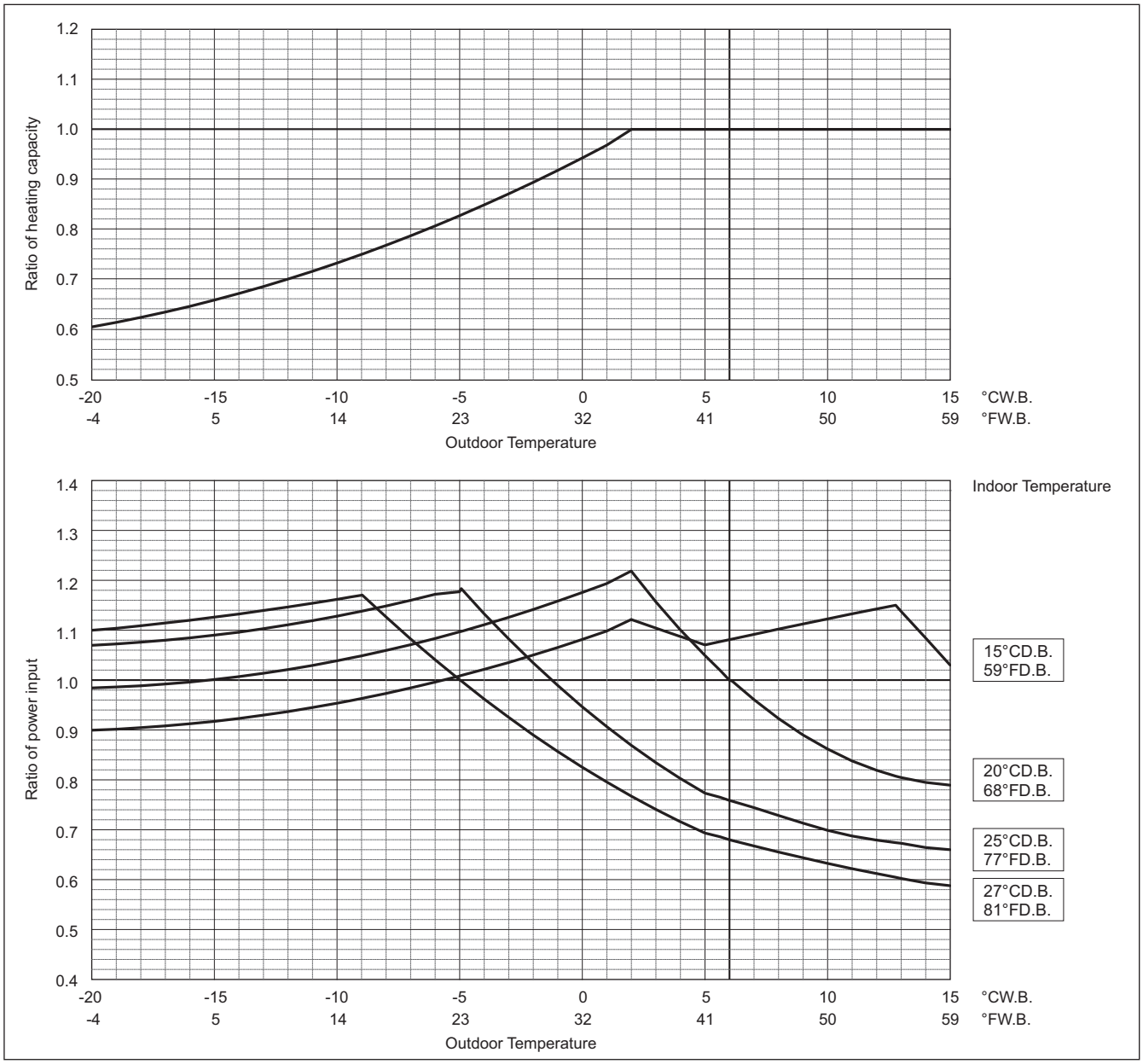


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



Correction by temperature (COP Priority Mode)

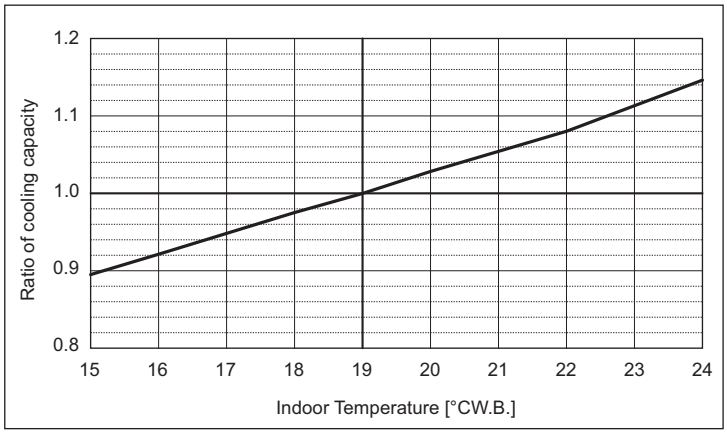
HYBRID CITY MULTI could have various capacities at different designing temperatures. Using the nominal cooling/heating capacity values and the ratios below, the capacity can be found for various temperatures.
To select COP priority mode, SW4 (935) must be set to ON.

PURY-		M200YNW-A1	M250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.53	8.40

PURY-		EM200YNW-A1	EM250YNW-A1
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.13	7.69

Indoor unit temperature correction

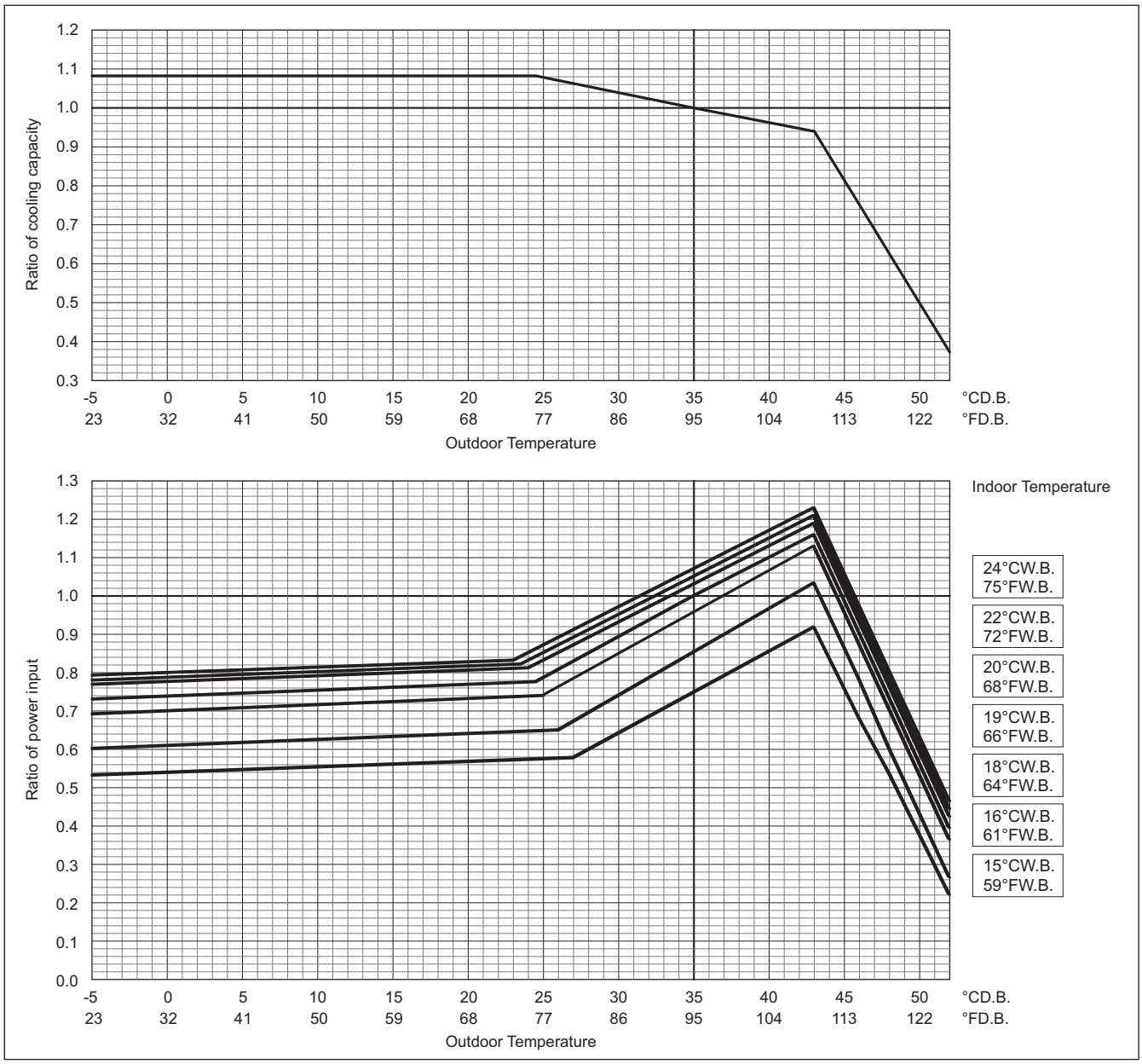
To be used to correct indoor unit capacity only



Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.
Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



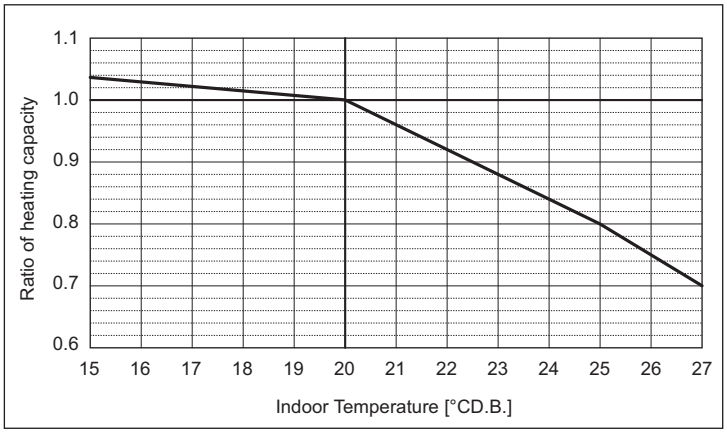
COP Priority Mode

PURY-		M200YNW-A1	M250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.39	9.15

PURY-		EM200YNW-A1	EM250YNW-A1
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.23	8.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

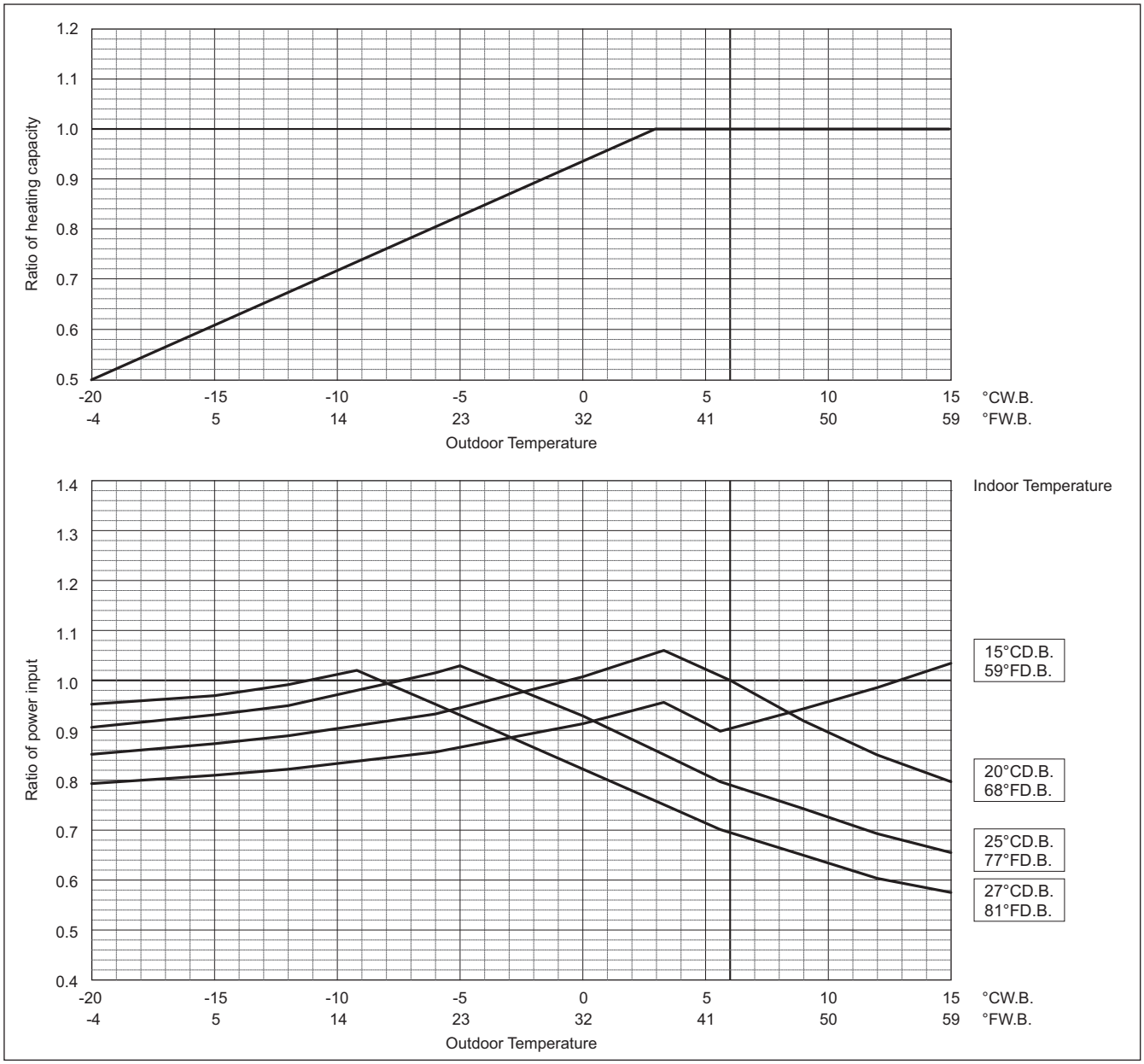


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

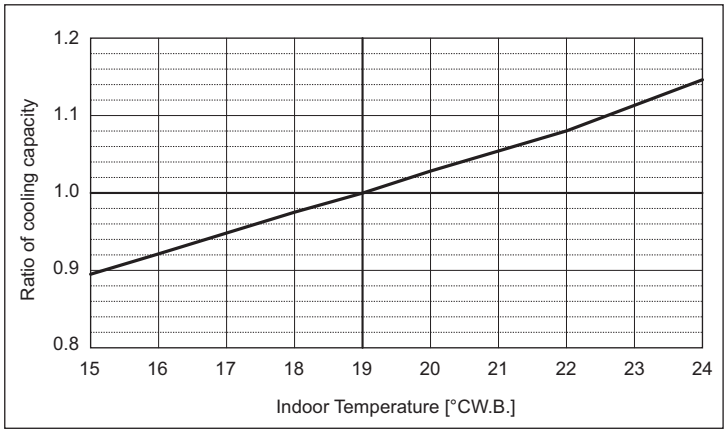


PURY-		M300YNW-A1	M350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	11.65	14.93

PURY-		EM300YNW-A1	EM350YNW-A1
Nominal Cooling Capacity	kW	33.5	40.0
	BTU/h	114,300	136,500
Input	kW	10.03	13.91

Indoor unit temperature correction

To be used to correct indoor unit capacity only

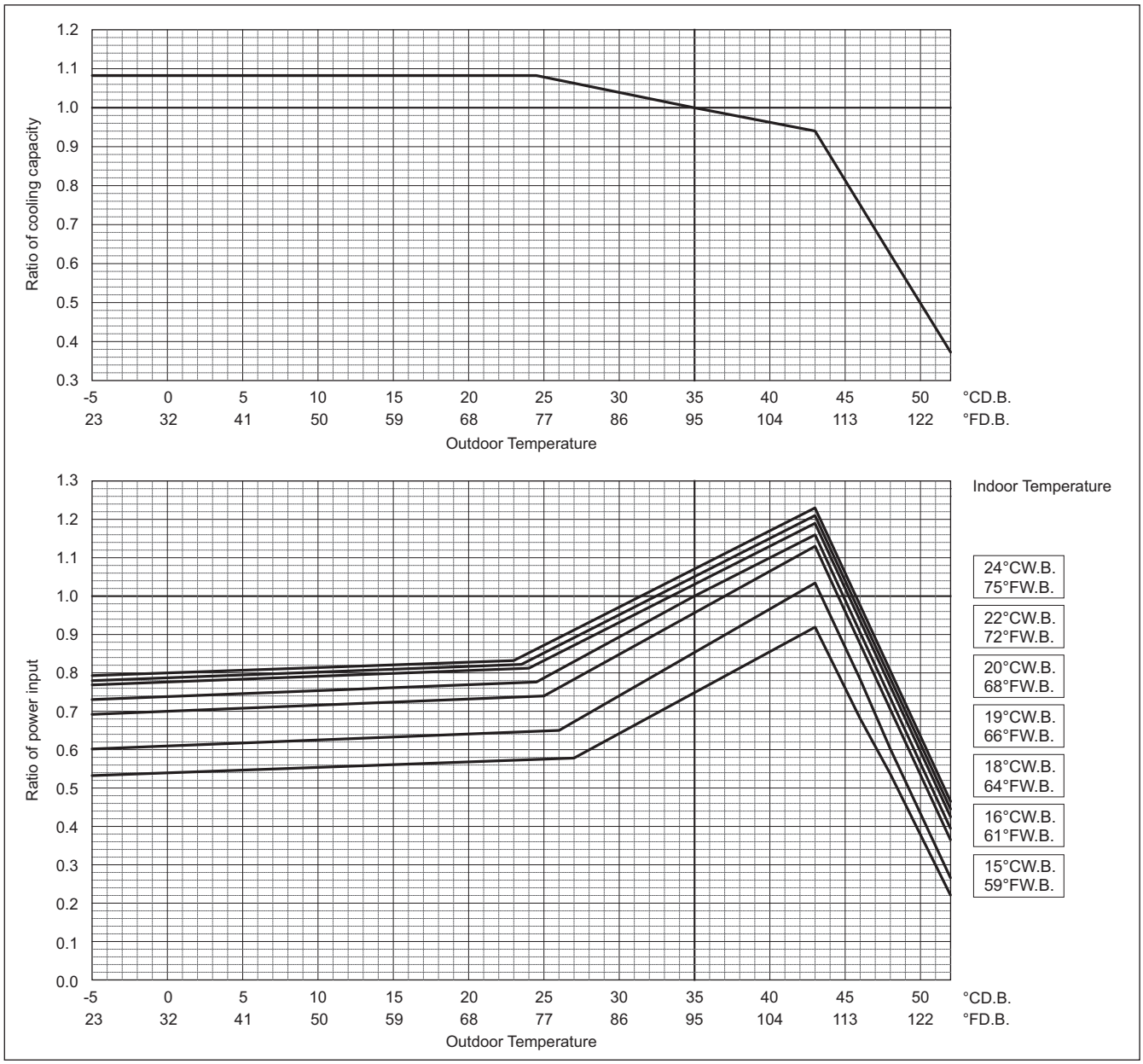


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



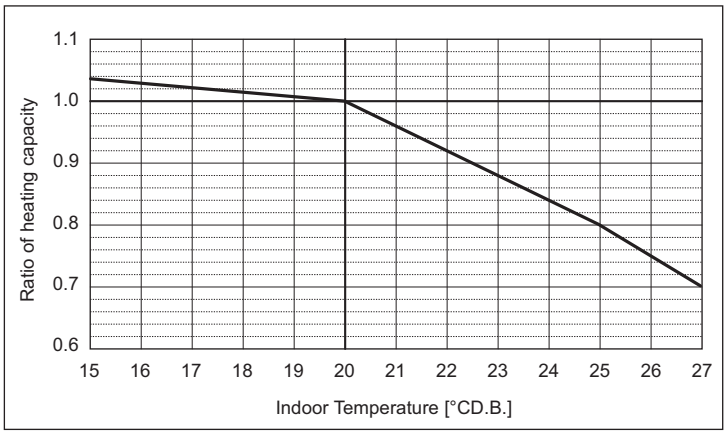
COP Priority Mode

PURY-		M300YNW-A1	M350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	11.00	13.14

PURY-		EM300YNW-A1	EM350YNW-A1
Nominal Heating Capacity	kW	37.5	45.0
	BTU/h	128,000	153,500
Input	kW	10.46	13.10

Indoor unit temperature correction

To be used to correct indoor unit capacity only

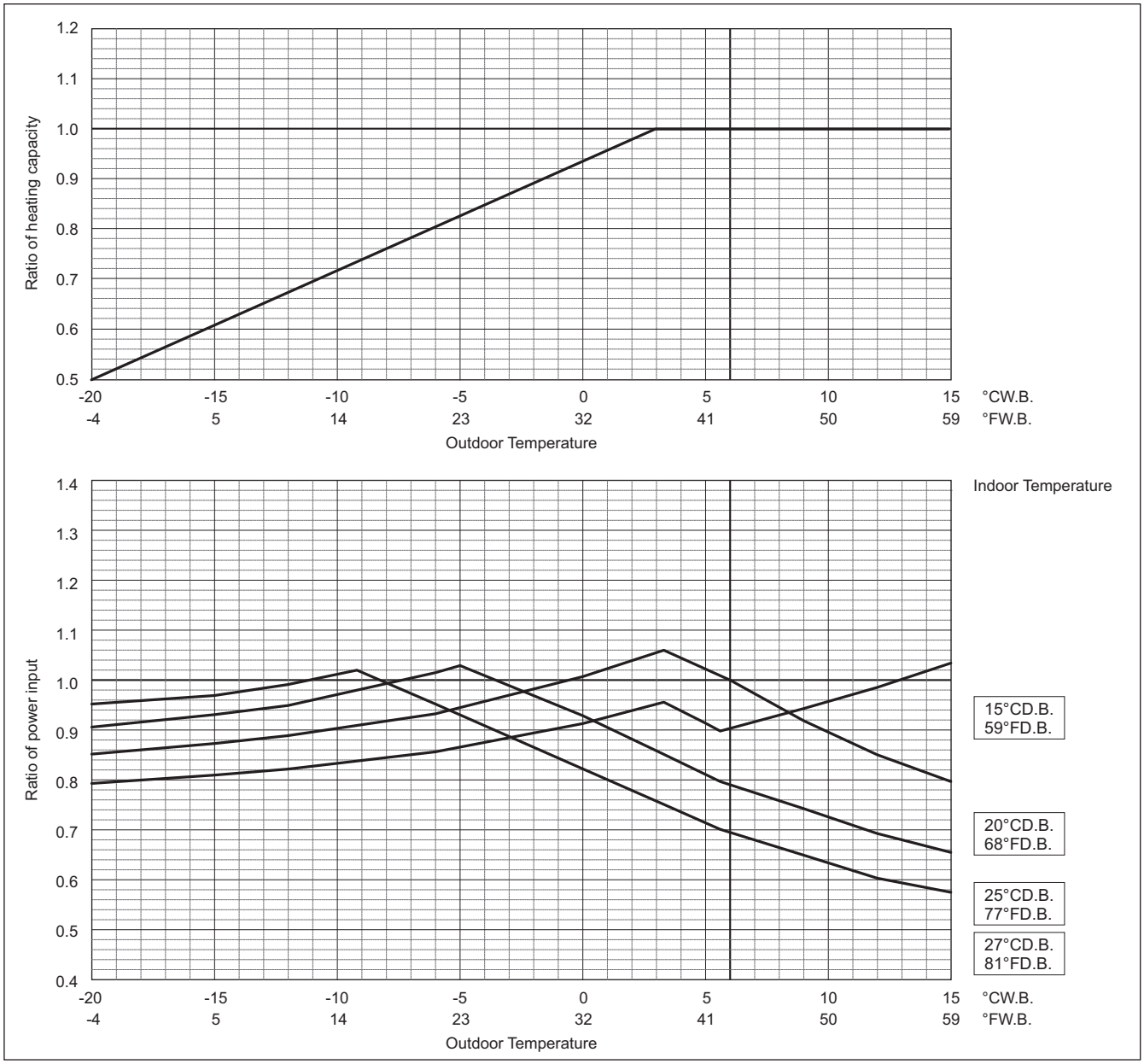


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

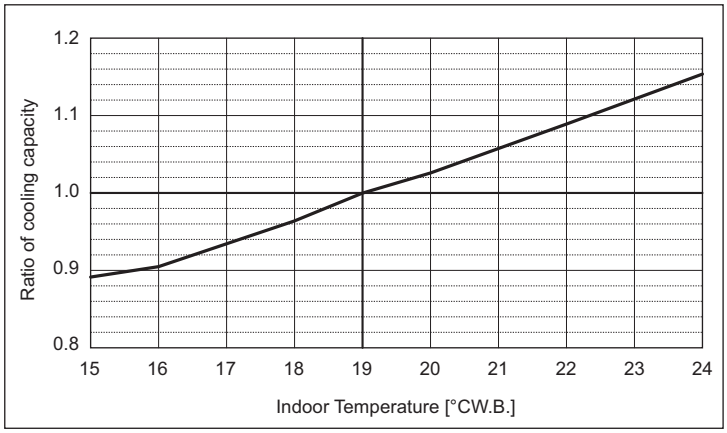


PURY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	15.15	15.47	22.25

PURY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Cooling Capacity	kW	45.0	50.0	56.0
	BTU/h	153,500	170,600	191,100
Input	kW	13.84	15.24	18.06

Indoor unit temperature correction

To be used to correct indoor unit capacity only

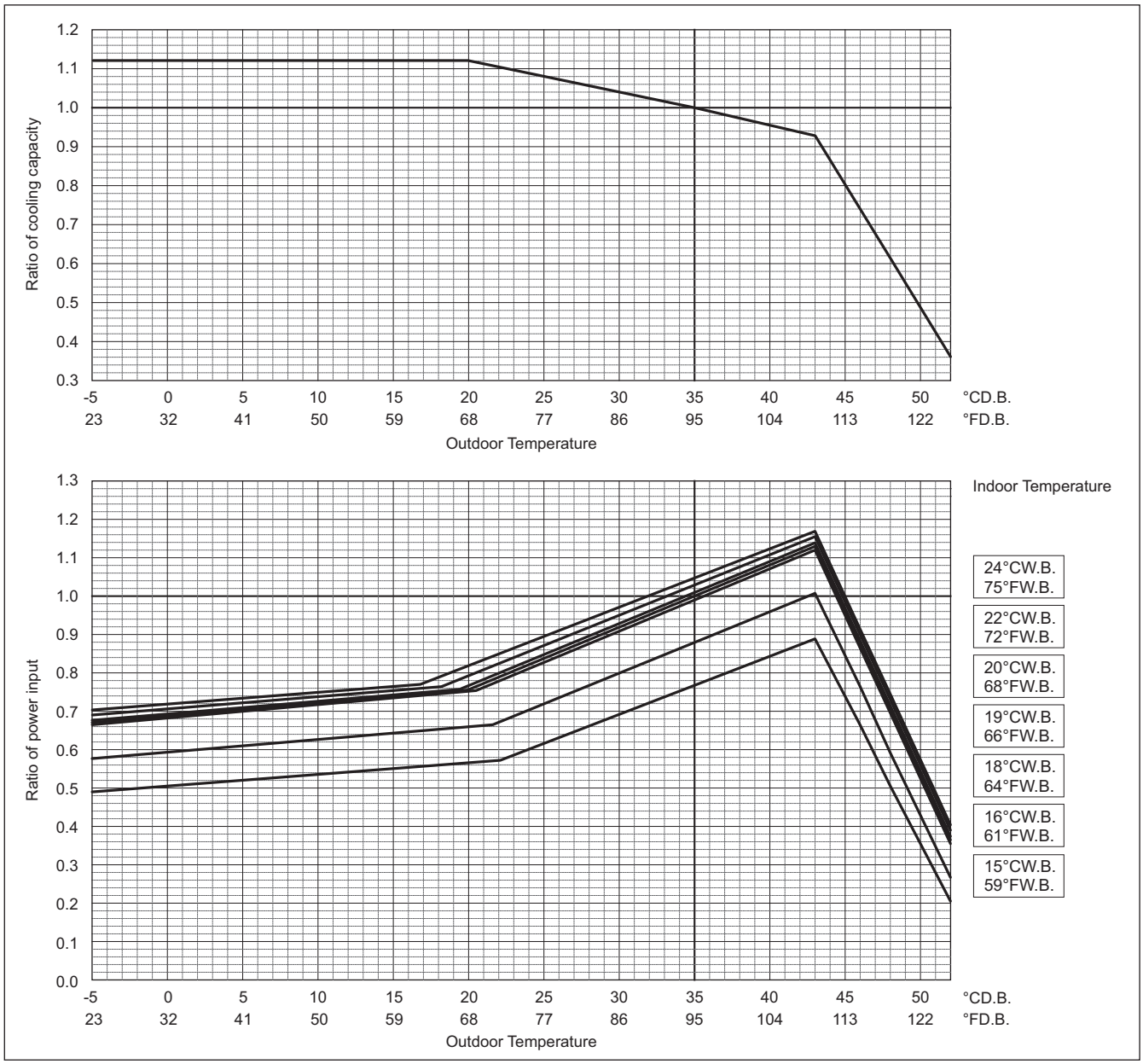


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



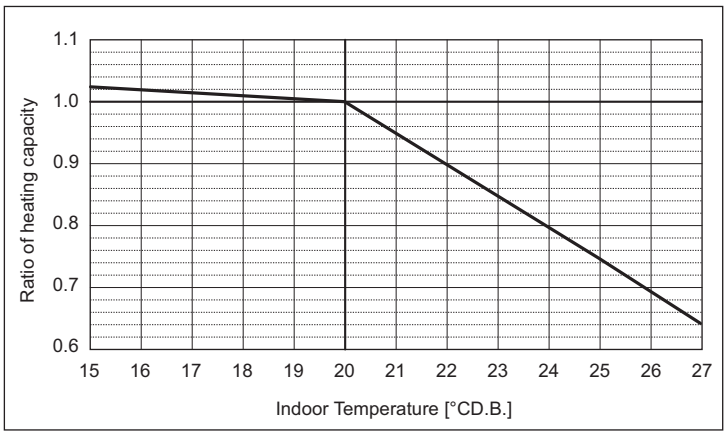
COP Priority Mode

PURY-		M400YNW-A1	M450YNW-A1	M500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	14.08	16.18	18.26

PURY-		EM400YNW-A1	EM450YNW-A1	EM500YNW-A1
Nominal Heating Capacity	kW	50.0	56.0	63.0
	BTU/h	170,600	191,100	215,000
Input	kW	13.88	15.77	17.45

Indoor unit temperature correction

To be used to correct indoor unit capacity only

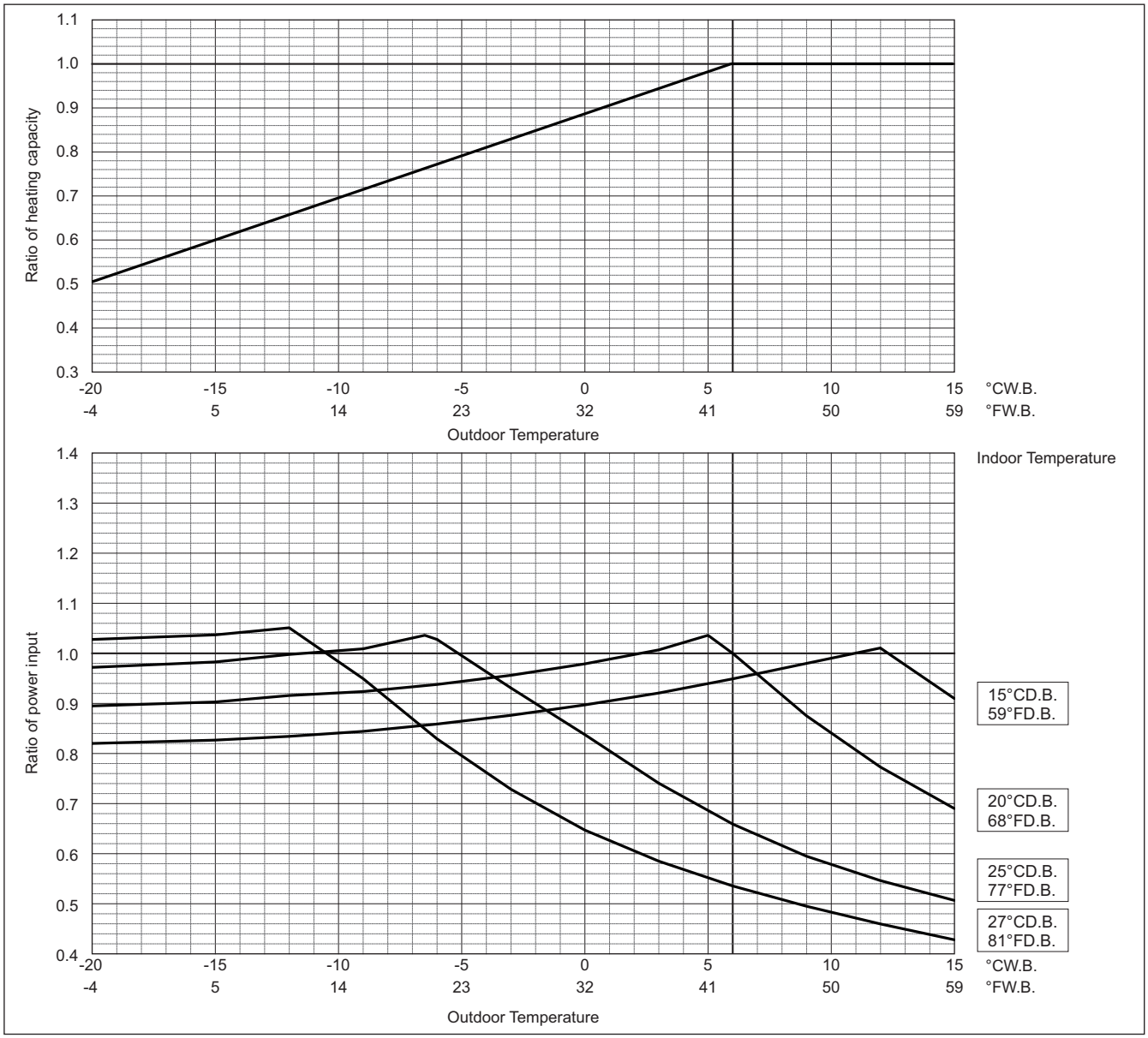


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



8-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

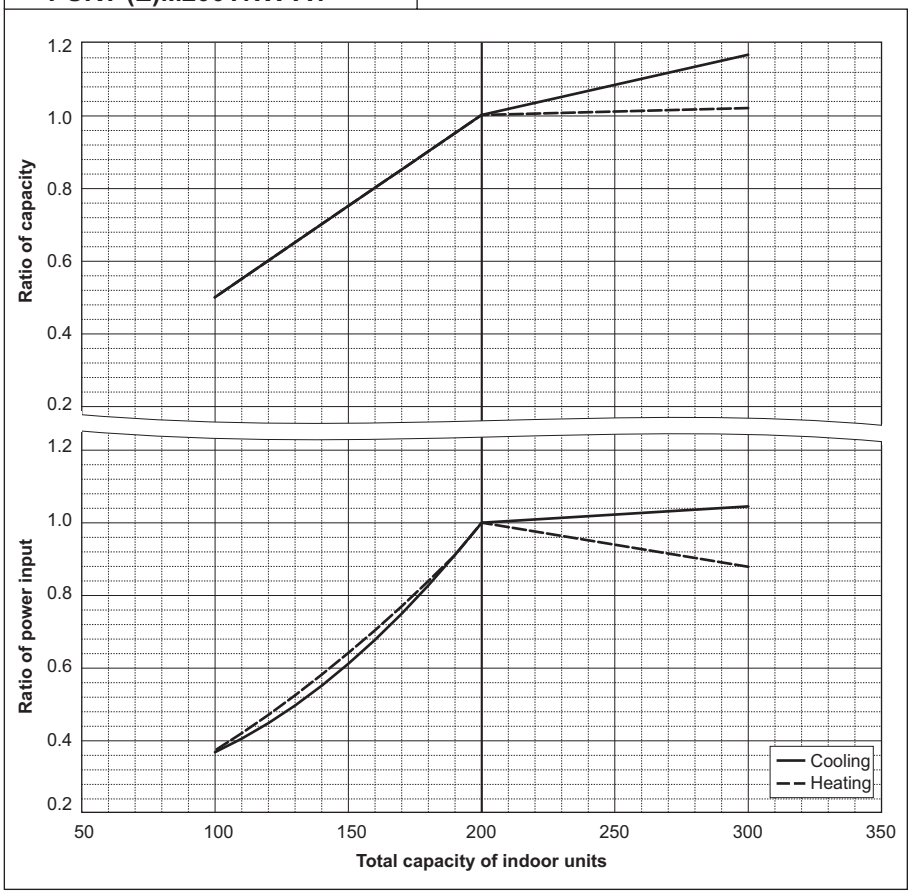
PURY-M200YNW-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.53

PURY-M200YNW-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.39

PURY-EM200YNW-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.13

PURY-EM200YNW-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.23

PURY-(E)M200YNW-A1



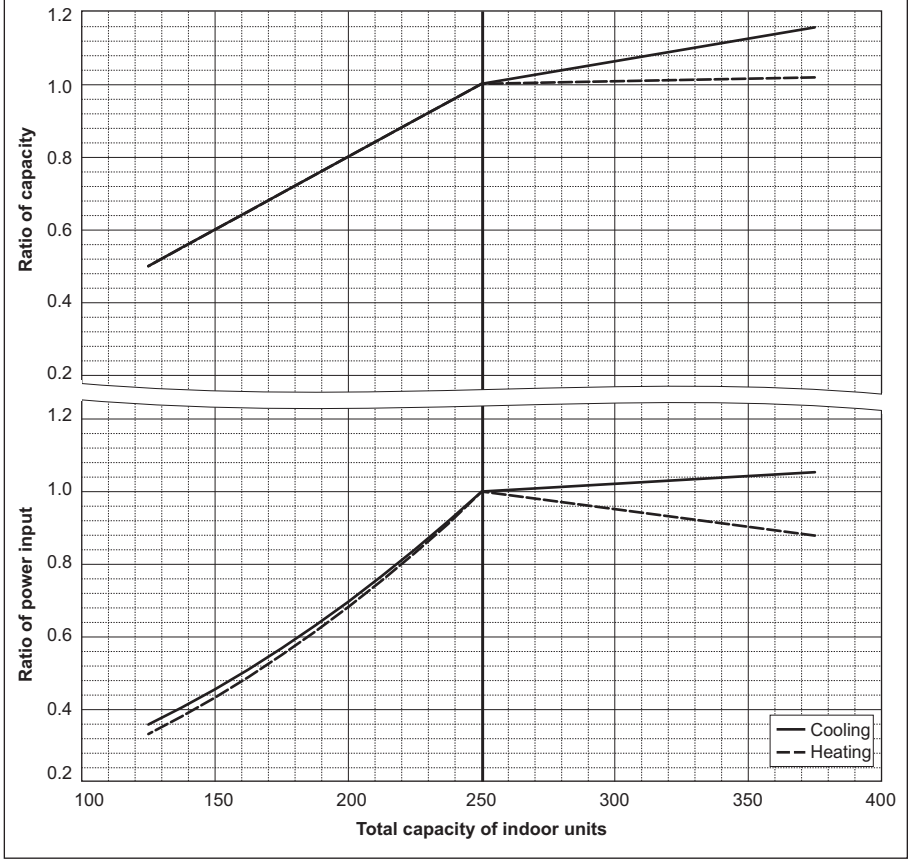
PURY-M250YNW-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	8.40

PURY-M250YNW-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	9.15

PURY-EM250YNW-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	7.69

PURY-EM250YNW-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	8.84

PURY-(E)M250YNW-A1



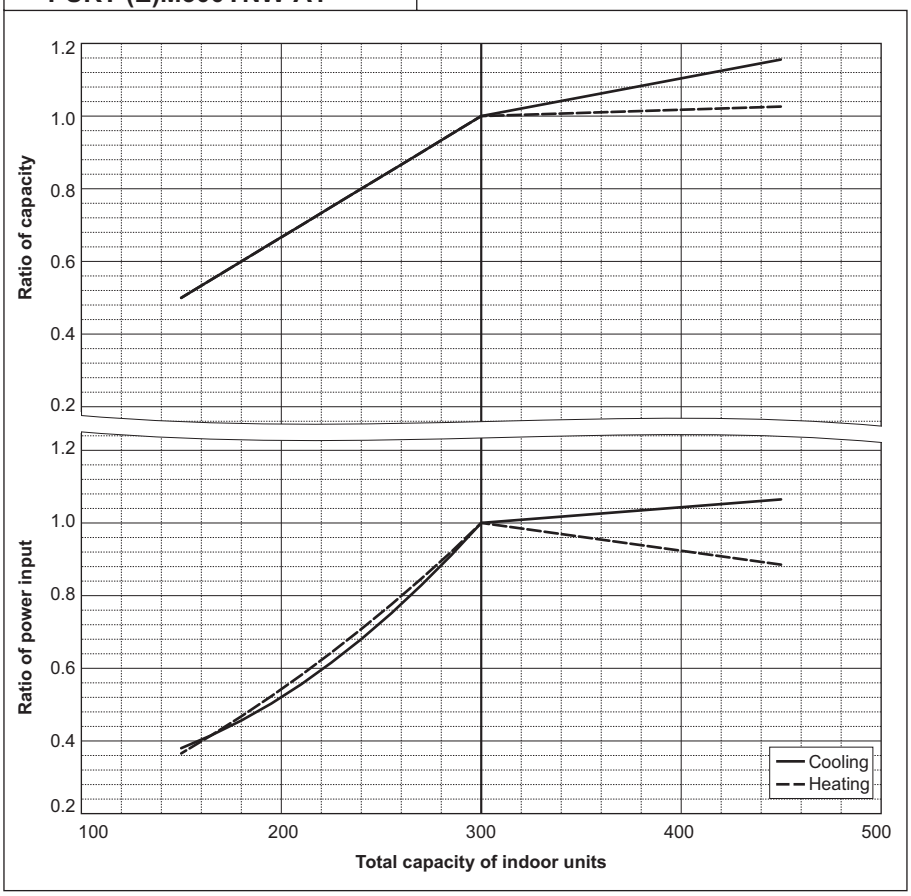
PURY-M300YNW-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	11.65

PURY-M300YNW-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.00

PURY-EM300YNW-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	10.03

PURY-EM300YNW-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	10.46

PURY-(E)M300YNW-A1



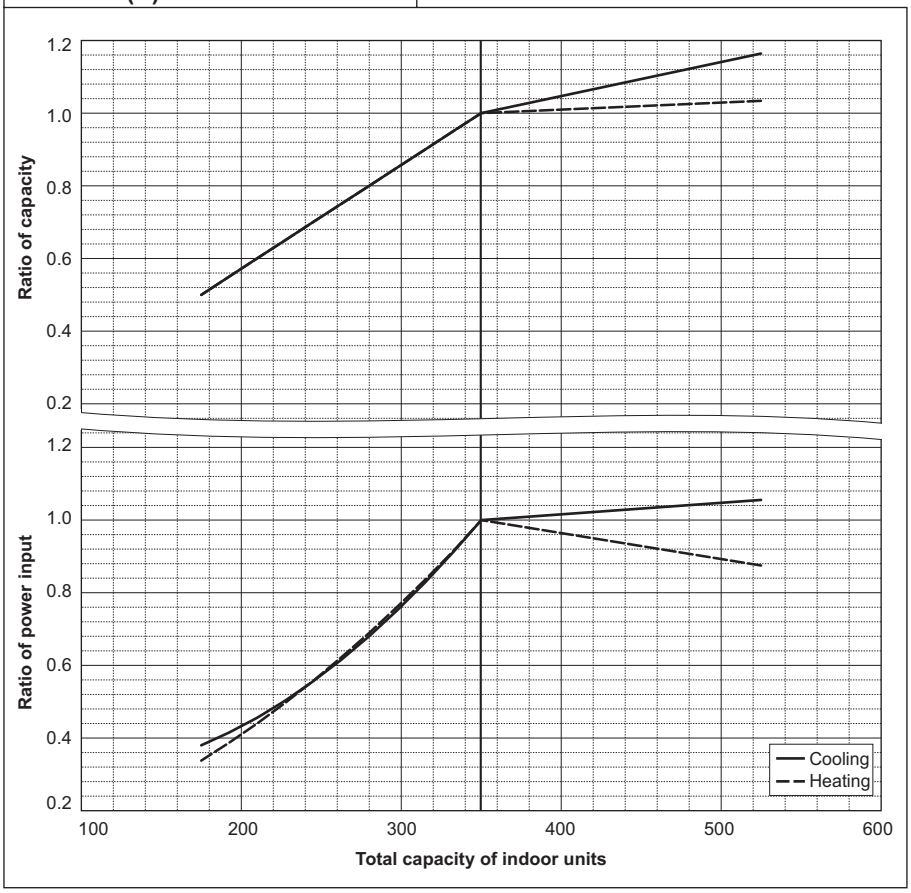
PURY-M350YNW-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	14.93

PURY-M350YNW-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.14

PURY-EM350YNW-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	13.91

PURY-EM350YNW-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.10

PURY-(E)M350YNW-A1



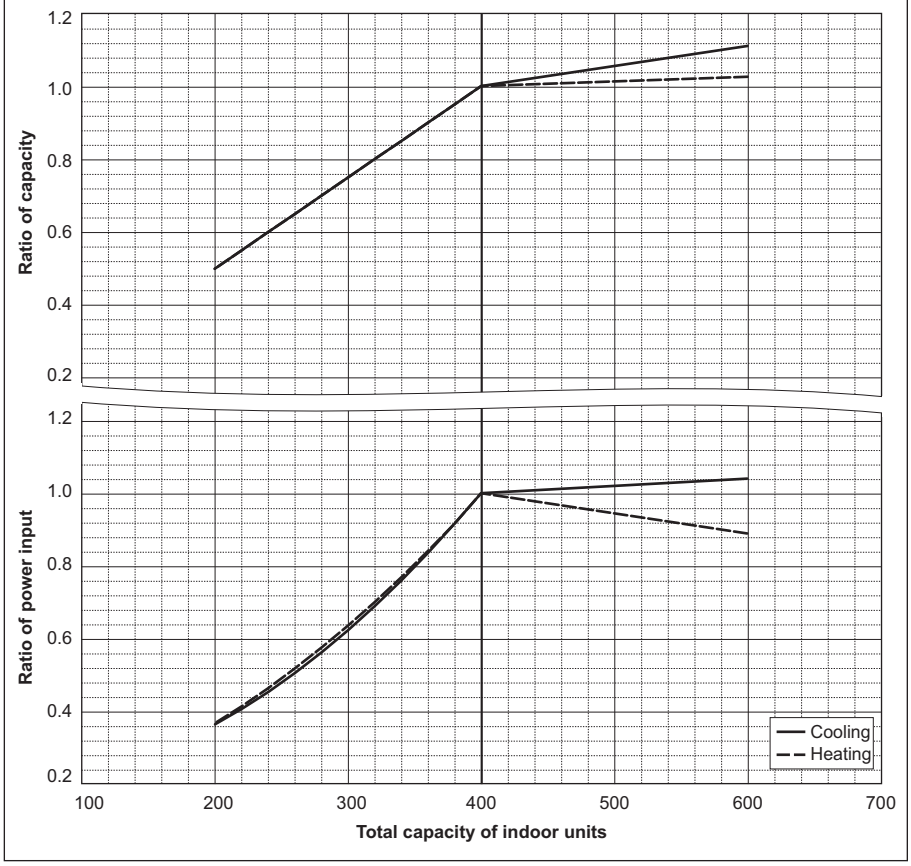
PURY-M400YNW-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	15.15

PURY-M400YNW-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.08

PURY-EM400YNW-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.84

PURY-EM400YNW-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	13.88

PURY-(E)M400YNW-A1



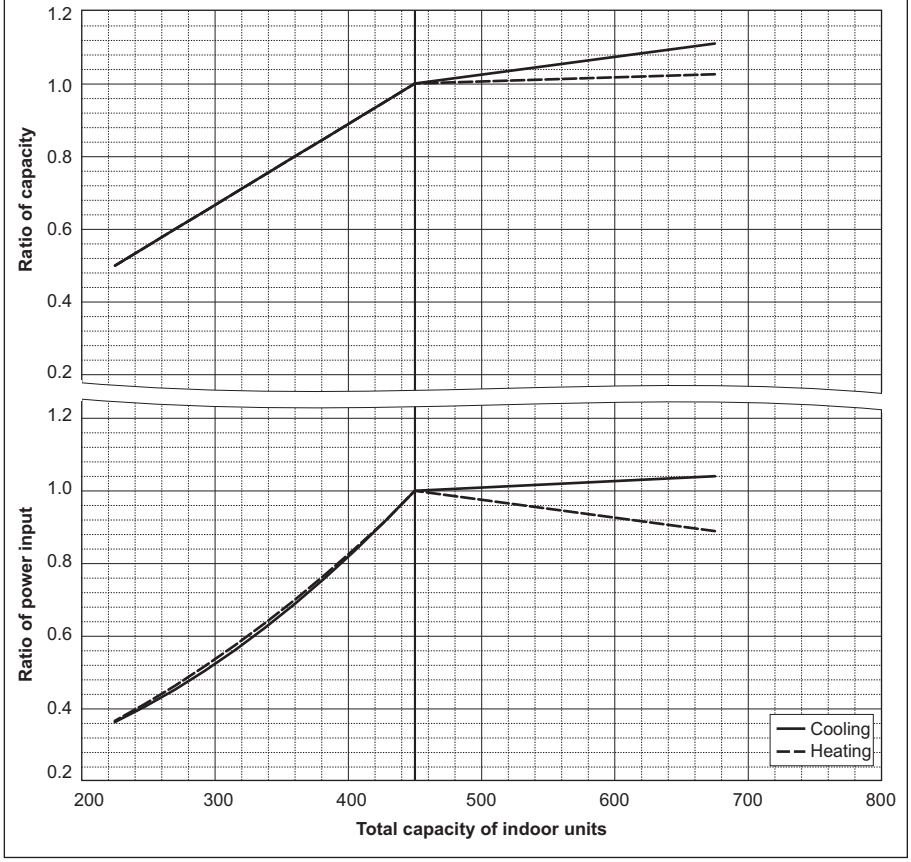
PURY-M450YNW-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	15.47

PURY-M450YNW-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	16.18

PURY-EM450YNW-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	15.24

PURY-EM450YNW-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	15.77

PURY-(E)M450YNW-A1



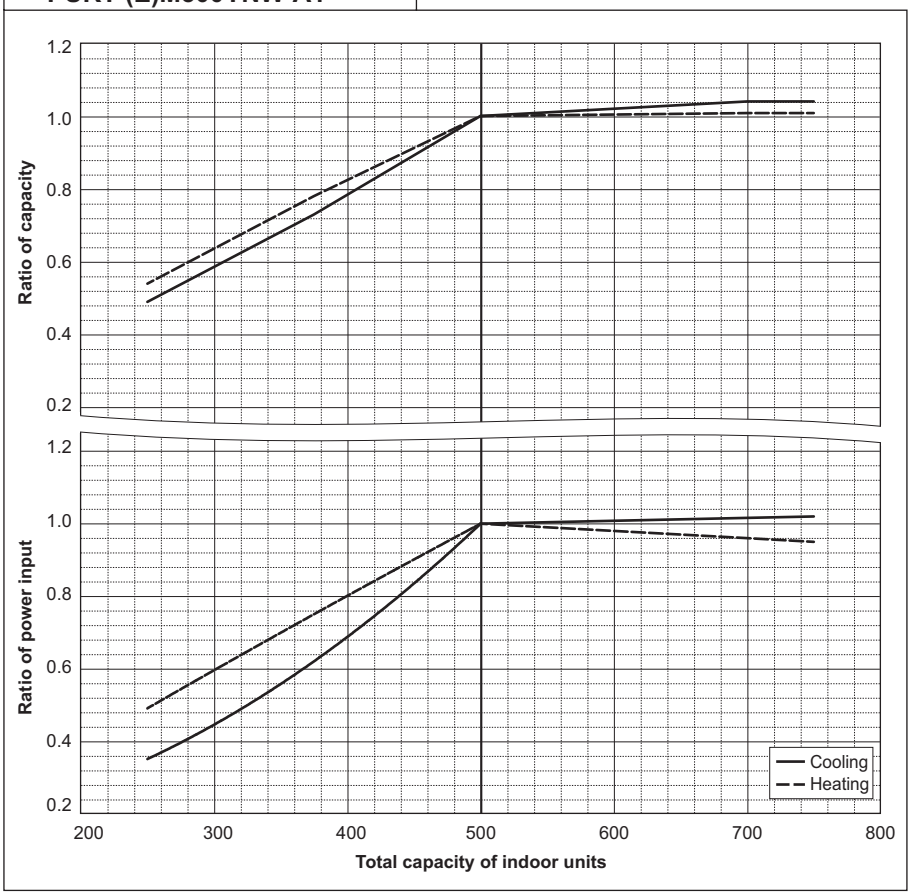
PURY-M500YNW-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	22.25

PURY-M500YNW-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	18.26

PURY-EM500YNW-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	18.06

PURY-EM500YNW-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	17.45

PURY-(E)M500YNW-A1

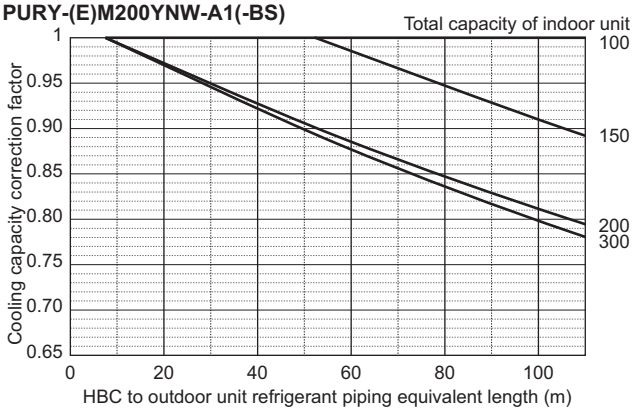


8-3. Correction by piping length

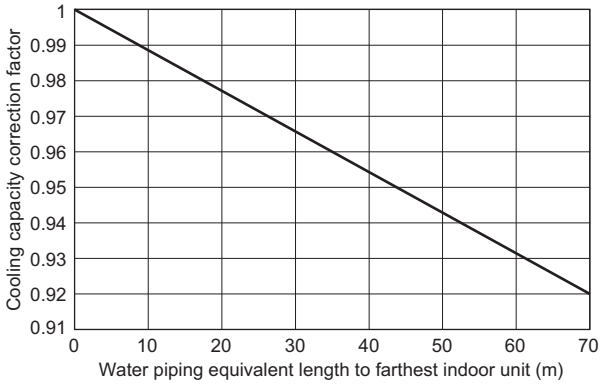
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 8-3-1 and 8-3-2 the capacity can be calculated. 8-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

8-3-1. Cooling capacity correction

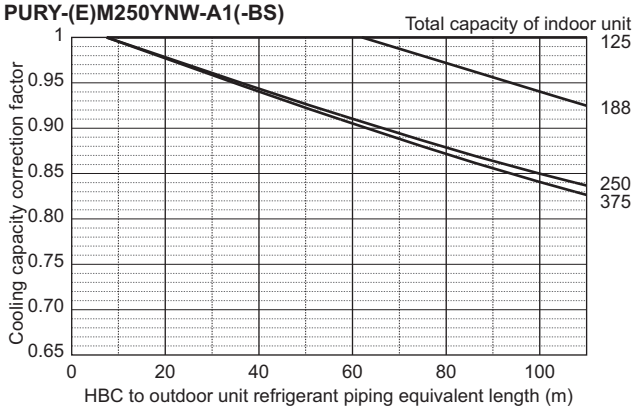
PURY-(E)M200YNW-A1(-BS)



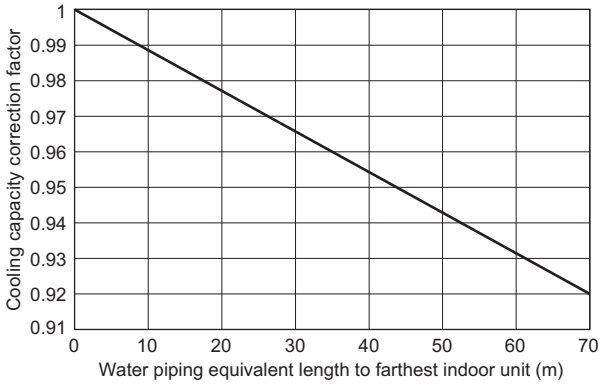
PURY-(E)M200YNW-A1(-BS)



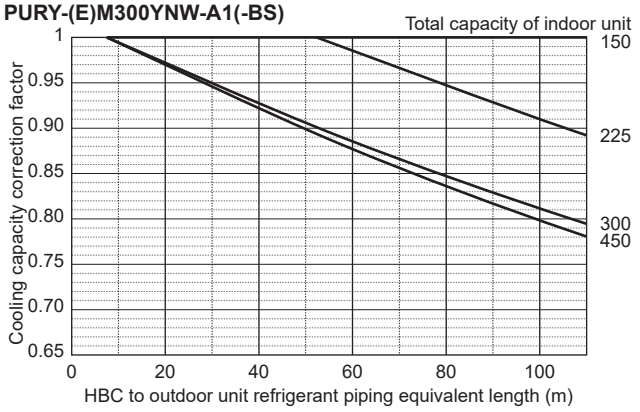
PURY-(E)M250YNW-A1(-BS)



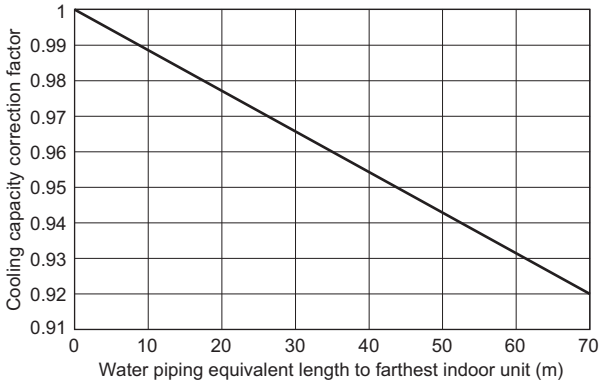
PURY-(E)M250YNW-A1(-BS)



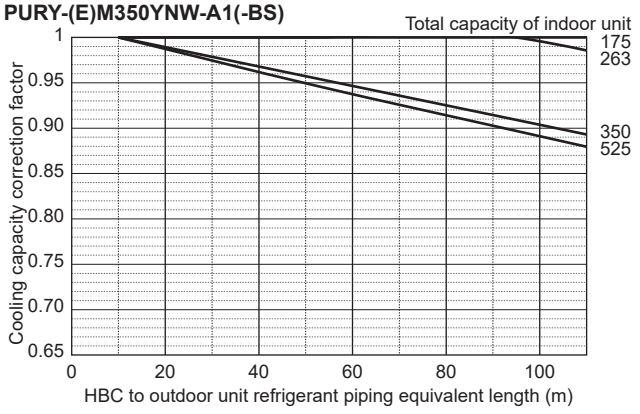
PURY-(E)M300YNW-A1(-BS)



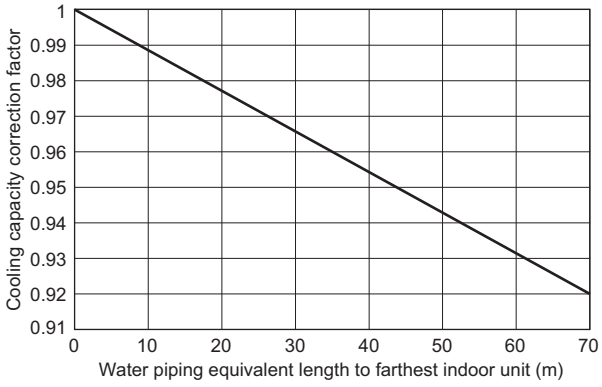
PURY-(E)M300YNW-A1(-BS)



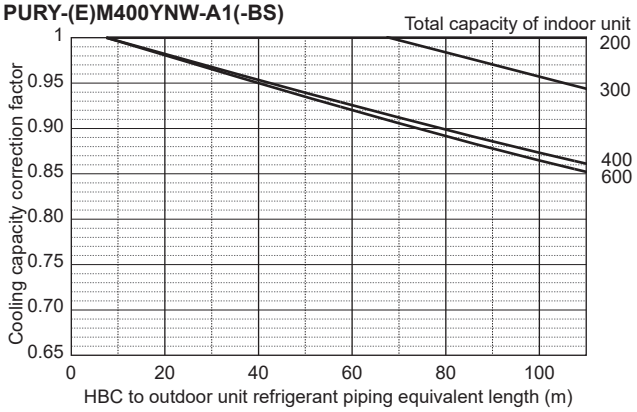
PURY-(E)M350YNW-A1(-BS)



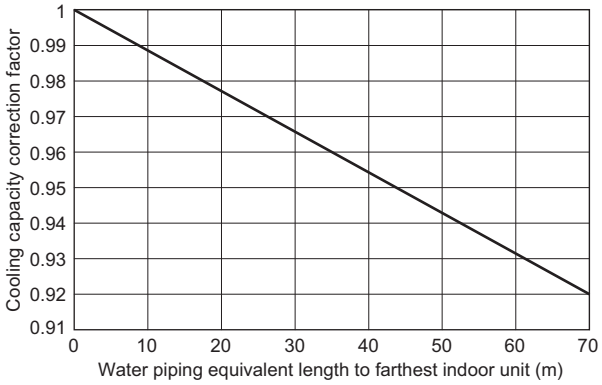
PURY-(E)M350YNW-A1(-BS)



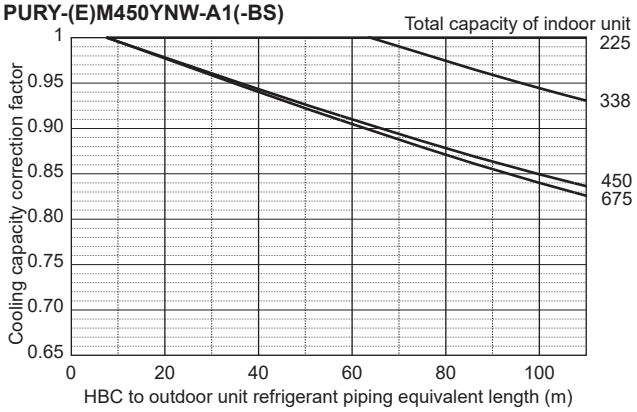
PURY-(E)M400YNW-A1(-BS)



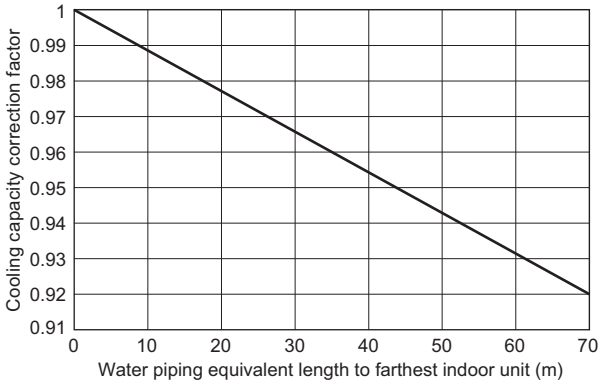
PURY-(E)M400YNW-A1(-BS)



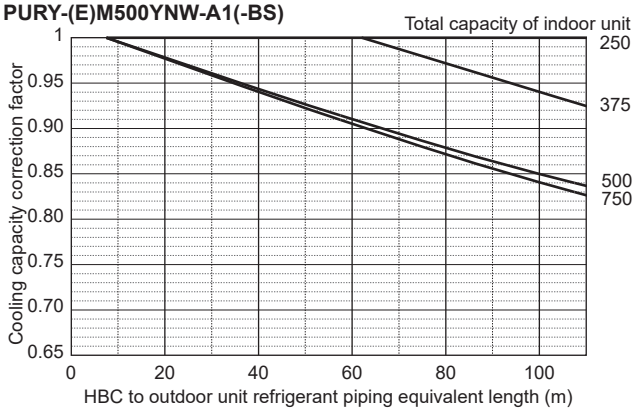
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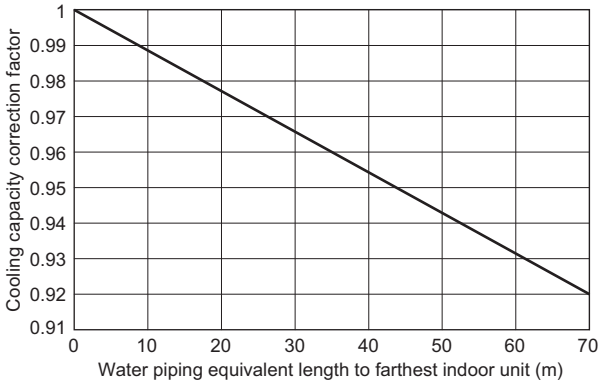
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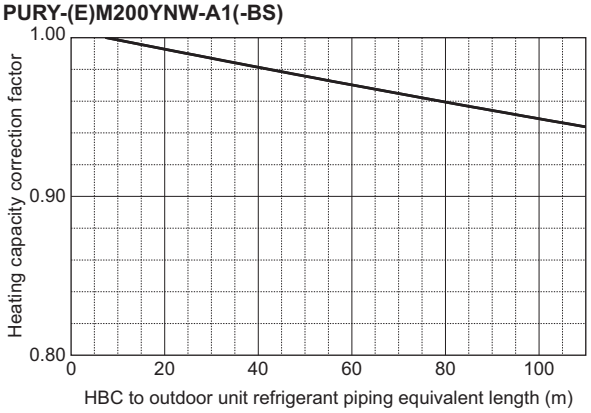


PURY-(E)M500YNW-A1(-BS)

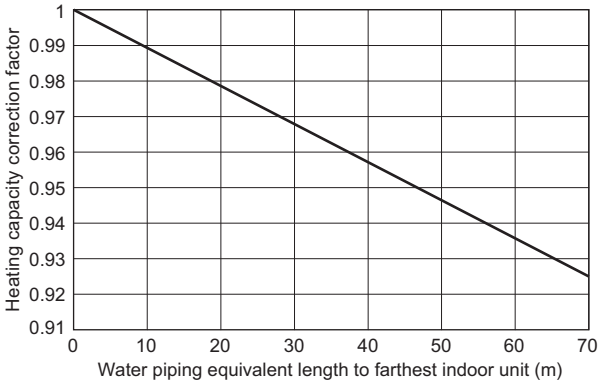


8-3-2. Heating capacity correction

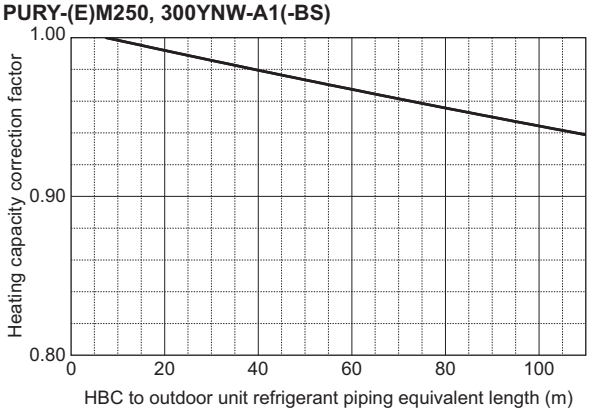
PURY-(E)M200YNW-A1(-BS)



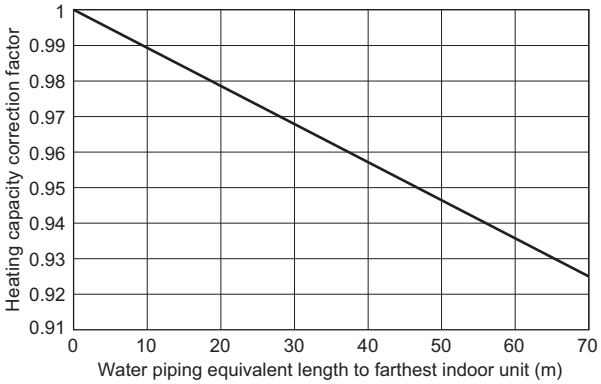
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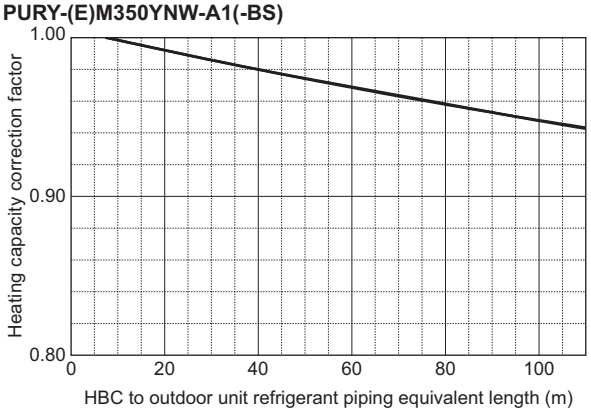
PURY-(E)M250, 300YNW-A1(-BS)



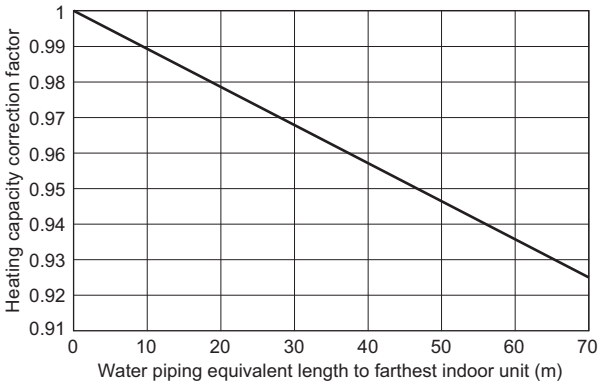
PURY-(E)M250, 300YNW-A1(-BS)



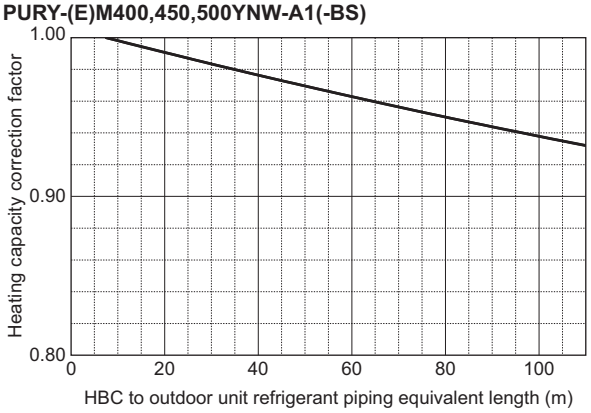
PURY-(E)M350YNW-A1(-BS)



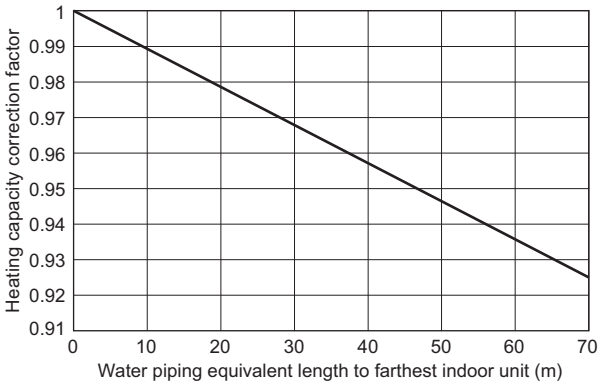
PURY-(E)M350YNW-A1(-BS)



PURY-(E)M400,450,500YNW-A1(-BS)



PURY-(E)M400,450,500YNW-A1(-BS)



8-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PURY-(E)M200YNW-A1(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

2. PURY-(E)M250, 300YNW-A1(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PURY-(E)M350YNW-A1(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

4. PURY-(E)M400, 450, 500YNW-A1(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

8-4. Correction at frost and defrost

Due to frost at the outdoor heat exchanger and the automatic defrost operation, the heating capacity of the outdoor unit can be calculated by multiplying the correction factor shown in the table below.

Table of correction factor at frost and defrost [Horizontal type HBC connection]

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PURY-(E)M200YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M250YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M300YNW-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)M350YNW-A1(-BS)	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)M400YNW-A1(-BS)	1.00	0.95	0.90	0.87	0.88	0.89	0.90	0.95	0.95	0.95	0.95
PURY-(E)M450YNW-A1(-BS)	1.00	0.98	0.89	0.87	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-(E)M500YNW-A1(-BS)	1.00	0.98	0.89	0.86	0.89	0.90	0.92	0.95	0.95	0.95	0.95

Note

- The high humidity condition (e.g., a foggy atmosphere) which causes frost forming on the heat exchanger will worsen the heating performance of the unit.
- The snow blowing to the heat exchanger will worsen the heating performance of the unit. Install a snow hood as a preventive measure.

Table of correction factor at frost and defrost [Vertical type HBC connection]

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PURY-(E)M200YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M250YNW-A1(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)M300YNW-A1(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)M350YNW-A1(-BS)	1.00	0.81	0.74	0.72	0.73	0.75	0.78	0.78	0.95	0.95	0.95
PURY-(E)M400YNW-A1(-BS)	1.00	0.82	0.78	0.75	0.76	0.77	0.78	0.95	0.95	0.95	0.95
PURY-(E)M450YNW-A1(-BS)	1.00	0.75	0.69	0.67	0.69	0.69	0.71	0.95	0.95	0.95	0.95
PURY-(E)M500YNW-A1(-BS)	1.00	0.96	0.87	0.84	0.87	0.88	0.90	0.95	0.95	0.95	0.95

Note

- The high humidity condition (e.g., a foggy atmosphere) which causes frost forming on the heat exchanger will worsen the heating performance of the unit.
- The snow blowing to the heat exchanger will worsen the heating performance of the unit. Install a snow hood as a preventive measure.
- During the heating operation which requires defrost operation, the operating sound of outdoor unit may increase.

8-5. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 8-5-1 for antifreeze solution concentration, 8-5-2 and 8-5-3 for capacity correction by antifreeze solution concentration.

8-5-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

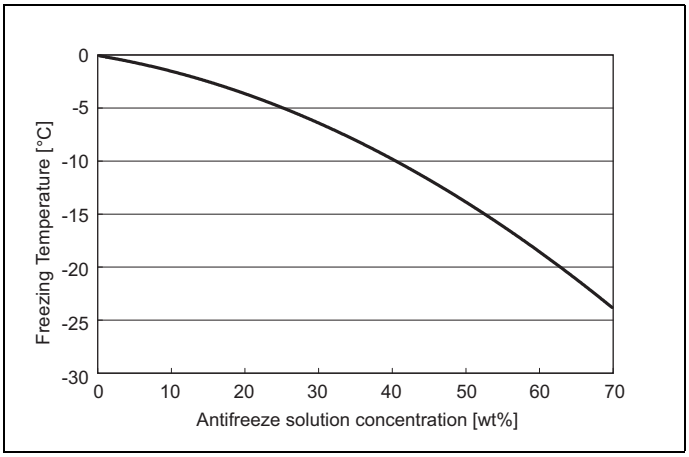
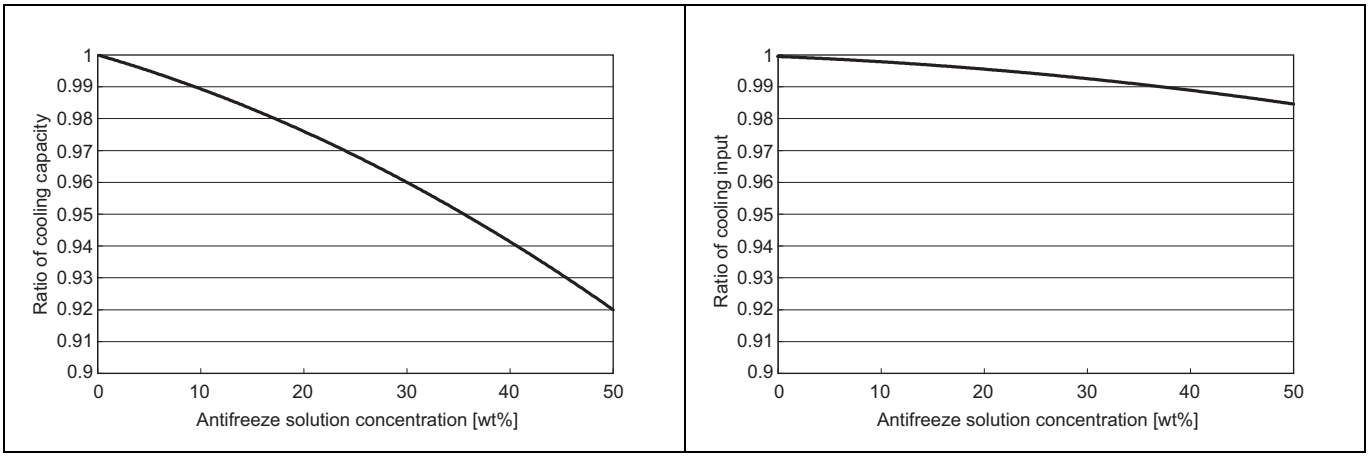


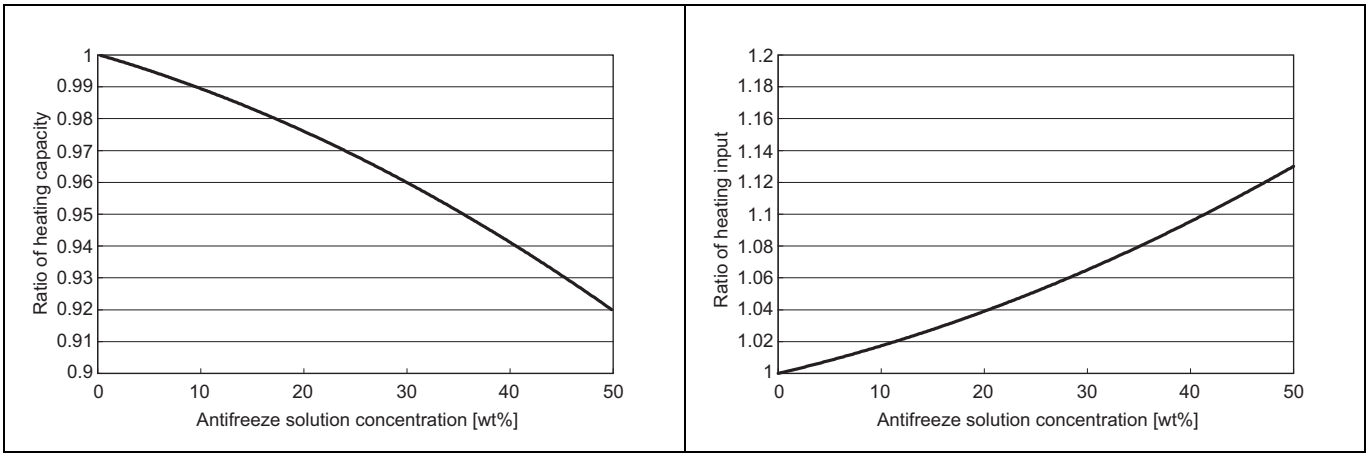
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

8-5-2. Capacity correction by antifreeze solution concentration (cooling)



8-5-3. Capacity correction by antifreeze solution concentration (heating)



9-1. Power supply for Outdoor unit

9-1-1. Electrical characteristics of the outdoor unit in cooling mode

Symbols: MCA: Max Circuit Amps
RLA: Rated Load Amps SC: Starting Current

PURY-M-YNW-A1	Unit Combination	Units			Power supply	Compressor		FAN	RLA (A) (50/60Hz)	
		Hz	Volts	Voltage range	MCA (A)	Output (kW)	SC (A)	Output (kW)	Cooling	Heating
PURY-M200YNW-A1(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	4.6	8	0.92	9.3/8.8/8.5	10.7/10.2/9.8
PURY-M250YNW-A1(-BS)	-				22.5	7.0	8	0.92	14.1/13.4/12.9	15.4/14.6/14.1
PURY-M300YNW-A1(-BS)	-				25.6	8.0	8	0.92	16.6/15.8/15.2	17.4/16.5/15.9
PURY-M350YNW-A1(-BS)	-				31.6	9.6	8	0.46+0.46	20.5/19.4/18.7	20.5/19.5/18.7
PURY-M400YNW-A1(-BS)	-				39.3	12.2	8	0.46+0.46	25.5/24.2/23.4	23.7/22.5/21.7
PURY-M450YNW-A1(-BS)	-				40.2	13.1	8	0.46+0.46	26.1/24.8/23.9	27.3/25.9/25.0
PURY-M500YNW-A1(-BS)	-				56.6	17.4	8	0.92+0.92	37.5/35.6/34.3	30.8/29.2/28.2

PURY-EM-YNW-A1	Unit Combination	Units			Power supply	Compressor		FAN	RLA (A) (50/60Hz)	
		Hz	Volts	Voltage range	MCA (A)	Output (kW)	SC (A)	Output (kW)	Cooling	Heating
PURY-EM200YNW-A1(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	4.5	8	0.92	8.6/8.2/7.9	10.5/9.9/9.6
PURY-EM250YNW-A1(-BS)	-				21.8	6.7	8	0.92	12.9/12.3/11.8	14.9/14.1/13.6
PURY-EM300YNW-A1(-BS)	-				23.9	7.7	8	0.92	14.3/13.6/13.1	16.7/15.9/15.3
PURY-EM350YNW-A1(-BS)	-				30.0	9.6	8	0.46+0.46	19.1/18.1/17.5	20.5/19.5/18.7
PURY-EM400YNW-A1(-BS)	-				35.9	11.1	8	0.46+0.46	23.3/22.1/21.3	23.4/22.2/21.4
PURY-EM450YNW-A1(-BS)	-				36.9	12.7	8	0.46+0.46	25.7/24.4/23.5	26.6/25.2/24.3
PURY-EM500YNW-A1(-BS)	-				46.9	13.8	8	0.92+0.92	30.4/28.9/27.9	29.4/27.9/26.9

9-2. Power cable specifications

Thickness of wire for main power supply, capacities of the switch and system impedance

	Model	Minimum wire thickness (mm^2)			Ground-fault interrupter *1	Local switch (A)		Breaker for wiring (A) (Non-fuse breaker)	Max. Permissive System Impedance
		Main cable	Branch	Ground		Capacity	Fuse		
Outdoor unit	PURY-(E)M200YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	25	25	30	*2
	PURY-(E)M250YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
	PURY-(E)M300YNW-A1	4.0	-	4.0	30A 100mA 0.1sec. or less	32	32	30	*2
	PURY-(E)M350YNW-A1	6.0	-	6.0	40A 100mA 0.1sec. or less	40	40	40	0.26Ω
	PURY-(E)M400YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.20Ω
	PURY-(E)M450YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.19Ω
	PURY-(E)M500YNW-A1	10.0	-	10.0	60A 100mA 0.1sec. or less	63	63	60	0.16Ω

*1 The Ground-fault interrupter should support Inverter circuit. The Ground-fault interrupter should combine using of local switch or wiring breaker.

*2 Meet technical requirements of IEC61000-3-3

1. Use dedicated power supplies for the outdoor unit and indoor unit. Ensure OC and OS are wired individually.
2. Bear in mind ambient conditions (ambient temperature, direct sunlight, rain water, etc.) when proceeding with the wiring and connections.
3. The wire size is the minimum value for metal conduit wiring. If the voltage drops, use a wire that is one rank thicker in diameter. Make sure the power-supply voltage does not drop more than 10%. Make sure that the voltage imbalance between the phases is 2% or less.
4. Specific wiring requirements should adhere to the wiring regulations of the region.
5. Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord (design 60245 IEC57). For example, use wiring such as YZW.
6. A switch with at least 3 mm contact separation in each pole shall be provided when the Air Conditioner is installed.
7. For details on indoor unit wiring and breaker for current leakage, refer to the indoor unit Instruction Book and Installation Manual.

⚠WARNING

- Be sure to use specified wires for connections and ensure no external force is imparted to terminal connections. If connections are not fixed firmly, heating or fire may result.
- Be sure to use the appropriate type of overcurrent protection switch. Note that generated overcurrent may include some amount of direct current.

⚠CAUTION

- The breakers for current leakage should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent). If no earth leakage breaker is installed, it may cause an electric shock.
- Breakers for current leakage should combine using of switch.
- Do not use anything other than a breaker with the correct capacity. Using a breaker of too large capacity may cause malfunction or fire.
- If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the upstream side of the power supply system may both operate. Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

Note

- This device is intended for the connection to a power supply system with a maximum permissible system impedance shown in the above table at the interface point (power service box) of the user's supply.
- The user must ensure that this device is connected only to a power supply system which fulfils the requirement above. If necessary, the user can ask the public power supply company for the system impedance at the interface point.
- This equipment complies with IEC 61000-3-12 provided that the short-circuit power Ssc is greater than or equal to Ssc (*2) at the interface point between the user's supply and the public system. It is the responsibility of the installer or user of the equipment to ensure, by consultation with the distribution network operator if necessary, that the equipment is connected only to a supply with a short-circuit power Ssc greater than or equal to Ssc (*2).

Ssc(*2)

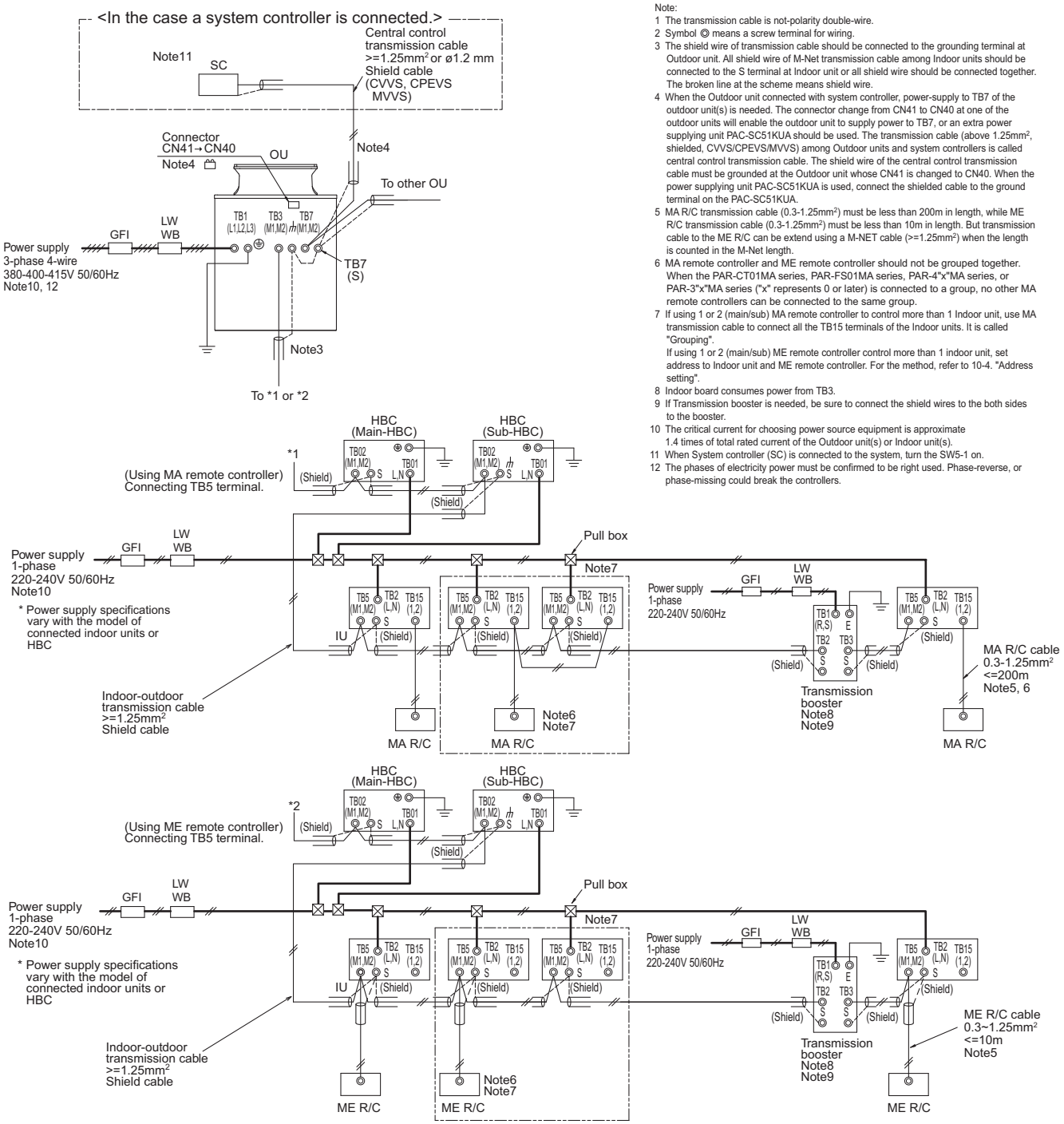
Model	Ssc (MVA)
PURY-M200YNW-A1	1.25
PURY-M250YNW-A1	1.38
PURY-M300YNW-A1	1.76
PURY-M350YNW-A1	2.14
PURY-M400YNW-A1	2.72
PURY-M450YNW-A1	2.88
PURY-M500YNW-A1	3.35

Model	Ssc (MVA)
PURY-EM200YNW-A1	1.25
PURY-EM250YNW-A1	1.32
PURY-EM300YNW-A1	1.58
PURY-EM350YNW-A1	1.89
PURY-EM400YNW-A1	2.38
PURY-EM450YNW-A1	2.69
PURY-EM500YNW-A1	3.13

9-3. Power supply examples (Horizontal type Main-HBC connection)

The local standards and/or regulations is applicable at a higher priority.

PURY-(E)M200, 250, 300, 350, 400, 450, 500YNW-A1



Note:
1 The transmission cable is not-polarity double-wire.
2 Symbol ◎ means a screw terminal for wiring.
3 The shield wire of transmission cable should be connected to the grounding terminal at Outdoor unit. All shield wire of M-Net transmission cable among Indoor units should be connected to the S terminal at Indoor unit or all shield wire should be connected together. The broken line at the scheme means shield wire.
4 When the Outdoor unit connected with system controller, power-supply to TB7 of the outdoor unit(s) is needed. The connector change from CN41 to CN40 at one of the outdoor units will enable the outdoor unit to supply power to TB7, or an extra power supplying unit PAC-SC51KUA should be used. The transmission cable (above 1.25mm², shielded, CVVS/CPEVS/MVVS) among Outdoor units and system controllers is called central control transmission cable. The shield wire of the central control transmission cable must be grounded at the Outdoor unit whose CN41 is changed to CN40. When the power supplying unit PAC-SC51KUA is used, connect the shielded cable to the ground terminal on the PAC-SC51KUA.
5 MA R/C transmission cable (0.3-1.25mm²) must be less than 200m in length, while ME R/C transmission cable (0.3-1.25mm²) must be less than 10m in length. But transmission cable to the ME R/C can be extend using a M-NET cable (>=1.25mm²) when the length is counted in the M-Net length.
6 MA remote controller and ME remote controller should not be grouped together. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.
7 If using 1 or 2 (main/sub) MA remote controller to control more than 1 Indoor unit, use MA transmission cable to connect all the TB15 terminals of the Indoor units. It is called "Grouping".
If using 1 or 2 (main/sub) ME remote controller control more than 1 indoor unit, set address to Indoor unit and ME remote controller. For the method, refer to 10-4. "Address setting".
8 Indoor board consumes power from TB3.
9 If Transmission booster is needed, be sure to connect the shield wires to the both sides to the booster.
10 The critical current for choosing power source equipment is approximate 1.4 times of total rated current of the Outdoor unit(s) or Indoor unit(s).
11 When System controller (SC) is connected to the system, turn the SW5-1 on.
12 The phases of electricity power must be confirmed to be right used. Phase-reverse, or phase-missing could break the controllers.

Symbol	
GFI	Ground-fault interrupter
LW	Local switch
BKC	Breaker capacity
OCP	Over-current protector
WB	Wiring breaker
NFB	Non-fuse breaker
OU	Outdoor unit
IU	Indoor unit
SC	System controller
MA R/C	MA remote controller
ME R/C	ME remote controller

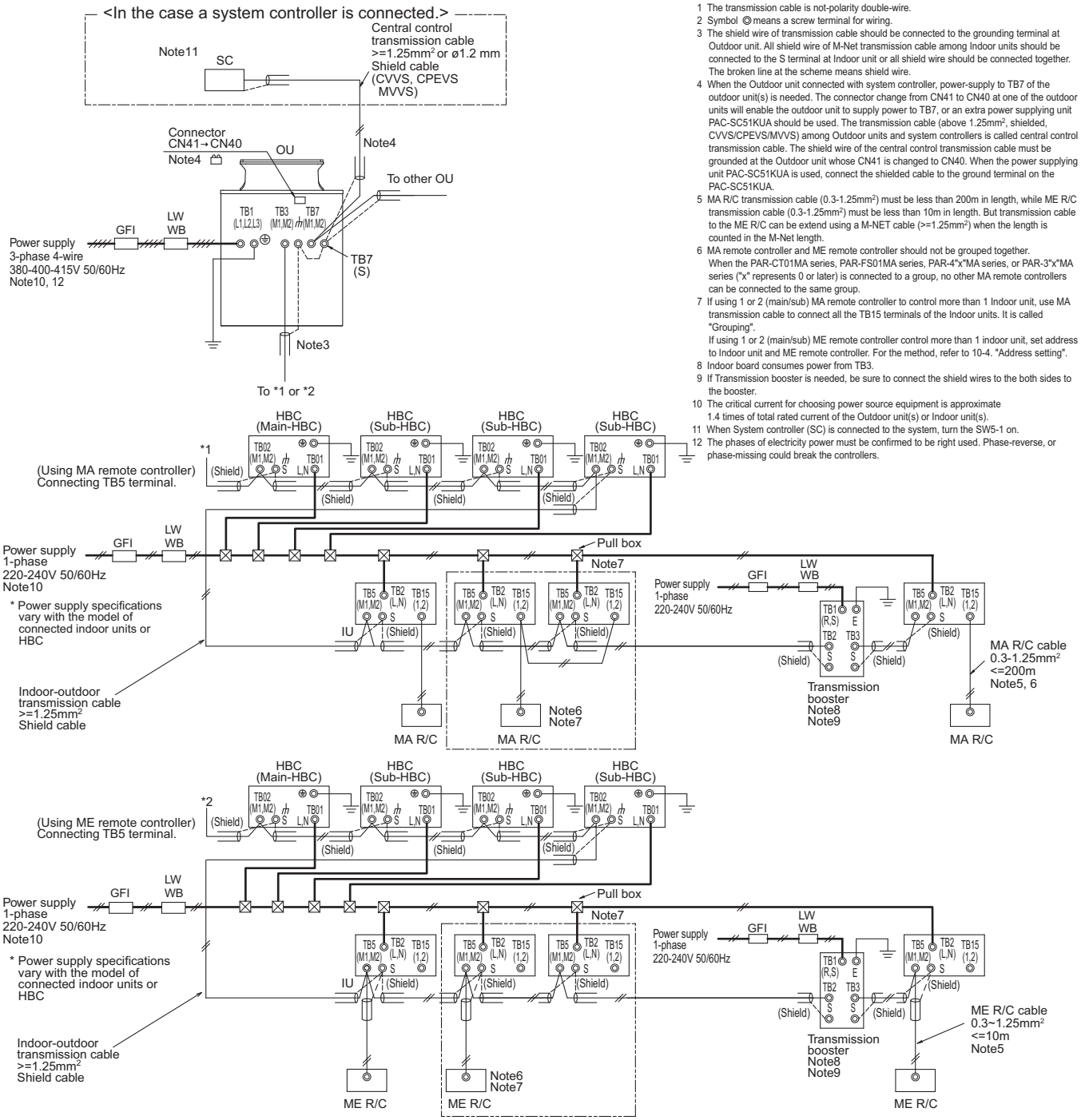
Model	Ground-fault interrupter *1, *2, *4	Local switch BKC <A>	Local switch OCP*3, *4 <A>	Wiring breaker *4 (NFB) <A>	Minimum Wire thickness Power wire <mm²>	Minimum Wire thickness Earth wire <mm²>
PURY-(E)M200YNW-A1	30A 100mA 0.1sec. or less	25	25	30	4	4
PURY-(E)M250YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PURY-(E)M300YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PURY-(E)M350YNW-A1	40A 100mA 0.1sec. or less	40	40	40	6	6
PURY-(E)M400YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PURY-(E)M450YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PURY-(E)M500YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10

*1 The Ground-fault interrupter should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent).
*2 Ground-fault interrupter should combine using of local switch or wiring breaker.
*3 It shows data for B-type fuse of the breaker for current leakage.
*4 If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the centralized controller side may both operate.
Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

9-4. Power supply examples (Vertical type Main-HBC connection)

The local standards and/or regulations is applicable at a higher priority.

PURY-(E)M200, 250, 300, 350, 400, 450, 500YNW-A1



Note:
1 The transmission cable is not-polarity double-wire.
2 Symbol ◎ means a screw terminal for wiring.
3 The shield wire of transmission cable should be connected to the grounding terminal at Outdoor unit. All shield wire of M-Net transmission cable among Indoor units should be connected to the S terminal at Indoor unit or all shield wire should be connected together. The broken line at the scheme means shield wire.
4 When the Outdoor unit connected with system controller, power-supply to TB7 of the outdoor unit(s) is needed. The connector change from CN41 to CN40 at one of the outdoor units will enable the outdoor unit to supply power to TB7, or an extra power supplying unit PAC-SC51KUA should be used. The transmission cable (above 1.25mm², shielded, CVVS/CPEVS/MVVS) among Outdoor units and system controllers is called central control transmission cable. The shield wire of the central control transmission cable must be grounded at the Outdoor unit whose CN41 is changed to CN40. When the power supplying unit PAC-SC51KUA is used, connect the shielded cable to the ground terminal on the PAC-SC51KUA.
5 MA R/C transmission cable (0.3-1.25mm²) must be less than 200m in length, while ME R/C transmission cable (0.3-1.25mm²) must be less than 10m in length. But transmission cable to the ME R/C can be extend using a M-NET cable (>=1.25mm²) when the length is counted in the M-Net length.
6 MA remote controller and ME remote controller should not be grouped together. When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.
7 If using 1 or 2 (main/sub) MA remote controller to control more than 1 Indoor unit, use MA transmission cable to connect all the TB15 terminals of the Indoor units. It is called "Grouping".
If using 1 or 2 (main/sub) ME remote controller control more than 1 indoor unit, set address to Indoor unit and ME remote controller. For the method, refer to 10-4. "Address setting".
8 Indoor board consumes power from TB3.
9 If Transmission booster is needed, be sure to connect the shield wires to the both sides to the booster.
10 The critical current for choosing power source equipment is approximate 1.4 times of total rated current of the Outdoor unit(s) or Indoor unit(s).
11 When System controller (SC) is connected to the system, turn the SW5-1 on.
12 The phases of electricity power must be confirmed to be right used. Phase-reverse, or phase-missing could break the controllers.

Symbol	
GFI	Ground-fault interrupter
LW	Local switch
BKC	Breaker capacity
OCP	Over-current protector
WB	Wiring breaker
NFB	Non-fuse breaker
OU	Outdoor unit
IU	Indoor unit
SC	System controller
MA R/C	MA remote controller
ME R/C	ME remote controller

Model	Ground-fault interrupter *1, *2, *4	Local switch BKC <A>	Local switch OCP*3, *4 <A>	Wiring breaker *4 (NFB) <A>	Minimum Wire thickness Power wire <mm²>	Minimum Wire thickness Earth wire <mm²>
PURY-(E)M200YNW-A1	30A 100mA 0.1sec. or less	25	25	30	4	4
PURY-(E)M250YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PURY-(E)M300YNW-A1	30A 100mA 0.1sec. or less	32	32	30	4	4
PURY-(E)M350YNW-A1	40A 100mA 0.1sec. or less	40	40	40	6	6
PURY-(E)M400YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PURY-(E)M450YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10
PURY-(E)M500YNW-A1	60A 100mA 0.1sec. or less	63	63	60	10	10

*1 The Ground-fault interrupter should support Inverter circuit. (e.g. Mitsubishi Electric's NV-S-Series or equivalent).
*2 Ground-fault interrupter should combine using of local switch or wiring breaker.
*3 It shows data for B-type fuse of the breaker for current leakage.
*4 If a large electric current flows due to malfunction or faulty wiring, earth-leakage breakers on the unit side and on the centralized controller side may both operate.
Depending on the importance of the system, separate the power supply system or take protective coordination of breakers.

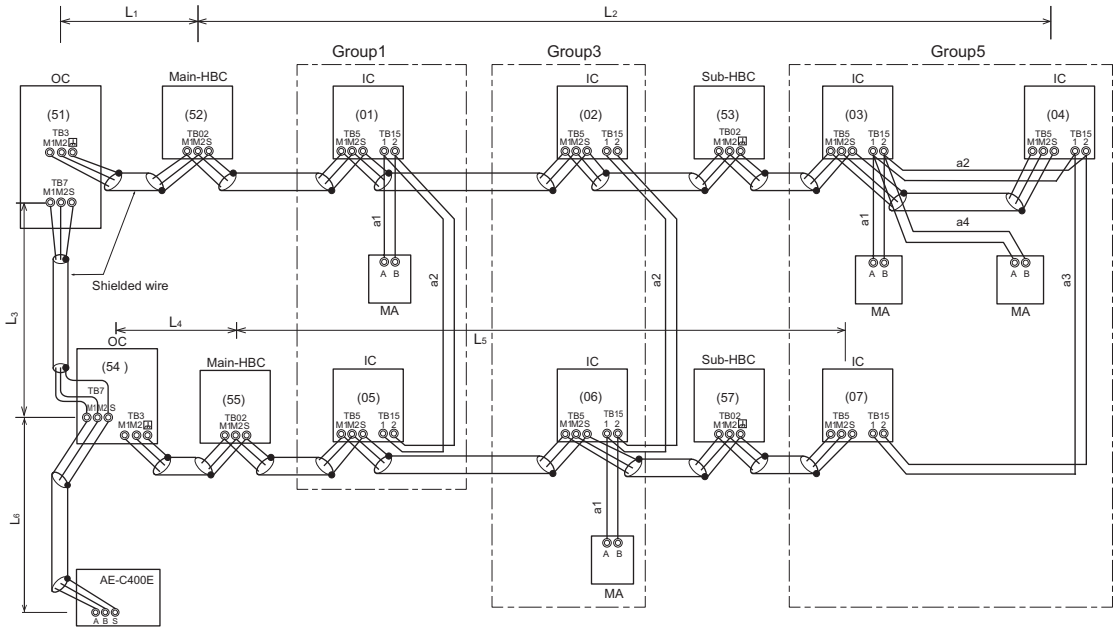
10-1. Transmission cable length limitation (Horizontal type Main-HBC connection)

10-1-1. Using MA Remote controller

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Outdoor (M-NET cable)	L1+L2+L3+L4+L5, L1+L2+L3+L6, L4+L5+L6	<= 500 m (1000 m *1) [1640 ft. (3280 ft. *1)]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length to Outdoor (M-NET cable)	L1+L2, L4+L5, L3+L6	<= 200 m [656 ft.]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length from MA to Indoor for each group	a1+a2, a1+a2+a3+a4	<= 200 m [656 ft.]	0.3-1.25 mm² [AWG22-16]

*1 When the wiring length exceeds 500 m (1640 ft), consult the sales office.



OC: Outdoor unit controller; IC: Indoor unit controller; MA: MA remote controller

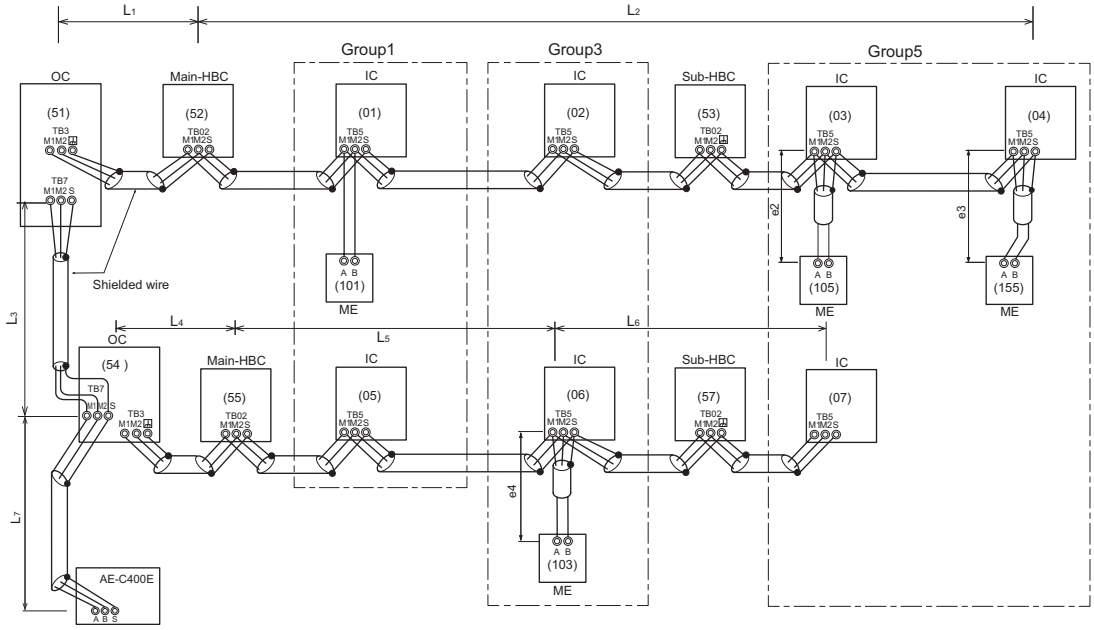
10-1-2. Using ME Remote controller

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Outdoor (M-NET cable)	L1+L2+L3+L4+L5+L6, L1+L2+L3+L7, L4+L5+L6+L7	<= 500 m (1000 m *1) [1640 ft. (3280 ft. *1)]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length to Outdoor (M-NET cable)	L1+L2, L4+L5+L6, L3+L7	<= 200 m [656 ft.]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length from ME to Indoor	e1, e2, e3, e4	<= 10 m [32 ft.] *2	0.3-1.25 mm² [AWG22-16] *2

*1 When the wiring length exceeds 500 m (1640 ft), consult the sales office.

*2. If the length from ME to Indoor exceed 10m, use 1.25 mm² [AWG16] shielded cable, but the total length should be counted into Max. length via Outdoor.



OC: Outdoor unit controller; IC: Indoor unit controller; ME: ME remote controller

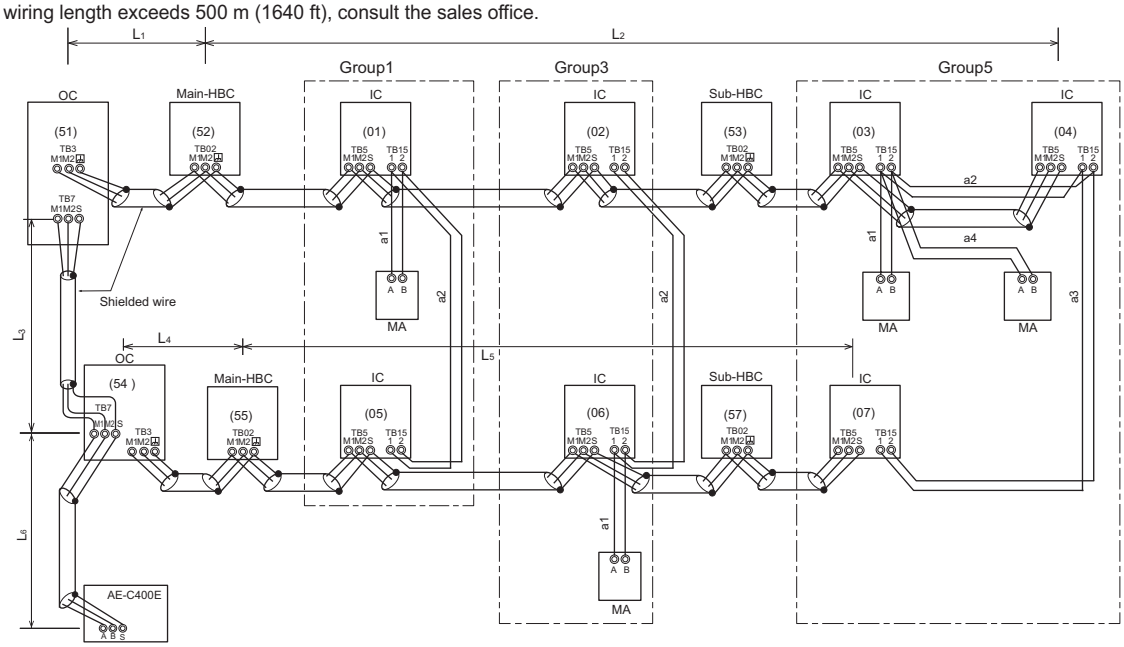
10-2. Transmission cable length limitation (Vertical type Main-HBC connection)

10-2-1. Using MA Remote controller

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Outdoor (M-NET cable)	L1+L2+L3+L4+L5, L1+L2+L3+L6, L4+L5+L6	<= 500 m (1000 m *1) [1640 ft. (3280 ft. *1)]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length from Outdoor to Main-HBC (M-NET cable)	L1, L4	<= 150 m [492 ft.]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length to Outdoor (M-NET cable)	L1+L2, L4+L5, L3+L6	<= 200 m [656 ft.]	1.25 mm² [AWG16] or thicker
Max. length from MA to Indoor for each group	a1+a2, a1+a2+a3+a4	<= 200 m [656 ft.]	0.3-1.25 mm² [AWG22-16]

*1 When the wiring length exceeds 500 m (1640 ft), consult the sales office.



OC: Outdoor unit controller; IC: Indoor unit controller; MA: MA remote controller

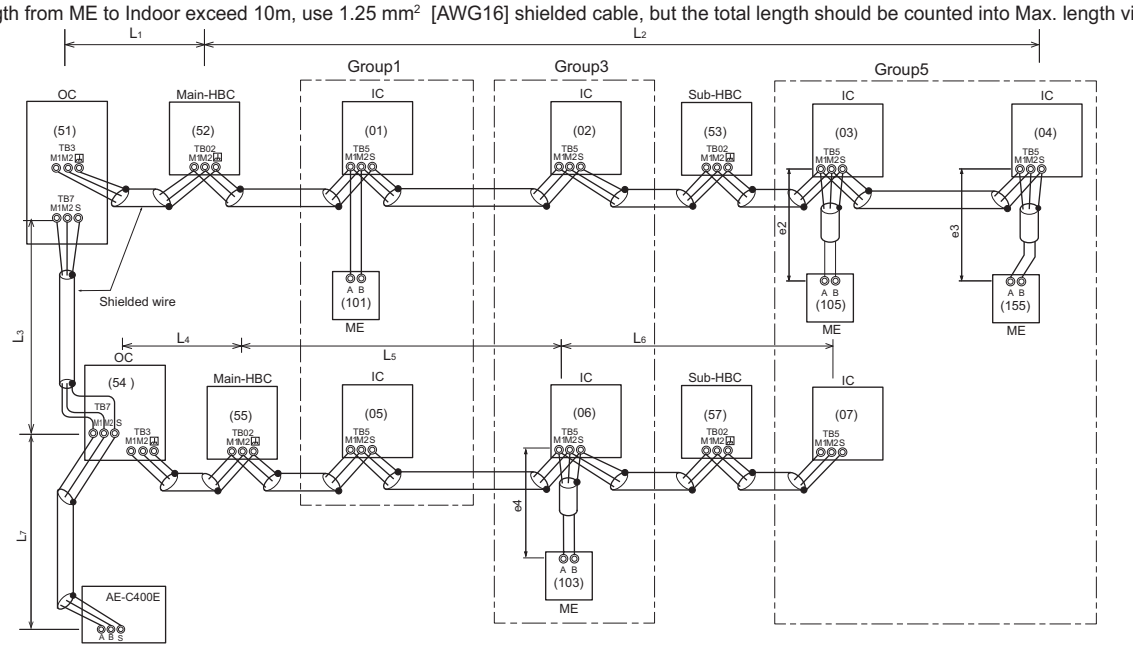
10-2-2. Using ME Remote controller

Long transmission cable causes voltage down, therefore, the length limitation should be obeyed to secure proper transmission.

Max. length via Outdoor (M-NET cable)	L1+L2+L3+L4+L5+L6, L1+L2+L3+L7, L4+L5+L6+L7	<= 500 m (1000 m *1) [1640 ft. (3280 ft. *1)]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length from Outdoor to Main-HBC (M-NET cable)	L1, L4	<= 150 m [492 ft.]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length to Outdoor (M-NET cable)	L1+L2, L4+L5+L6, L3+L7	<= 200 m [656 ft.]	Larger than 1.25 mm² [AWG16], or ø1.2 mm or above
Max. length from ME to Indoor	e1, e2, e3, e4	<= 10m [32 ft.] *2	0.3-1.25 mm² [AWG22-16] *2

*1 When the wiring length exceeds 500 m (1640 ft), consult the sales office.

*2. If the length from ME to Indoor exceed 10m, use 1.25 mm² [AWG16] shielded cable, but the total length should be counted into Max. length via Outdoor.



OC: Outdoor unit controller; IC: Indoor unit controller; ME: ME remote controller

10-3. System configuration restrictions

10-3-1. Common restrictions for the CITY MULTI system

For each Outdoor/Heat source unit, the maximum connectable quantity of Indoor unit is specified at its Specifications table.

A) 1 Group of Indoor units can have 1-16 Indoor units;
*OA processing unit GUF-RD(H) is considered as Indoor unit.

B) Maximum 2 remote controllers for 1 group;
*MA/ME remote controllers cannot be present together in 1 group.
*When the PAR-CT01MA series, PAR-FS01MA series, PAR-4"x"MA series, or PAR-3"x"MA series ("x" represents 0 or later) is connected to a group, no other MA remote controllers can be connected to the same group.

C) 1 LOSSNAY unit can interlock maximum 16 Indoor units; 1 Indoor unit can interlock only 1 LOSSNAY unit.

D) Maximum 3 System controllers are connectable when connecting to TB3 of the Outdoor/Heat source unit.

E) A maximum of 6 system controllers are connectable to TB3 and TB7 of Outdoor/Heat source unit.

F) 4 System controllers or more are connectable when connecting to TB7 of the Outdoor/Heat source unit, if the transmission power is supplied by the power supply unit PAC-SC51KUA.
*System controller connected as described in D) would have a risk that the failure of connected Outdoor/Heat source unit would stop power supply to the System controller.

10-3-2. Ensuring proper communication power and the number of connected units for M-NET

In order to ensure proper communication among Outdoor/Heat source unit, Indoor unit, LOSSNAY, OA processing unit GUF-RD(H), and Controllers, the transmission power situation for the M-NET should be observed. In some cases, Transmission booster should be used. Taking the power consumption of Indoor unit as 1, the equivalent power consumption or supply of others are listed at Table 1 and Table 2.

Both the transmission line for centralized controller and indoor-outdoor transmission line must meet the conditions listed below. (Both conditions a) and b) must be met.)

a) [Total equivalent power consumption] ≤ [The equivalent power supply]
b) [Total equivalent number of units (Table 1)] ≤ [40]

Table 1 The equivalent power consumption and the equivalent number of units

Category	Model	The equivalent power consumption	The equivalent number of units
CITY MULTI indoor unit OA unit CITY MULTI connection kit Air handling unit controller	Except for the models indicated by *2 PEFY-AF2500, 3000, 4000, 5000, 6000MH GUF-50, 100 PAC-LV11M-J PAC-AH125, 140, 250, 500M-J	1	1
CITY MULTI indoor unit *2	PDFY-P100VM-E-RE	2	2
BC controller	CMB-P/M	2	1
HBC controller	CMB-WP CMB-WM-V-AA/AB	2	1
	CMB-WM-F-AA CMB-WM-V-BB	2	2
Hydro unit	CMH-WM-V-A	2	1
PWFY *1	P100VM-E1-BU	6	1
	P200VM-E1-AU P200VM-E2-AU	5	1
	(E)P100VM-E1-AU (E)P100VM-E2-AU P140VM-E1-AU P140VM-E2-AU	1	1
PFAV	P250, 300, 500, 600VM-E(-F)	1	1
	P750, 900VM-E(-F)	2	2
PFV, PEV	P200, 250, 400, 500YM-A	1	1
MA remote controller/ LOSSNAY	PAR-CT01MA series PAR-FS01MA series PAR-21, 31, 32, 33, 40, 41MA series PAC-YT52CRA PAR-FA32MA LGH PZ-60, 61, 62DR PZ-43SMF-E	0	0
ME remote controller	PAR-U02MEDA	0.5	1
	PZ-52SF	0.25	1
System controller	AE-C400E(-X)/EW-C50E(-X) AE-200E/AE-50E/EW-50E LM-AP	0	0
	AG-150A EB-50GU-J PAC-IF01AHC-J	0.5	1
	AT-50B	1.5	5
	PAC-YG60MCA PAC-YG66DCA PAC-YG63MCA	0.25	1
ON/OFF controller	PAC-YT40ANRA	1	1
MN converter	CMS-MNG-E	2	1
Outdoor/Heat source unit	TB7 power consumption	0	0
System control interface	MAC-333IF-E	0	0
A-M converter	PAC-SF83MA-E		

*1 PWFY cannot be connected to PUMY model.

Table 2 The equivalent power supply

Category	Model	The equivalent power supply		
Transmission Booster	PAC-SF46EPA-G	25 *1		
Power supply unit	PAC-SC51KUA	5		
Expansion controller	PAC-YG50ECA	6		
BM ADAPTER	BAC-HD150	6		
System controller	AE-C400E(-X)/EW-C50E(-X)	0.75		
	AE-200E/AE-50E	0.75		
	EW-50E	1.5		
	LM-AP	0		
Outdoor/Heat source unit		TB3 and TB7 total	TB7 only	TB3 only
	Outdoor unit except S-Series and TKA *2	32 *1	6	32 *1-equivalent power supplied to TB7
	S-Series outdoor unit	12 *1	0	12 *1
	S-Series outdoor unit (YBM)	32 *1	0	32 *1
	TKA outdoor unit	32 *1	- *3	32 *1

*1 When one or more indoor units listed below is connected, subtract 3 from the equivalent power supply.

Table 3

Category	Model
Indoor unit	Sized P200/P250 PEFY-AF4000/5000/6000MH, PFFY-P400/500YM-E, PFFY-P400/500YMH-C PFFY-P300/600YM-E-F, PFFY-P300/600YM-C-F, PDFY-P100VM-E-RE
Air handling unit controller	PAC-AH250/500M-J
PFAV	PFAV-P500/600/750/900VM-E(-F)
PFV	PFV-P400/500YM-A
PEV	PEV-P400/500YM-A

*2 If PAC-SC51KUA is used to supply power at TB7 side, no power supply need from Outdoor/Heat source unit at TB7, Connector TB3 itself will therefore have 32.
*3 Do not supply power to TB7 from TKA outdoor units.
Use PAC-SC51KUA or PAC-SF46EPA-G when connecting an M-NET device to TB7.

With the equivalent power consumption values and the equivalent number of units in Table 1 and Table 2, PAC-SF46EPA-G can be designed into the air-conditioner system to ensure proper system communication according to (A), (B), (C).

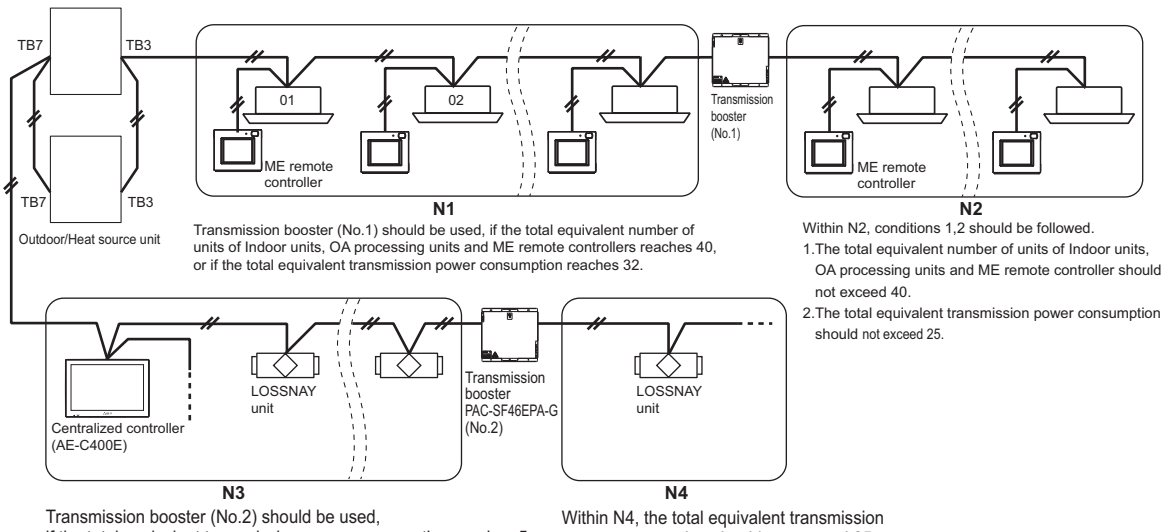
(A) Firstly, count from TB3 at TB3 side the total equivalent number of units of Indoor units, OA processing units, ME remote controller, and System controllers. If the total equivalent number of units reaches 40, a PAC-SF46EPA-G should be set.

(B) Secondly, count from TB7 side to TB3 side the total transmission power consumption. If the total equivalent power supply reaches 32, a PAC-SF46EPA-G should be set. Yet, if a PAC-SC51KUA or another controller with a built-in power supply, such as AE-C400E(-X)/EW-C50E(-X), is used to supply power at TB7 side, count from TB3 side only.

(C) Thirdly, count from TB7 at TB7 side the total transmission power consumption. If the total equivalent power supply for only TB7 reaches 6, a PAC-SF46EPA-G should be set. Also, count from TB7 at TB7 side the total equivalent number of units of System controllers, and so on. If the total equivalent number of units reaches 40, a PAC-SF46EPA-G should be set.

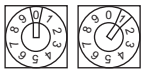
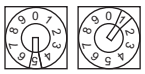
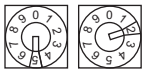
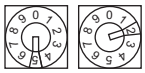
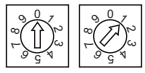
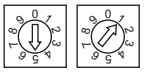
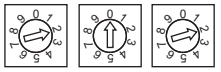
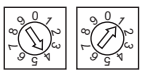
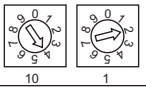
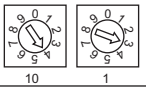
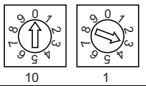
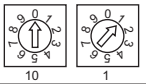
* The equivalent power supply of S-Series outdoor unit is 12.
* When one or more indoor units listed in Table 3 is connected, subtract 3 from the equivalent power supply.

■ System example



10-4. Address setting

10-4-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50	 10 1	Use the most recent address within the same group of indoor units.
Outdoor unit		51 ~ 99, 100 (Note1)	 10 1	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the outdoor units in one refrigerant circuit system. OC, OS1 and OS2 are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Hydro unit		52 ~ 99, 100	 10 1	The address of the smallest address of outdoor unit connected to the hydro unit + 50 * Please reset one of them to an address between 52 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100	 10 1	The address of the smallest address of indoor unit connected to the HBC controller +50 * Please reset one of them to an address between 52 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed  10 1	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed  10 1	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250	 100 10 1	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-C400E/EW-C50E AE-200E/AE-50E EW-50E AG-150A AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50	 10 1	
	PAC-YG63MCA	01 ~ 50	 10 1	
	PAC-YG66DCA	01 ~ 50	 10 1	
LOSSNAY, OA processing unit		01 ~ 50	 10 1	After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed  10 1	

Note1: To set the address to "100", set it to "50"
Note2: Outdoor units OC, OS1 and OS2 in one refrigerant circuit system are automatically detected. OC, OS1 and OS2 are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

11-1. R32 Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R32 air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

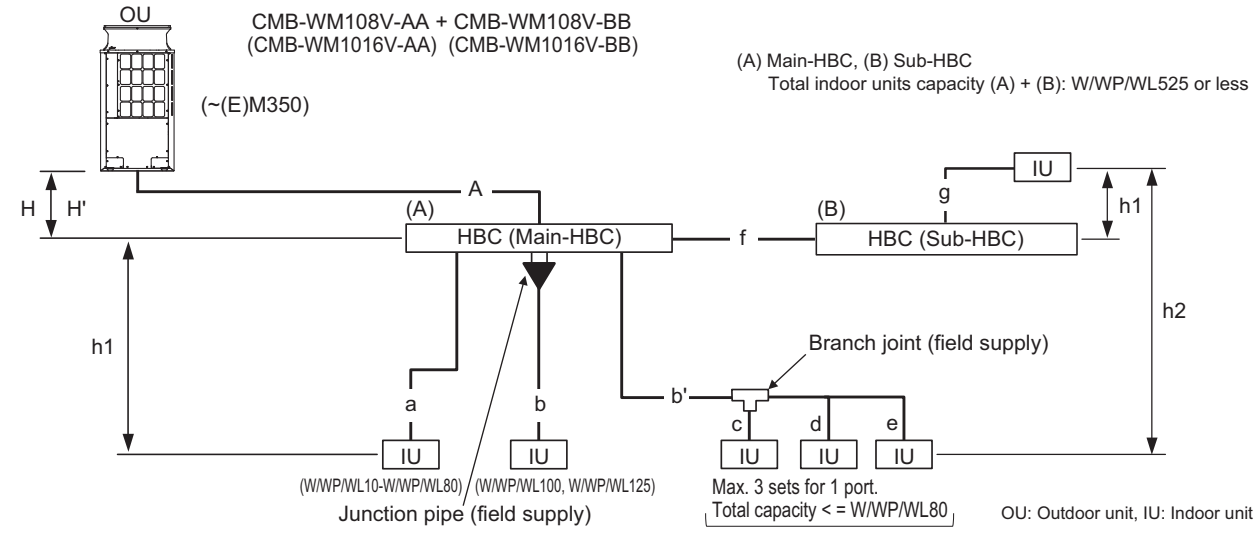
Table 1. Copper pipe size and radial thickness for R32 HYBRID CITY MULTI.

Size (mm)	Size (in.)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R32 air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

11-2. Piping Design (Horizontal type Main-HBC connection)

11-2-1. Restrictions on pipe length



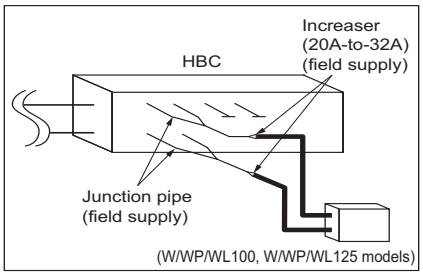
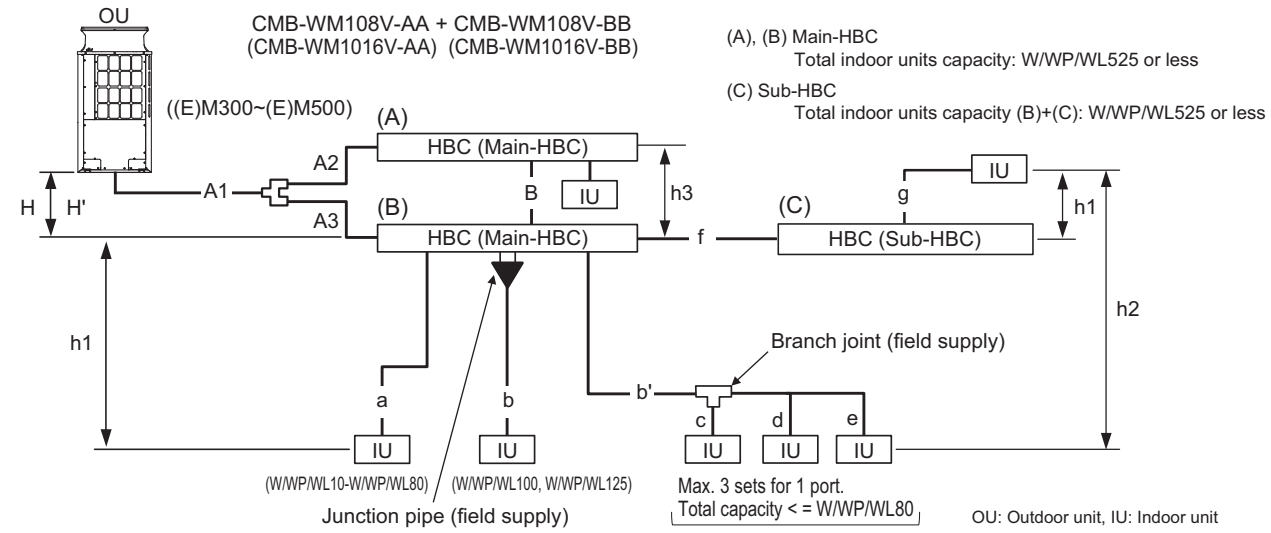


Fig. A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC		f + g	60 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less*1
		Outdoor unit below HBC	H'	40 or less*2
	Between indoor units and HBC		h1	15(10) or less*3
	Between indoor units		h2	15(10) or less*3

*1. 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*2. 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*3. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity



(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC		f + g	60 or less
	Between HBC		B	40 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less*1
		Outdoor unit below HBC	H'	40 or less*2
	Between indoor units and HBC		h1	15(10) or less*3
	Between indoor units		h2	15(10) or less*3
	Between HBC		h3	15(10) or less*3

*1. 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*2. 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*3. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity

♦Indoor units with valves (W-type) and indoor units without valves (WP-type) may not coexist in the same system.

1. Refrigerant and water pipe size

(1) Refrigerant pipe between outdoor unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

Unit model		HBC controller		
		Model name	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)M200	CMB-WM108V-AA CMB-WM1016V-AA	ø15.88 (Brazed)	ø19.05 (Brazed)
	PURY-(E)M250			ø22.2 (Brazed)
	PURY-(E)M300			
	PURY-(E)M350			ø28.58 (Brazed)

Use of two HBC controllers

Unit model		HBC controller			
		Model name	Between outdoor unit and twinning pipe		Between twinning pipe and HBC controller	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)M300	CMB-WM108V-AA CMB-WM1016V-AA	ø15.88 (Brazed)	ø22.2 (Brazed)	ø15.88 (Brazed) for each HBC controller	ø19.05 (Brazed) for each HBC controller
	PURY-(E)M350			ø28.58 (Brazed)		
	PURY-(E)M400		ø19.05 (Brazed)			
	PURY-(E)M450					ø22.2 (Brazed) for each HBC controller
	PURY-(E)M500					

***1. PURY-(E)P400YNW model or larger requires a connection of two Main-HBC controller in parallel.**

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

(3) Water pipe between Main-HBC and Sub-HBC controller (Section f)

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC controller
W/WP/WL10–100	I.D. ≥ 20.0 mm
W/WP/WL101–200	I.D. ≥ 25.8 mm
W/WP/WL201–300	I.D. ≥ 30.0 mm
W/WP/WL301–400	I.D. ≥ 33.3 mm
W/WP/WL401–500	I.D. ≥ 36.2 mm
W/WP/WL501–525	I.D. ≥ 36.8 mm

* The diameter of Main-HBC ports is O.D. 22.0 mm.
* The diameter of Sub-HBC ports is O.D. 28.0 mm.

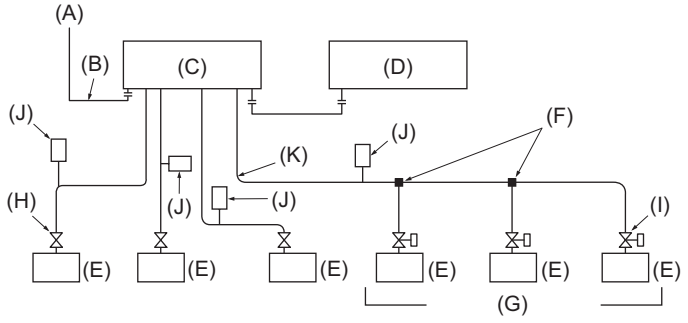
(4) Refrigerant pipe between HBC controller and HBC controller (Section B)

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To outdoor unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Branch joint (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but in same mode, cooling/heating)
(H) Shutoff valve (field supply)
(I) Pressure control valve (field supply)
(J) Auto air vent valve (Highest point on the water pipe for each branch) (field supply)
(K) Water pipework

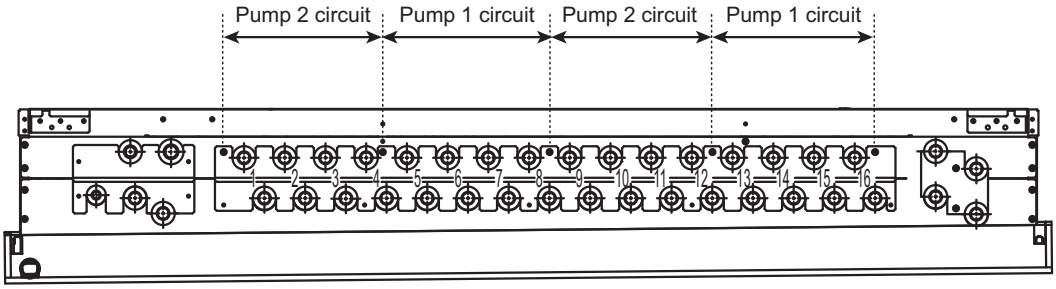


Fig. B

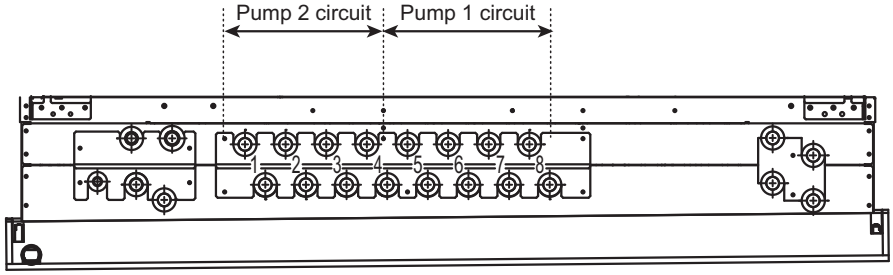


Fig. C

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: W/WP/WL80
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
- All the indoor units that are connected to the same port must be in the same group and perform the Thermo-ON/OFF operation simultaneously.
- The room temperatures of all the indoor units in the group need to be monitored via the connected remote controller.
- When connecting a W/WP/WL71 through 125 model indoor unit to an HBC controller, the pipes that connect the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- Selection of water piping

  Select the size according to the total capacity of indoor units to be installed downstream.
- Do not connect multiple indoor units to the same port when operating each of them in different modes (cooling, heating, stop, and thermo-OFF). The indoor units connected to the same port must be set to operate in the same mode. Set them to the same group to make them run/stop in the same mode all together. Alternatively, enable the thermo setting on the remote controller, or set the common thermostat (optional) to run/stop the units in the same mode based on the representative temperature.
- When multiple indoor units are connected to a single port, install a pressure control valve in the pipe to equalize the pressure of all indoor units.
- Pressure control valves are required for the “WP-type” and “WL-type without the optional valve kit” indoor units only, and not for the “W-type” and “WL-type with the optional valve kit” indoor units.

Note: 2

Connecting W/WP/WL100 or 125 indoor units to an HBC controller

- When connecting W/WP/WL100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two junction pipes (Y-joints). (See Fig. A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. A.)
- When the junction pipes are connected to 16 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5," "8 and 9," or "12 and 13" at the same time. (See Fig. B.)
- When the junction pipes are connected to 8 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5" at the same time. (See Fig. C.)
- When a W/WP/WL100 or a 125 model indoor unit is connected to an HBC controller, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.

Note: 3

Maximum capacity of indoor units connectable to an HBC controller for obtaining the rated performance

- An HBC controller has two pumps. Each pump can accommodate the capacity equivalent to W/WP/WL175 indoor units.
- When connecting the pipe to 16 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. B.)

  When connecting the pipe to 8 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4" or "5 through 8" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. C.)

  If the total capacity exceeds W/WP/WL175, the performance will be degraded.

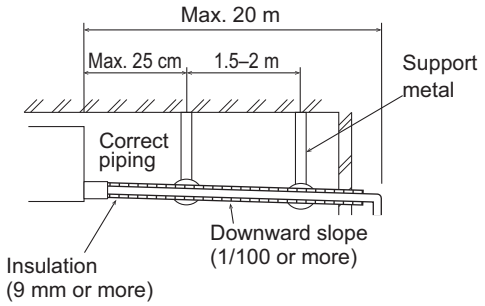
11-2-2. Drain piping work

1. Drain piping work

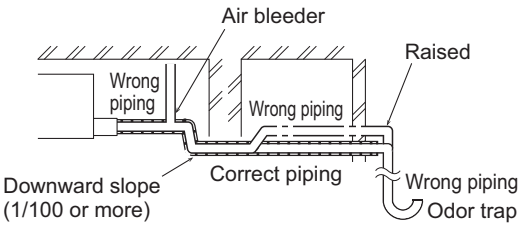
For Main-HBC and Sub-HBC controller

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Do not use any odor trap around the discharge port.
- As shown in (3), install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

(1)

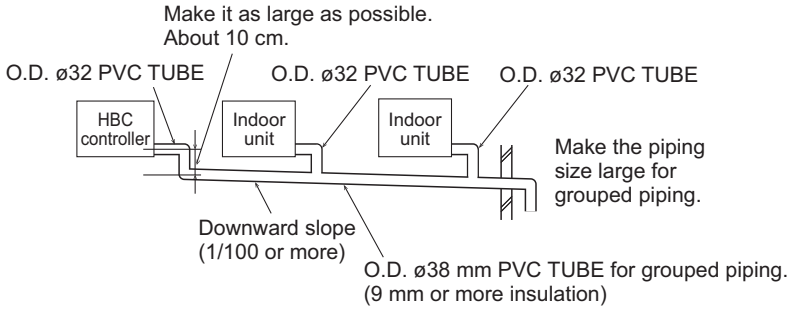


(2)



(3)

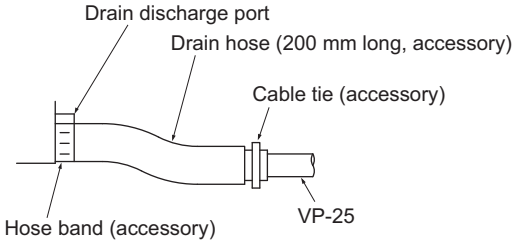
[Grouped piping]



For Main-HBC controller

- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)

(4)

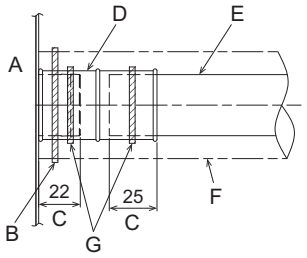


For Sub-HBC controller

♦For Sub-HBC controller, connect the drain pipe by following the steps described below.

1. Insert the drain hose (accessory) into the drain port (insertion margin: 32 mm).
   (The drain hose must not be bent more than 45° to prevent the hose from breaking or clogging.)
   (Attach the hose with glue, and fix it with the band (small, accessory).)
2. Attach the drain pipe (O.D. ø32 PVC TUBE PV-25, field supply).
   (Attach the pipe with glue, and fix it with the band (small, accessory).)
3. Perform insulation work on the drain pipe (O.D. ø32 PVC TUBE PV-25) and on the socket (including elbow).
4. Check the drainage.
5. Attach the insulating material, and fix it with the band (large, accessory) to insulate the drain port.

(5)



A: Sub-HBC controller
B: Tie band (accessory)
C: Insertion margin
D: Drain hose (accessory)
E: Drain pipe (O.D. ø32 PVC TUBE, field supply)
F: Insulating material (field supply)
G: Tie band (accessory)

2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

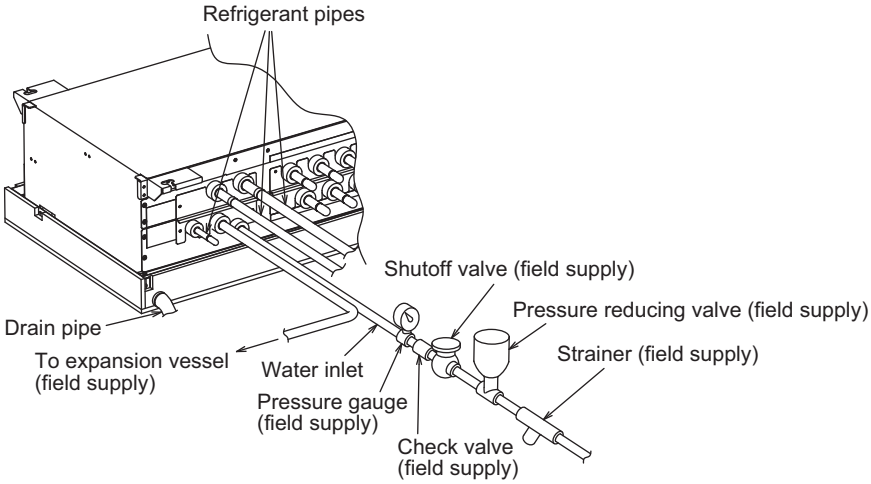
11-2-3. Connecting water pipe work

Please observe the following precautions during installation.

1. Important notes on water pipework installation

- The design pressure of the HBC controller water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC controller. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC controller with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC controller, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC controller water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
- Remove burr after cutting the piping to prevent entering the pipe connection. Prevent the particles that are generated during pipe cutting or cut edge treatment from entering the pipes. Check that there is no crack at the edge of the piping.
- Be sure to braze the water pipes after covering a wet cloth to the insulation pipes of the units in order to prevent them from burning and shrinking by heat. (There are some plastic parts in HBC controller.)
- Install the unit so that external force is not applied to the water pipes.
- After filling the pipes with water, immediately perform debris removal operation and air vent operation.

Example of heat source unit installation (using left piping)



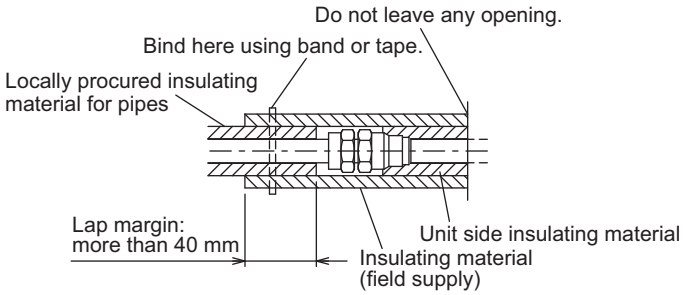
HBC controller sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

- The HBC controller system must be serviced at least once a year.

2. Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



- Insulation materials for the pipes to be added on site must meet the following specifications:

HBC – indoor unit	20 mm or more
Main-HBC – Sub-HBC	20 mm or more

- This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
- Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
- When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel

- Install an expansion tank to accommodate expanded water.

Expansion vessel selection criteria:

Water containment volume of the HBC controller

- Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

Unit model	Water volume
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-BB	5
CMB-WM1016V-BB	9

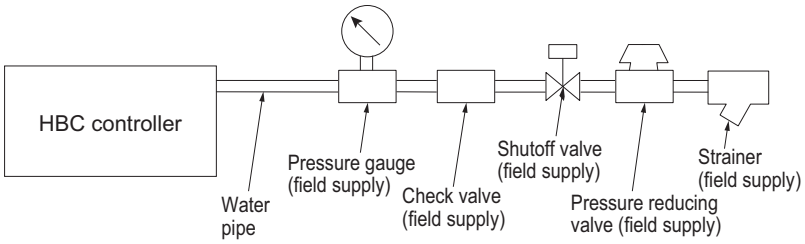
- The maximum water temperature is 60°C.
- The minimum water temperature is 5°C.
- The circuit protection valve set pressure is 370-490 kPa.
- The circulation pump head pressure is 0.24 MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC controller water pipe connection sizes and pipe sizes.

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
(A: Height difference (m) between the HBC controller and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 8-5. Correction by antifreeze solution concentration.

3. Water treatment and quality control

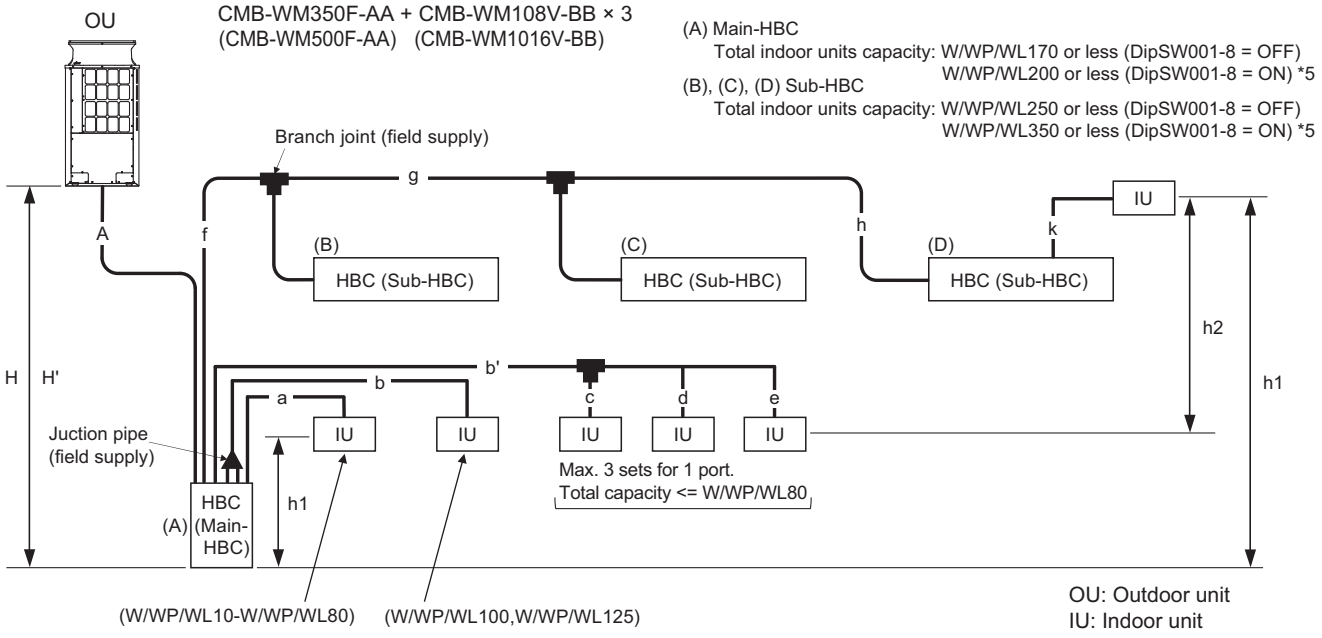
To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

♦Removing of foreign objects or impurities within the pipes.
During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.

♦Water Quality Processing
Depending on the quality of the cold-temperature water used in the air-conditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1 mg/ℓ.

11-3. Piping Design (Vertical type Main-HBC connection)

11-3-1. Restrictions on pipe length



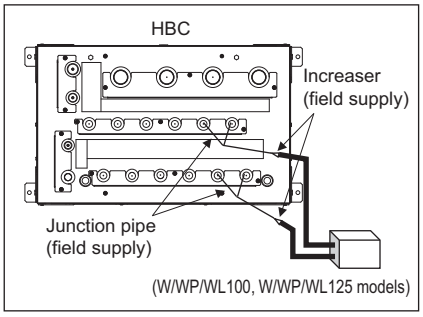


Fig. 11-3-1A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC		f + g + h + k	60 or less
Height difference	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less*1
		Outdoor unit below HBC	H'	40 or less*2
	Between indoor units and HBC		h1	15(10) or less*3 *4
	Between indoor units		h2	15(10) or less*3

*1. 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*2. 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*3. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity
*4. When DipSW001-8 = ON, the height difference between indoor units and HBC must be 11 (10) m or less.
*5. When DipSW001-8 = ON, the supply pressure must not exceed 0.12 MPa. (Refer to 12 on page 94.)

1. Refrigerant and water pipe size

(1) Refrigerant pipe between outdoor unit and HBC (Part A)

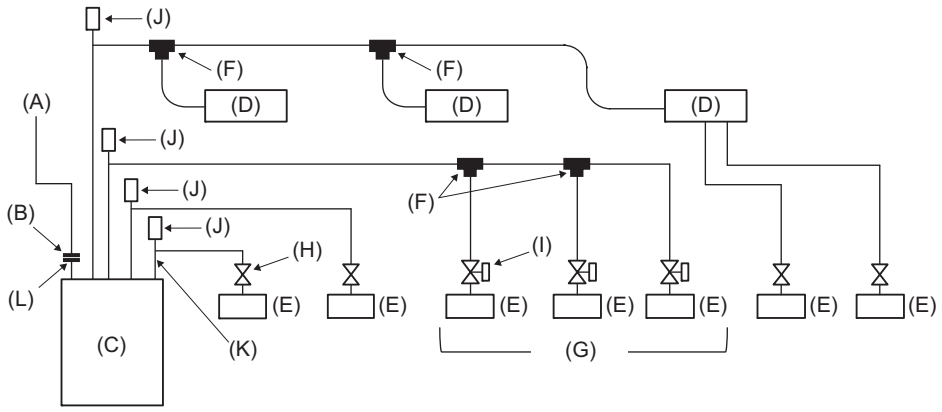
Unit model		HBC		
		Model name	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)M200	(HBC) CMB-WM350F-AA	ø15.88 (Brazing)	ø19.05 (Brazing)
	PURY-(E)M250		ø15.88 (Brazing)	ø22.2 (Brazing)
	PURY-(E)M300		ø15.88 (Brazing)	ø22.2 (Brazing)
	PURY-(E)M350		ø15.88 (Brazing)	ø28.58 (Brazing)
	PURY-(E)M400	(HBC) CMB-WM500F-AA	ø19.05 (Brazing)	ø28.58 (Brazing)
	PURY-(E)M450		ø19.05 (Brazing)	ø28.58 (Brazing)
	PURY-(E)M500		ø19.05 (Brazing)	ø28.58 (Brazing)

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC *1 Pipe size between Main-HBC and indoor unit *1 Pipe size between Sub-HBC and indoor unit *1		
	Max 20 m *2	Max 40 m *2	Max 60 m *2
W/WP/WL10	I.D. ≥ 12 mm	I.D. ≥ 12 mm	I.D. ≥ 12 mm
W/WP/WL11 - W/WP/WL15	I.D. ≥ 12 mm	I.D. ≥ 12 mm	I.D. ≥ 15.5 mm
W/WP/WL16 - W/WP/WL25	I.D. ≥ 15.5 mm	I.D. ≥ 15.5 mm	I.D. ≥ 15.5 mm
W/WP/WL26 - W/WP/WL32	I.D. ≥ 15.5 mm	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm
W/WP/WL33 - W/WP/WL50	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm
W/WP/WL51 - W/WP/WL63	I.D. ≥ 19.9 mm	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm
W/WP/WL64 - W/WP/WL80	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm
W/WP/WL81 - W/WP/WL100	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm	I.D. ≥ 32.6 mm
W/WP/WL101 - W/WP/WL150	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm
W/WP/WL151 - W/WP/WL250	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm	I.D. ≥ 39.6 mm
W/WP/WL251 - W/WP/WL300	I.D. ≥ 32.6 mm	I.D. ≥ 39.6 mm	I.D. ≥ 50.8 mm
W/WP/WL301 - W/WP/WL750	I.D. ≥ 50.8 mm	I.D. ≥ 50.8 mm	I.D. ≥ 50.8 mm

*1 When connecting CMB-WM108/1016V-AA and CMB-WM108/1016V-BB, refer to the installation manual for CMB-WM108/1016V-AA about pipe size.
*2 Piping length from Main-HBC to the farthest indoor unit

2. Connecting the HBC

(1) Size of the pipe that fits the standard HBC ports



(A) To outdoor unit
(B) End connection (brazing)
(C) Main-HBC
(D) Sub-HBC
(E) Indoor unit
(F) Branch joint (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but in same mode, cooling/heating)
(H) Shutoff valve (field supply)
(I) Pressure control valve (field supply)
(J) Auto air vent valve (Highest point on the water pipe for each branch) (field supply)
(K) Water pipework
(L) Joint (field supply)

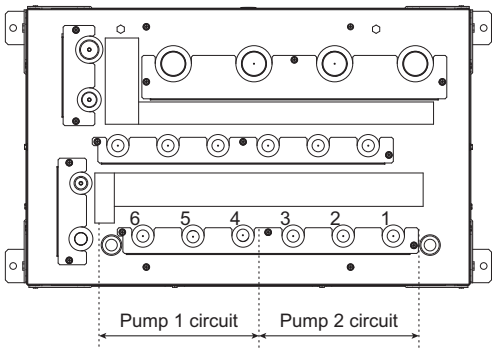


Fig. 11-3-1B

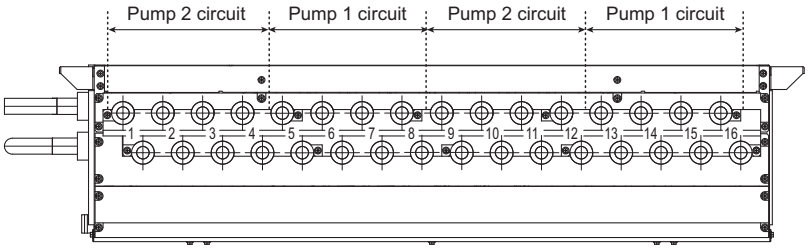


Fig. 11-3-1C

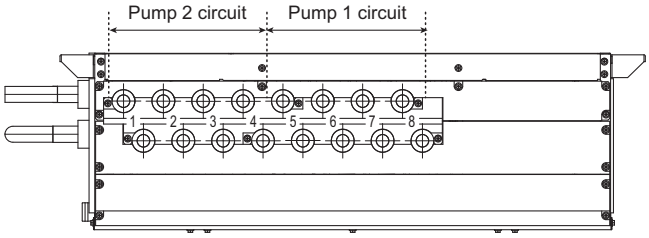


Fig. 11-3-1D

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: W/WP/WL80
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
- All the indoor units that are connected to the same port must be in the same group and perform the Thermo-ON/OFF operation simultaneously.
- The room temperatures of all the indoor units in the group need to be monitored via the connected remote controller.
- When connecting a W/WP/WL71 through 125 model indoor unit to an HBC, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.
- Selection of water piping
  Select the size according to the total capacity of indoor units to be installed downstream.
- Do not connect multiple indoor units to the same port when operating each of them in different modes (cooling, heating, stop, and thermo-OFF). The indoor units connected to the same port must be set to operate in the same mode. Set them to the same group to make them run/stop in the same mode all together. Alternatively, enable the thermo setting on the remote controller, or set the common thermostat (optional) to run/stop the units in the same mode based on the representative temperature.
- When multiple indoor units are connected to a single port, install a pressure control valve in the pipe to equalize the pressure of all indoor units.
- Pressure control valves are required for the “WP-type” and “WL-type without the optional valve kit” indoor units only, and not for the “W-type” and “WL-type with the optional valve kit” indoor units.

Note: 2

Connecting W/WP/WL100 or 125 indoor units to an HBC

- When connecting W/WP/WL100 or 125 indoor units to an HBC, connect each unit to two sets of two ports on the HBC, using two junction pipes (Y-joints).
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe.
- When the junction pipes are connected to Main-HBC, the branched sides of the junction pipes cannot be connected to the ports "3 and 4" at the same time. (See Fig. 11-3-1B.)
- When the junction pipes are connected to 16 Sub-HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5," "8 and 9," or "12 and 13" at the same time. (See Fig. 11-3-1C.)
- When the junction pipes are connected to 8 Sub-HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5" at the same time. (See Fig. 11-3-1D.)
- When a W/WP/WL100 or a 125 model indoor unit is connected to an HBC, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.

Note: 3

Selecting the port for indoor unit connection

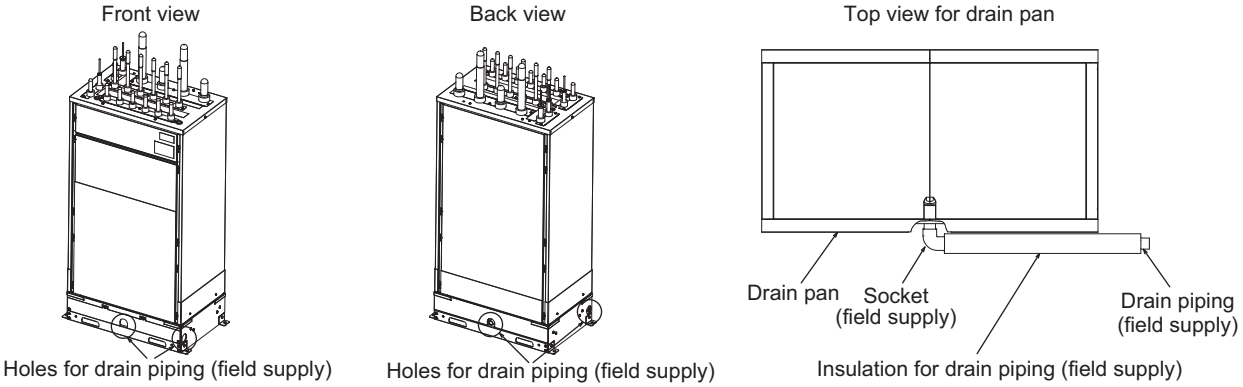
- The table below shows the ports for connecting the units that belong to Group 1 and Group 2.

	Group 1	Group 2
CMB-WM350/500F-AA	Ports from 1 to 3	Ports from 4 to 6
CMB-WM108V-BB	Ports from 1 to 4	Ports from 5 to 8
CMB-WM1016V-BB	Ports from 1 to 4	Ports from 5 to 8
	Ports from 9 to 12	Ports from 13 to 16

11-3-2. Drain piping work

1. Drain piping work for Main-HBC controller

• Sufficient space (over 150 mm) is required on each side of the unit to remove the screws. If it is difficult to leave sufficient space, change the orientation of the drain pan before installing the unit.

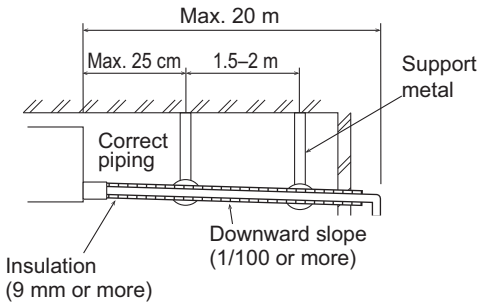


• Use a socket to connect the drain piping to the drainage hole of the drain pan.
• Route the drain piping through the holes for drain piping.
• Seal the joint between the drainage hole of the drain pan and the socket with a silicone sealant.
• Bond the socket and the drain piping with a PVC adhesive.
• Ensure that the drain piping is downward (sloped gradient of more than 1/100) to the drainage hole.

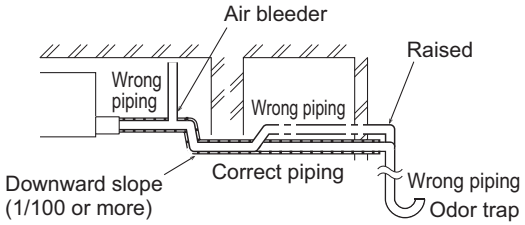
2. Drain piping work for Sub-HBC controller

• Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side.
If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
• Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
• Do not use any odor trap around the discharge port.
• As shown in (3), install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.

(1)

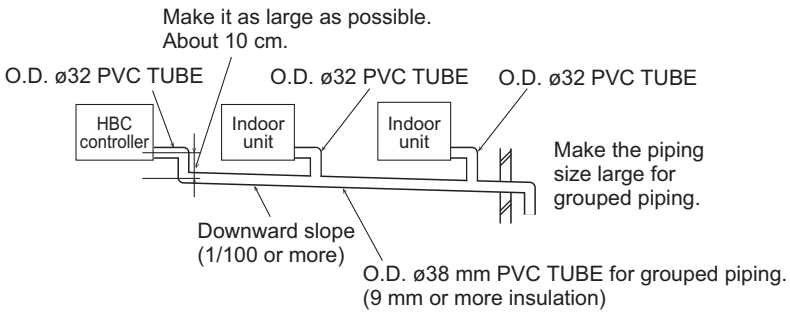


(2)



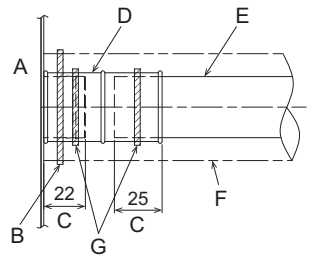
(3)

[Grouped piping]



• For Sub-HBC controller, connect the drain pipe by following the steps described below.
1. Insert the drain hose (accessory) into the drain port (insertion margin: 32 mm).
(The drain hose must not be bent more than 45° to prevent the hose from breaking or clogging.)
(Attach the hose with glue, and fix it with the band (small, accessory).)
2. Attach the drain pipe (O.D. ø32 PVC TUBE PV-25, field supply).
(Attach the pipe with glue, and fix it with the band (small, accessory).)
3. Perform insulation work on the drain pipe (O.D. ø32 PVC TUBE PV-25) and on the socket (including elbow).
4. Check the drainage.
5. Attach the insulating material, and fix it with the band (large, accessory) to insulate the drain port.

(4)



A: Sub-HBC controller
B: Tie band (accessory)
C: Insertion margin
D: Drain hose (accessory)
E: Drain pipe (O.D. ø32 PVC TUBE, field supply)
F: Insulating material (field supply)
G: Tie band (accessory)

3. Drain piping work for Main-HBC and Sub-HBC controller

• Set the end of drain piping in a place without any risk of odor generation.
• Do not put the end of drain piping into any drain where ionic gases are generated.
• Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

4. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

5. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

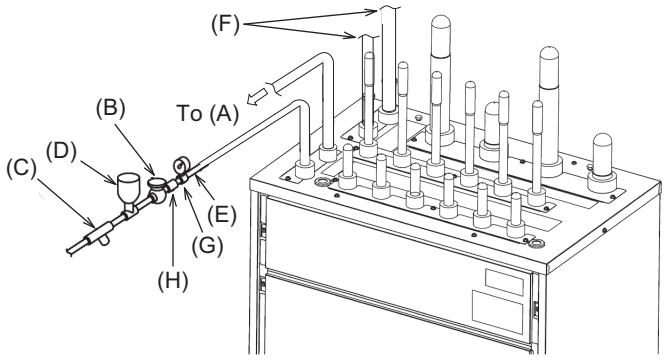
11-3-3. Connecting water pipe work

Please observe the following precautions during installation.

1. Important notes on water pipework installation

- The design pressure of the HBC water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC unit with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC unit water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.

Example of heat source unit installation (using left piping)



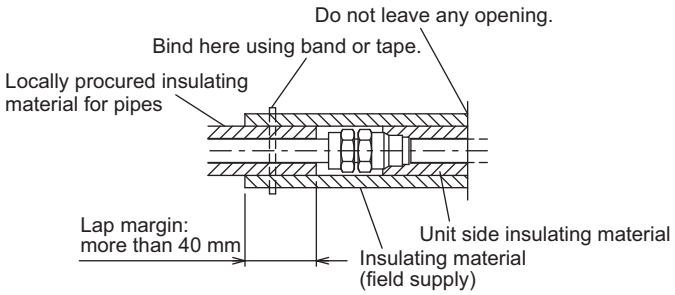
Example of HBC installation (*1)

(A) Expansion vessel (field supply)
(B) Shutoff valve (field supply)
(C) Strainer (field supply)
(D) Pressure reducing valve (field supply)
(E) Water inlet
(F) Refrigerant pipes
(G) Pressure gauge (field supply)
(H) Check valve (field supply)

Note:
***1. Connect the pipes to the water pipes according to the local regulations.**
***2. Remove the water pipes on the point of outside shutoff valve after finishing supply water.**

2. Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC control box (for identification purposes), and HBC end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



• Insulation materials for the pipes to be added on site must meet the following specifications:

HBC to indoor unit	20 mm or more
Main-HBC to Sub-HBC	20 mm or more

• This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
• Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
• When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel
• Install an expansion tank to accommodate expanded water.

Expansion vessel selection criteria:

Water containment volume of the HBC

• Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

Unit model	Water volume
CMB-WM350F-AA	20
CMB-WM500F-AA	24
CMB-WM108V-BB	5
CMB-WM1016V-BB	9

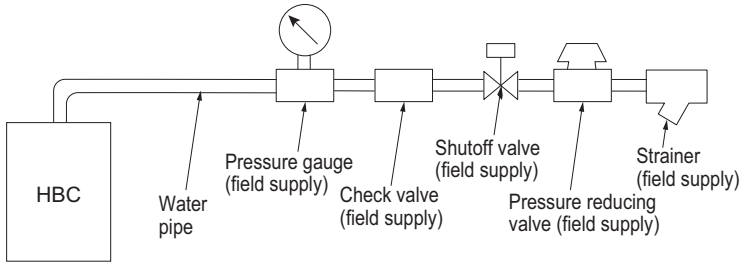
• The maximum water temperature is 60°C.
• The minimum water temperature is 5°C.
• The circuit protection valve set pressure is 370-490kPa.
• The circulation pump head pressure is 0.24MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC water pipe connection sizes and pipe sizes.

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC *1 Pipe size between Main-HBC and indoor unit *1 Pipe size between Sub-HBC and indoor unit *1		
	Max 20 m *2	Max 40 m *2	Max 60 m *2
W/WP/WL10	I.D. ≥ 12 mm	I.D. ≥ 12 mm	I.D. ≥ 12 mm
W/WP/WL11 - W/WP/WL15	I.D. ≥ 12 mm	I.D. ≥ 12 mm	I.D. ≥ 15.5 mm
W/WP/WL16 - W/WP/WL25	I.D. ≥ 15.5 mm	I.D. ≥ 15.5 mm	I.D. ≥ 15.5 mm
W/WP/WL26 - W/WP/WL32	I.D. ≥ 15.5 mm	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm
W/WP/WL33 - W/WP/WL50	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm	I.D. ≥ 19.9 mm
W/WP/WL51 - W/WP/WL63	I.D. ≥ 19.9 mm	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm
W/WP/WL64 - W/WP/WL80	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm
W/WP/WL81 - W/WP/WL100	I.D. ≥ 25.2 mm	I.D. ≥ 25.2 mm	I.D. ≥ 32.6 mm
W/WP/WL101 - W/WP/WL150	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm
W/WP/WL151 - W/WP/WL250	I.D. ≥ 32.6 mm	I.D. ≥ 32.6 mm	I.D. ≥ 39.6 mm
W/WP/WL251 - W/WP/WL300	I.D. ≥ 32.6 mm	I.D. ≥ 39.6 mm	I.D. ≥ 50.8 mm
W/WP/WL301 - W/WP/WL750	I.D. ≥ 50.8 mm	I.D. ≥ 50.8 mm	I.D. ≥ 50.8 mm

*1 When connecting CMB-WM108/1016V-AA and CMB-WM108/1016V-BB, refer to the installation manual for CMB-WM108/1016V-AA about pipe size.
*2 Piping length from Main-HBC to the farthest indoor unit

11. Please refer to the figure below when connecting the water supply.



12. When DipSW001-8 = OFF, use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
When DipSW001-8 = ON, use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.12 for the supply pressure range to be used.
(A: Height difference (m) between the HBC and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa (when DipSW001-8 = OFF) or 0.12 MPa (when DipSW001-8 = ON), use a pressure reducing valve to keep the pressure within the range. If the head pressure is unknown, set it to 0.16 MPa (when DipSW001-8 = OFF) or 0.12 MPa (when DipSW001-8 = ON).
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC unit in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 8-5. "Correction by antifreeze solution concentration".

3. Water treatment and quality control

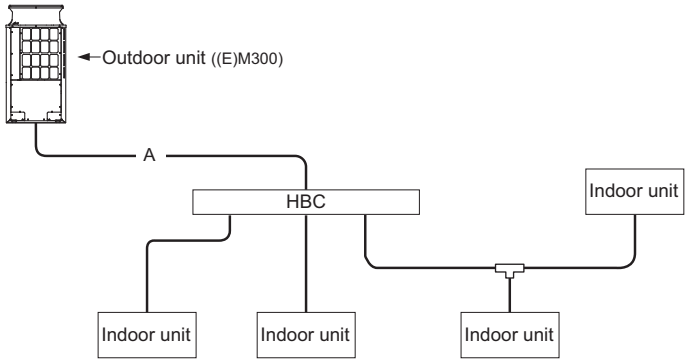
To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

- Removing of foreign objects or impurities within the pipes.
  During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.
- Water Quality Processing
  Depending on the quality of the cold-temperature water used in the airconditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1mg/ℓ.

11-4. Refrigerant charging calculation

1. Horizontal type Main-HBC connection

Example

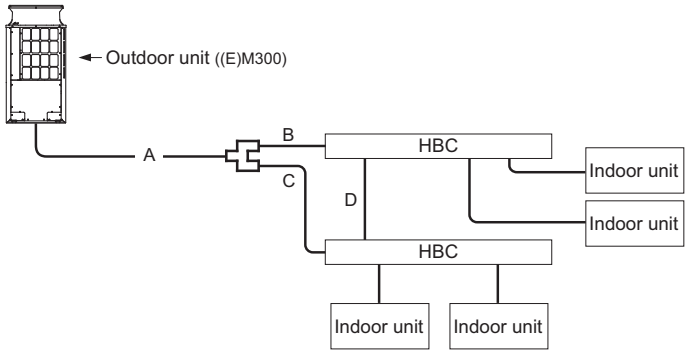


■ Sample calculation

Indoor 1: 50 A: ø15.88 42 m
2: 50
3: 50
4: 40
Outdoor M250

The total length of each liquid line is as follows:
ø15.88: A = 42 m, $\alpha_1 = 2.8$

Therefore,
Additional refrigerant charge
= 42 × 0.09 + 2.8
= 6.58 kg
≒ 6.6 kg
* All pipe work except A is water pipe work.



Indoor 1: 50 A:ø15.88 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Outdoor M300

The total length of each liquid line is as follows:
ø15.88: A = 18 m, ø15.88: B + C = 15 m, $\alpha_1 = 2.8 \times 2$
Pipe between HBC controller and HBC controller: D = 8 m

Therefore,
Additional refrigerant charge
= 18 × 0.09 + (5 + 10) × 0.09 + 2.8 × 2 + 8 × 0.16
= 9.85 kg
≒ 9.9 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
M200YNW	5.2
M250YNW	5.2
M300YNW	5.2
M350YNW	8.0
M400YNW	8.0
M450YNW	10.8
M500YNW	10.8

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EM200YNW	5.2
EM250YNW	5.2
EM300YNW	5.2
EM350YNW	8.0
EM400YNW	8.0
EM450YNW	10.8
EM500YNW	10.8

■ Calculation formula

- The amount of refrigerant to be added depends on the size and the total length of the high-pressure piping and liquid piping.
- Calculate the amount of refrigerant to be charged according to the formula below.
- Round up the calculation result to the nearest 0.1 kg (Example: 18.04 kg to 18.1 kg).
- The refrigerant does not need to be added for the indoor units in a Hybrid City Multi system.

<Formula>

- When the piping length from the outdoor unit to the farthest HBC is 10 m or shorter

Amount of additional charge (kg)	=	High-pressure pipe ø22.2 total length × 0.23 (kg/m)	+	High-pressure pipe ø19.05 total length × 0.16 (kg/m)	+	High-pressure pipe ø15.88 total length × 0.11 (kg/m)	+	Pipe between HBC controller and HBC controller ø15.88 total length × 0.2 (kg/m)	*1

Outdoor unit model	Amount (kg)
(E)M200	1.0
(E)M250	1.0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

* Amount of refrigerant to be charged for single-module units

HBC model	Amount (kg/unit)
CMB-WM108V-AA	2.8
CMB-WM1016V-AA	2.8

*1 Only when two main HBC controllers are used

* When connecting PEFY-W50/63/71/80/100/125VMA2-A units, add 0.25 kg of refrigerant for each of these units.

• When the piping length from the outdoor unit to the farthest HBC is longer than 10 m

Amount of additional charge (kg) = High-pressure pipe ø22.2 total length × 0.19 (kg/m) + High-pressure pipe ø19.05 total length × 0.13 (kg/m) + High-pressure pipe ø15.88 total length × 0.09 (kg/m) + Pipe between HBC controller and HBC controller ø15.88 total length × 0.16 (kg/m) *1

+

Outdoor unit model	Amount (kg)
(E)M200	1.0
(E)M250	1.0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

* Amount of refrigerant to be charged for single-module units

+

HBC model	Amount (kg/unit)
CMB-WM108V-AA	2.8
CMB-WM1016V-AA	2.8

*1 Only when two main HBC controllers are used

* When connecting PEFY-W50/63/71/80/100/125VMA2-A units, add 0.25 kg of refrigerant for each of these units.

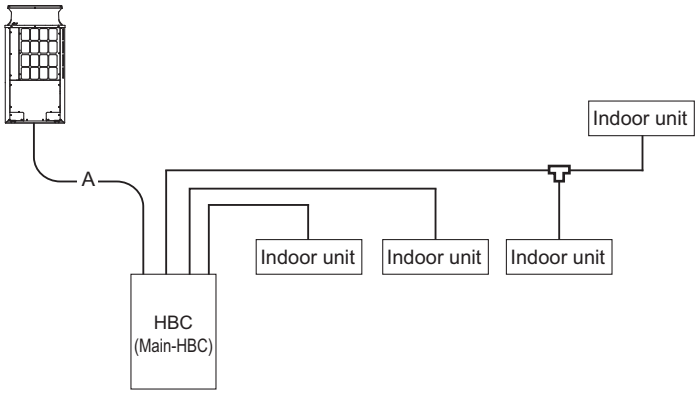
■ Limitation of the amount of refrigerant to be charged

The above calculation result of the amount of refrigerant to be charged must become below the value in the table below.

Total index of the outdoor units			M200 YNW	M250 YNW	M300 YNW	M350 YNW	M400 YNW	M450 YNW	M500 YNW	EM200 YNW	EM250 YNW	EM300 YNW	M350 YNW	EM400 YNW	EM450 YNW	EM500 YNW
Maximum refrigerant charge	Factory charged	kg	5.2	5.2	5.2	8.0	8.0	10.8	10.8	5.2	5.2	5.2	8.0	8.0	10.8	10.8
	Charged on site	kg	13.5	13.5	15.5	15.5	19.5	19.5	19.5	13.5	13.5	15.5	15.5	19.5	19.5	19.5
	Total for system	kg	18.7	18.7	20.7	23.5	27.5	30.3	30.3	18.7	18.7	20.7	23.5	27.5	30.3	30.3

2. Vertical type Main-HBC connection

Example



■ Sample calculation

Indoor 1: 50 A: ø15.88 42 m
2: 50
3: 50
4: 40
Outdoor M250

The total length of each liquid line is as follows:
ø15.88: A = 42 m, α1 = 5.6
Therefore,
<Calculation example>
Additional refrigerant charge
= 42 × 0.09 + 5.6
= 9.38 kg
≒ 9.4 kg
* All pipe work except A is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
M200YNW	5.2
M250YNW	5.2
M300YNW	5.2
M350YNW	8.0
M400YNW	8.0
M450YNW	10.8
M500YNW	10.8

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EM200YNW	5.2
EM250YNW	5.2
EM300YNW	5.2
EM350YNW	8.0
EM400YNW	8.0
EM450YNW	10.8
EM500YNW	10.8

■ Calculation formula

- The amount of refrigerant to be added depends on the size and the total length of the high-pressure piping and liquid piping.
- Calculate the amount of refrigerant to be charged according to the formula below.
- Round up the calculation result to the nearest 0.1 kg (Example: 18.04 kg to 18.1 kg).
- The refrigerant does not need to be added for the indoor units in a Hybrid City Multi system.

<Formula>
• When the piping length from the outdoor unit to HBC is 10 m or shorter

Amount of additional charge (kg) = High-pressure pipe ø22.2 total length × 0.23 (kg/m) + High-pressure pipe ø19.05 total length × 0.16 (kg/m) + High-pressure pipe ø15.88 total length × 0.11 (kg/m)

Outdoor unit model	Amount (kg)
(E)M200	1.0
(E)M250	1.0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

+

HBC model	Amount (kg)
350F	5.6
500F	5.6

* Amount of refrigerant to be charged for single-module units

• When the piping length from the outdoor unit to HBC is longer than 10 m

Amount of additional charge (kg)	=	High-pressure pipe ø22.2 total length × 0.19 (kg/m)	+	High-pressure pipe ø19.05 total length × 0.13 (kg/m)	+	High-pressure pipe ø15.88 total length × 0.09 (kg/m)

+

Outdoor unit model	Amount (kg)
(E)M200	1.0
(E)M250	1.0
(E)M300	0
(E)M350	0
(E)M400	0
(E)M450	0
(E)M500	0

+

HBC model	Amount (kg)
350F	5.6
500F	5.6

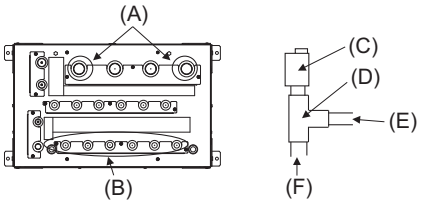
* Amount of refrigerant to be charged for single-module units

11-5. Water piping

11-5-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate. (Horizontal type Main-HBC connection)
   Install air vent valves to the highest places where air can accumulate and inlet of Main-HBC.
   (Vertical type Main-HBC connection)



(A) Connection pipe from Sub-HBC
(B) Connection pipe from indoor unit
(C) Auto air vent
(D) T-joint
(E) Piping for Sub-HBC or indoor unit side
(F) Piping for Main-HBC side

7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

11-5-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items		Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])	7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion (mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion (mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8) (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness (mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica (mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron (mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper (mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion (mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion (mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine (mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide (mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index	–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC.
3. Connecting pipes made of different materials
   Connecting pipes used for HBC and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use.

11-6. Compatibility

<Horizontal type Main-HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY-(E)M-YNW	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Not compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Not compatible
	WP type	WM-V-BB type	–	–	Not compatible
	WP type	WM-V-AB type	–	–	Not compatible
	WP type	WP type	–	–	Not compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Not compatible
	WP type	–	WM-V-AA type	–	Not compatible
	WP type	–	WP type	–	Not compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Not compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Not compatible
	WM-V-AA type	WP type	WM-V-AA type		Not compatible
	WM-V-AA type	WP type	WP type		Not compatible
	WP type	WM-V-BB type	WM-V-AA type		Not compatible
	WP type	WM-V-BB type	WP type		Not compatible
	WP type	WM-V-AB type	WM-V-AA type		Not compatible
	WP type	WM-V-AB type	WP type		Not compatible
	WP type	WP type	WM-V-AA type		Not compatible
	WP type	WP type	WP type		Not compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	–	WP type	WP type	Not compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	–	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	–	WM-V-AA type	WP type	Not compatible
	WP type	–	WP type	WM-V-BB type	Not compatible
	WP type	–	WP type	WM-V-AB type	Not compatible
	WP type	–	WP type	WP type	Not compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-BB type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-AB type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WP type	WP type	WP type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WP type	Not compatible
	WP type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WP type	WM-V-BB type	WP type	WP type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Not compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WP type	WM-V-AB type	WP type	WP type	Not compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WP type	WM-V-AA type	WP type	Not compatible
	WP type	WP type	WP type	WM-V-BB type	Not compatible
	WP type	WP type	WP type	WM-V-AB type	Not compatible
	WP type	WP type	WP type	WP type	Not compatible

<Vertical type Main-HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY-(E)M-YNW-A1	WM-F-AA type	–	–	–	Compatible
	WM-F-AA type	WM-V-BB type	–	–	Compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
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	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
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	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

PURY-P-YNW-A2/TR2, PURY-EP-YNW-A2/TR2

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Model			PURY-P200YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	22.4
		BTU/h	76,400
	Power input	kW	6.54
	Current input	A	11.0-10.4-10.1
	EER	kW/kW	3.42
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)
cooling *3	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	25.0
		BTU/h	85,300
	Power input	kW	6.49
	Current input	A	10.9-10.4-10.0
	COP	kW/kW	3.85
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)
heating *3	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit	Total capacity		50~150% of outdoor unit capacity
connectable	Model/Quantity		W/WP/WL10~125/1~30
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76/76
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed
piping diameter	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	5.0
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	214 (472)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WD
	Wiring		WKE94L190
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P250YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	28.0
		BTU/h	95,500
	Power input	kW	9.92
	Current input	A	16.7-15.9-15.3
	EER	kW/kW	2.82
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	31.5
		BTU/h	107,500
	Power input	kW	10.06
	Current input	A	16.9-16.1-15.5
	COP	kW/kW	3.13
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	60.5/64.0
Sound power level (measured in anechoic room) *4		dB <A>	78/83
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	220
		L/s	3,667
		cfm	7,768
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	8.0
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	223 (492)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WD
	Wiring		WKE94L190
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P300YNW-A2/TR2 (-BS)	
Number of HBC			**Single HBC**	**Double HBC**
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
		BTU/h	114,300	
	Power input	kW	13.13	11.12
	Current input	A	22.1-21.0-20.2	18.7-17.8-17.1
	EER	kW/kW	2.55	3.01
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	33.5	
		BTU/h	114,300	
	Power input	kW	11.35	10.66
	Current input	A	19.1-18.2-17.5	17.9-17.0-16.4
	COP	kW/kW	2.95	3.14
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80/86	
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed	
	Low pressure	mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*6	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	9.2	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)	
	Control		HBC	
Net weight		kg (lbs)	225 (497)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKB94C4WD	
	Wiring		WKE94L190	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.) with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P350YNW-A2/TR2 (-BS)	
Number of HBC			**Single HBC**	**Double HBC**
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	40.0	
		BTU/h	136,500	
	Power input	kW	16.26	13.24
	Current input	A	27.4-26.0-25.1	22.3-21.2-20.4
	EER	kW/kW	2.46	3.02
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	45.0	
		BTU/h	153,500	
	Power input	kW	13.88	12.85
	Current input	A	23.4-22.2-21.4	21.6-20.6-19.8
	COP	kW/kW	3.24	3.50
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4		dB <A>	81/83	
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed	
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity		Propeller fan x 2	
	Air flow rate	m^3/min	250	
		L/s	4,167	
		cfm	8,828	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.46 x 2	
*6	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	12.0	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)	
	Control		HBC	
Net weight		kg (lbs)	269 (594)	
Heat exchanger			Salt-resistant cross fin & copper tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKB94C4WE	
	Wiring		WKE94L191	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P400YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	45.0
		BTU/h	153,500
	Power input	kW	16.65
	Current input	A	28.1-26.7-25.7
	EER	kW/kW	2.70
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	50.0
		BTU/h	170,600
	Power input	kW	14.88
	Current input	A	25.1-23.8-23.0
	COP	kW/kW	3.36
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	65.0/69.0
Sound power level (measured in anechoic room) *4		dB <A>	83/88
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	16.1
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)
	Control		HBC
Net weight		kg (lbs)	269 (594)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WE
	Wiring		WKE94L191
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.) with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P450YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	50.0
		BTU/h	170,600
	Power input	kW	17.92
	Current input	A	30.2-28.7-27.7
	EER	kW/kW	2.79
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	56.0
		BTU/h	191,100
	Power input	kW	17.39
	Current input	A	29.3-27.8-26.8
	COP	kW/kW	3.22
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83/89
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	16.2
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	289 (638)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WE
	Wiring		WKE94L191
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-P500YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	56.0
		BTU/h	191,100
	Power input	kW	24.03
	Current input	A	40.5-38.5-37.1
	EER	kW/kW	2.33
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	63.0
		BTU/h	215,000
	Power input	kW	19.09
	Current input	A	32.2-30.6-29.5
	COP	kW/kW	3.30
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	63.5/64.5
Sound power level (measured in anechoic room) *4		dB <A>	82/84
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	295
		L/s	4,917
		cfm	10,416
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	17.4
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	335 (739)
Heat exchanger			Salt-resistant cross fin & copper tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WF
	Wiring		WKE94L192
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.) with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP200YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	22.4
		BTU/h	76,400
	Power input	kW	5.84
	Current input	A	9.8-9.3-9.0
	EER	kW/kW	3.83
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	25.0
		BTU/h	85,300
	Power input	kW	6.49
	Current input	A	10.9-10.4-10.0
	COP	kW/kW	3.85
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~30
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	59.0/59.0
Sound power level (measured in anechoic room) *4		dB <A>	76/76
Refrigerant piping diameter	High pressure	mm (in.)	15.88 (5/8) Brazed
	Low pressure	mm (in.)	19.05 (3/4) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	170
		L/s	2,833
		cfm	6,003
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	4.9
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	219 (483)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WG
	Wiring		WKE94L190
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP250YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	28.0
		BTU/h	95,500
	Power input	kW	8.77
	Current input	A	14.8-14.0-13.5
	EER	kW/kW	3.19
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	31.5
		BTU/h	107,500
	Power input	kW	9.84
	Current input	A	16.6-15.7-15.2
	COP	kW/kW	3.20
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	60.5/61.0
Sound power level (measured in anechoic room) *4		dB <A>	78/80
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed
	Low pressure	mm (in.)	22.2 (7/8) Brazed
FAN	Type x Quantity		Propeller fan x 1
	Air flow rate	m^3/min	185
		L/s	3,083
		cfm	6,532
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 1
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	7.5
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)
	Control		HBC
Net weight		kg (lbs)	228 (503)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WG
	Wiring		WKE94L190
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP300YNW-A2/TR2 (-BS)	
Number of HBC			**Single HBC**	**Double HBC**
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
		BTU/h	114,300	
	Power input	kW	12.05	10.24
	Current input	A	20.3-19.3-18.6	17.2-16.4-15.8
	EER	kW/kW	2.78	3.27
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	37.5	
		BTU/h	128,000	
	Power input	kW	11.71	11.12
	Current input	A	19.7-18.7-18.1	18.7-17.8-17.1
	COP	kW/kW	3.20	3.37
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	61.0/67.0	
Sound power level (measured in anechoic room) *4		dB <A>	80/86	
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed	
	Low pressure	mm (in.)	22.2 (7/8) Brazed	
FAN	Type x Quantity		Propeller fan x 1	
	Air flow rate	m^3/min	240	
		L/s	4,000	
		cfm	8,474	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.92 x 1	
*6	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	8.8	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 920 x 740	
		in.	73-3/16 (70-13/16 without legs) x 36-1/4 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 5.2 kg (12 lbs)	
	Control		HBC	
Net weight		kg (lbs)	230 (508)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKB94C4WG	
	Wiring		WKE94L190	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP350YNW-A2/TR2 (-BS)	
Number of HBC			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	40.0	
		BTU/h	136,500	
	Power input	kW	14.76	12.01
	Current input	A	24.9-23.6-22.8	20.2-19.2-18.5
	EER	kW/kW	2.71	3.33
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)	
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)	
Heating capacity *2		kW	45.0	
		BTU/h	153,500	
	Power input	kW	13.88	12.85
	Current input	A	23.4-22.2-21.4	21.6-20.6-19.8
	COP	kW/kW	3.24	3.50
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)	
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)	
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity	
	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	62.5/64.0	
Sound power level (measured in anechoic room) *4		dB <A>	81/83	
Refrigerant piping diameter	High pressure	mm (in.)	19.05 (3/4) Brazed	
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
FAN	Type x Quantity		Propeller fan x 2	
	Air flow rate	m^3/min	250	
		L/s	4,167	
		cfm	8,828	
	Control, Driving mechanism		Inverter-control, Direct-driven by motor	
	Motor output	kW	0.46 x 2	
*6	External static press.		0 Pa (0 mmH_2O)	
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1	
	Starting method		Inverter	
	Motor output	kW	11.4	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>	
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740	
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection	
	Compressor		-	
	Fan motor		-	
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)	
	Control		HBC	
Net weight		kg (lbs)	275 (607)	
Heat exchanger			Salt-resistant cross fin & aluminium tube	
HIC circuit (HIC: Heat Inter-Changer)			-	
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)	
Drawing	External		WKB94C4WH	
	Wiring		WKE94L191	
Standard attachment	Document		Installation Manual	
	Accessory		-	
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.	

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.) with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP400YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	45.0
		BTU/h	153,500
	Power input	kW	14.28
	Current input	A	24.1-22.9-22.0
	EER	kW/kW	3.15
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	50.0
		BTU/h	170,600
	Power input	kW	14.12
	Current input	A	23.8-22.6-21.8
	COP	kW/kW	3.54
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	65.0/69.0
Sound power level (measured in anechoic room) *4		dB <A>	83/88
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	15.3
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 8.0 kg (18 lbs)
	Control		HBC
Net weight		kg (lbs)	276 (609)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WH
	Wiring		WKE94L191
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP450YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	50.0
		BTU/h	170,600
	Power input	kW	16.83
	Current input	A	28.4-26.9-26.0
	EER	kW/kW	2.97
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	56.0
		BTU/h	191,100
	Power input	kW	16.86
	Current input	A	28.4-27.0-26.0
	COP	kW/kW	3.32
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	65.5/70.0
Sound power level (measured in anechoic room) *4		dB <A>	83/89
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	315
		L/s	5,250
		cfm	11,123
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.46 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	15.5
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,240 x 740
		in.	73-3/16 (70-13/16 without legs) x 48-7/8 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	301 (664)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WH
	Wiring		WKE94L191
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

1. Nominal cooling conditions (subject to JIS B8615-2)
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions (subject to JIS B8615-2)
   Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. -10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
   with cooling/heating mixed operation.
4. Cooling mode/Heating mode
5. The sound pressure level measured by the conventional method in JIS for reference purpose.
6. External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
   Consult your dealer about the specification when setting External static pressure option.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PURY-EP500YNW-A2/TR2 (-BS)
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	56.0
		BTU/h	191,100
	Power input	kW	21.22
	Current input	A	35.8-34.0-32.8
	EER	kW/kW	2.63
Temp. range of cooling *3	Indoor	W.B.	15.0~24.0°C (59~75°F)
	Outdoor	D.B.	-5.0~52.0°C (23~126°F)
Heating capacity *2		kW	63.0
		BTU/h	215,000
	Power input	kW	19.74
	Current input	A	33.3-31.6-30.5
	COP	kW/kW	3.19
Temp. range of heating *3	Indoor	D.B.	15.0~27.0°C (59~81°F)
	Outdoor	W.B.	-20.0~15.5°C (-4~60°F)
Indoor unit connectable	Total capacity		50~150% of outdoor unit capacity
	Model/Quantity		W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room) *4, 5		dB <A>	63.5/64.5
Sound power level (measured in anechoic room) *4		dB <A>	82/84
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed
FAN	Type x Quantity		Propeller fan x 2
	Air flow rate	m^3/min	295
		L/s	4,917
		cfm	10,416
	Control, Driving mechanism		Inverter-control, Direct-driven by motor
	Motor output	kW	0.92 x 2
*6	External static press.		0 Pa (0 mmH_2O)
Compressor	Type x Quantity		Inverter scroll hermetic compressor x 1
	Starting method		Inverter
	Motor output	kW	17.0
	Case heater	kW	-
	Lubricant		MEL32
External finish			Pre-coated galvanized steel sheets (+powder coating for -BS type) <MUNSELL 5Y 8/1 or similar>
External dimension H x W x D		mm	1,858 (1,798 without legs) x 1,750 x 740
		in.	73-3/16 (70-13/16 without legs) x 68-15/16 x 29-3/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP./FAN)		Over-heat protection, Over-current protection
	Compressor		-
	Fan motor		-
Refrigerant	Type x original charge		R410A x 10.8 kg (24 lbs)
	Control		HBC
Net weight		kg (lbs)	346 (763)
Heat exchanger			Salt-resistant cross fin & aluminium tube
HIC circuit (HIC: Heat Inter-Changer)			-
Defrosting method			Auto-defrost mode (Reversed refrigerant cycle)
Drawing	External		WKB94C4WJ
	Wiring		WKE94L192
Standard attachment	Document		Installation Manual
	Accessory		-
Optional parts			Main HBC: CMB-WM108,1016V-AA Sub HBC: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice.

Notes:

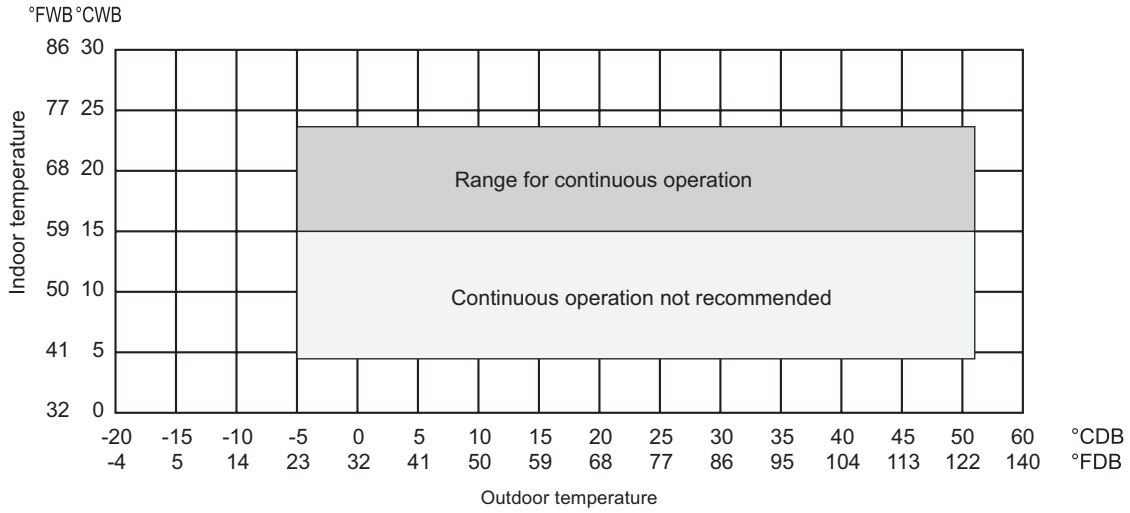
1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B./24°CW.B. (95°FD.B./75°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°C D.B. (68°F D.B.), Outdoor: 7°C D.B./6°C W.B. (45°F D.B./43°F W.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.-10 °CD.B.(14 °FD.B.)/-11 °CW.B.(12 °FW.B.) to 21 °CD.B.(70 °FD.B.)/15.5 °CW.B.(60 °FW.B.)
with cooling/heating mixed operation.
4.Cooling mode/Heating mode
5.The sound pressure level measured by the conventional method in JIS for reference purpose.
6.External static pressure option is available (30 Pa, 60 Pa, 80 Pa/3.1 mmH_2O, 6.1 mmH_2O, 8.2 mmH_2O).
Consult your dealer about the specification when setting External static pressure option.

Unit converter

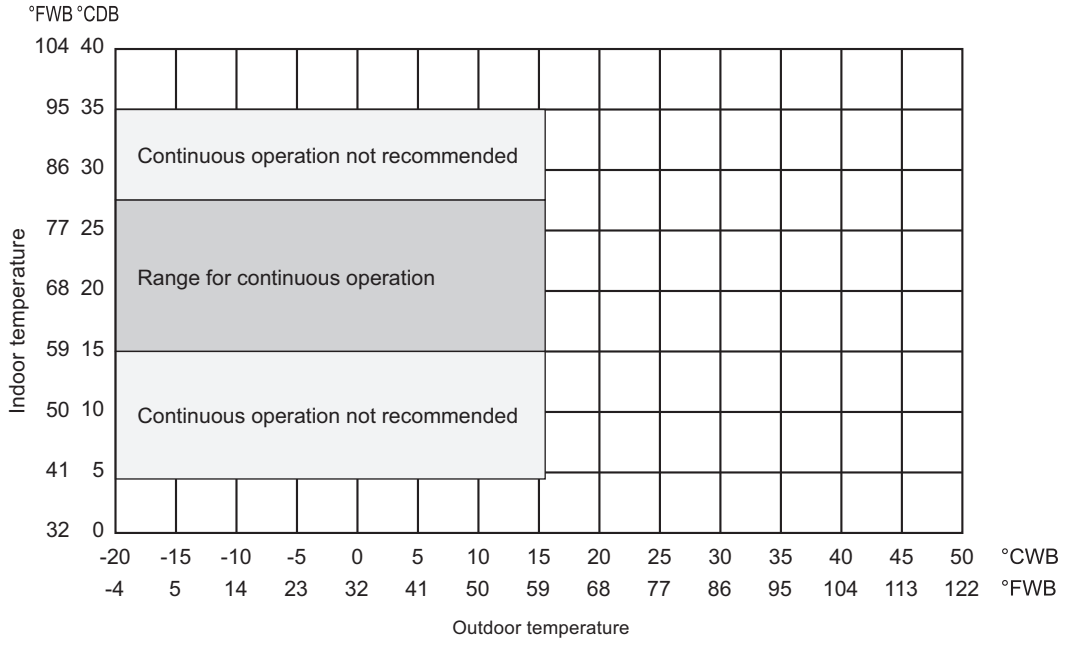
BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

• **Cooling only**



• **Heating only**



• **Combination of cooling/heating operation (Cooling main or Heating main)**

Outdoor temperature	Indoor temperature	
	Cooling	Heating
-10 to 21°CDB (14 to 70°FDB)	——	15 to 27°CDB (59 to 81°FDB)
-11 to 15.5°CWB (12 to 60°FWB)	15 to 24°CWB (59 to 75°FWB)	——

Section 3-1.
Shows an example of how to select the indoor and outdoor units according to the required heating/cooling load.

Section 3-2. through 3-5.
Show the actual correction data of indoor and outdoor units.

3-1. Correction by temperature

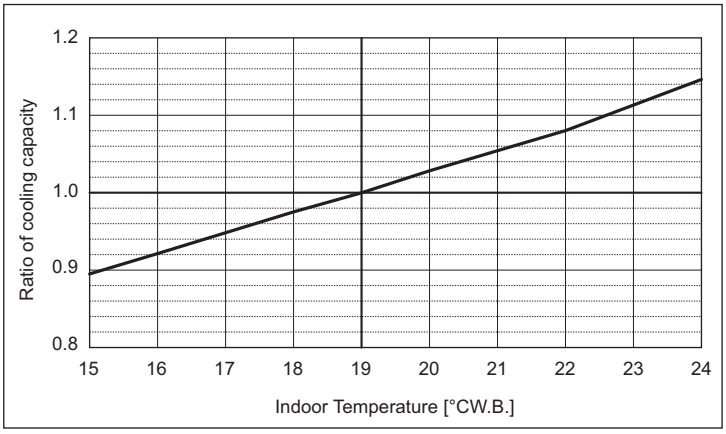
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

PURY-		P200YNW-A2/TR2	P250YNW-A2/TR2
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.54	9.92

PURY-		EP200YNW-A2/TR2	EP250YNW-A2/TR2
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.84	8.77

Indoor unit temperature correction

To be used to correct indoor unit capacity only

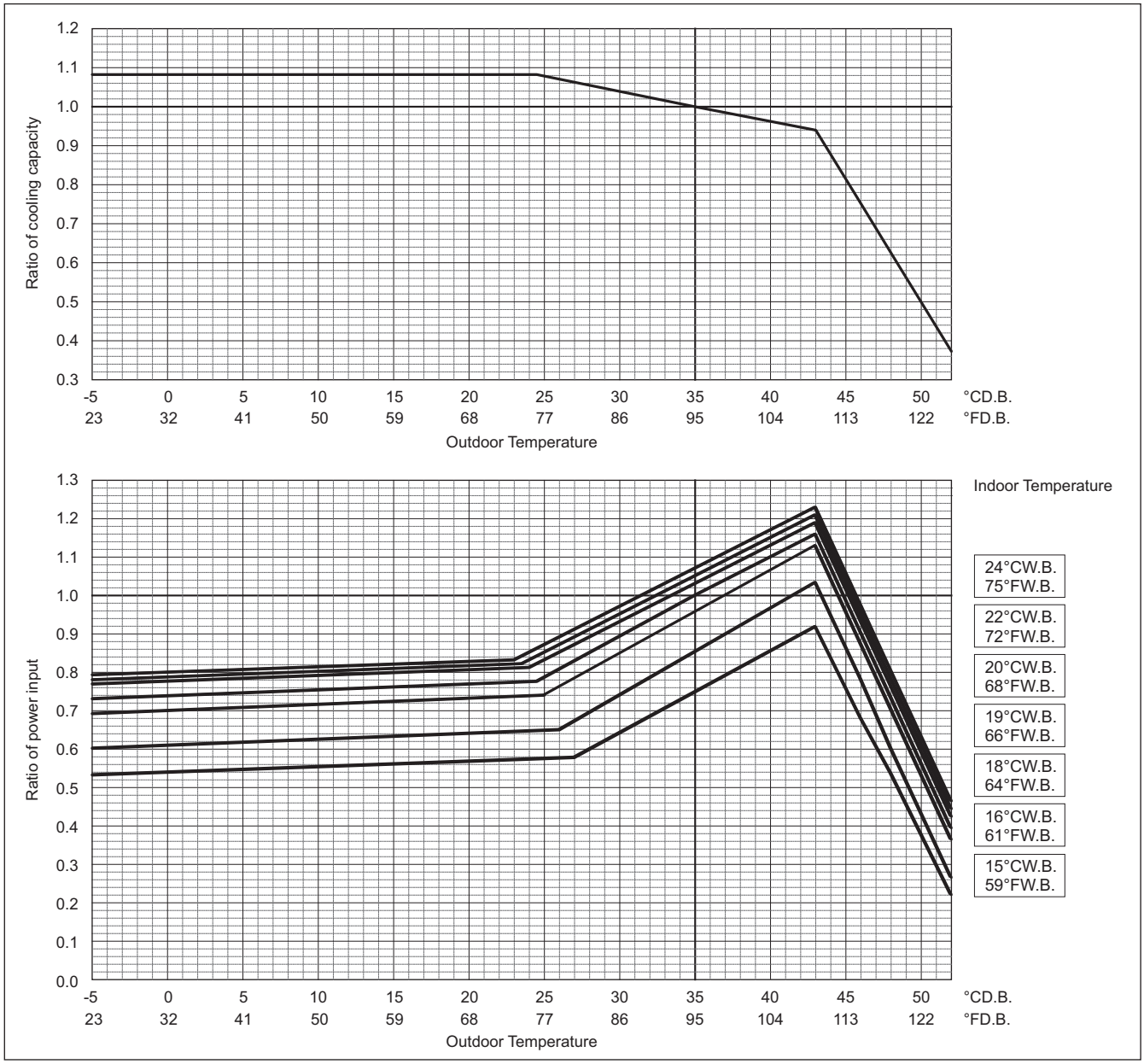


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

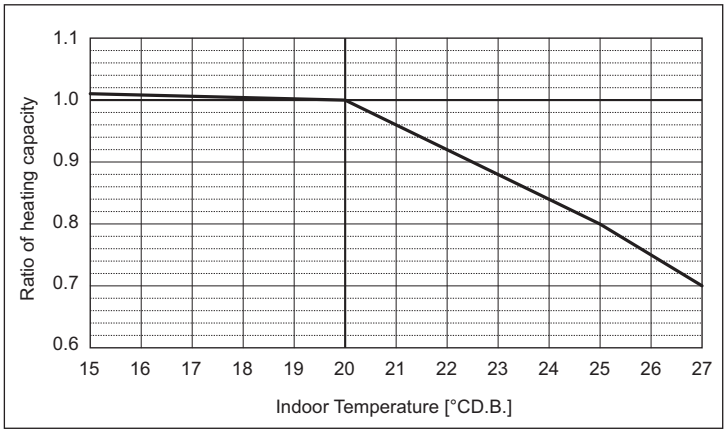


PURY-		P200YNW-A2/TR2	P250YNW-A2/TR2
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.49	10.06

PURY-		EP200YNW-A2/TR2	EP250YNW-A2/TR2
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.49	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

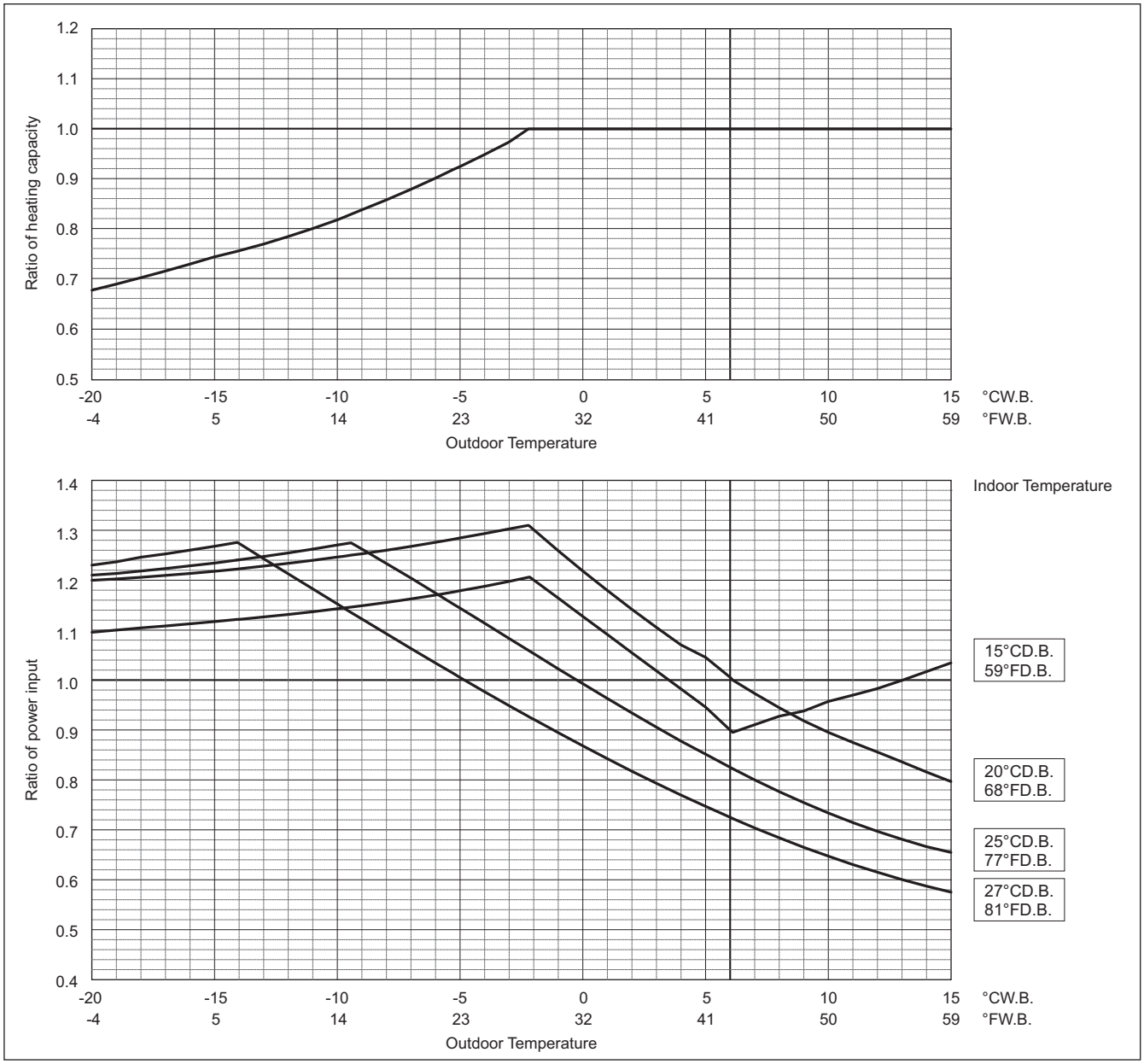


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

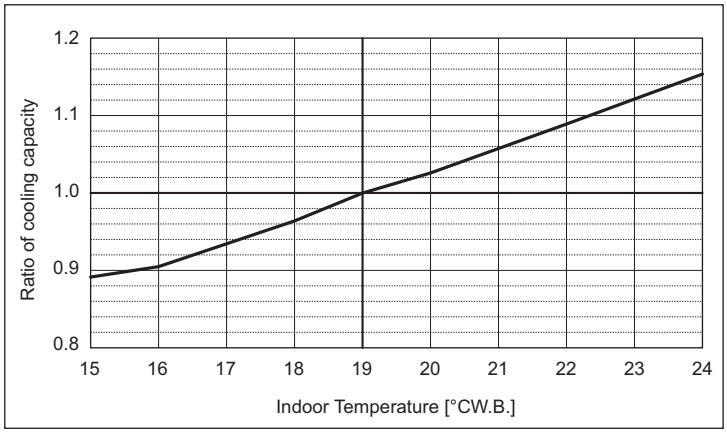


PURY-		P300YNW-A2/TR2	P350YNW-A2/TR2	P400YNW-A2/TR2
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	13.13	16.26	16.65

PURY-		EP300YNW-A2/TR2	EP350YNW-A2/TR2	EP400YNW-A2/TR2
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	12.05	14.76	14.28

Indoor unit temperature correction

To be used to correct indoor unit capacity only

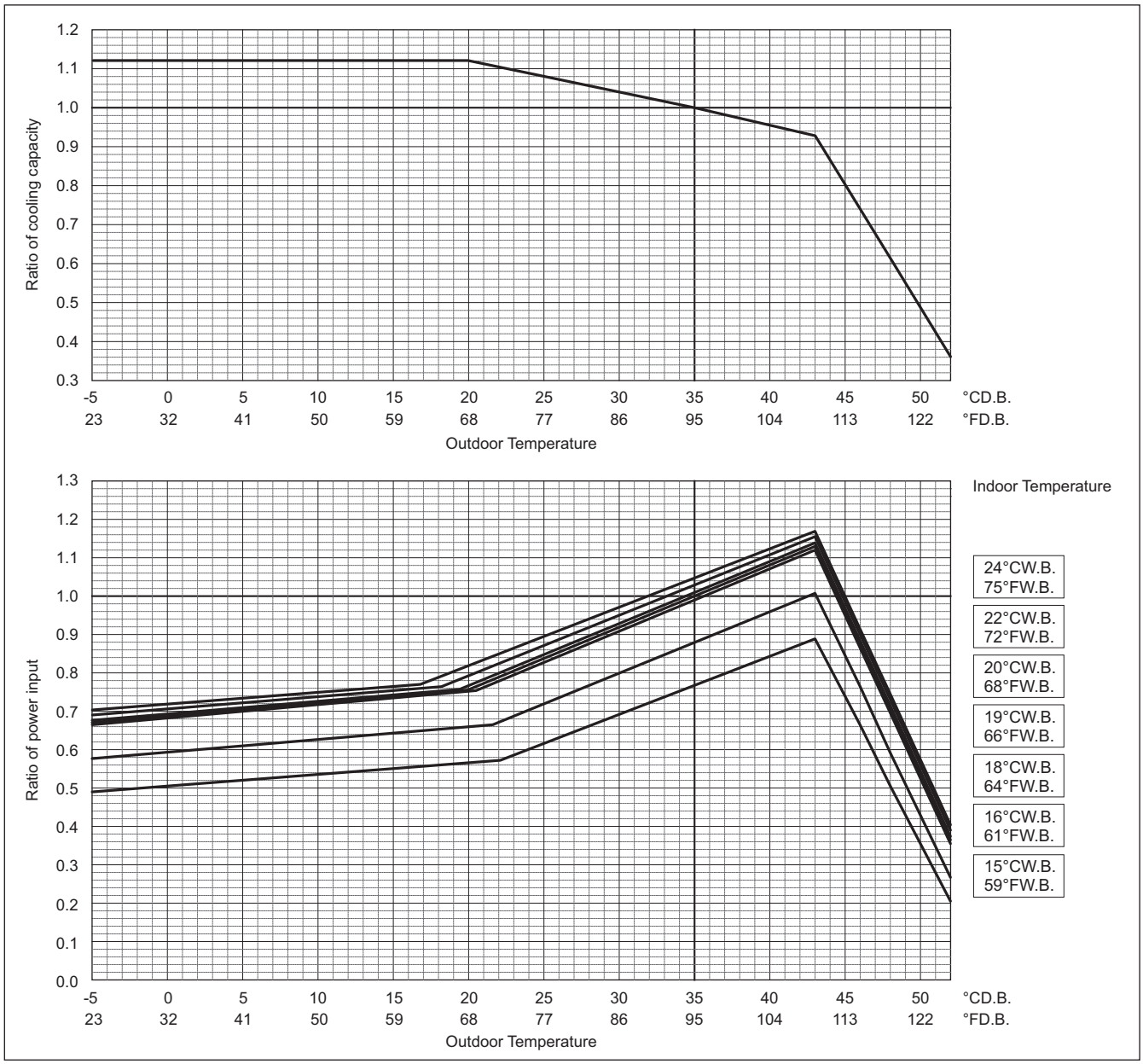


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

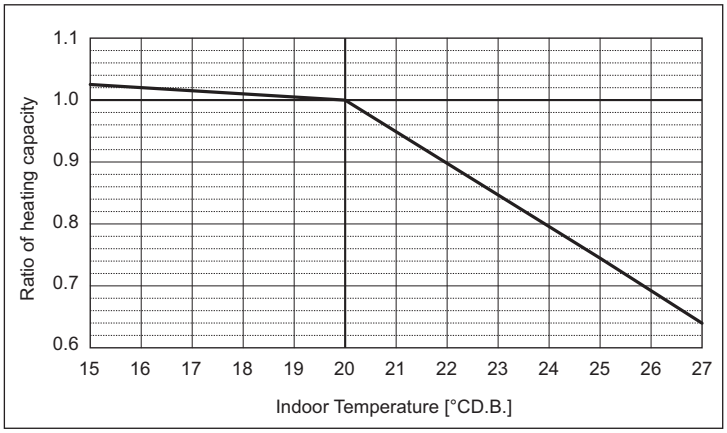


PURY-		P300YNW-A2/TR2	P350YNW-A2/TR2	P400YNW-A2/TR2
Nominal Heating Capacity	kW	33.5	45.0	50.0
	BTU/h	114,300	153,500	170,600
Input	kW	11.35	13.88	14.88

PURY-		EP300YNW-A2/TR2	EP350YNW-A2/TR2	EP400YNW-A2/TR2
Nominal Heating Capacity	kW	37.5	45.0	50.0
	BTU/h	128,000	153,500	170,600
Input	kW	11.71	13.88	14.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

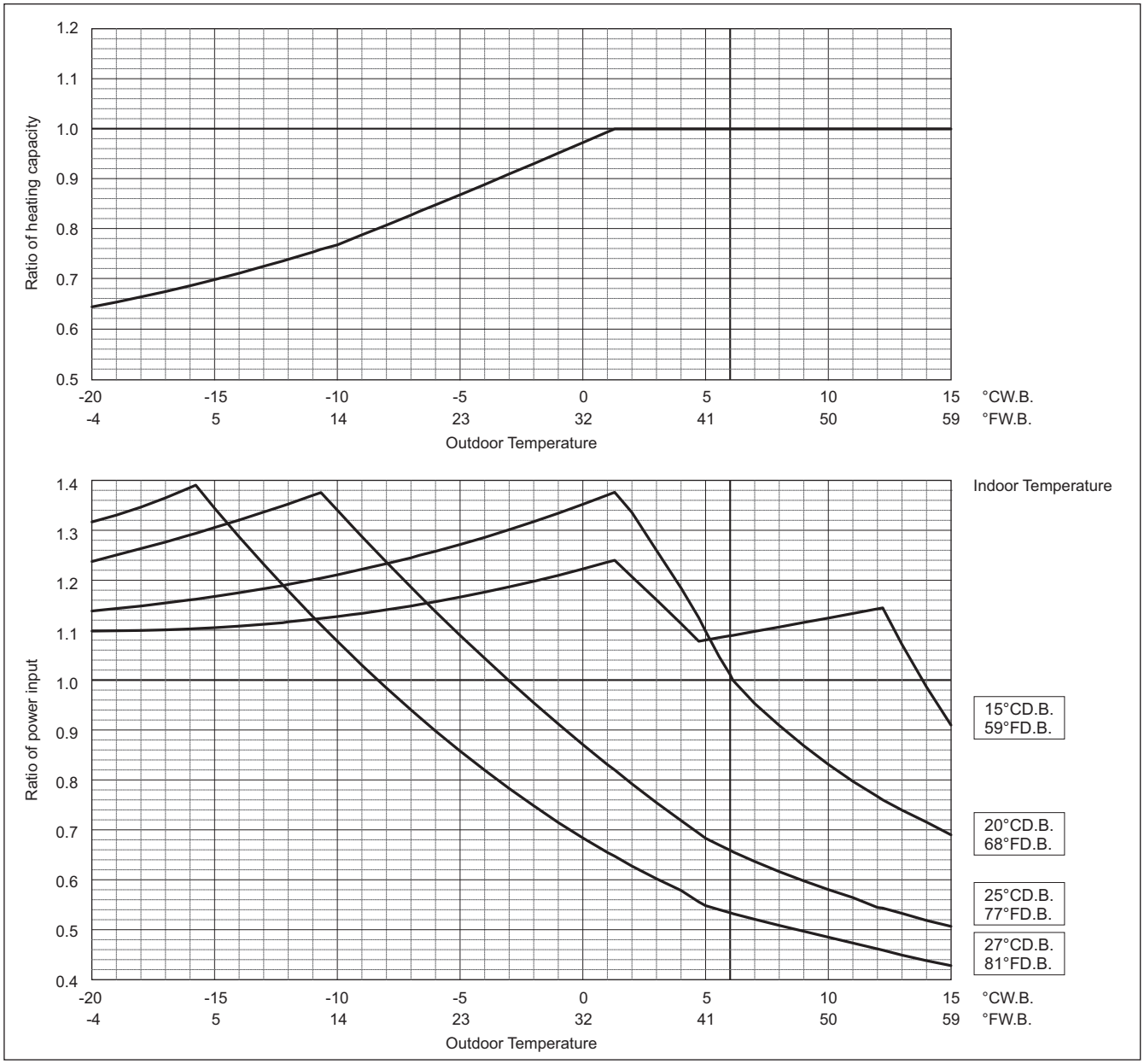


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

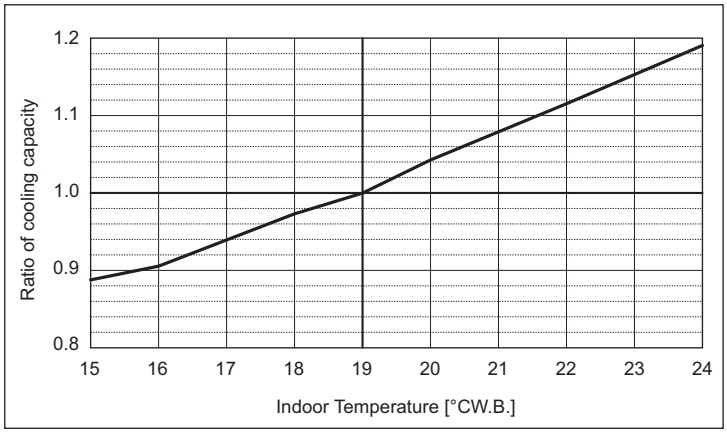


PURY-		P450YNW-A2/TR2	P500YNW-A2/TR2
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	17.92	24.03

PURY-		EP450YNW-A2/TR2	EP500YNW-A2/TR2
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	16.83	21.22

Indoor unit temperature correction

To be used to correct indoor unit capacity only

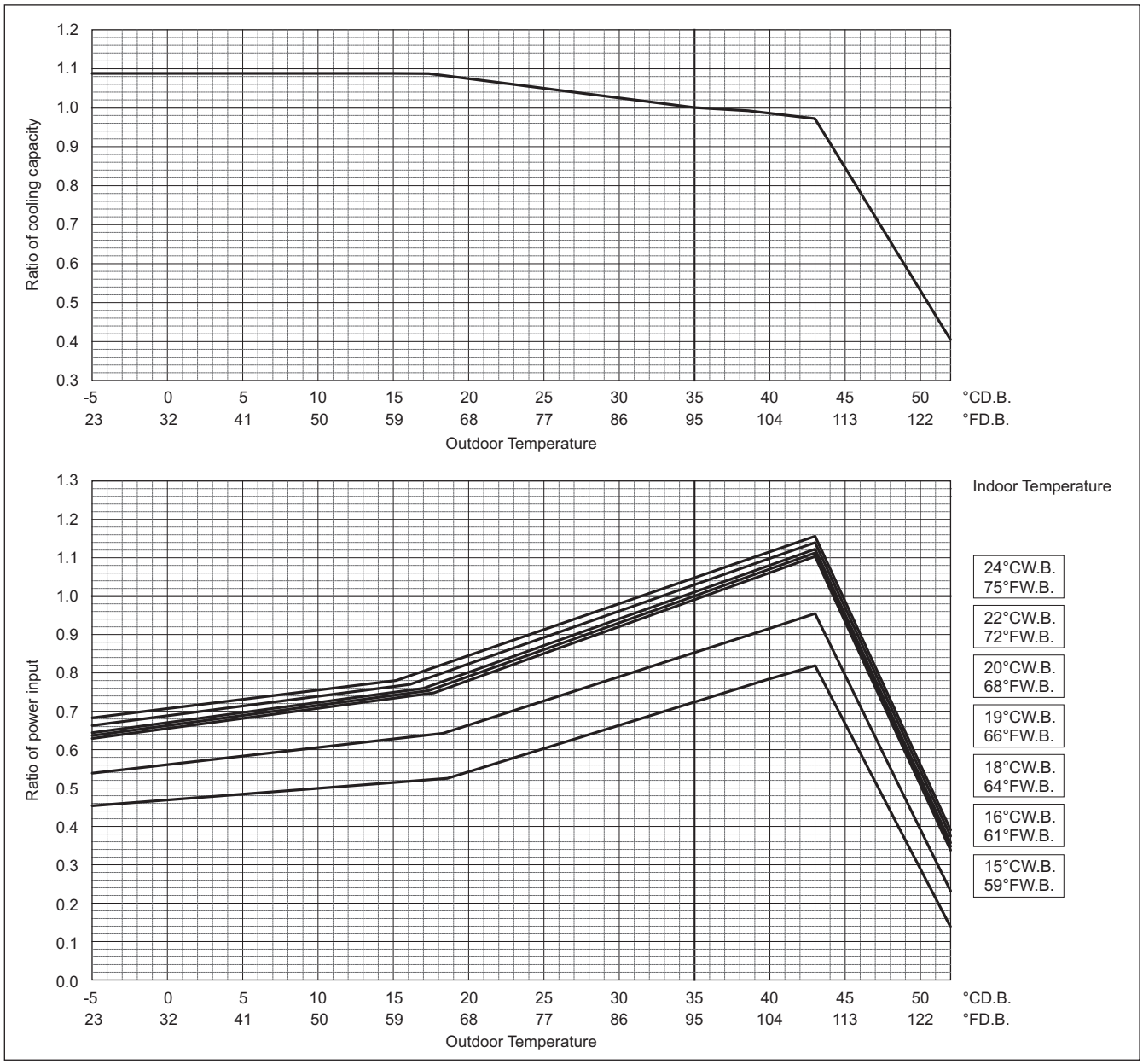


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

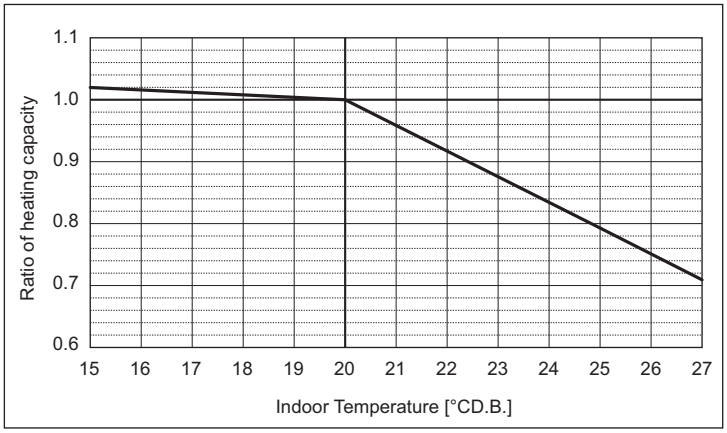


PURY-		P450YNW-A2/TR2	P500YNW-A2/TR2
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	17.39	19.09

PURY-		EP450YNW-A2/TR2	EP500YNW-A2/TR2
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	16.86	19.74

Indoor unit temperature correction

To be used to correct indoor unit capacity only

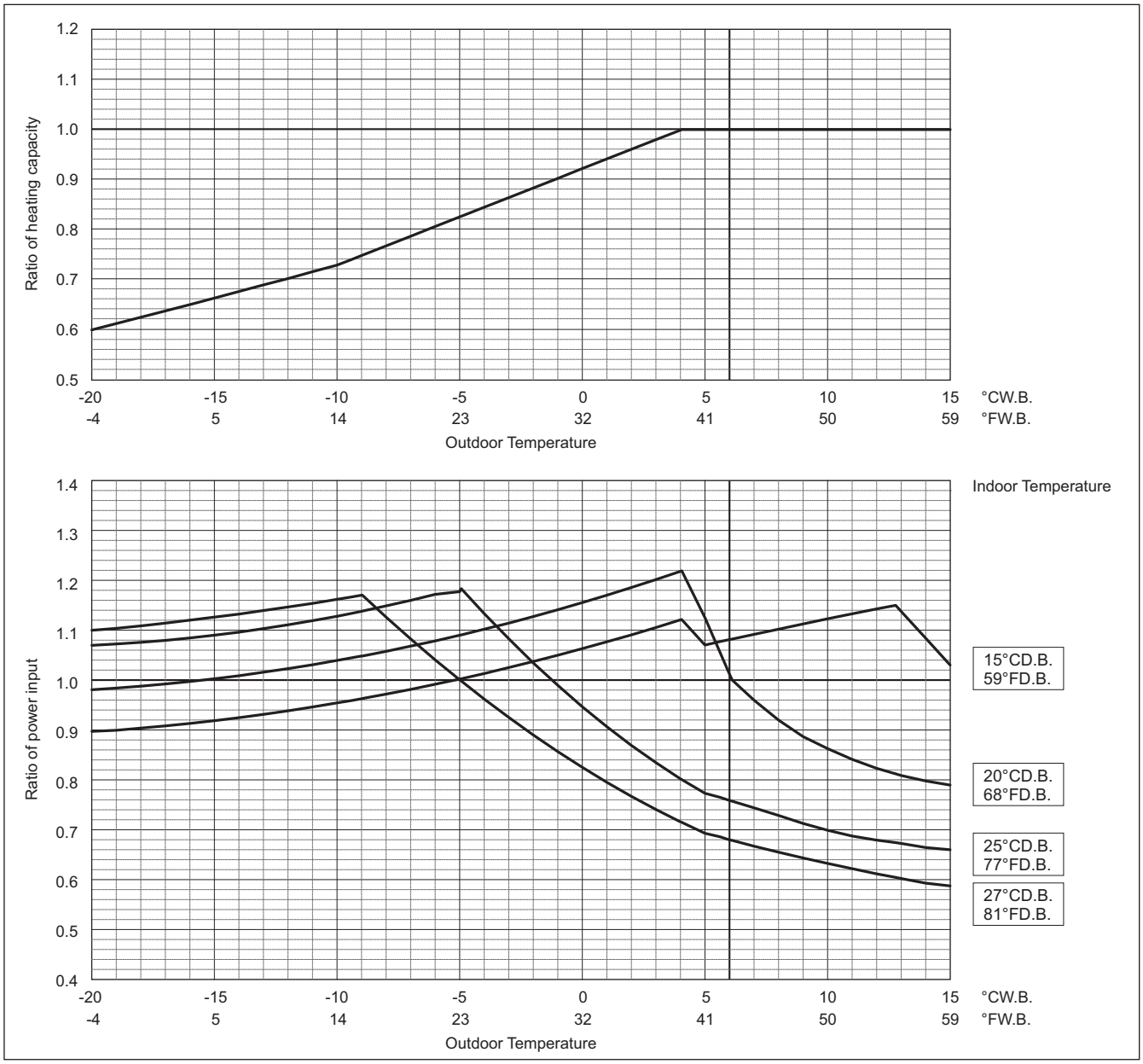


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



Correction by temperature (COP Priority Mode)

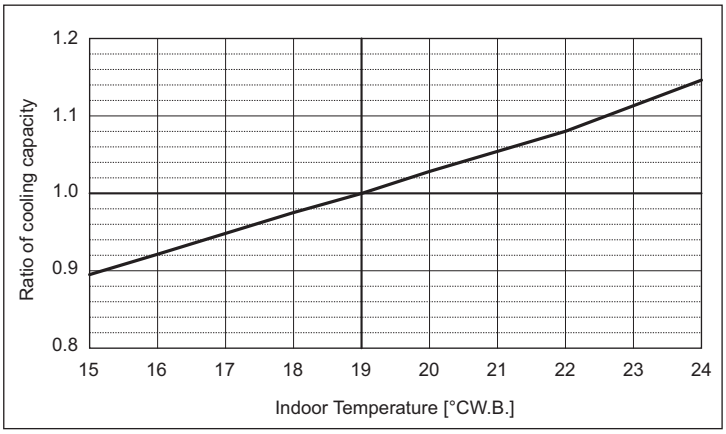
HYBRID CITY MULTI could have various capacities at different designing temperatures. Using the nominal cooling/heating capacity values and the ratios below, the capacity can be found for various temperatures.
To select COP priority mode, SW4 (935) must be set to ON.

PURY-		P200YNW-A2/TR2	P250YNW-A2/TR2
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	6.54	9.92

PURY-		EP200YNW-A2/TR2	EP250YNW-A2/TR2
Nominal Cooling Capacity	kW	22.4	28.0
	BTU/h	76,400	95,500
Input	kW	5.84	8.77

Indoor unit temperature correction

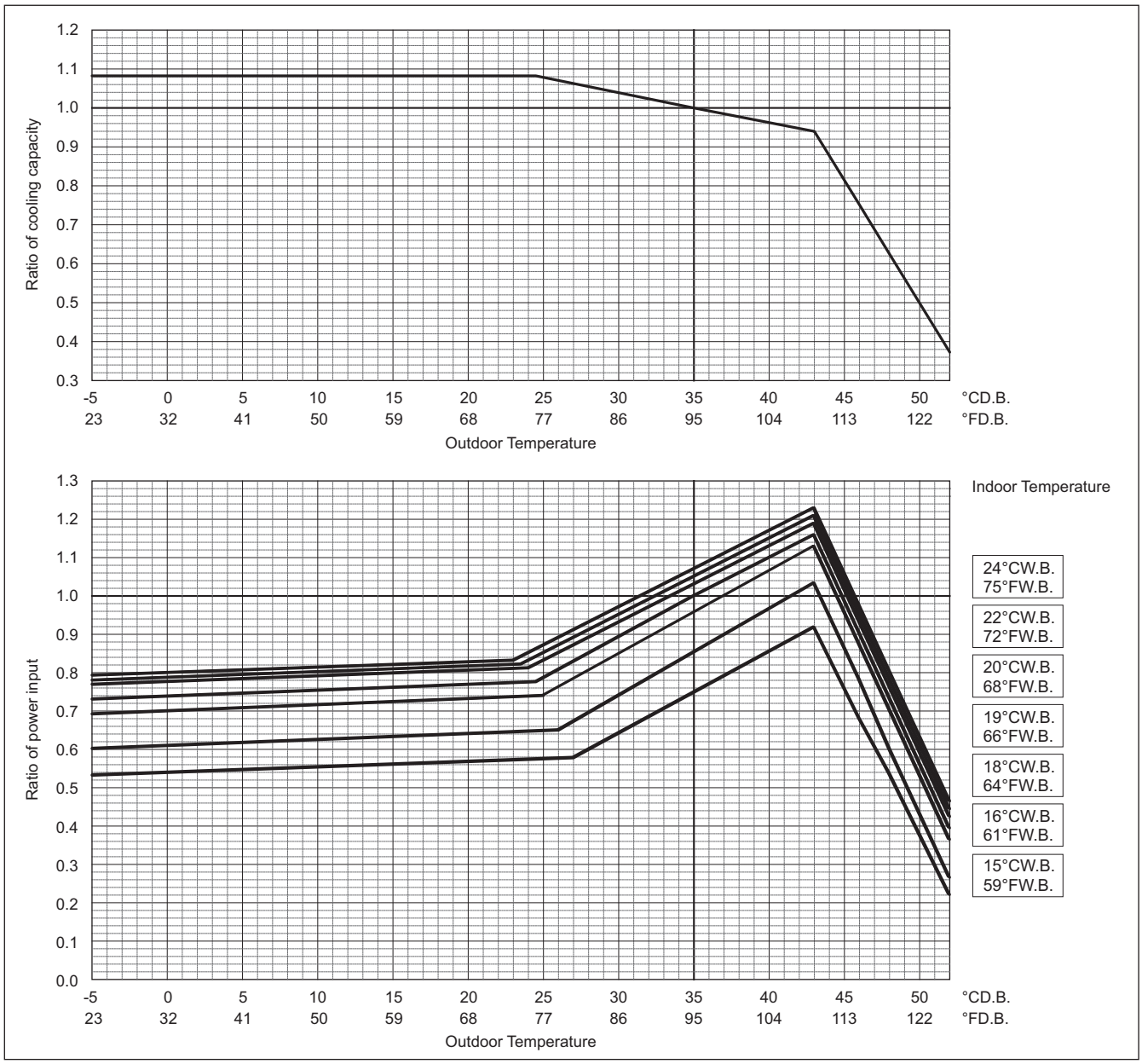
To be used to correct indoor unit capacity only



Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.
Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



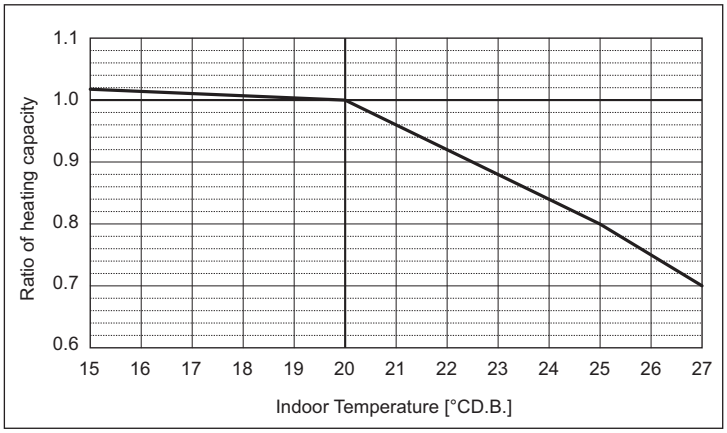
COP Priority Mode

PURY-		P200YNW-A2/TR2	P250YNW-A2/TR2
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.49	10.06

PURY-		EP200YNW-A2/TR2	EP250YNW-A2/TR2
Nominal Heating Capacity	kW	25.0	31.5
	BTU/h	85,300	107,500
Input	kW	6.49	9.84

Indoor unit temperature correction

To be used to correct indoor unit capacity only

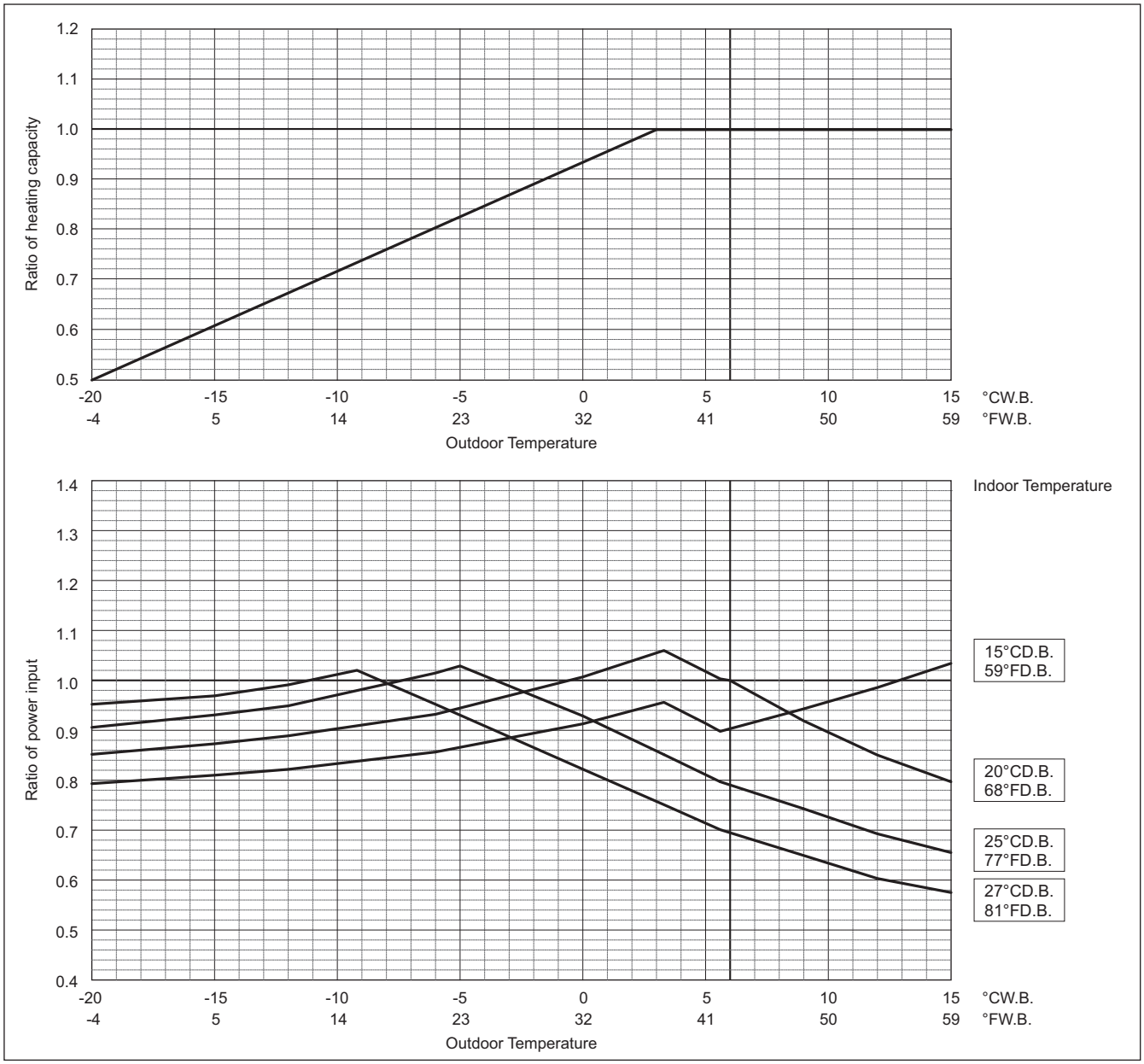


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

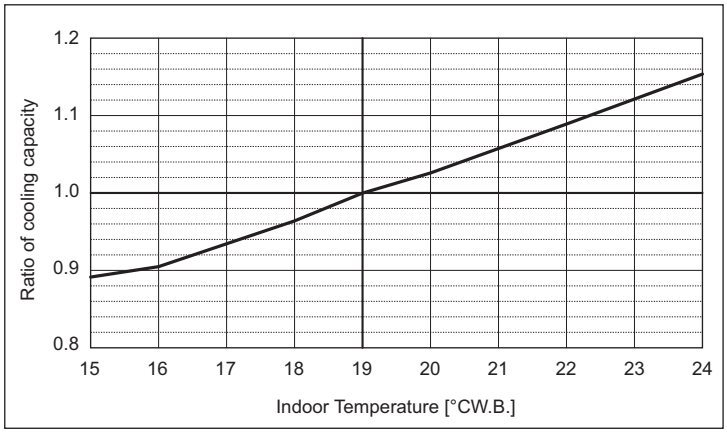


PURY-		P300YNW-A2/TR2	P350YNW-A2/TR2	P400YNW-A2/TR2
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	13.13	16.26	16.65

PURY-		EP300YNW-A2/TR2	EP350YNW-A2/TR2	EP400YNW-A2/TR2
Nominal Cooling Capacity	kW	33.5	40.0	45.0
	BTU/h	114,300	136,500	153,500
Input	kW	12.05	14.76	14.28

Indoor unit temperature correction

To be used to correct indoor unit capacity only

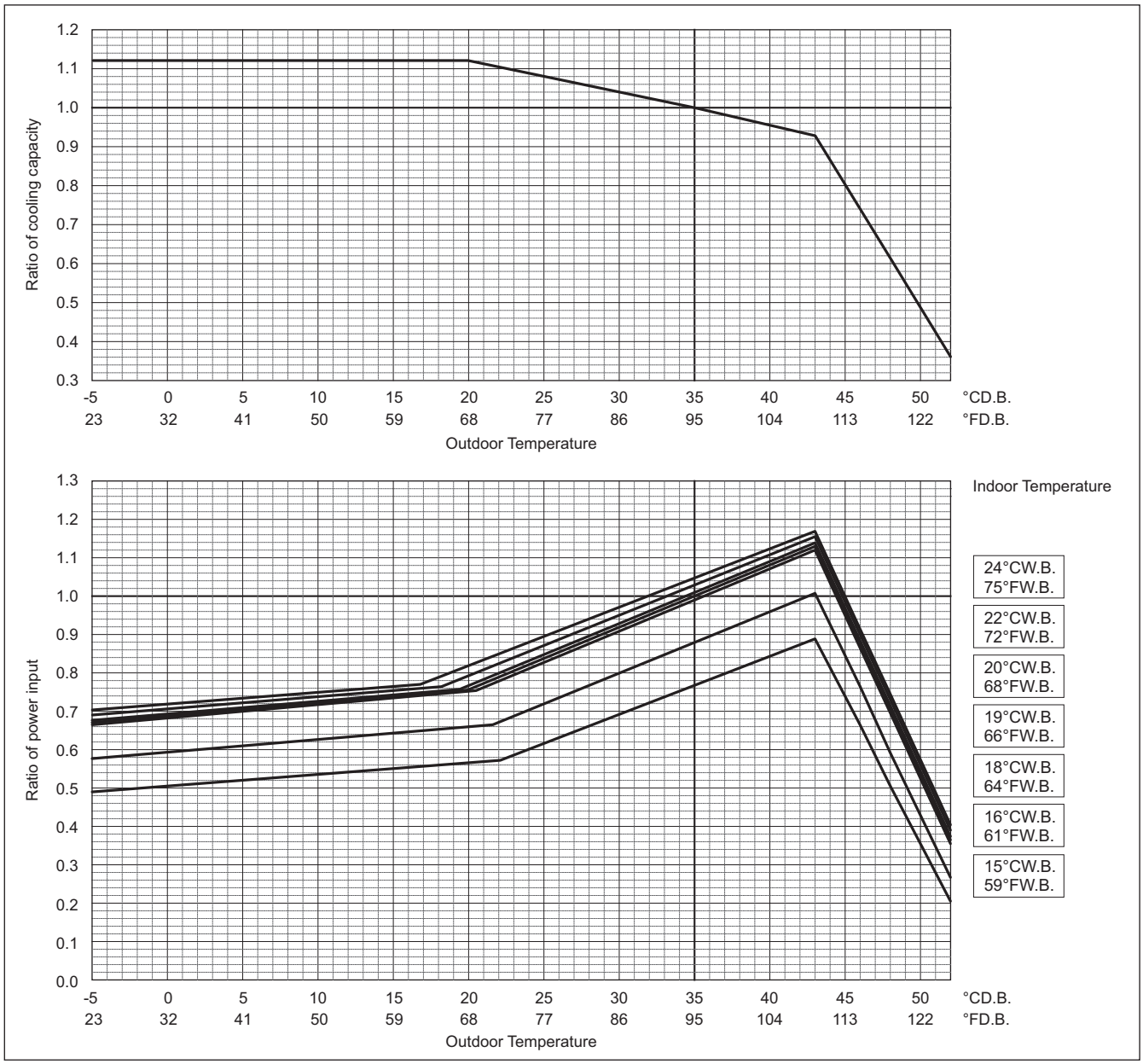


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



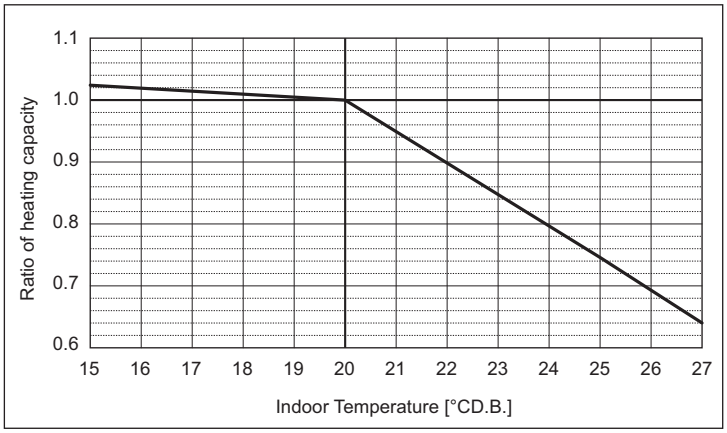
COP Priority Mode

PURY-		P300YNW-A2/TR2	P350YNW-A2/TR2	P400YNW-A2/TR2
Nominal Heating Capacity	kW	33.5	45.0	50.0
	BTU/h	114,300	153,500	170,600
Input	kW	11.35	13.88	14.88

PURY-		EP300YNW-A2/TR2	EP350YNW-A2/TR2	EP400YNW-A2/TR2
Nominal Heating Capacity	kW	37.5	45.0	50.0
	BTU/h	128,000	153,500	170,600
Input	kW	11.71	13.88	14.12

Indoor unit temperature correction

To be used to correct indoor unit capacity only

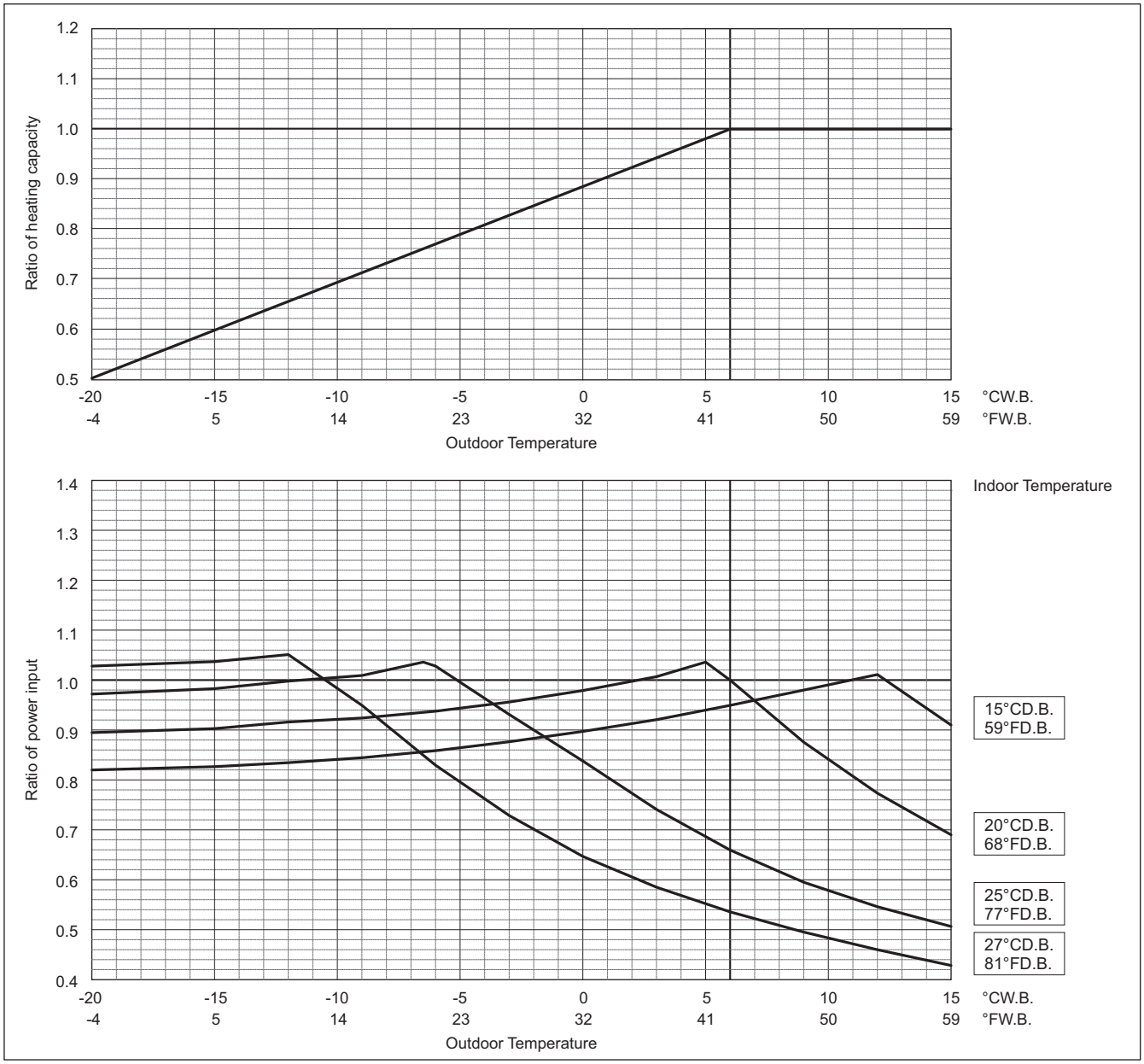


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.

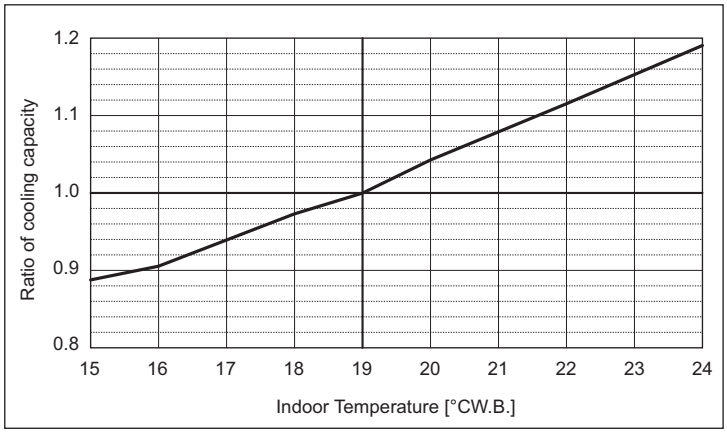


PURY-		P450YNW-A2/TR2	P500YNW-A2/TR2
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	17.92	24.03

PURY-		EP450YNW-A2/TR2	EP500YNW-A2/TR2
Nominal Cooling Capacity	kW	50.0	56.0
	BTU/h	170,600	191,100
Input	kW	16.83	21.22

Indoor unit temperature correction

To be used to correct indoor unit capacity only

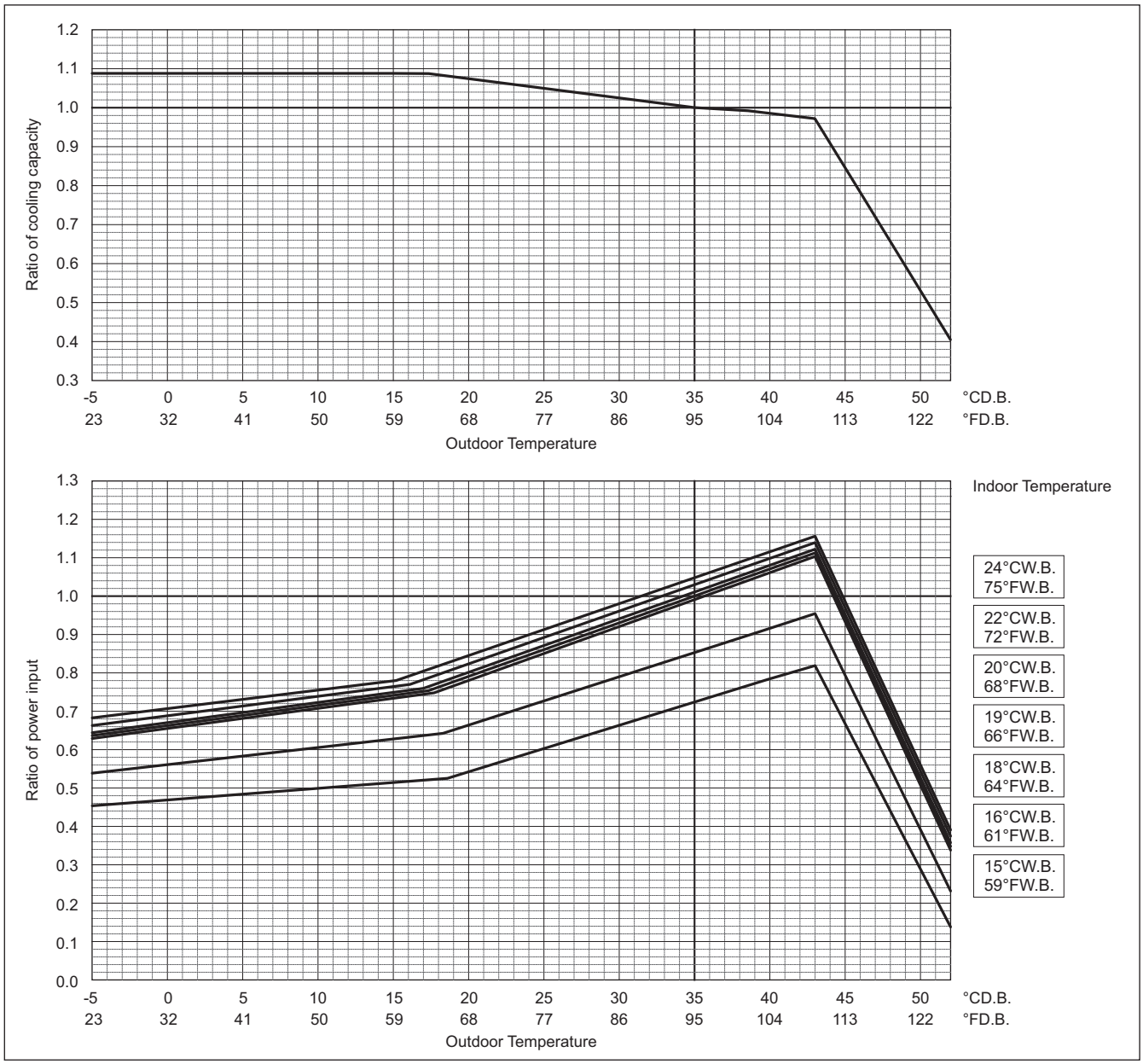


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



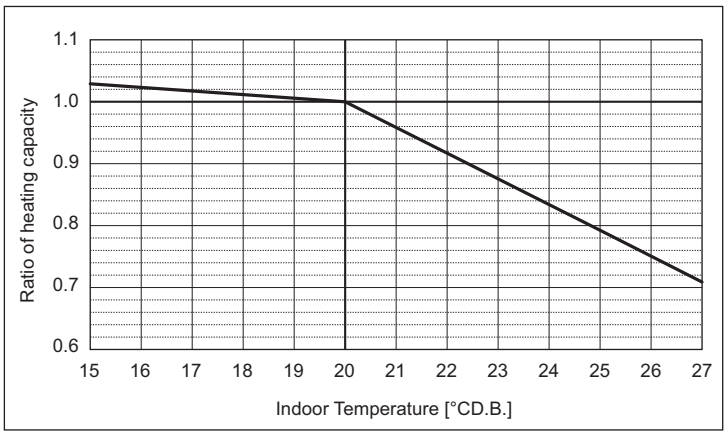
COP Priority Mode

PURY-		P450YNW-A2/TR2	P500YNW-A2/TR2
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	17.39	19.09

PURY-		EP450YNW-A2/TR2	EP500YNW-A2/TR2
Nominal Heating Capacity	kW	56.0	63.0
	BTU/h	191,100	215,000
Input	kW	16.86	19.74

Indoor unit temperature correction

To be used to correct indoor unit capacity only

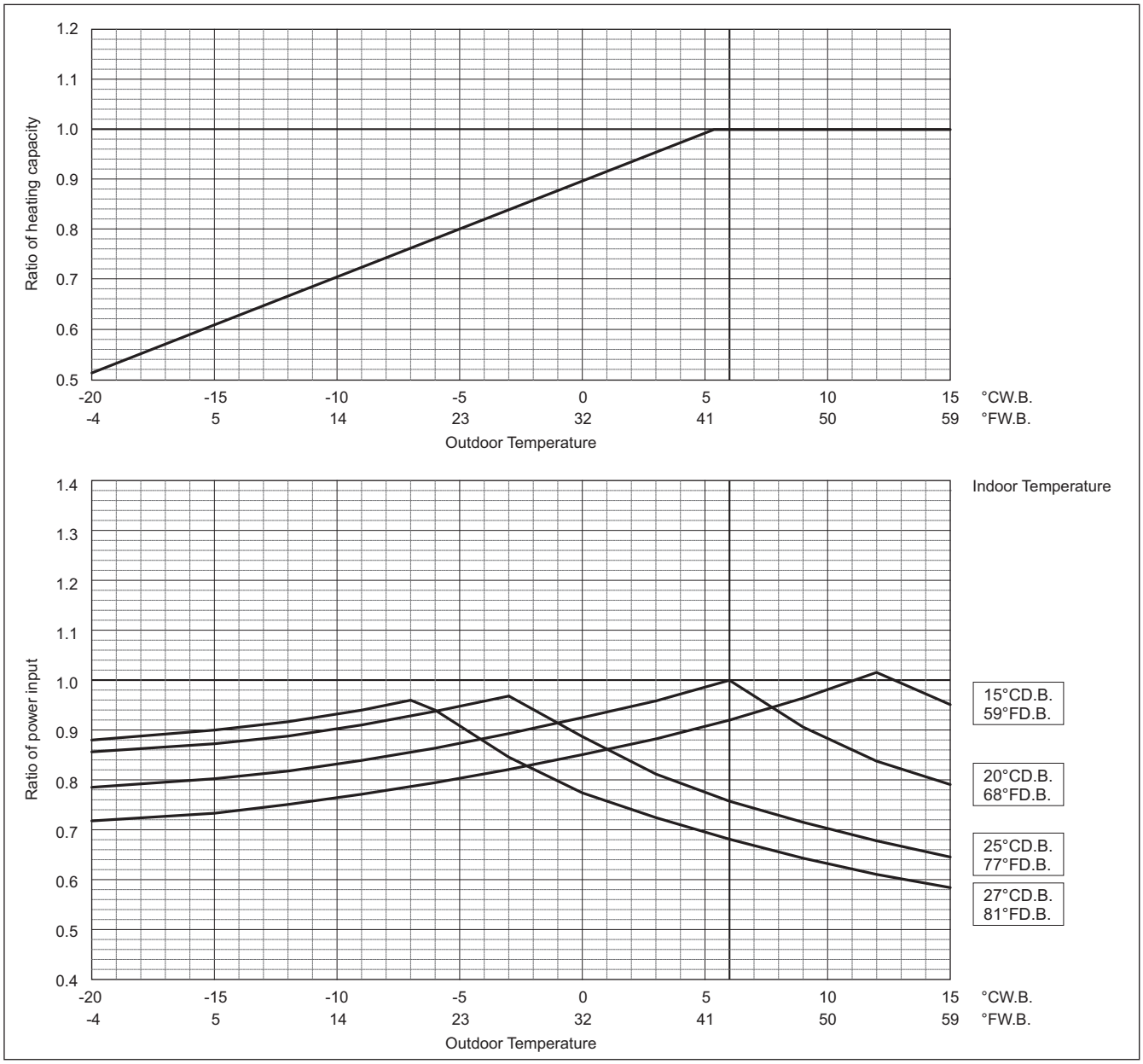


Outdoor unit temperature correction

To be used to correct outdoor unit only

Outdoor unit capacity is NOT affected by the indoor temperature.

Outdoor unit power input is affected by the indoor and outdoor temperatures. Please consult the sales office for details.



3-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

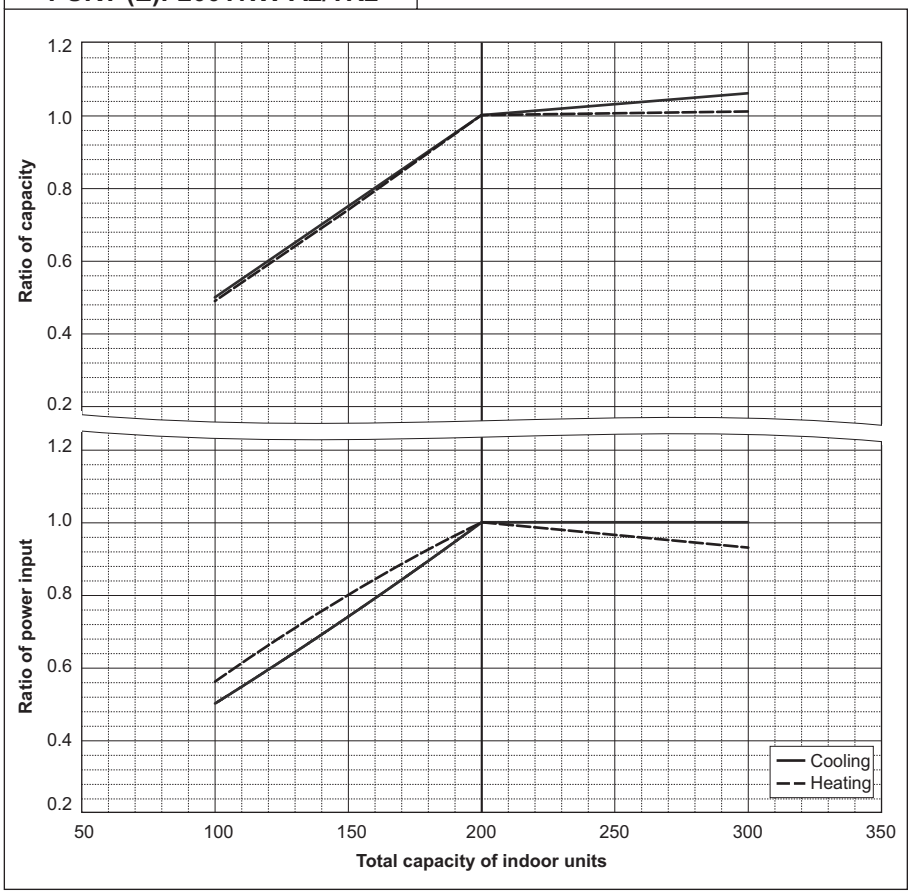
PURY-P200YNW-A2/TR2		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	6.54

PURY-P200YNW-A2/TR2		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.49

PURY-EP200YNW-A2/TR2		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	5.84

PURY-EP200YNW-A2/TR2		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	6.49

PURY-(E)P200YNW-A2/TR2



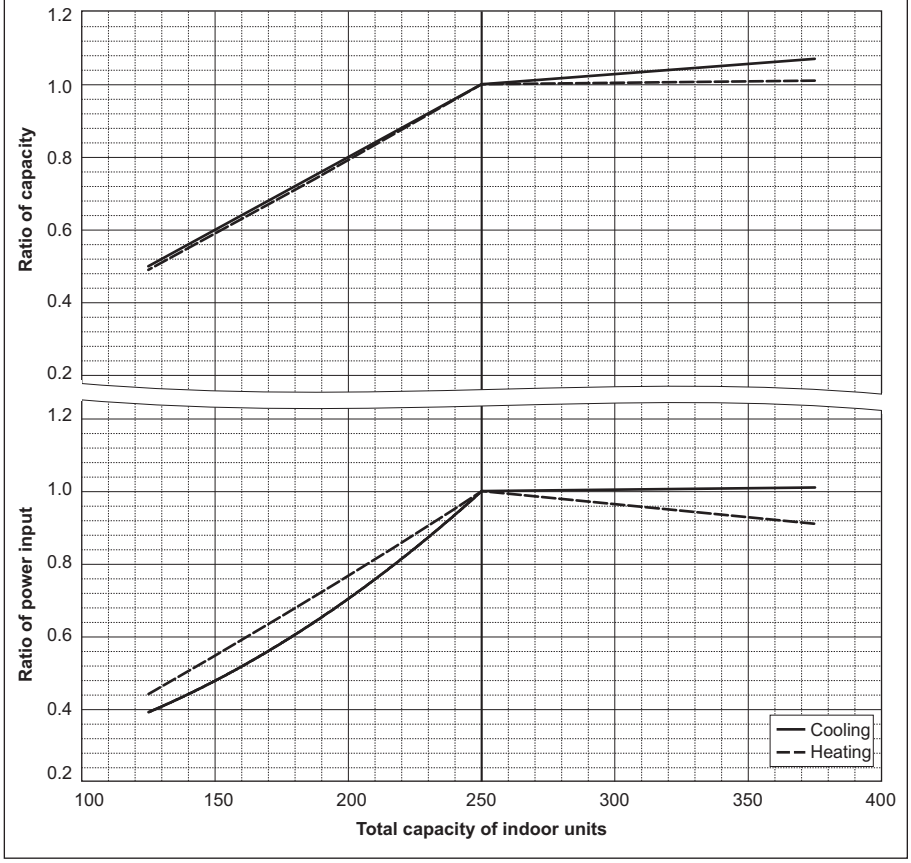
PURY-P250YNW-A2/TR2		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	9.92

PURY-P250YNW-A2/TR2		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	10.06

PURY-EP250YNW-A2/TR2		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	8.77

PURY-EP250YNW-A2/TR2		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	9.84

PURY-(E)P250YNW-A2/TR2



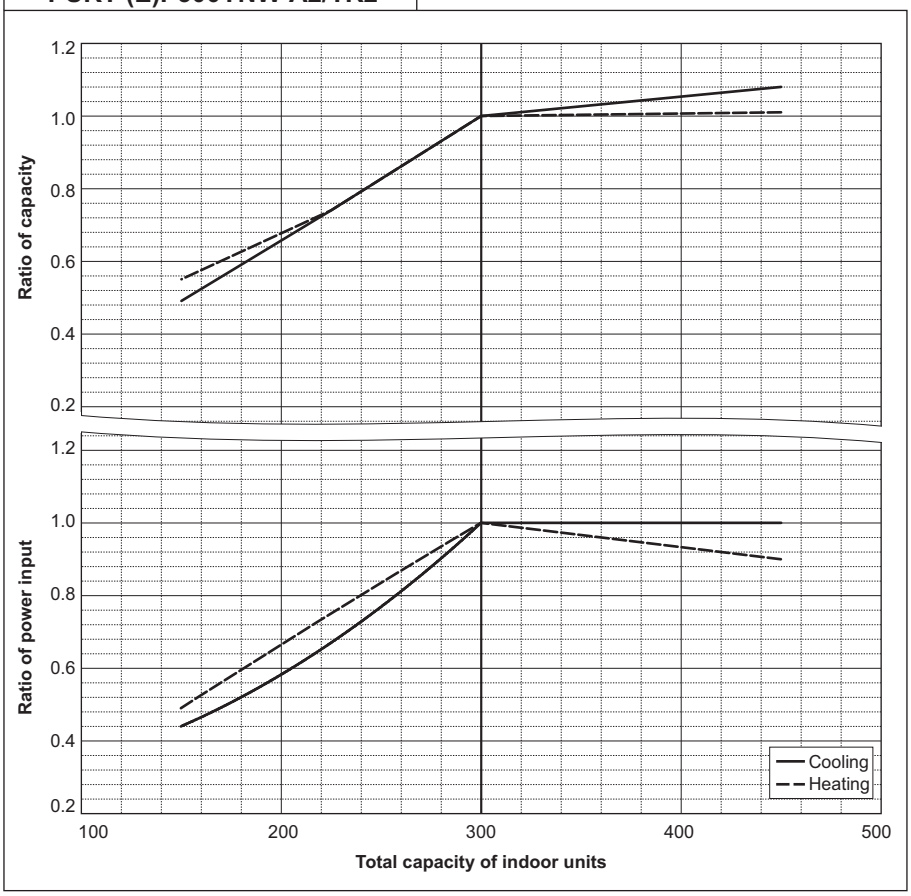
PURY-P300YNW-A2/TR2		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	13.13

PURY-P300YNW-A2/TR2		
Nominal Heating Capacity	kW	33.5
	BTU/h	114,300
Input	kW	11.35

PURY-EP300YNW-A2/TR2		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	12.05

PURY-EP300YNW-A2/TR2		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	11.71

PURY-(E)P300YNW-A2/TR2



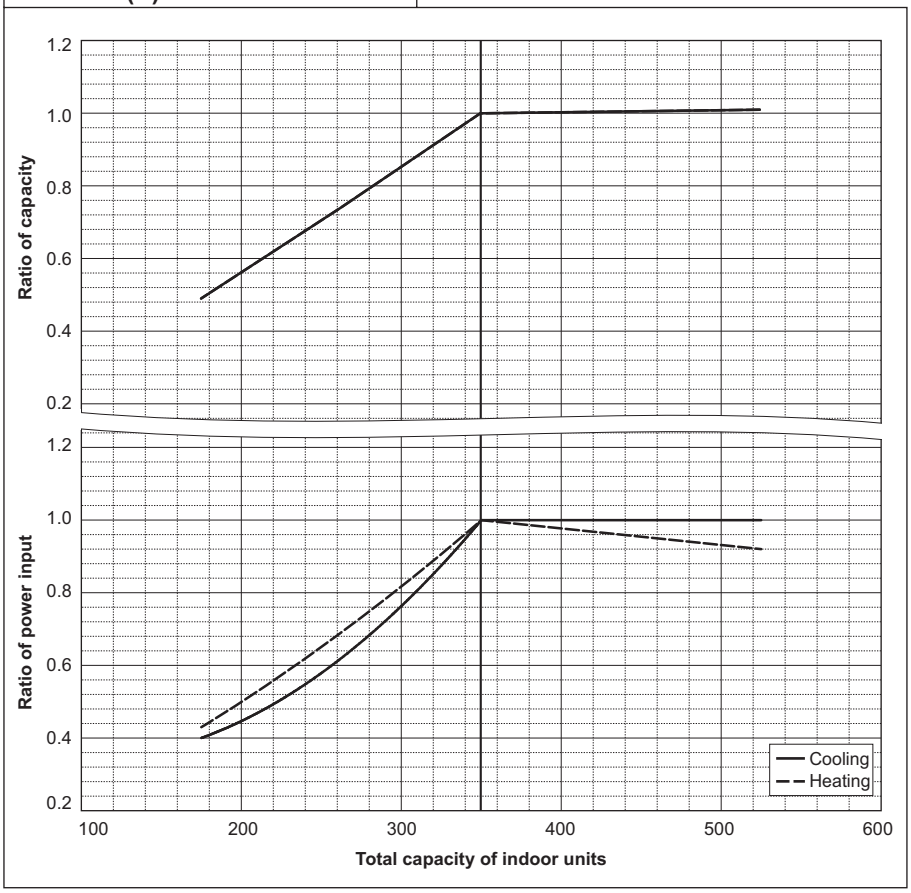
PURY-P350YNW-A2/TR2		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	16.26

PURY-P350YNW-A2/TR2		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.88

PURY-EP350YNW-A2/TR2		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	14.76

PURY-EP350YNW-A2/TR2		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	13.88

PURY-(E)P350YNW-A2/TR2



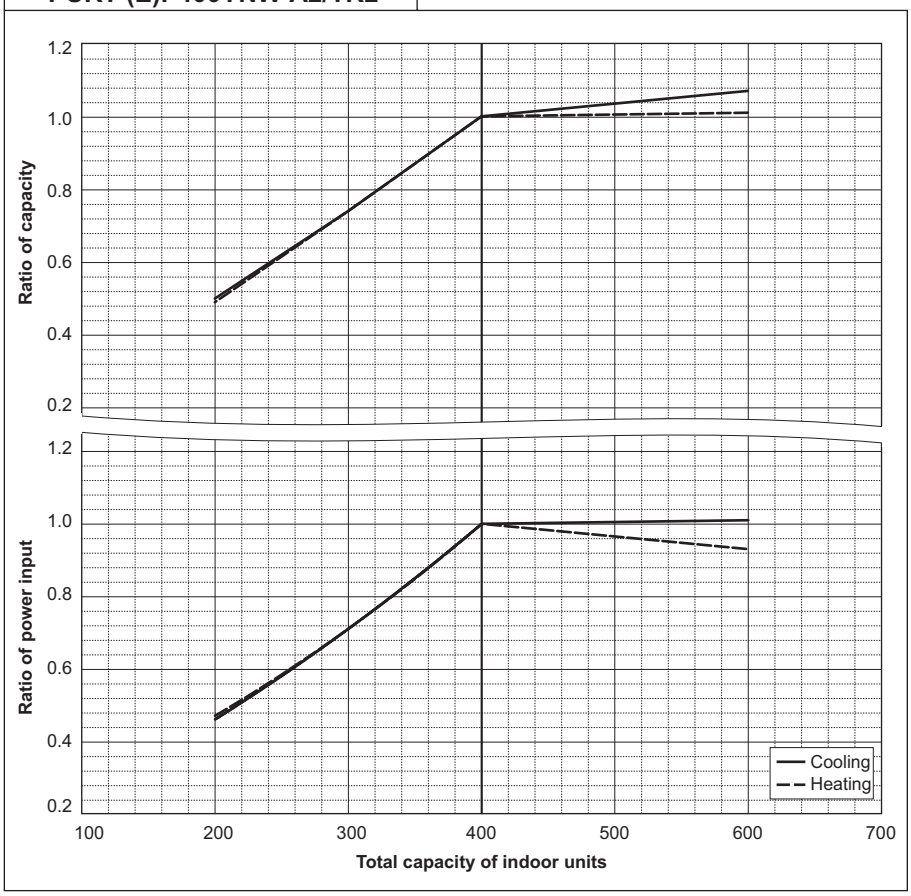
PURY-P400YNW-A2/TR2		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	16.65

PURY-P400YNW-A2/TR2		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.88

PURY-EP400YNW-A2/TR2		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	14.28

PURY-EP400YNW-A2/TR2		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	14.12

PURY-(E)P400YNW-A2/TR2



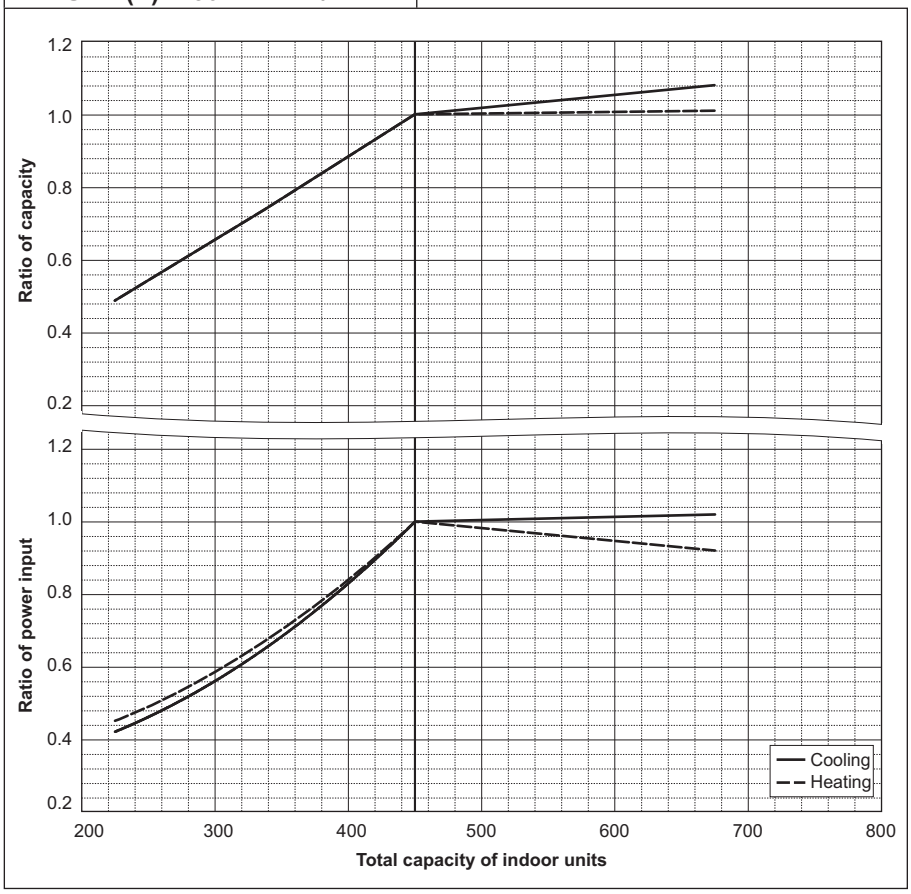
PURY-P450YNW-A2/TR2		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	17.92

PURY-P450YNW-A2/TR2		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	17.39

PURY-EP450YNW-A2/TR2		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	16.83

PURY-EP450YNW-A2/TR2		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	16.86

PURY-(E)P450YNW-A2/TR2



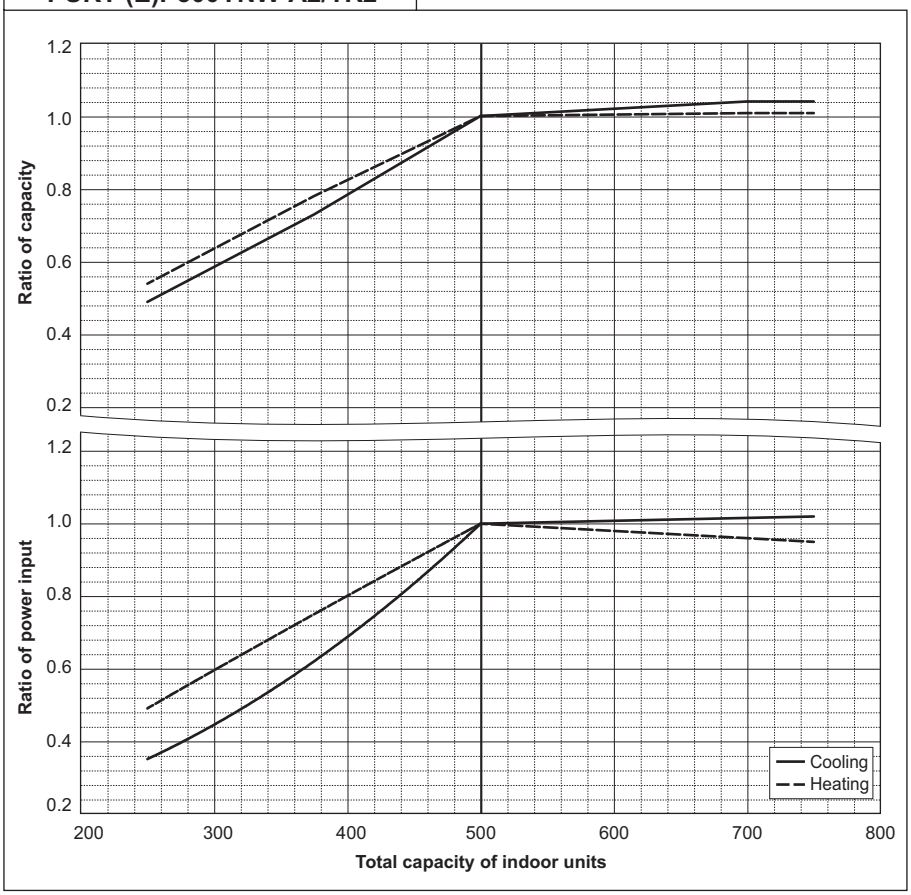
PURY-P500YNW-A2/TR2		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	24.03

PURY-P500YNW-A2/TR2		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	19.09

PURY-EP500YNW-A2/TR2		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	21.22

PURY-EP500YNW-A2/TR2		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	19.74

PURY-(E)P500YNW-A2/TR2

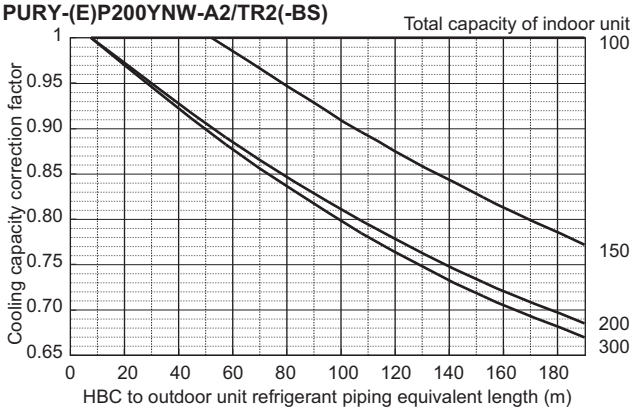


3-3. Correction by piping length

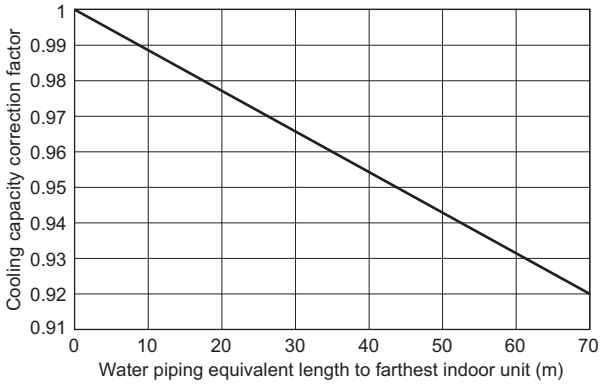
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 3-3-1 and 3-3-2 the capacity can be calculated. 3-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

3-3-1. Cooling capacity correction

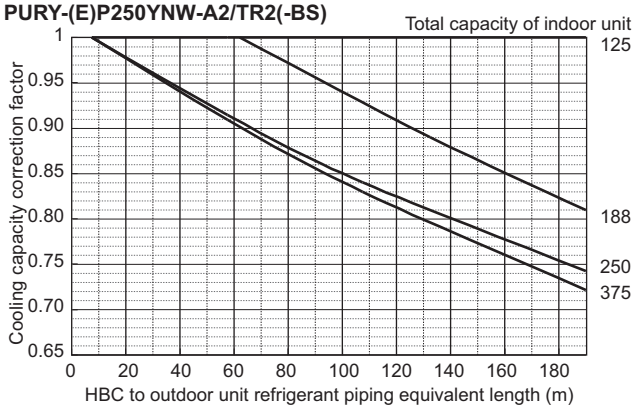
PURY-(E)P200YNW-A2/TR2(-BS)



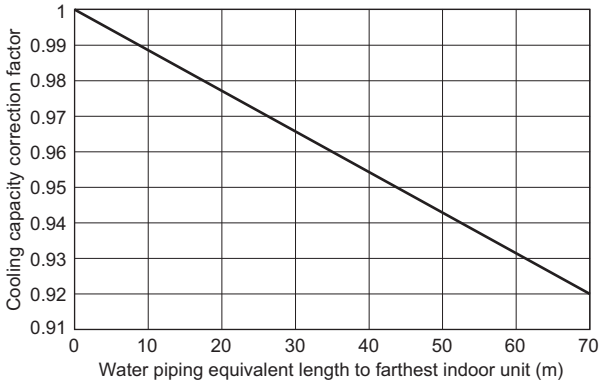
PURY-(E)P200YNW-A2/TR2(-BS)



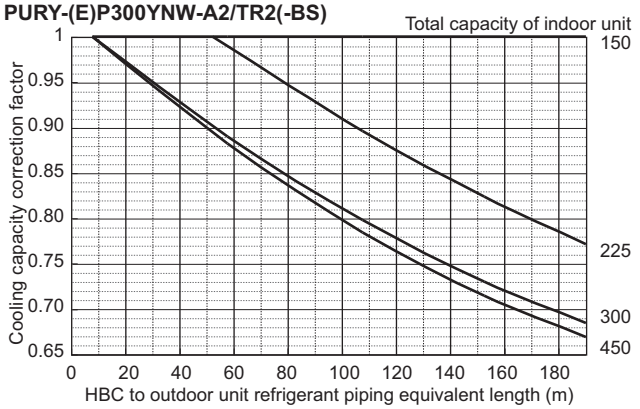
PURY-(E)P250YNW-A2/TR2(-BS)



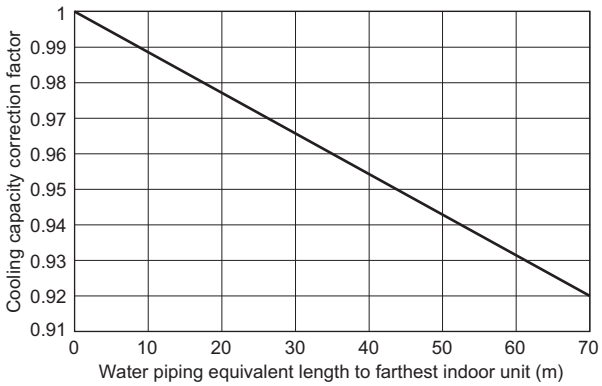
PURY-(E)P250YNW-A2/TR2(-BS)



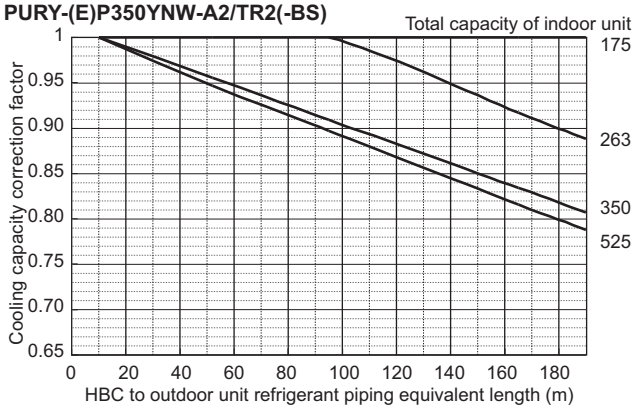
PURY-(E)P300YNW-A2/TR2(-BS)



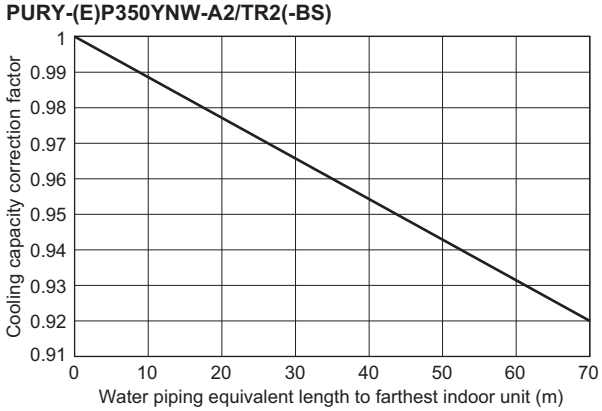
PURY-(E)P300YNW-A2/TR2(-BS)



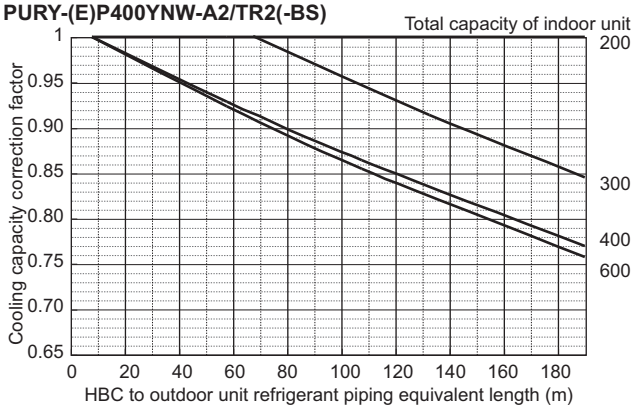
PURY-(E)P350YNW-A2/TR2(-BS)



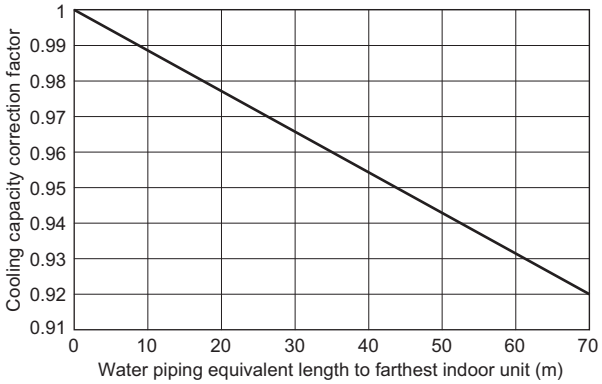
PURY-(E)P350YNW-A2/TR2(-BS)



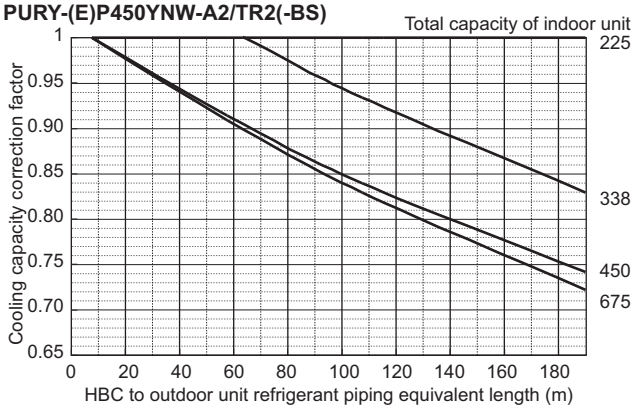
PURY-(E)P400YNW-A2/TR2(-BS)



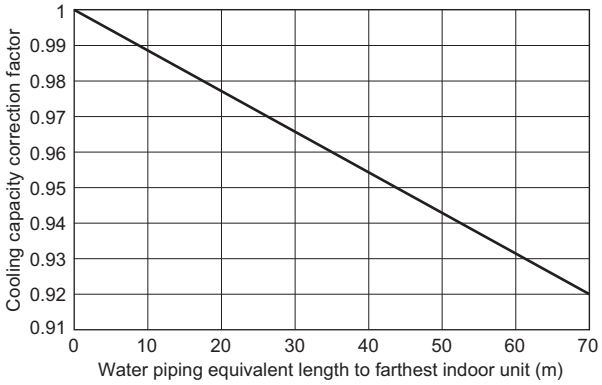
PURY-(E)P400YNW-A2/TR2(-BS)



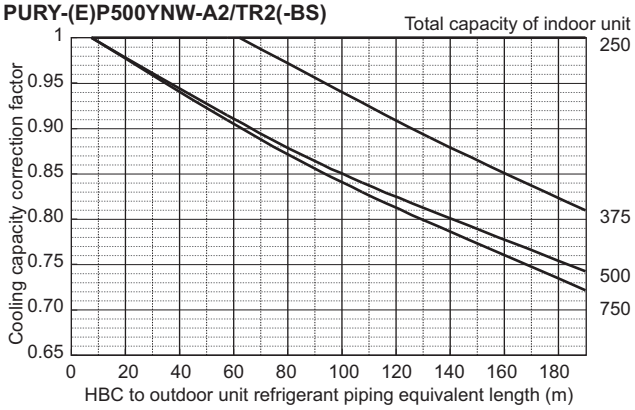
PURY-(E)P450YNW-A2/TR2(-BS)



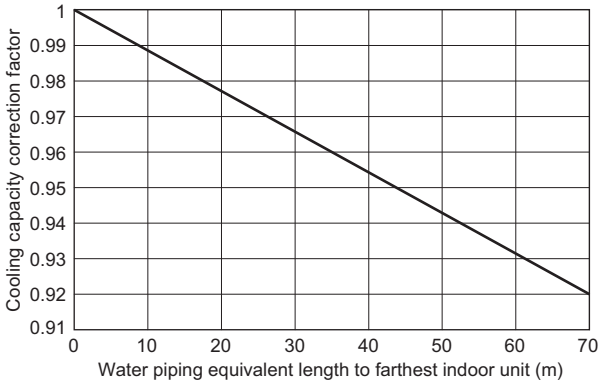
PURY-(E)P450YNW-A2/TR2(-BS)



PURY-(E)P500YNW-A2/TR2(-BS)

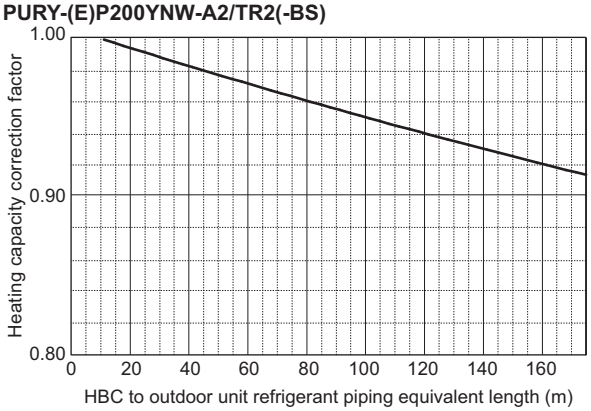


PURY-(E)P500YNW-A2/TR2(-BS)

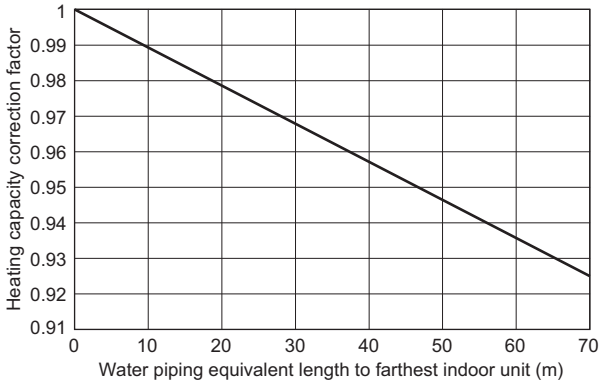


3-3-2. Heating capacity correction

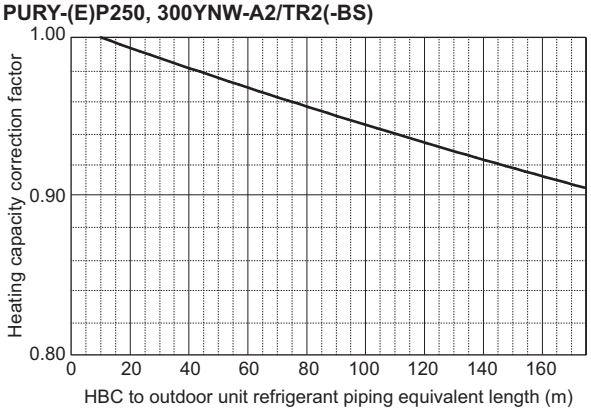
PURY-(E)P200YNW-A2/TR2(-BS)



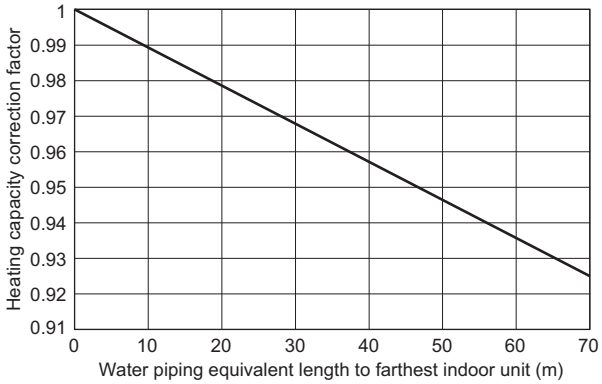
PURY-(E)P200YNW-A2/TR2(-BS)



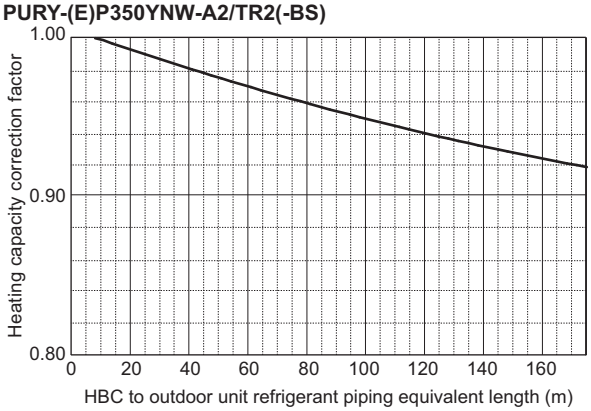
PURY-(E)P250, 300YNW-A2/TR2(-BS)



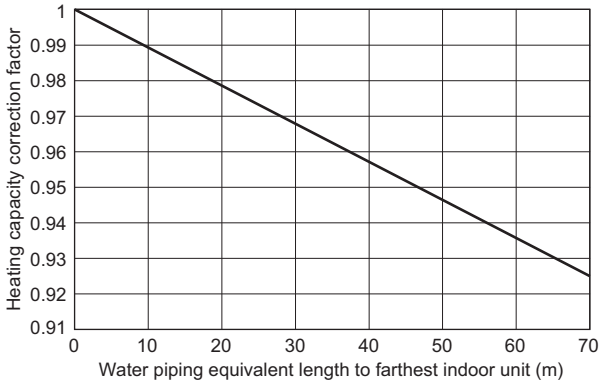
PURY-(E)P250, 300YNW-A2/TR2(-BS)



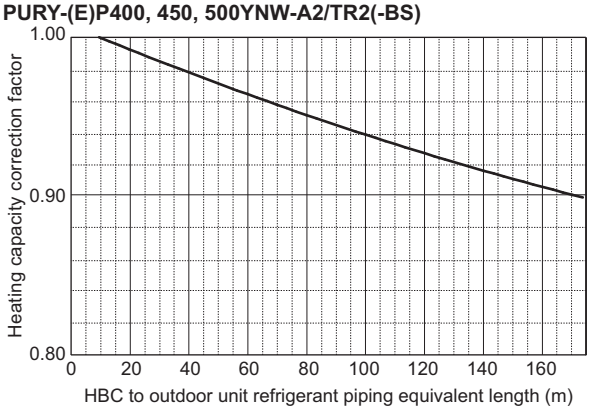
PURY-(E)P350YNW-A2/TR2(-BS)



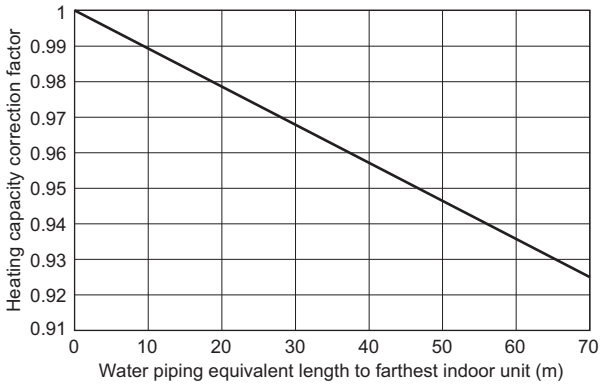
PURY-(E)P350YNW-A2/TR2(-BS)



PURY-(E)P400, 450, 500YNW-A2/TR2(-BS)



PURY-(E)P400, 450, 500YNW-A2/TR2(-BS)



3-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PURY-(E)P200YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

2. PURY-(E)P250, 300YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PURY-(E)P350YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

4. PURY-(E)P400, 450, 500YNW(-BS)

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

3-4. Correction at frost and defrost

Due to frost at the outdoor heat exchanger and the automatic defrost operation, the heating capacity of the outdoor unit can be calculated by multiplying the correction factor shown in the table below.

Table of correction factor at frost and defrost

Outdoor inlet air temp. °CWB	6	4	2	1	0	-2	-4	-6	-8	-10	-20
Outdoor inlet air temp. °FWB	43	39	36	34	32	28	25	21	18	14	-4
PURY-(E)P200YNW-A2/TR2(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)P250YNW-A2/TR2(-BS)	1.00	0.95	0.84	0.83	0.83	0.87	0.90	0.95	0.95	0.95	0.95
PURY-(E)P300YNW-A2/TR2(-BS)	1.00	0.93	0.82	0.80	0.82	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)P350YNW-A2/TR2(-BS)	1.00	0.93	0.85	0.83	0.84	0.86	0.90	0.90	0.95	0.95	0.95
PURY-(E)P400YNW-A2/TR2(-BS)	1.00	0.95	0.90	0.87	0.88	0.89	0.90	0.95	0.95	0.95	0.95
PURY-(E)P450YNW-A2/TR2(-BS)	1.00	0.98	0.89	0.87	0.89	0.90	0.92	0.95	0.95	0.95	0.95
PURY-(E)P500YNW-A2/TR2(-BS)	1.00	0.98	0.89	0.86	0.89	0.90	0.92	0.95	0.95	0.95	0.95

Note

- The high humidity condition (e.g., a foggy atmosphere) which causes frost forming on the heat exchanger will worsen the heating performance of the unit.
- The snow blowing to the heat exchanger will worsen the heating performance of the unit. Install a snow hood as a preventive measure.

3-5. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 3-5-1 for antifreeze solution concentration, 3-5-2 and 3-5-3 for capacity correction by antifreeze solution concentration.

3-5-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

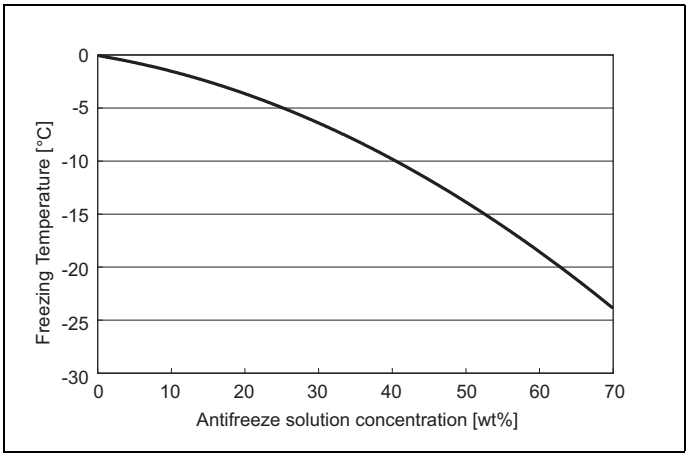
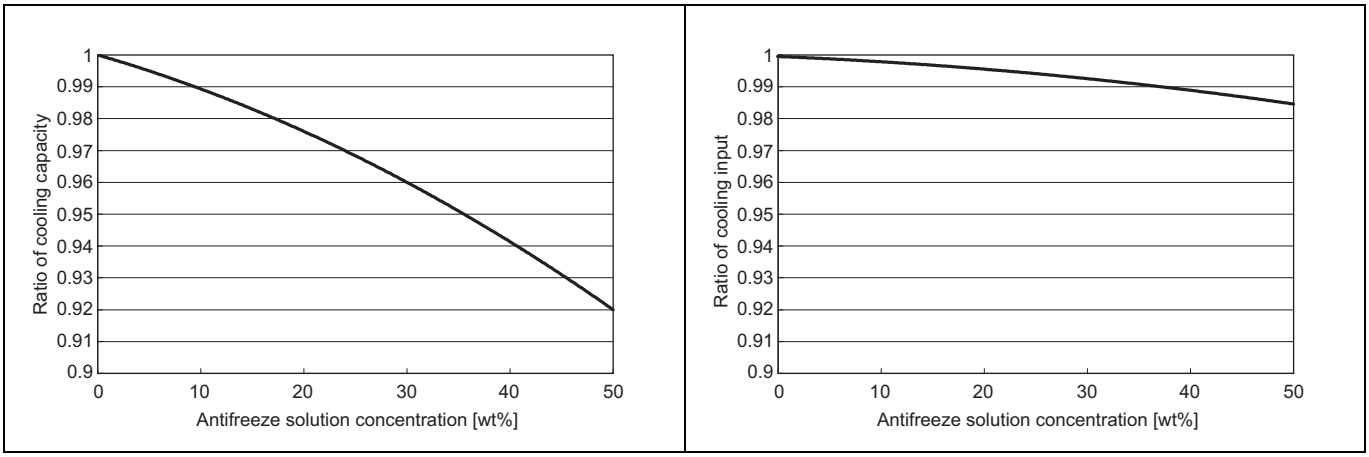


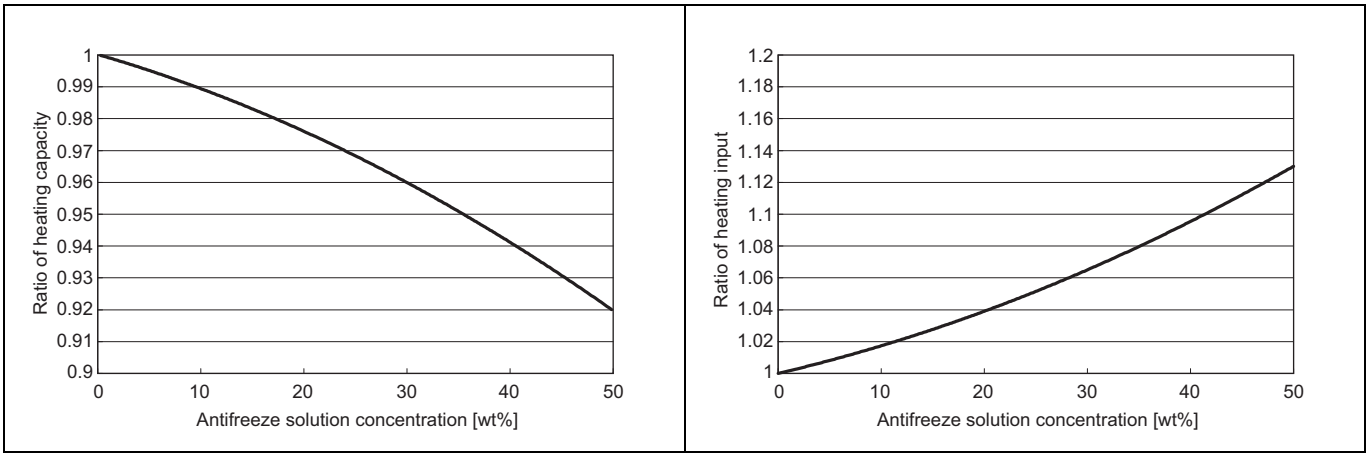
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

3-5-2. Capacity correction by antifreeze solution concentration (cooling)



3-5-3. Capacity correction by antifreeze solution concentration (heating)



4-1. Power supply for Outdoor unit

4-1-1. Electrical characteristics of the outdoor unit in cooling mode

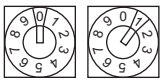
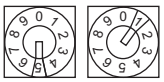
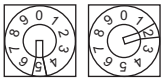
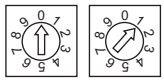
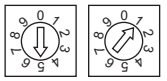
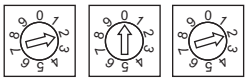
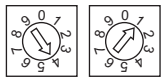
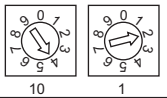
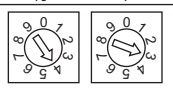
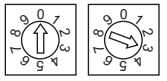
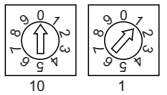
Symbols: MCA: Max Circuit Amps
RLA: Rated Load Amps SC: Starting Current

PURY-P-YNW-A2/TR2	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-P200YNW-A2/TR2(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	3.7	8	0.92	11.0/10.4/10.1	10.9/10.4/10.0
PURY-P250YNW-A2/TR2(-BS)	-				21.4	5.5	8	0.92	16.7/15.9/15.3	16.9/16.1/15.5
PURY-P300YNW-A2/TR2(-BS)	-				23.4	7.3	8	0.92	22.1/21.0/20.2	19.1/18.2/17.5
PURY-P350YNW-A2/TR2(-BS)	-				27.6	8.7	8	0.46+0.46	27.4/26.0/25.1	23.4/22.2/21.4
PURY-P400YNW-A2/TR2(-BS)	-				35.1	11.7	8	0.46+0.46	28.1/26.7/25.7	25.1/23.8/23.0
PURY-P450YNW-A2/TR2(-BS)	-				39.0	12.4	8	0.46+0.46	30.2/28.7/27.7	29.3/27.8/26.8
PURY-P500YNW-A2/TR2(-BS)	-				43.2	14.2	8	0.92+0.92	40.5/38.5/37.1	32.2/30.6/29.5

PURY-EP-YNW-A2/TR2	Unit Combination	Units			Power supply	Compressor		FAN	RLA(A)(50/60Hz)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Output(kW)	Cooling	Heating
PURY-EP200YNW-A2/TR2(-BS)	-	50/60	380 400 415	Max:456V Min:342V	16.1	3.6	8	0.92	9.8/9.3/9.0	10.9/10.4/10.0
PURY-EP250YNW-A2/TR2(-BS)	-				20.3	5.5	8	0.92	14.8/14.0/13.5	16.6/15.7/15.2
PURY-EP300YNW-A2/TR2(-BS)	-				22.3	7.3	8	0.92	20.3/19.3/18.6	19.7/18.7/18.1
PURY-EP350YNW-A2/TR2(-BS)	-				24.8	8.7	8	0.46+0.46	24.9/23.6/22.8	23.4/22.2/21.4
PURY-EP400YNW-A2/TR2(-BS)	-				33.3	10.8	8	0.46+0.46	24.1/22.9/22.0	23.8/22.6/21.8
PURY-EP450YNW-A2/TR2(-BS)	-				37.3	11.7	8	0.46+0.46	28.4/26.9/26.0	28.4/27.0/26.0
PURY-EP500YNW-A2/TR2(-BS)	-				40.3	13.8	8	0.92+0.92	35.8/34.0/32.8	33.3/31.6/30.5

5-1. Address setting

5-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50	 10 1	Use the most recent address within the same group of indoor units.
Outdoor unit		51 ~ 99, 100 (Note1)	 10 1	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the outdoor units in one refrigerant circuit system. OC, OS1 and OS2 are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100	 10 1	The address of the smallest address of indoor unit connected to the HBC controller + 50 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed  10 1	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed  10 1	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250	 100 10 1	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-C400E/EW-C50E AE-200E/AE-50E EW-50E AG-150A AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50	 10 1	
	PAC-YG63MCA	01 ~ 50	 10 1	
	PAC-YG66DCA	01 ~ 50	 10 1	
LOSSNAY, OA processing unit		01 ~ 50	 10 1	After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed  10 1	

Note1: To set the address to "100", set it to "50"

Note2: Outdoor units OC, OS1 and OS2 in one refrigerant circuit system are automatically detected. OC, OS1 and OS2 are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

6-1. R410A Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R410A air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

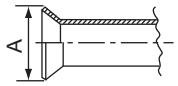
Table 1. Copper pipe size and radial thickness for R410A HYBRID CITY MULTI.

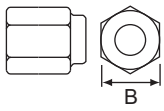
Size (mm)	Size (in.)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R410A air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

Flare

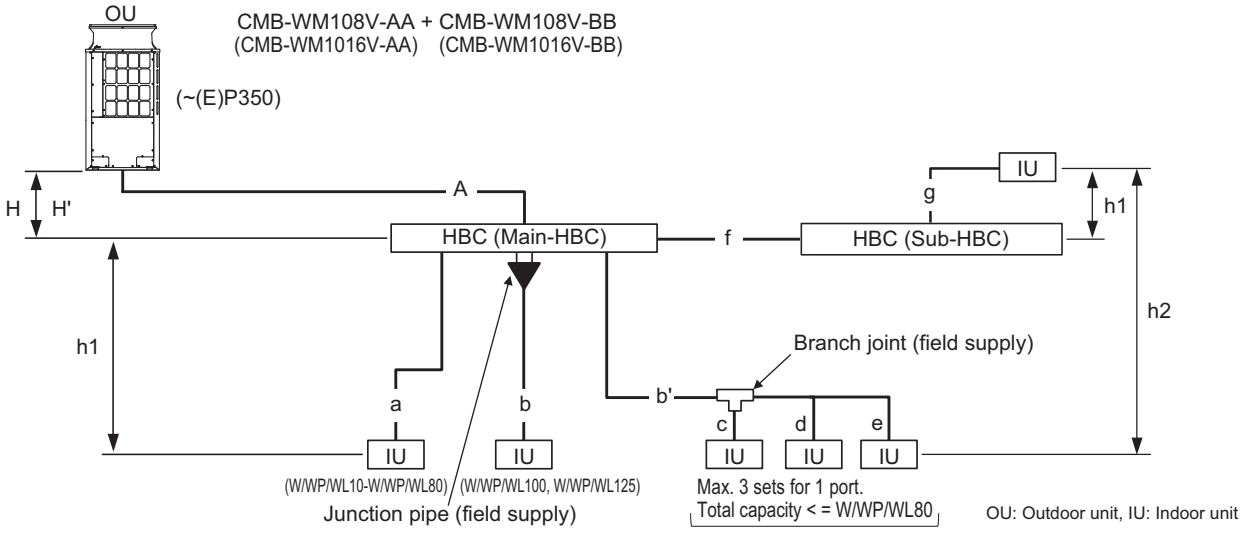
Due to the relative higher operation pressure of R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

Flare nut	Pipe size	B (For R410A) (mm[in.])
	ø6.35 [1/4"]	17.0
	ø9.52 [3/8"]	22.0
	ø12.70 [1/2"]	26.0
	ø15.88 [5/8"]	29.0
	ø19.05 [3/4"]	36.0

6-2. Piping Design

6-2-1. Restrictions on pipe length



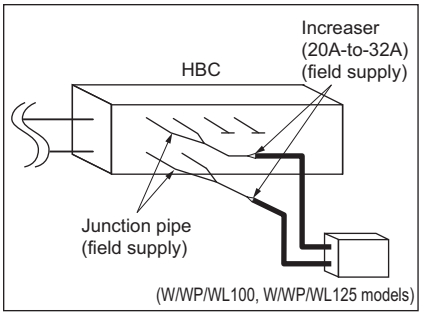
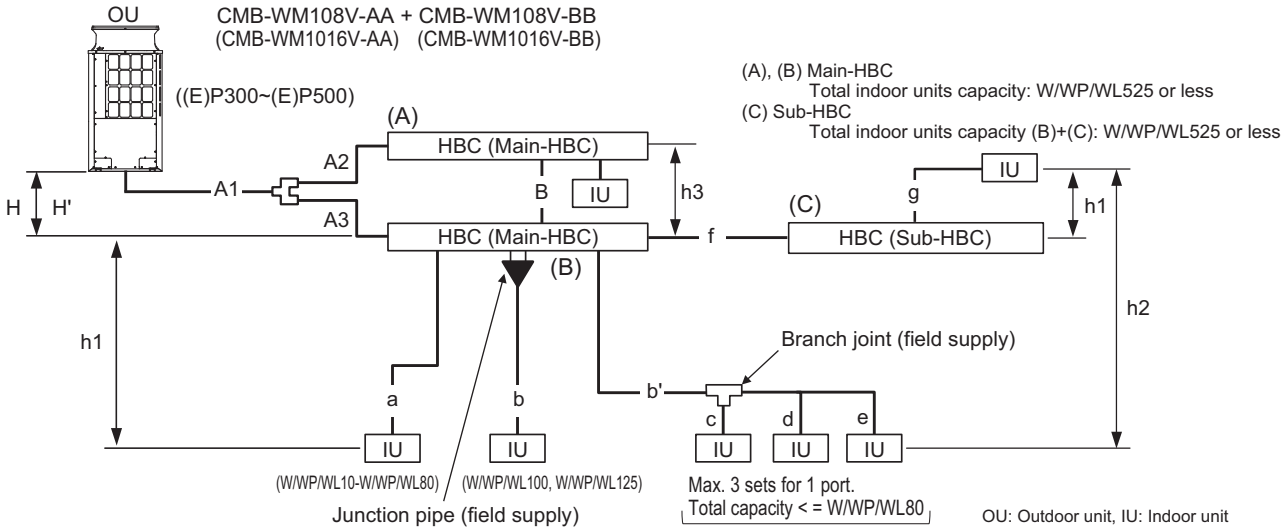


Fig. A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC		f + g	60 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less*1
		Outdoor unit below HBC	H'	40 or less*2
	Between indoor units and HBC		h1	15(10) or less*3
	Between indoor units		h2	15(10) or less*3

*1. 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*2. 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*3. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity



(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between outdoor unit and HBC (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC		f + g	60 or less
	Between HBC		B	40 or less
Difference of elevation	Between HBC and outdoor units	Outdoor unit above HBC	H	50 or less*1
		Outdoor unit below HBC	H'	40 or less*2
	Between indoor units and HBC		h1	15(10) or less*3
	Between indoor units		h2	15(10) or less*3
	Between HBC		h3	15(10) or less*3

*1. 90 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*2. 60 m is available depending on the model and installation conditions. For more detailed information, contact your local distributor.
*3. Values in ( ) are applied when indoor total capacity exceeds 130% of outdoor unit capacity

1. Refrigerant and water pipe size

(1) Refrigerant pipe between outdoor unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

		HBC controller		
Unit model		Model name	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)P200	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø15.88 (Brazing)	ø19.05 (Brazing)
	PURY-(E)P250		ø19.05 (Brazing)	ø22.2 (Brazing)
	PURY-(E)P300		ø19.05 (Brazing)	ø22.2 (Brazing)
	PURY-(E)P350		ø19.05 (Brazing)	ø28.58 (Brazing)

Use of two HBC controllers

		HBC controller			
Unit model		Model name	Between outdoor unit and twining pipe		Between twining pipe and HBC controller	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Outdoor unit side	PURY-(E)P300	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø19.05 (Brazing)	ø22.2 (Brazing)	ø15.88 (Brazing) for each HBC controller	ø19.05 (Brazing) for each HBC controller
	PURY-(E)P350		ø19.05 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC controller	ø19.05 (Brazing) for each HBC controller
	PURY-(E)P400		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC controller	ø19.05 (Brazing) for each HBC controller
	PURY-(E)P450		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC controller	ø22.2 (Brazing) for each HBC controller
	PURY-(E)P500		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC controller	ø22.2 (Brazing) for each HBC controller

***1. PURY-(E)P400YNW model or larger requires a connection of two Main-HBC controller in parallel.**

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

(3) Water pipe between Main-HBC and Sub-HBC controller (Section f)

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC controller
W/WP/WL10–100	I.D. ≥ 20.0 mm
W/WP/WL101–200	I.D. ≥ 25.8 mm
W/WP/WL201–300	I.D. ≥ 30.0 mm
W/WP/WL301–400	I.D. ≥ 33.3 mm
W/WP/WL401–500	I.D. ≥ 36.2 mm
W/WP/WL501–525	I.D. ≥ 36.8 mm

* The diameter of Main-HBC ports is O.D. 22.0 mm.
* The diameter of Sub-HBC ports is O.D. 28.0 mm.

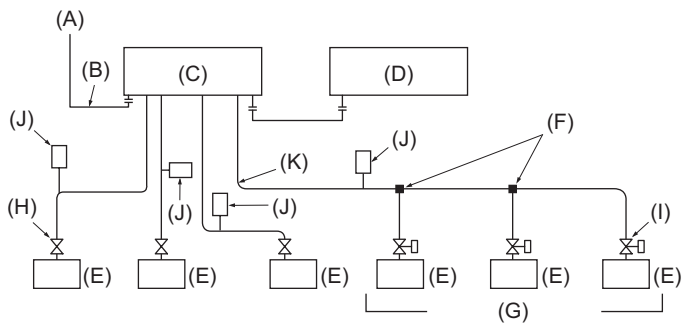
(4) Refrigerant pipe between HBC controller and HBC controller (Section B)

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To outdoor unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Branch joint (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but in same mode, cooling/heating)
(H) Shutoff valve (field supply)
(I) Pressure control valve (field supply)
(J) Auto air vent valve (Highest point on the water pipe for each branch) (field supply)
(K) Water pipework

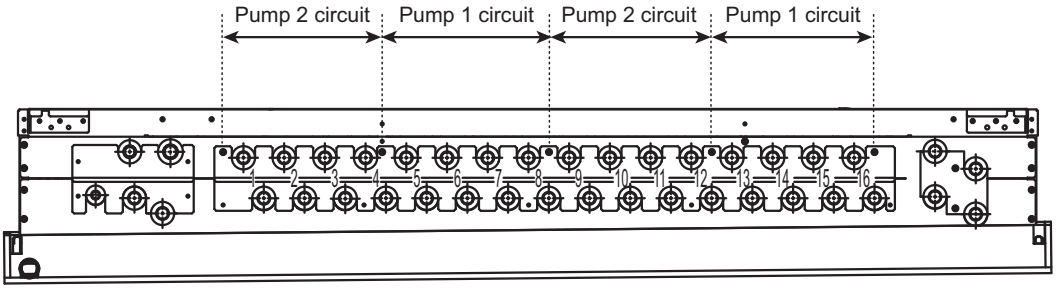


Fig. B

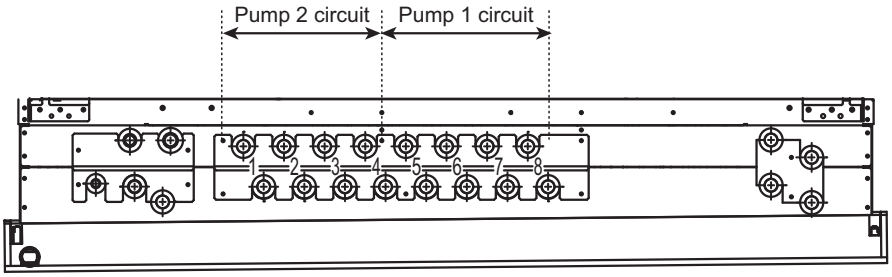


Fig. C

Note: 1

To connect multiple indoor units to a port

- ⬧Maximum total capacity of connected indoor units: W/WP/WL80
- ⬧Maximum number of connectable indoor units: 3 units
- ⬧Branch joints are field-supplied.
- ⬧All the indoor units that are connected to the same port must be in the same group and perform the Thermo-ON/OFF operation simultaneously.
- ⬧The room temperatures of all the indoor units in the group need to be monitored via the connected remote controller.
- ⬧When connecting a W/WP/WL71 through 125 model indoor unit to an HBC controller, the pipes that connect the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- ⬧Selection of water piping
  Select the size according to the total capacity of indoor units to be installed downstream.
- ⬧Do not connect multiple indoor units to the same port when operating each of them in different modes (cooling, heating, stop, and thermo-OFF). The indoor units connected to the same port must be set to operate in the same mode. Set them to the same group to make them run/stop in the same mode all together. Alternatively, enable the thermo setting on the remote controller, or set the common thermostat (optional) to run/stop the units in the same mode based on the representative temperature.
- ⬧When multiple indoor units are connected to a single port, install a pressure control valve in the pipe to equalize the pressure of all indoor units.
- ⬧Pressure control valves are required for the “WP-type” and “WL-type without the optional valve kit” indoor units only, and not for the “W-type” and “WL-type with the optional valve kit” indoor units.

Note: 2

Connecting W/WP/WL100 or 125 indoor units to an HBC controller

- ⬧When connecting W/WP/WL100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two junction pipes (Y-joints). (See Fig. A.)
- ⬧Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. A.)
- ⬧When the junction pipes are connected to 16 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5," "8 and 9," or "12 and 13" at the same time. (See Fig. B.)
- ⬧When the junction pipes are connected to 8 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5" at the same time. (See Fig. C.)
- ⬧When a W/WP/WL100 or a 125 model indoor unit is connected to an HBC controller, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.

Note: 3

Maximum capacity of indoor units connectable to an HBC controller for obtaining the rated performance

- ⬧An HBC controller has two pumps. Each pump can accommodate the capacity equivalent to W/WP/WL175 indoor units.
- ⬧When connecting the pipe to 16 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. B.)
  When connecting the pipe to 8 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4" or "5 through 8" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. C.)
  If the total capacity exceeds W/WP/WL175, the performance will be degraded.

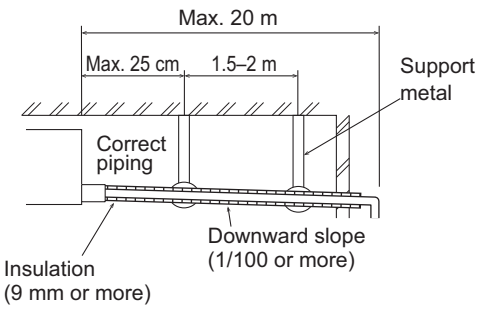
6-2-2. Drain piping work

1. Drain piping work

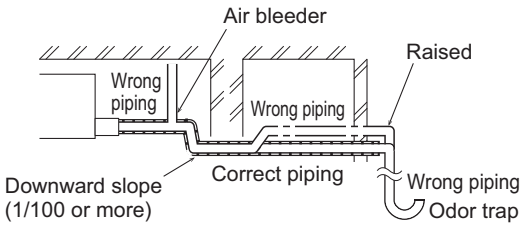
For Main-HBC and Sub-HBC controller

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Do not use any odor trap around the discharge port.
- As shown in (3), install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

(1)

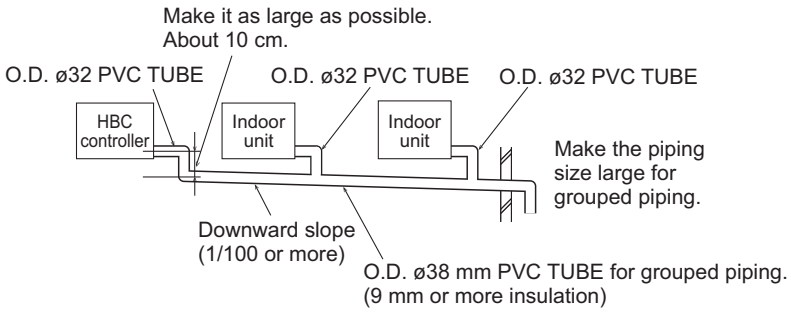


(2)



(3)

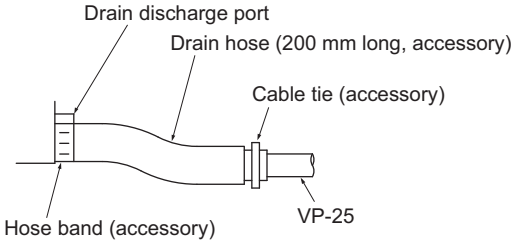
[Grouped piping]



For Main-HBC controller

- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)

(4)

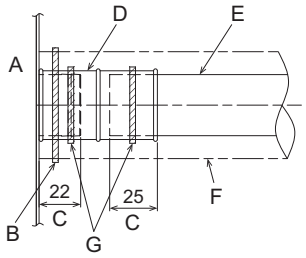


For Sub-HBC controller

♦For Sub-HBC controller, connect the drain pipe by following the steps described below.

1. Insert the drain hose (accessory) into the drain port (insertion margin: 32 mm).
   (The drain hose must not be bent more than 45° to prevent the hose from breaking or clogging.)
   (Attach the hose with glue, and fix it with the band (small, accessory).)
2. Attach the drain pipe (O.D. ø32 PVC TUBE PV-25, field supply).
   (Attach the pipe with glue, and fix it with the band (small, accessory).)
3. Perform insulation work on the drain pipe (O.D. ø32 PVC TUBE PV-25) and on the socket (including elbow).
4. Check the drainage.
5. Attach the insulating material, and fix it with the band (large, accessory) to insulate the drain port.

(5)



A: Sub-HBC controller
B: Tie band (accessory)
C: Insertion margin
D: Drain hose (accessory)
E: Drain pipe (O.D. ø32 PVC TUBE, field supply)
F: Insulating material (field supply)
G: Tie band (accessory)

2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

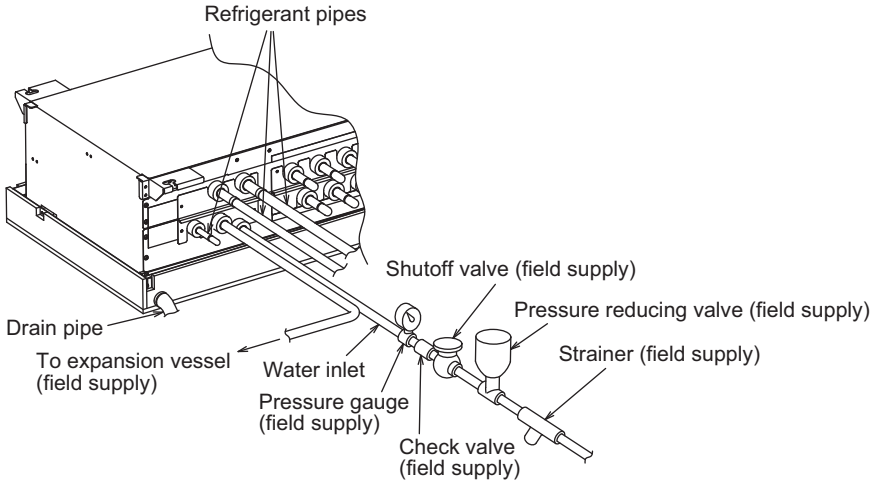
6-2-3. Connecting water pipe work

Please observe the following precautions during installation.

1. Important notes on water pipework installation

- The design pressure of the HBC controller water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC controller. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC controller with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC controller, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC controller water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
- Remove burr after cutting the piping to prevent entering the pipe connection. Prevent the particles that are generated during pipe cutting or cut edge treatment from entering the pipes. Check that there is no crack at the edge of the piping.
- Be sure to braze the water pipes after covering a wet cloth to the insulation pipes of the units in order to prevent them from burning and shrinking by heat. (There are some plastic parts in HBC controller.)
- Install the unit so that external force is not applied to the water pipes.
- After filling the pipes with water, immediately perform debris removal operation and air vent operation.

Example of heat source unit installation (using left piping)



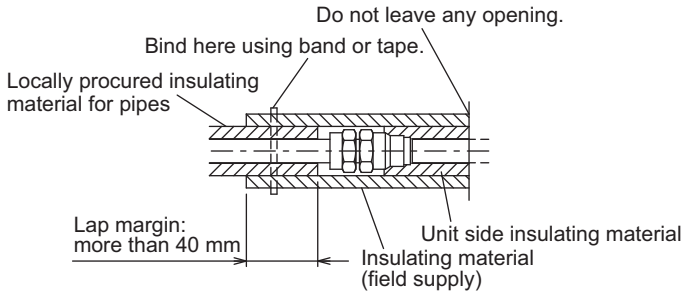
HBC controller sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

- The HBC controller system must be serviced at least once a year.

2. Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



- Insulation materials for the pipes to be added on site must meet the following specifications:

HBC – indoor unit	20 mm or more
Main-HBC – Sub-HBC	20 mm or more

- This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
- Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
- When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel

- Install an expansion tank to accommodate expanded water.

Expansion vessel selection criteria:

Water containment volume of the HBC controller

- Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

Unit model	Water volume
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-BB	5
CMB-WM1016V-BB	9

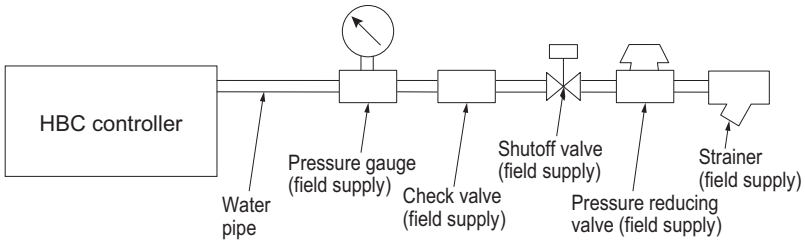
- The maximum water temperature is 60°C.
- The minimum water temperature is 5°C.
- The circuit protection valve set pressure is 370-490 kPa.
- The circulation pump head pressure is 0.24 MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC controller water pipe connection sizes and pipe sizes.

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
(A: Height difference (m) between the HBC controller and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 3-5. Correction by antifreeze solution concentration.

3. Water treatment and quality control

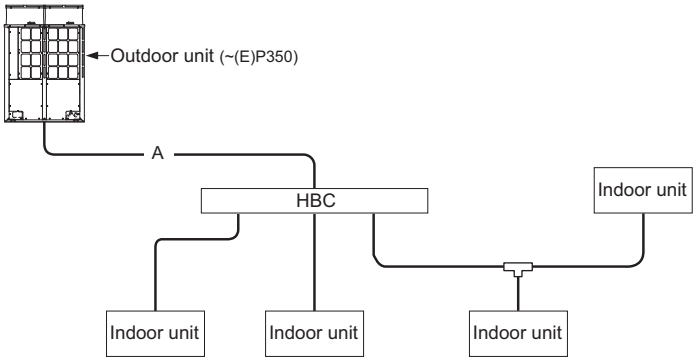
To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

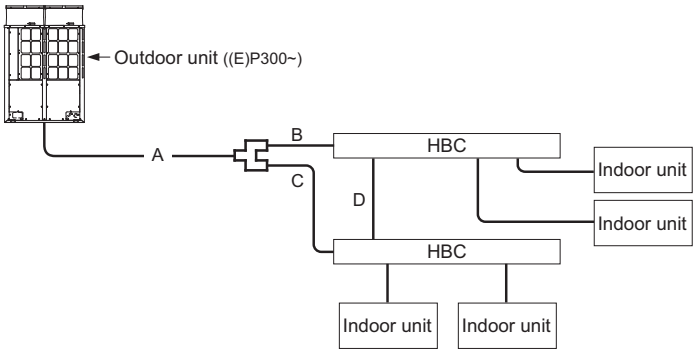
♦Removing of foreign objects or impurities within the pipes.
During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.

♦Water Quality Processing
Depending on the quality of the cold-temperature water used in the air-conditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1 mg/ℓ.

6-3. Refrigerant charging calculation

Example





■ Sample calculation

Indoor 1: 50 A: ø19.05 42 m
2: 50
3: 50
4: 40
Outdoor P250

The total length of each liquid line is as follows:
ø19.05: A = 42 m, α_1 = 3.0

Therefore,
Additional refrigerant charge
= 42 × 0.14 + 3.0
= 8.88 kg
≒ 8.9 kg
* All pipe work except A is water pipe work.

Indoor 1: 50 A:ø22.20 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Outdoor P400

The total length of each liquid line is as follows:
ø22.20: A = 18 m, ø15.88: B + C = 15 m, α_1 = 3.0 × 2
Pipe between HBC controller and HBC controller: D = 8 m

Therefore,
Additional refrigerant charge
= 18 × 0.23 + (5 + 10) × 0.11 + 3.0 × 2 + 8 × 0.2
= 13.39 kg
≒ 13.4 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the outdoor units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)	Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
P200YNW	5.2	P400YNW	8.0
P250YNW	5.2	P450YNW	10.8
P300YNW	5.2	P500YNW	10.8
P350YNW	8.0		

Outdoor unit model	Amount of pre-charged refrigerant in the outdoor unit (kg)
EP200YNW	5.2
EP250YNW	5.2
EP300YNW	5.2
EP350YNW	8.0
EP400YNW	8.0
EP450YNW	10.8
EP500YNW	10.8

■ Calculation formula

The amount of refrigerant to be added depends on the size and the length of field piping. (unit in m [ft])

1) When the distance between HBC controller and outdoor unit is longer than 30.5m:
Amount of added refrigerant (kg) = $(0.21 \times L_1) + (0.14 \times L_2) + (0.1 \times L_3) + \alpha_1 (+ 0.18 \times L_4)$ *1
2) When the distance between HBC controller and outdoor unit is 30.5 m or shorter:
Amount of added refrigerant (kg) = $(0.23 \times L_1) + (0.16 \times L_2) + (0.11 \times L_3) + \alpha_1 (+ 0.2 \times L_4)$ *1

L_1 : Length of ø22.20 [7/8"] high pressure pipe (m)
L_2 : Length of ø19.05 [3/4"] high pressure pipe (m)
L_3 : Length of ø15.88 [5/8"] high pressure pipe (m)
L_4 : Length of ø15.88 [5/8"] pipe between HBC controller and HBC controller (m)
α_1: Refer to the table below.
*1 Only when two main HBC controllers are used

Use of one HBC controller

Outdoor unit index	Diameter of high-pressure pipe
(E)P200	ø15.88
(E)P250	ø19.05
(E)P300	ø19.05
(E)P350	ø19.05

Amount for the HBC controller
α_1 (kg)
3.0

Round up the calculation result to the nearest 0.1 kg. (Example: 18.04 kg to 18.1 kg)

Use of two HBC controllers

Outdoor unit index	Diameter of high-pressure pipe
(E)P300	ø19.05
(E)P350	ø19.05
(E)P400	ø22.20
(E)P450	ø22.20
(E)P500	ø22.20

Amount for the HBC controller
α_1 (kg)
3.0

× 2

Refrigerant pipe between main HBC controller and main HBC controller
ø15.88 [5/8]

* When connecting PEFY-W50/63/71/80/100/125VMA2-A units, add 0.25 kg of refrigerant for each of these units.

6-4. Water piping

6-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC controller branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

6-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items		Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])	7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion (mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion (mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8) (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness (mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica (mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron (mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper (mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion (mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion (mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine (mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide (mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index	–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC controller and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC controller.
3. Connecting pipes made of different materials
   Connecting pipes used for HBC controller and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use.

6-5. Compatibility

<Horizontal type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Compatible
	WP type	WM-V-BB type	–	–	Compatible
	WP type	WM-V-AB type	–	–	Compatible
	WP type	WP type	–	–	Compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Compatible
	WP type	–	WM-V-AA type	–	Compatible
	WP type	–	WP type	–	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Compatible
	WM-V-AA type	WP type	WM-V-AA type		Compatible
	WM-V-AA type	WP type	WP type		Compatible
	WP type	WM-V-BB type	WM-V-AA type		Compatible
	WP type	WM-V-BB type	WP type		Compatible
	WP type	WM-V-AB type	WM-V-AA type		Compatible
	WP type	WM-V-AB type	WP type		Compatible
	WP type	WP type	WM-V-AA type		Compatible
	WP type	WP type	WP type		Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Compatible
	WM-V-AA type	–	WP type	WP type	Compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Compatible
	WP type	–	WM-V-AA type	WM-V-AB type	Compatible
	WP type	–	WM-V-AA type	WP type	Compatible
	WP type	–	WP type	WM-V-BB type	Compatible
	WP type	–	WP type	WM-V-AB type	Compatible
	WP type	–	WP type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WP type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WP type	WP type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WP type	WP type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WP type	WP type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WP type	WM-V-AA type	WP type	Compatible
	WP type	WP type	WP type	WM-V-BB type	Compatible
	WP type	WP type	WP type	WM-V-AB type	Compatible
	WP type	WP type	WP type	WP type	Compatible

<Vertical type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-F-AA type	–	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	–	–	Not compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

PQRY-P-YLM-A2

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Model			PQRY-P200YLM-A2	PQRY-P250YLM-A2
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	22.4	28.0
(Nominal) *1		BTU/h	76,400	95,500
	Power input	kW	3.97	5.44
	Current input	A	6.7-6.3-6.1	9.1-8.7-8.4
	EER	kW/kW	5.64	5.14
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Heating capacity *2		kW	25.0	31.5
(Nominal) *2		BTU/h	85,300	107,500
	Power input	kW	4.04	5.41
	Current input	A	6.8-6.4-6.2	9.1-8.6-8.3
	COP	kW/kW	6.18	5.82
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
connectable	Model/Quantity		W/WP/WL10~125/1~30	W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room)		dB <A>	46	48
Sound power level (measured in anechoic room)		dB <A>	60	62
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed	19.05 (3/4) Brazed
piping diameter	Low pressure	mm (in.)	19.05 (3/4) Brazed	22.2 (7/8) Brazed
Circulating water	Water flow rate	m^3/h	5.76	5.76
		L/min	96	96
		cfm	3.4	3.4
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 ~ 7.2	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	4.8	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Drawing	External		WKL94C186	WKL94C186
	Wiring		WKE94G420	WKE94G420
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The upper limit of the ambient relative humidity for heat source unit varies with the ambient temperature. Please refer to 2-4. Humidity range. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P300YLM-A2	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
(Nominal) *1		BTU/h	114,300	
	Power input	kW	7.55	6.71
	Current input	A	12.7-12.1-11.6	11.3-10.7-10.3
	EER	kW/kW	4.43	4.99
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	37.5	
(Nominal) *2		BTU/h	128,000	
	Power input	kW	7.13	6.79
	Current input	A	12.0-11.4-11.0	11.4-10.8-10.4
	COP	kW/kW	5.25	5.52
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room)		dB <A>	54	
Sound power level (measured in anechoic room)		dB <A>	68	
Refrigerant	High pressure	mm (in.)	19.05 (3/4) Brazed	
piping diameter	Low pressure	mm (in.)	22.2 (7/8) Brazed	
Circulating water	Water flow rate	m^3/h	5.76	
		L/min	96	
		cfm	3.4	
	Pressure drop	kPa	24	
	Operating volume range	m^3/h	3.0 ~ 7.2	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.7	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,100 x 880 x 550	
		in.	43-5/16 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	173 (382)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C186	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The upper limit of the ambient relative humidity for heat source unit varies with the ambient temperature. Please refer to 2-4. Humidity range. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter

BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P350YLM-A2	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	40.0	
(Nominal) *1		BTU/h	136,500	
	Power input	kW	9.98	8.72
	Current input	A	16.8-16.0-15.4	14.7-13.9-13.4
	EER	kW/kW	4.00	4.58
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	45.0	
(Nominal) *2		BTU/h	153,500	
	Power input	kW	8.87	8.25
	Current input	A	14.9-14.2-13.7	13.9-13.2-12.7
	COP	kW/kW	5.07	5.45
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room)		dB <A>	52	
Sound power level (measured in anechoic room)		dB <A>	66	
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
Circulating water	Water flow rate	m^3/h	7.20	
		L/min	120	
		cfm	4.2	
	Pressure drop	kPa	44	
	Operating volume range	m^3/h	4.5 ~ 11.6	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	9.5	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,450 x 880 x 550	
		in.	57-1/8 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	217 (479)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C187	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The upper limit of the ambient relative humidity for heat source unit varies with the ambient temperature. Please refer to 2-4. Humidity range. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3$/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P400YLM-A2	PQRY-P450YLM-A2
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity (Nominal)	*1	kW	45.0	50.0
	*1	BTU/h	153,500	170,600
	Power input	kW	10.05	12.05
	Current input	A	16.9-16.1-15.5	20.3-19.3-18.6
	EER	kW/kW	4.47	4.14
Temp. range of cooling	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Heating capacity (Nominal)	*2	kW	50.0	56.0
	*2	BTU/h	170,600	191,100
	Power input	kW	9.45	11.11
	Current input	A	15.9-15.1-14.6	18.7-17.8-17.1
	COP	kW/kW	5.29	5.04
Temp. range of heating	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Indoor unit connectable	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
	Model/Quantity		W/WP/WL10~125/2~50	W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room)		dB <A>	52	54
Sound power level (measured in anechoic room)		dB <A>	66	70
Refrigerant piping diameter	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20	7.20
		L/min	120	120
		cfm	4.2	4.2
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 ~ 11.6	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	11.6
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Drawing	External		WKL94C187	WKL94C187
	Wiring		WKE94G420	WKE94G420
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The upper limit of the ambient relative humidity for heat source unit varies with the ambient temperature. Please refer to 2-4. Humidity range. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P500YLM-A2	
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	56.0	
(Nominal) *1		BTU/h	191,100	
	Power input	kW	14.58	
	Current input	A	24.6-23.3-22.5	
	EER	kW/kW	3.84	
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	63.0	
(Nominal) *2		BTU/h	215,000	
	Power input	kW	13.07	
	Current input	A	22.0-20.9-20.2	
	COP	kW/kW	4.82	
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room)		dB <A>	54	
Sound power level (measured in anechoic room)		dB <A>	70.5	
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
Circulating water	Water flow rate	m^3/h	7.20	
		L/min	120	
		cfm	4.2	
	Pressure drop	kPa	44	
	Operating volume range	m^3/h	4.5 ~ 11.6	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	13.0	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,450 x 880 x 550	
		in.	57-1/8 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	217 (479)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C187	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The upper limit of the ambient relative humidity for heat source unit varies with the ambient temperature. Please refer to 2-4. Humidity range. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

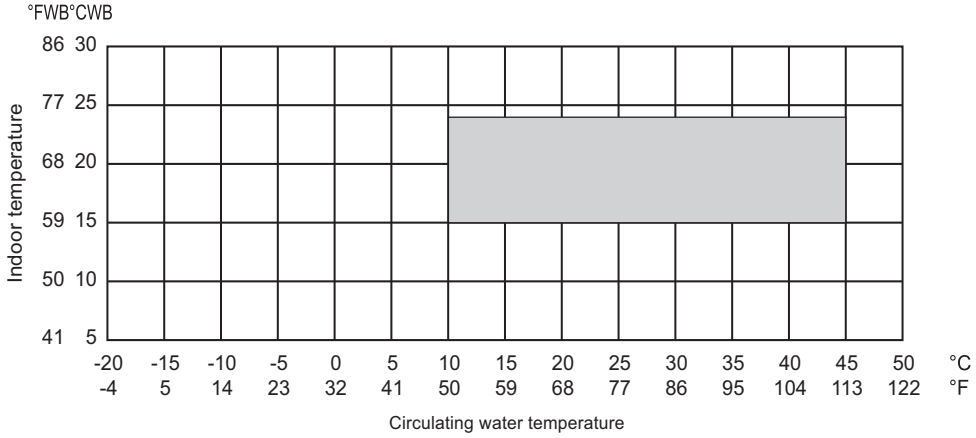
1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

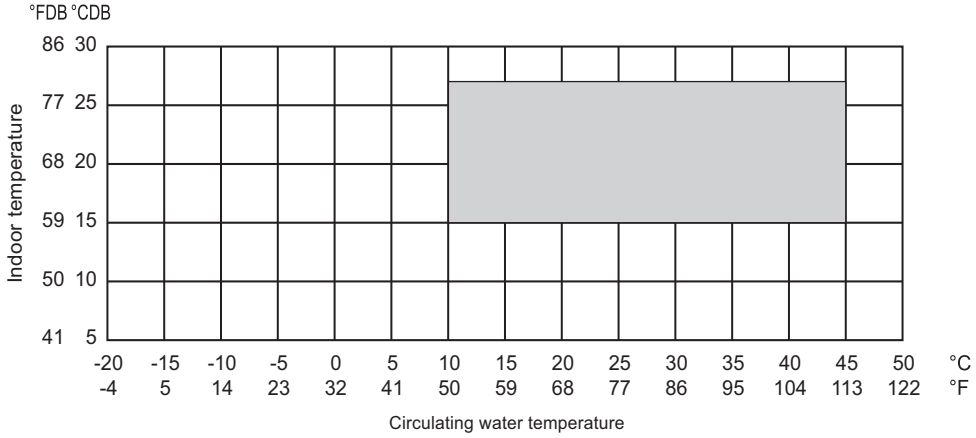
*Above specification data is subject to rounding variation.

2-1. Temperature range

• Cooling



• Heating

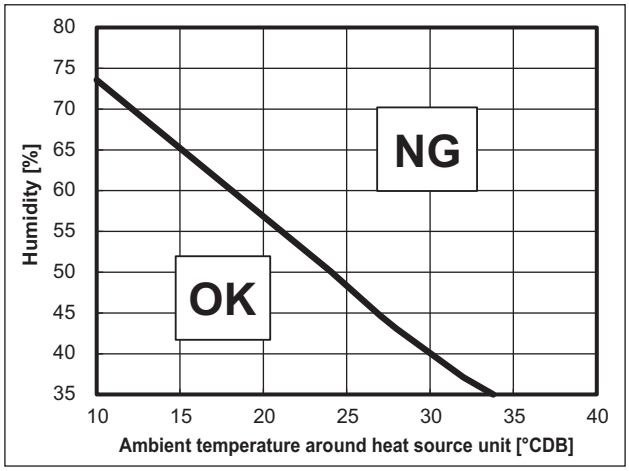


• Combination of cooling/heating operation (Cooling main or Heating main)

Water temperature	Indoor temperature	
	Cooling	Heating
10 to 45˚C (50 to 113˚F)	15 to 24˚CWB (59 to 75˚FWB)	15 to 27˚CDB (59 to 81˚FDB)

2-2. Humidity range

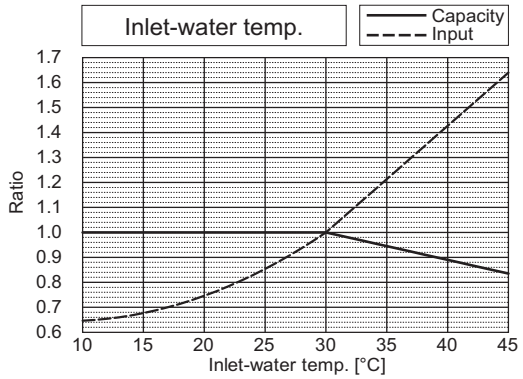
Humidity limitations apply to PQH(R)Y-P-YLM-A2 models as indicated in the figure below.
When using a heat source unit PQHY-P-YLM-A2, PQRY-P-YLM-A2, do not install it on the things that are vulnerable to water damage.

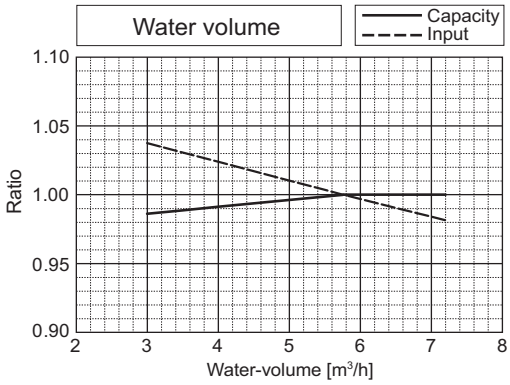


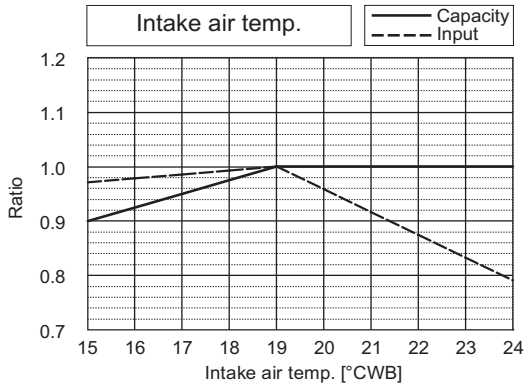
3-1. Correction by temperature

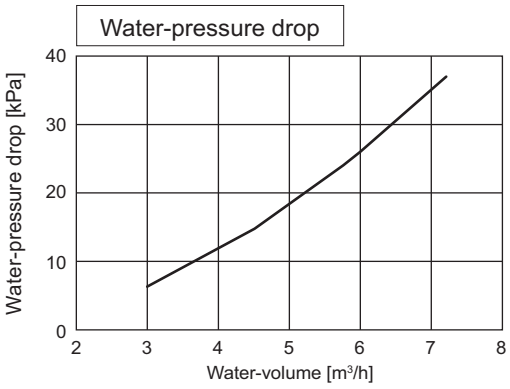
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

		PQRY-P200YLM-A2
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.97

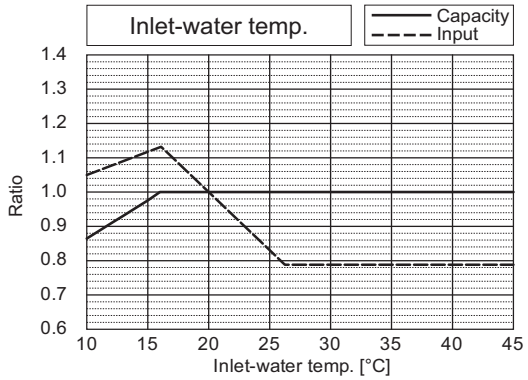


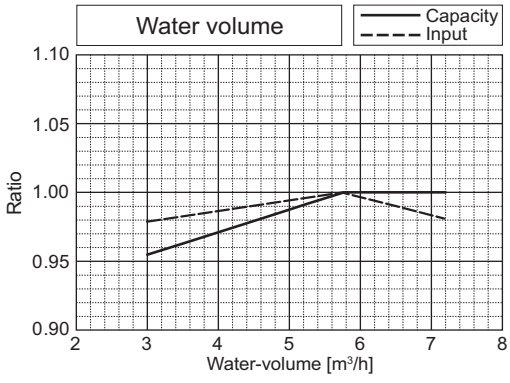


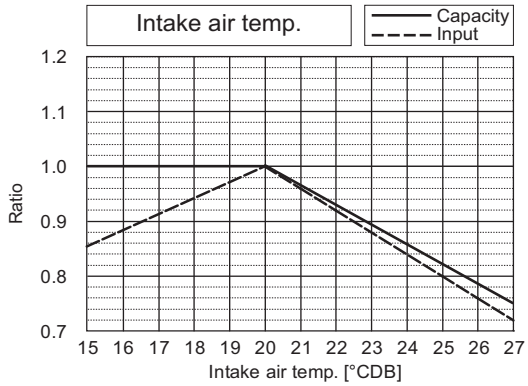


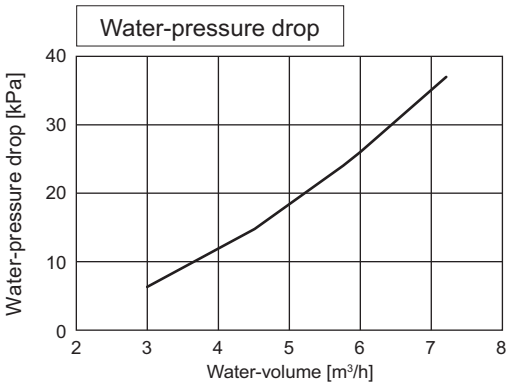


		PQRY-P200YLM-A2
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	4.04

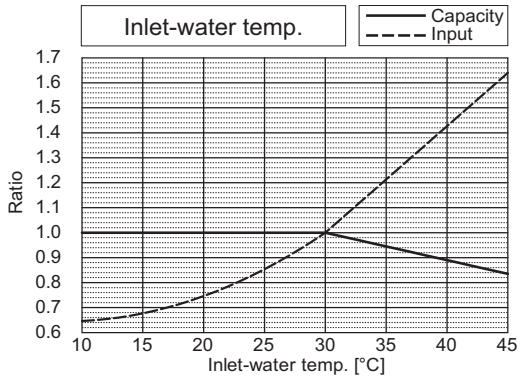


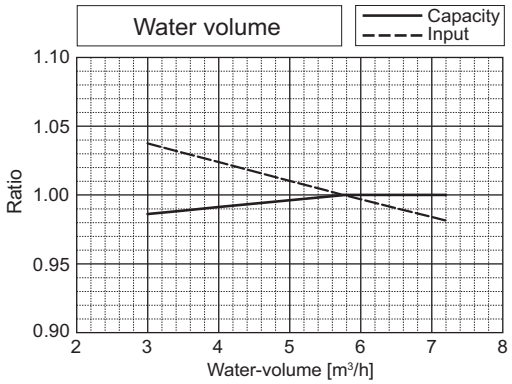


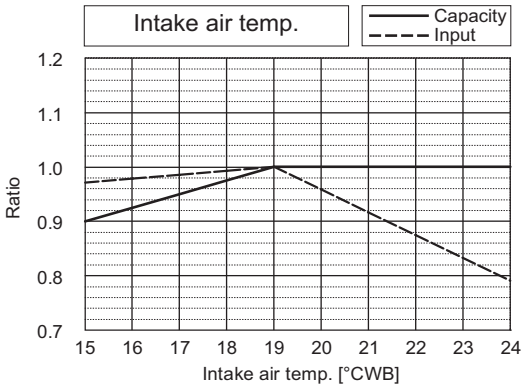


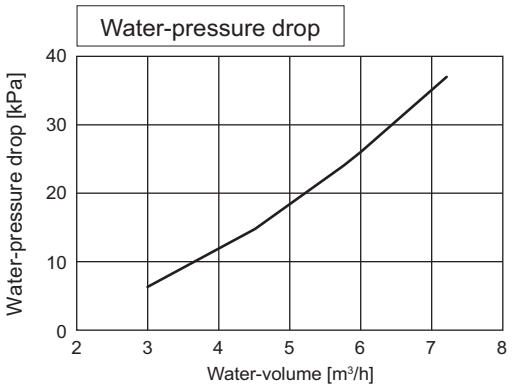


		PQRY-P250YLM-A2
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	5.44

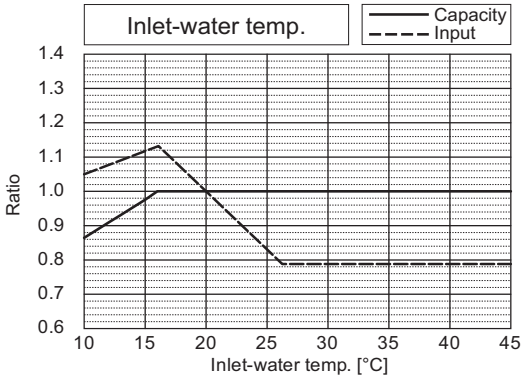


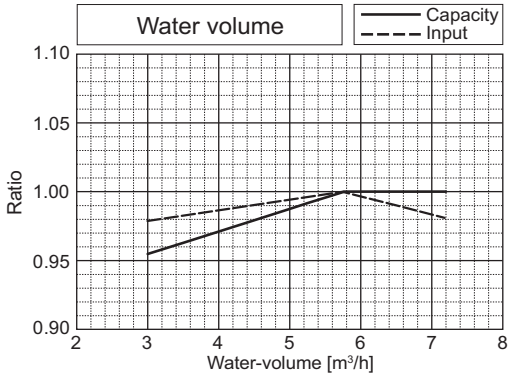


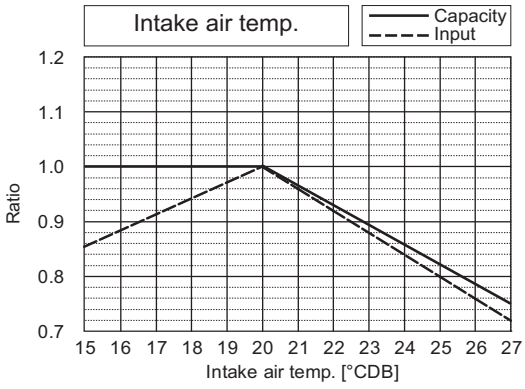


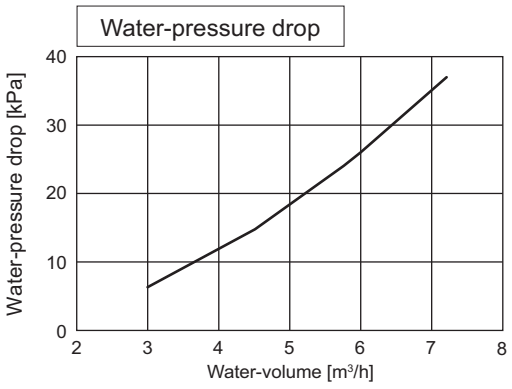


		PQRY-P250YLM-A2
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.41

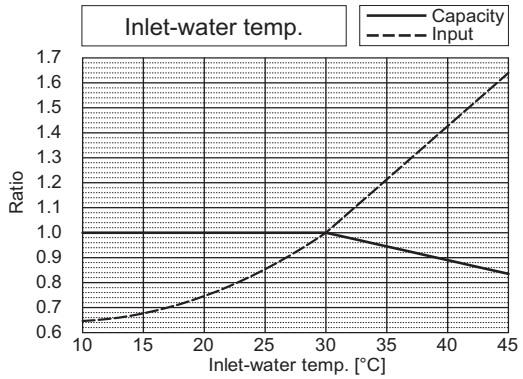


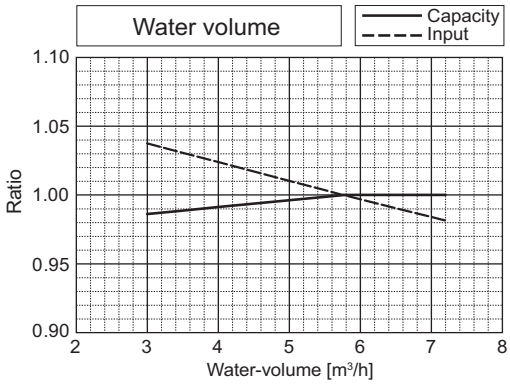


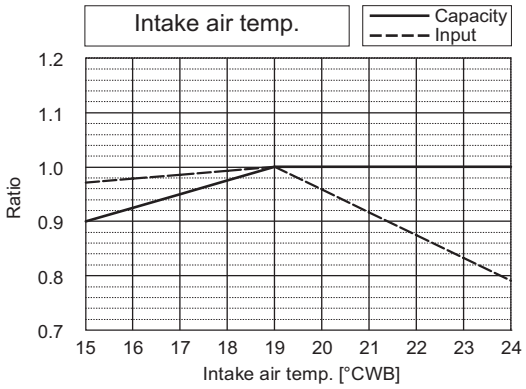


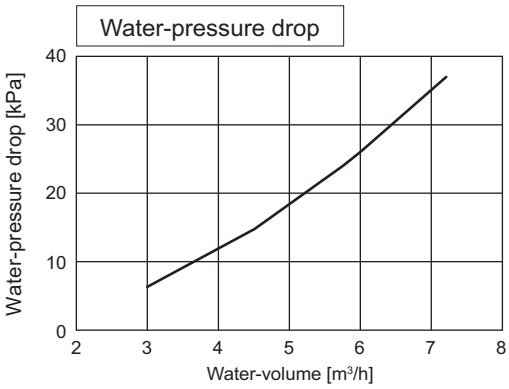


		PQRY-P300YLM-A2
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	7.55

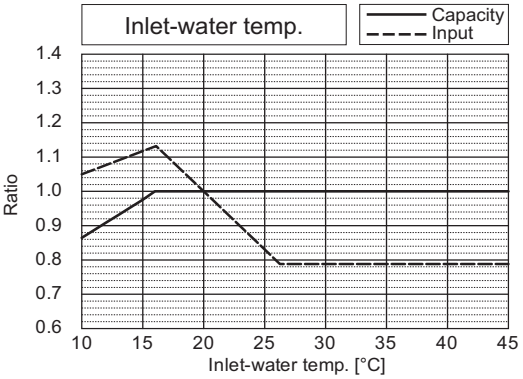


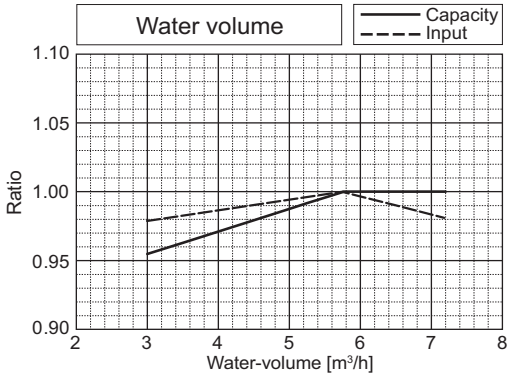


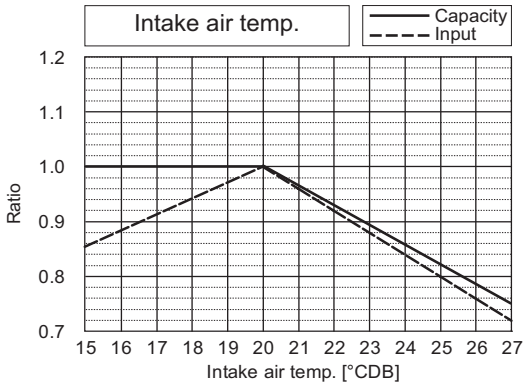


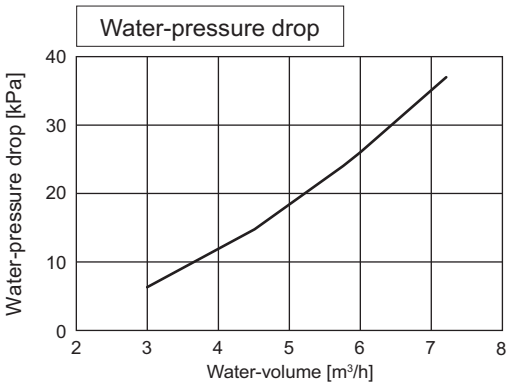


		PQRY-P300YLM-A2
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	7.13

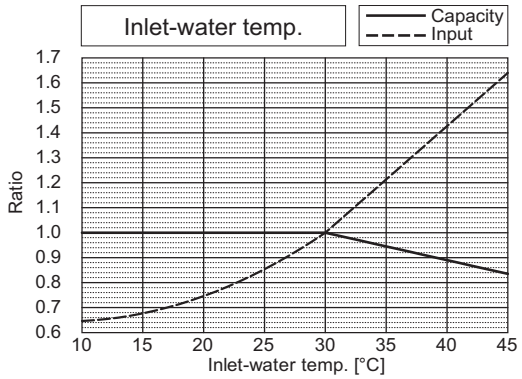


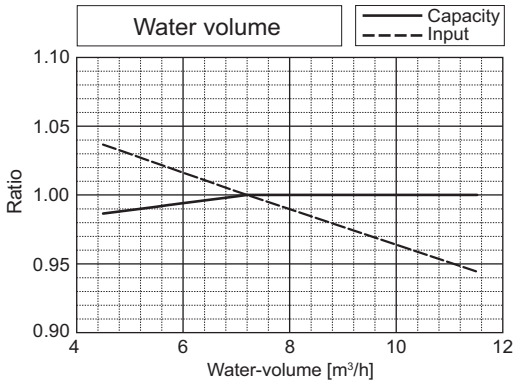


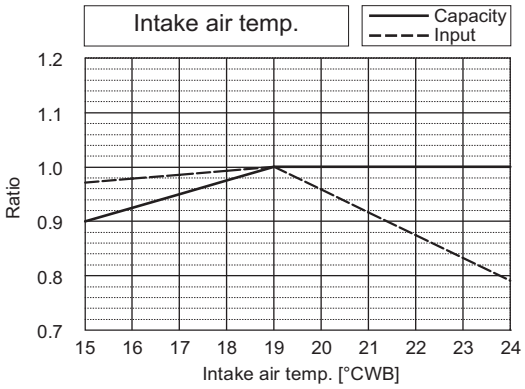


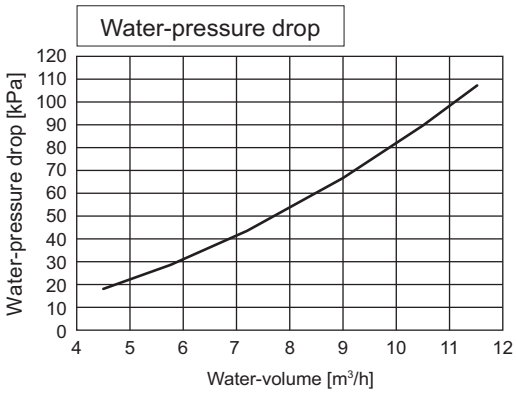


		PQRY-P350YLM-A2
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	9.98

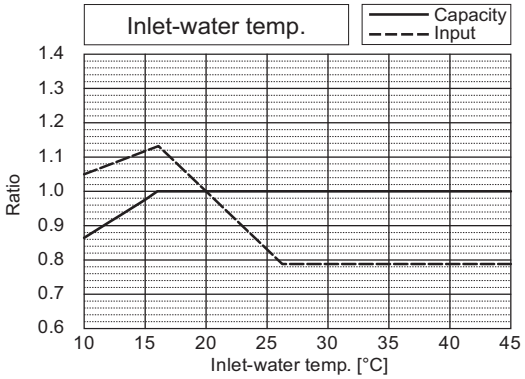


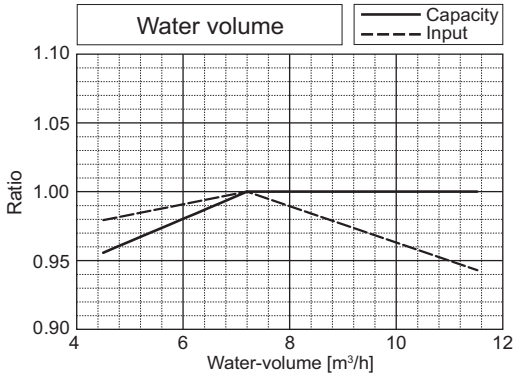


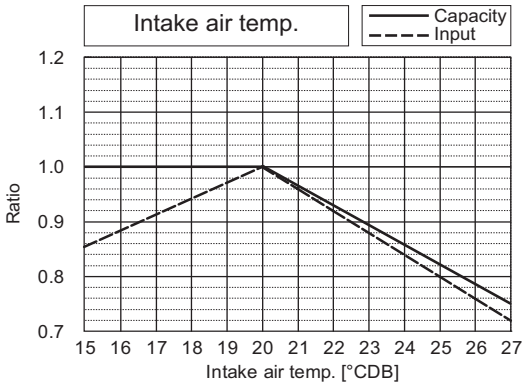


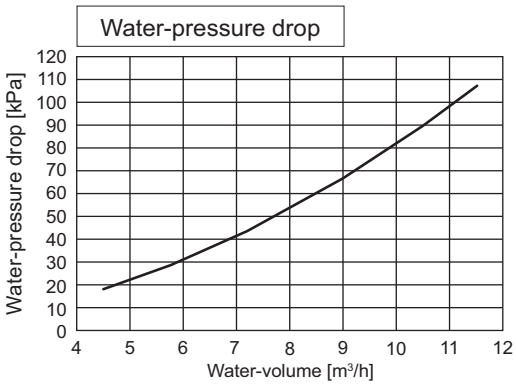


		PQRY-P350YLM-A2
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.87

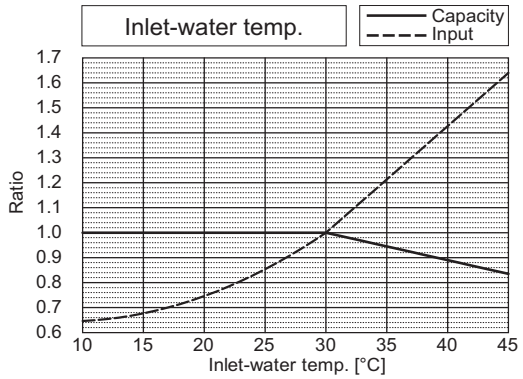


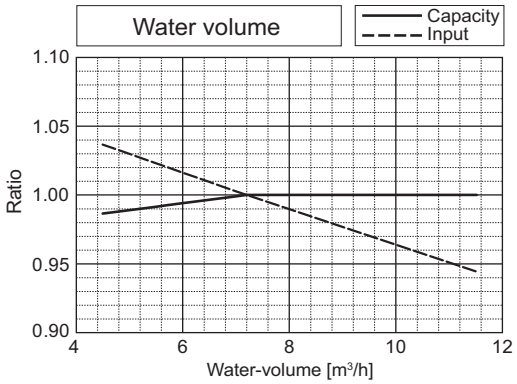


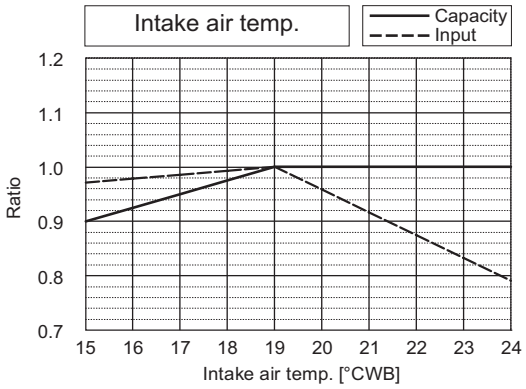


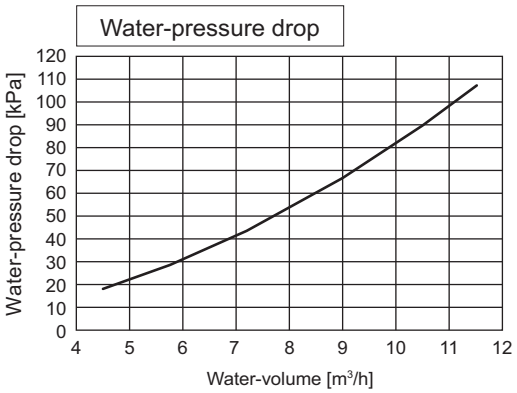


		PQRY-P400YLM-A2
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.05

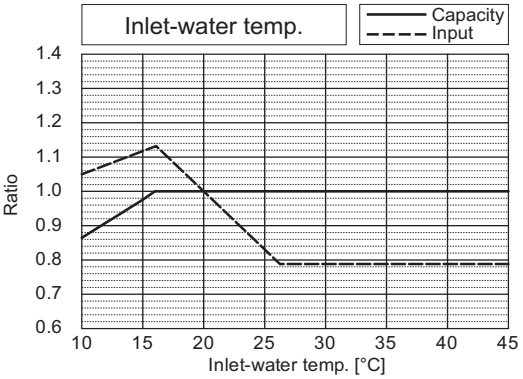


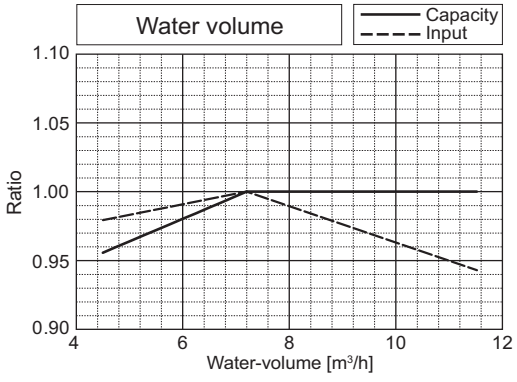


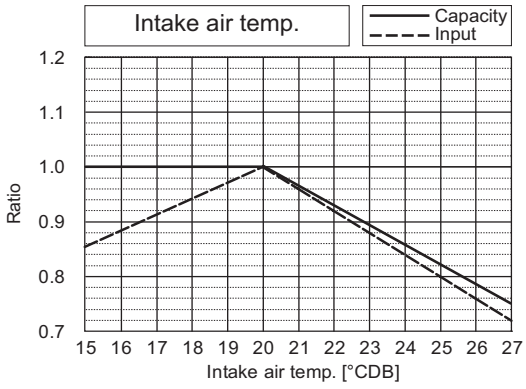


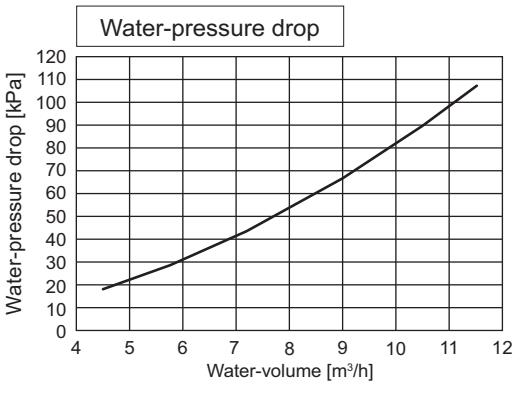


		PQRY-P400YLM-A2
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.45

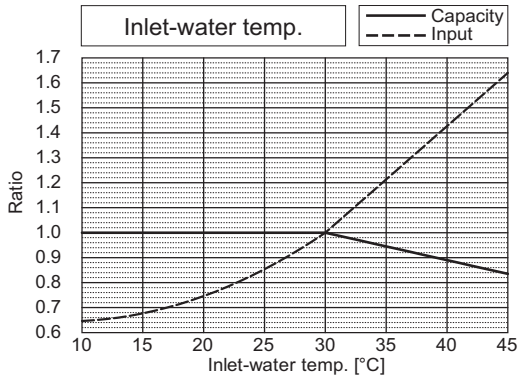


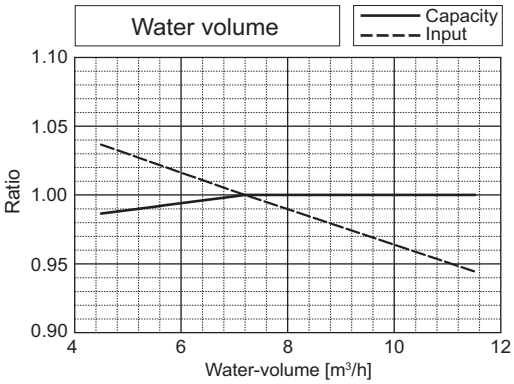


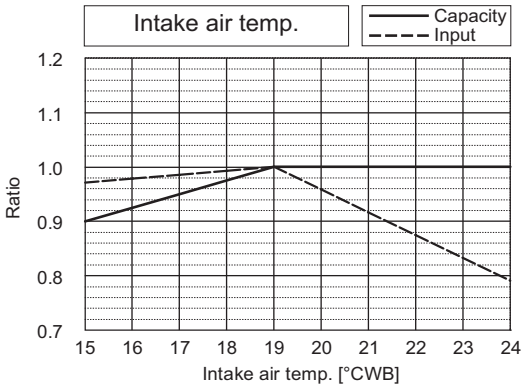


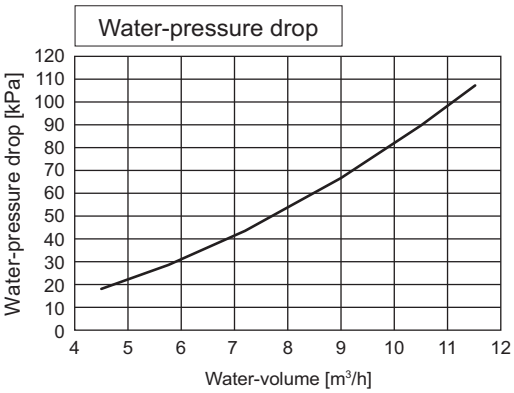


		PQRY-P450YLM-A2
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	12.05

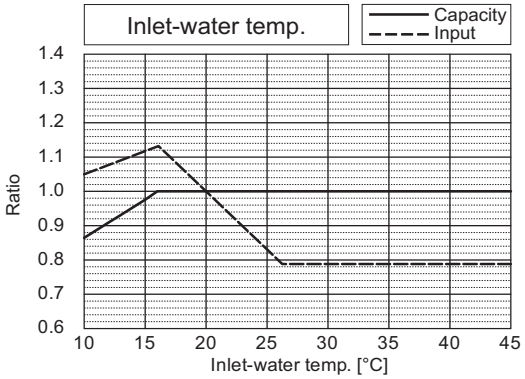


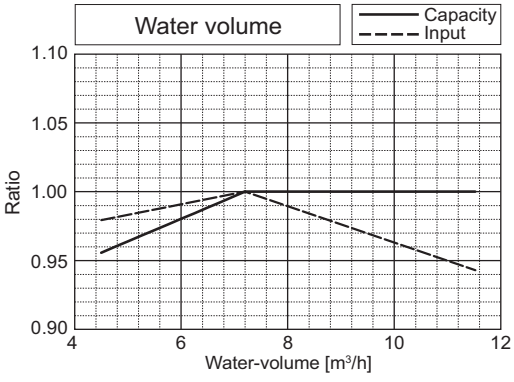


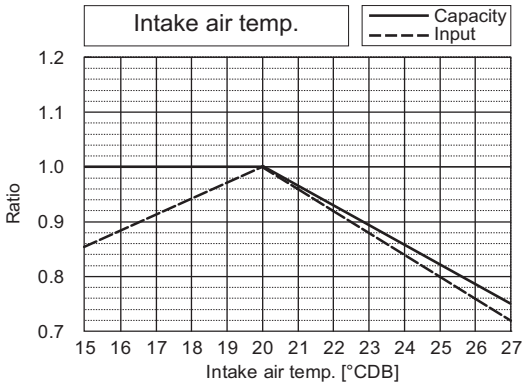


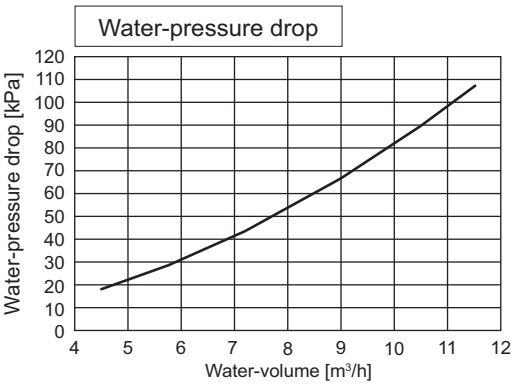


		PQRY-P450YLM-A2
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.11

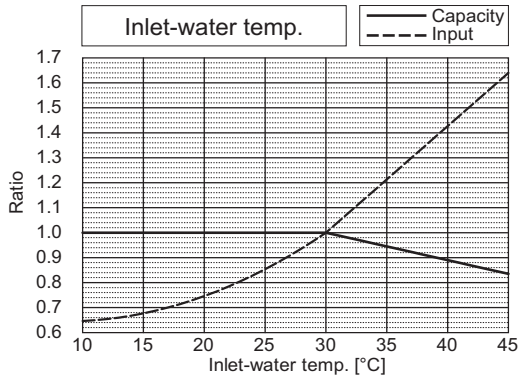


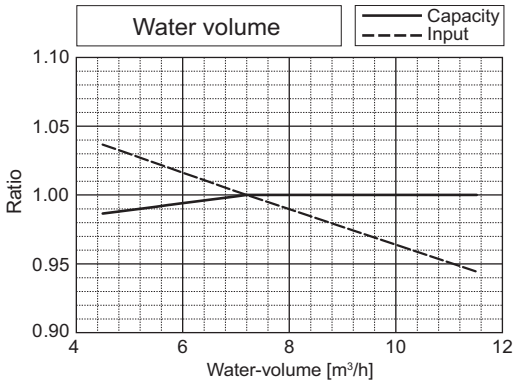


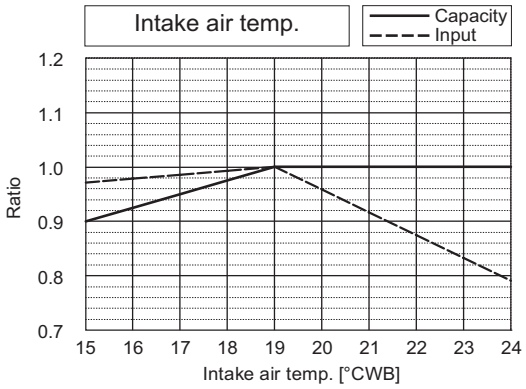


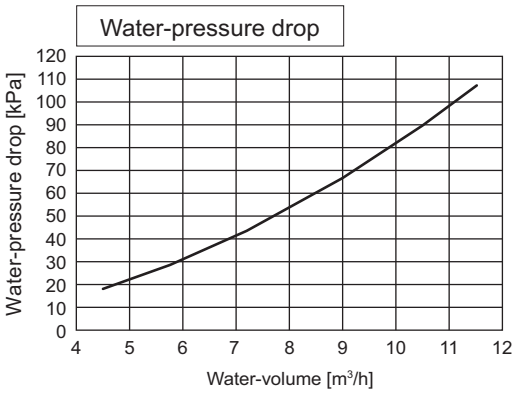


		PQRY-P500YLM-A2
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.58

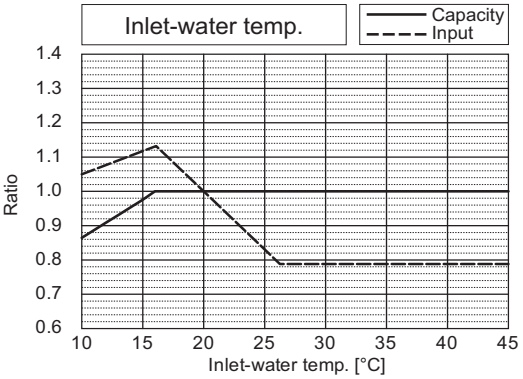


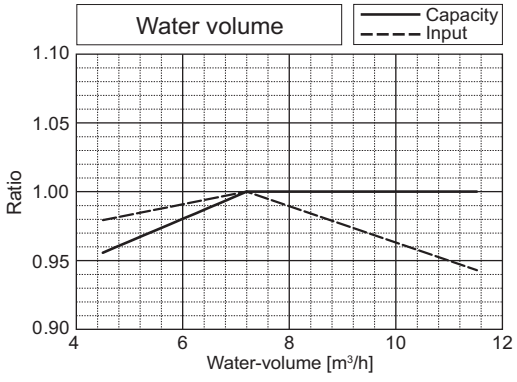


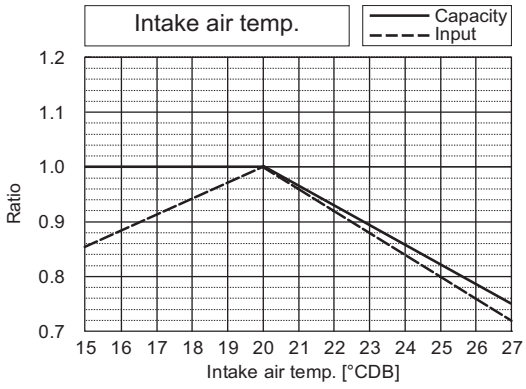


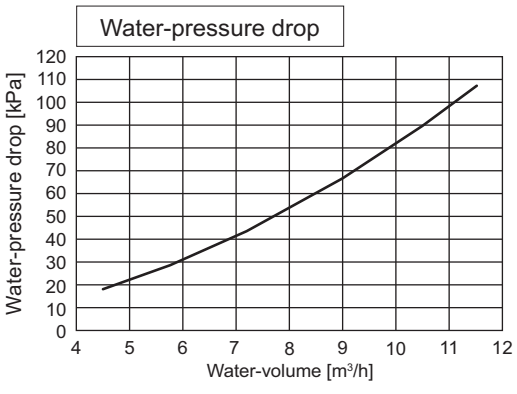


		PQRY-P500YLM-A2
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	13.07









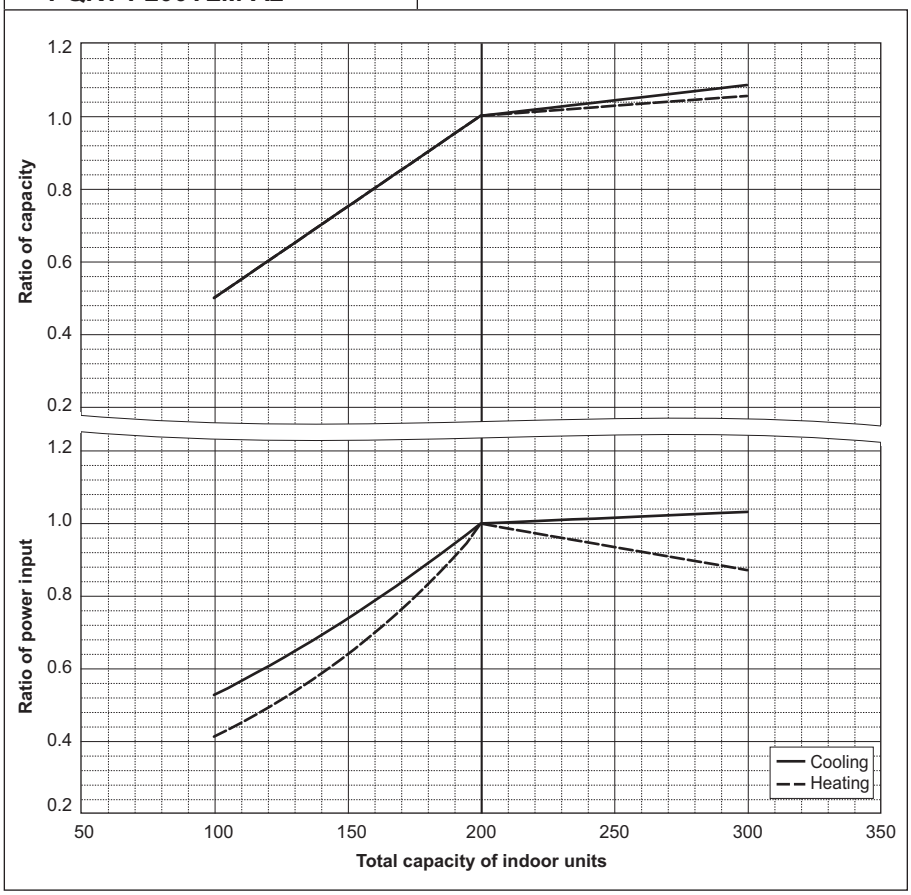
3-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

PQRY-P200YLM-A2		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.97

PQRY-P200YLM-A2		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	4.04

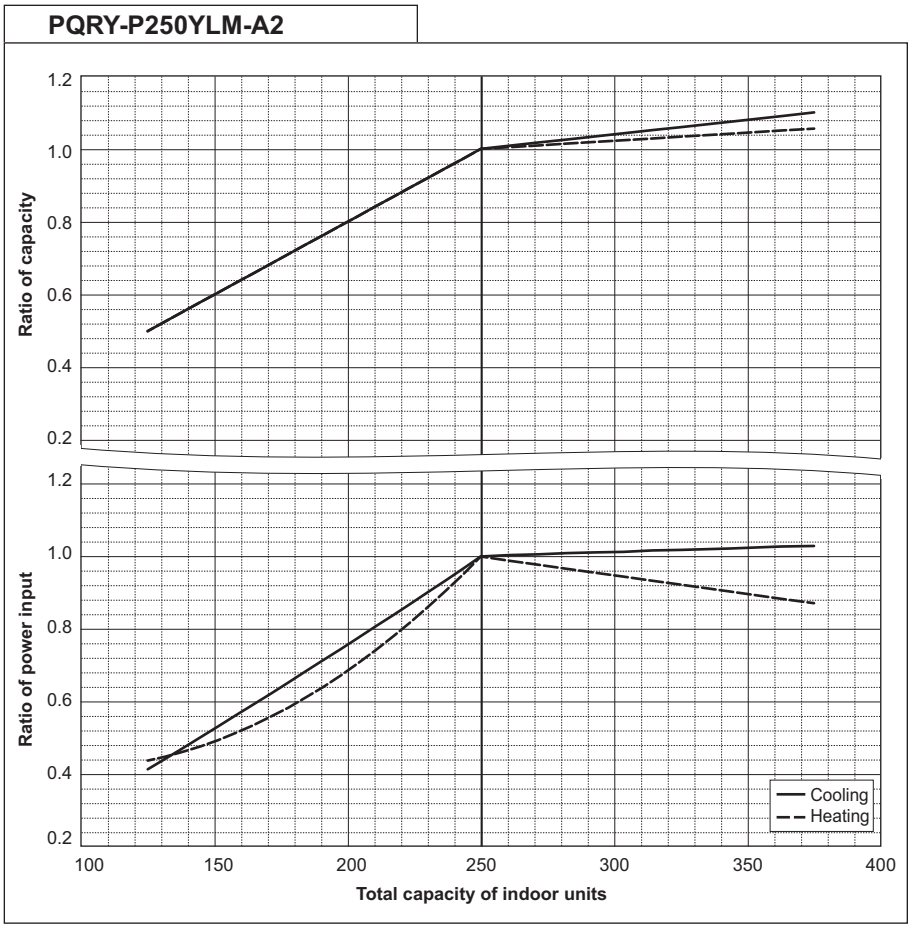
PQRY-P200YLM-A2



PQRY-P250YLM-A2		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	5.44

PQRY-P250YLM-A2		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.41

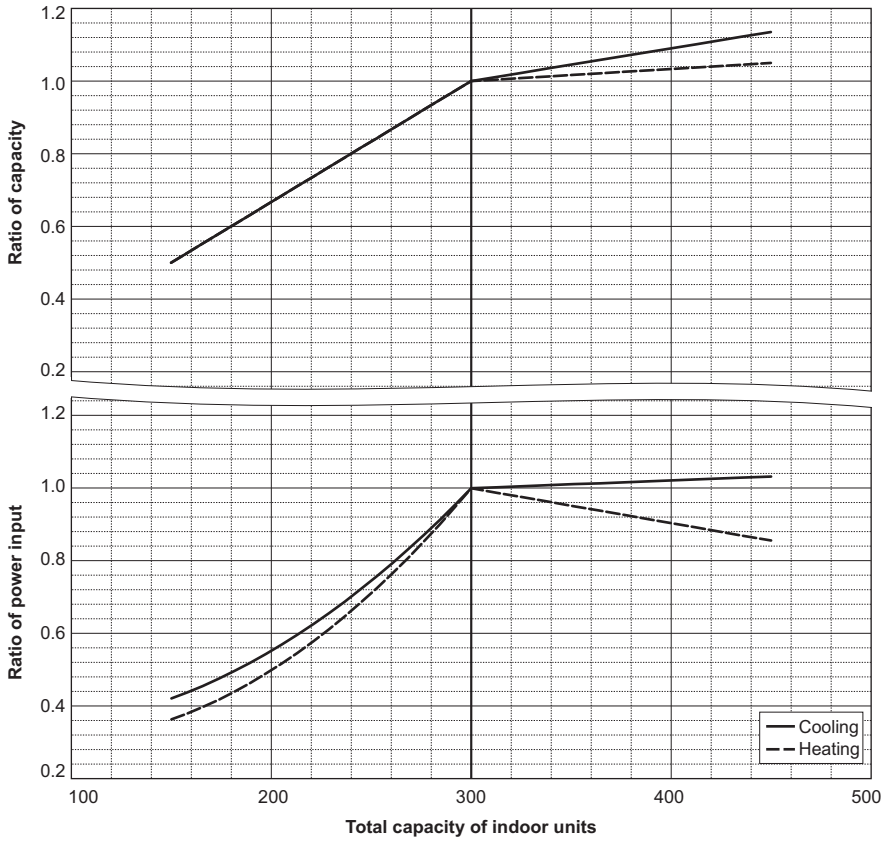
PQRY-P250YLM-A2



PQRY-P300YLM-A2		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	7.55

PQRY-P300YLM-A2		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	7.13

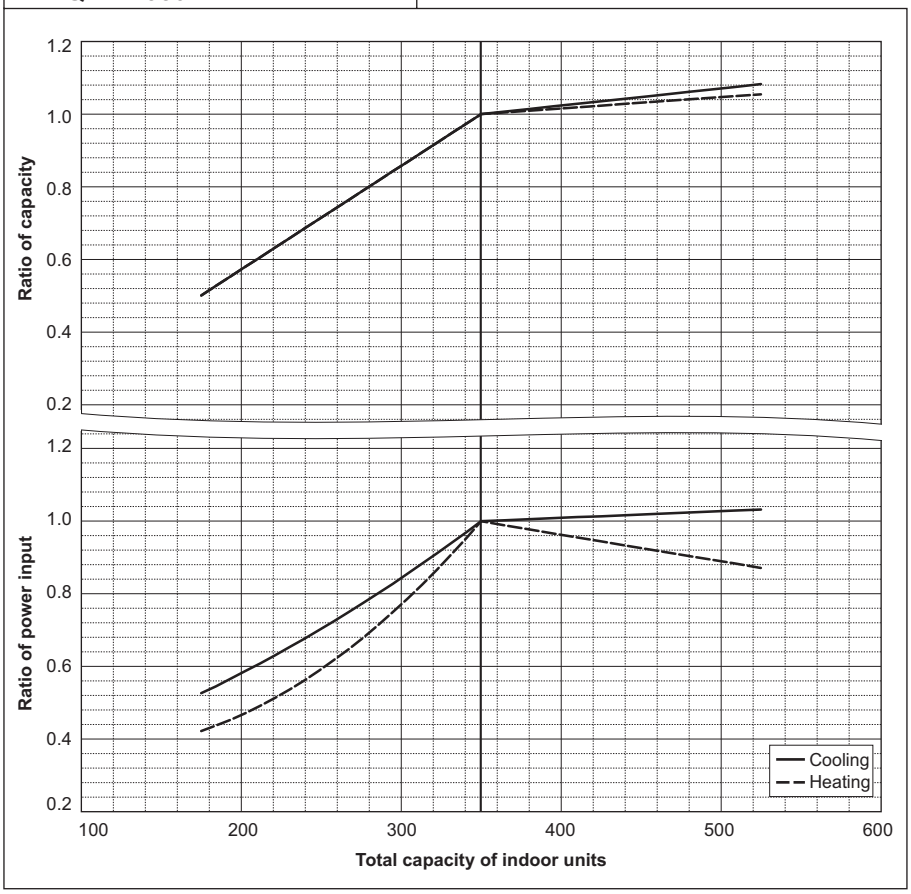
PQRY-P300YLM-A2



PQRY-P350YLM-A2		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	9.98

PQRY-P350YLM-A2		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.87

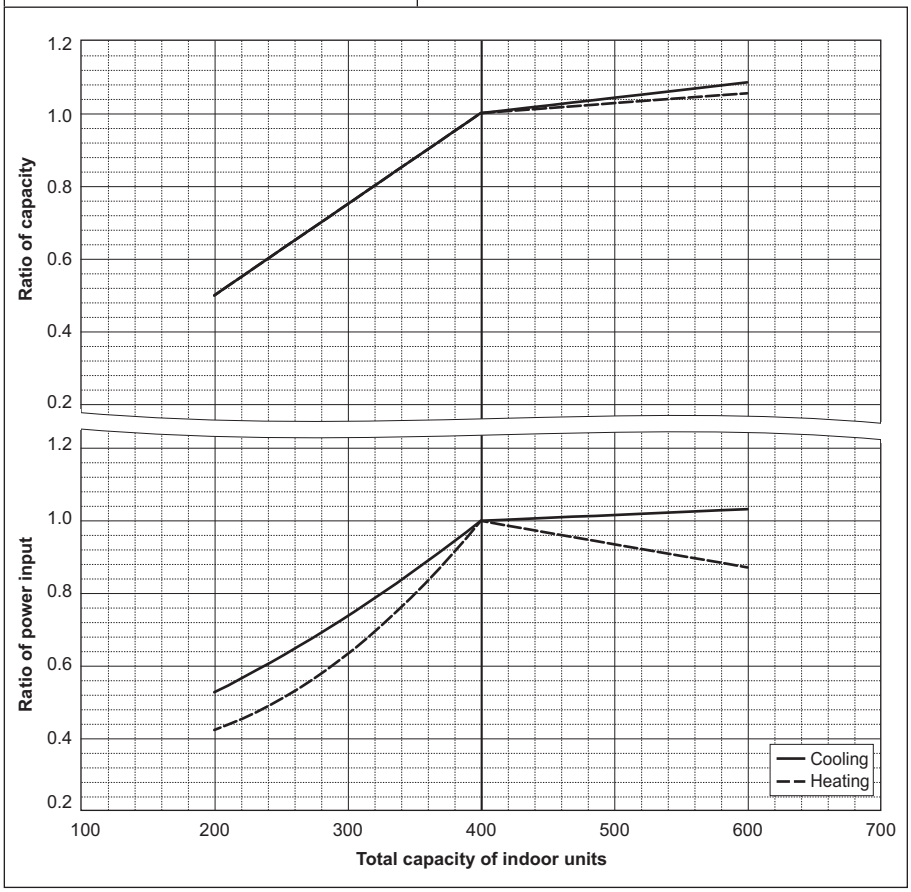
PQRY-P350YLM-A2



PQRY-P400YLM-A2		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.05

PQRY-P400YLM-A2		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.45

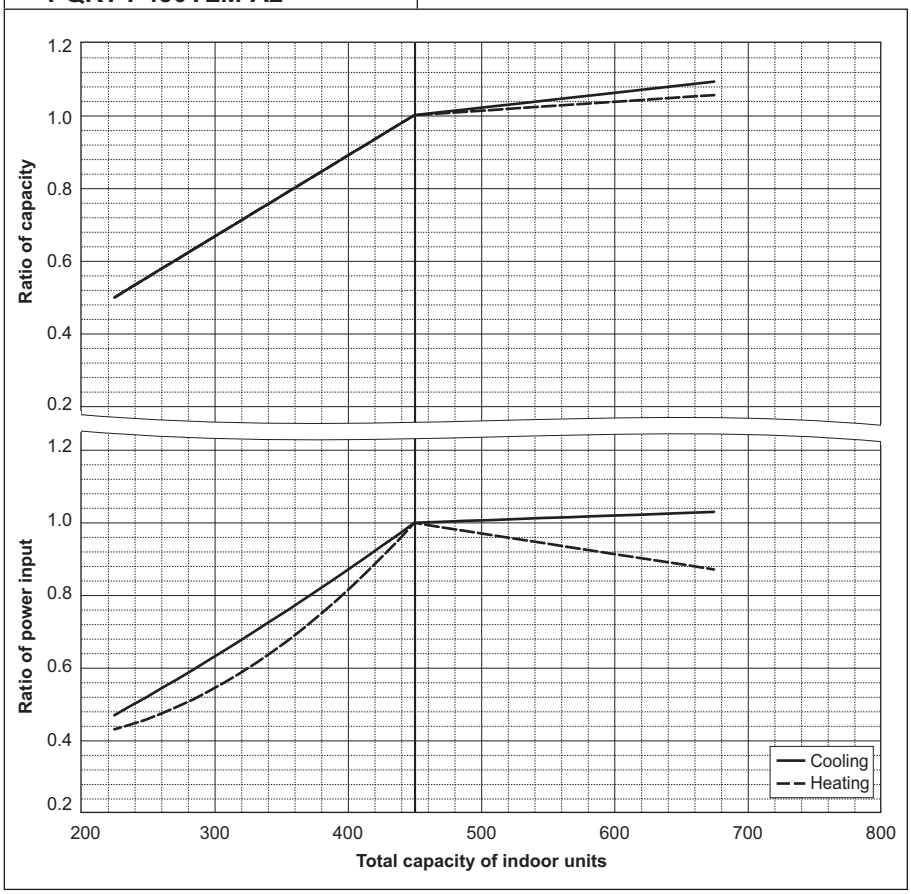
PQRY-P400YLM-A2



PQRY-P450YLM-A2		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	12.05

PQRY-P450YLM-A2		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.11

PQRY-P450YLM-A2

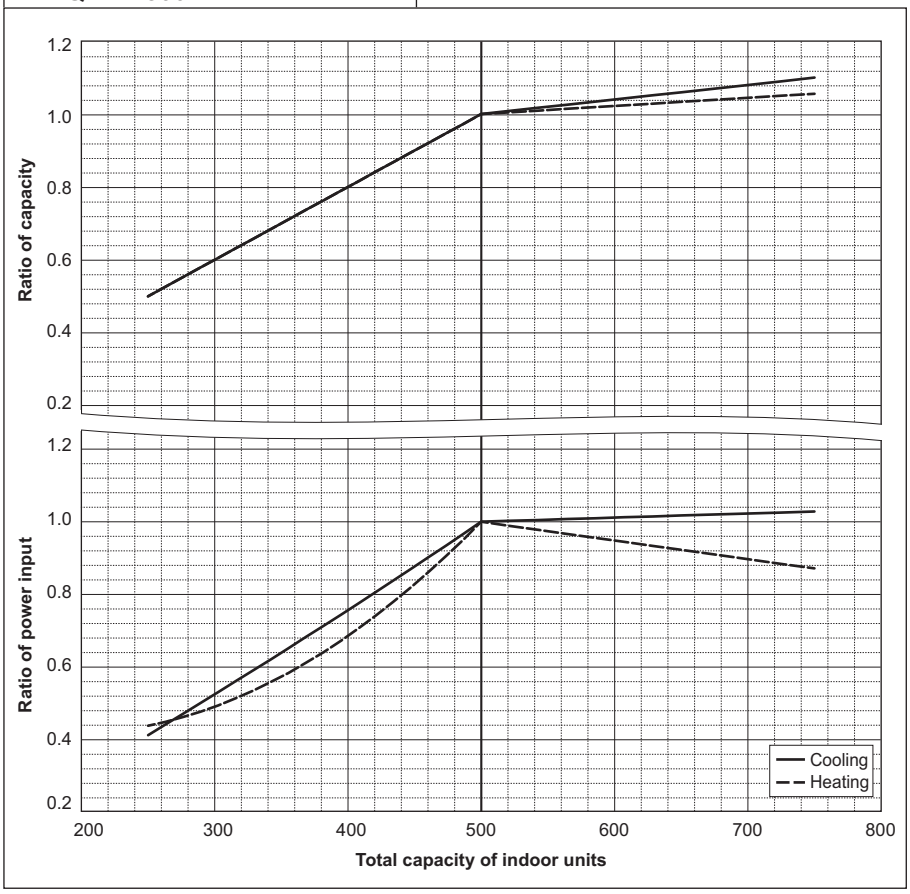


PQRY-P-YLM-A2

PQRY-P500YLM-A2		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.58

PQRY-P500YLM-A2		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	13.07

PQRY-P500YLM-A2

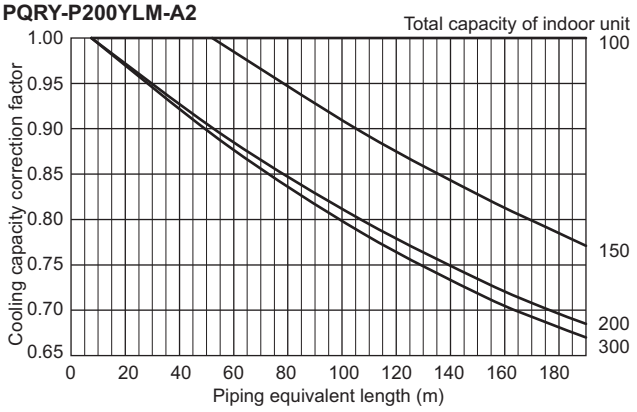


3-3. Correction by piping length

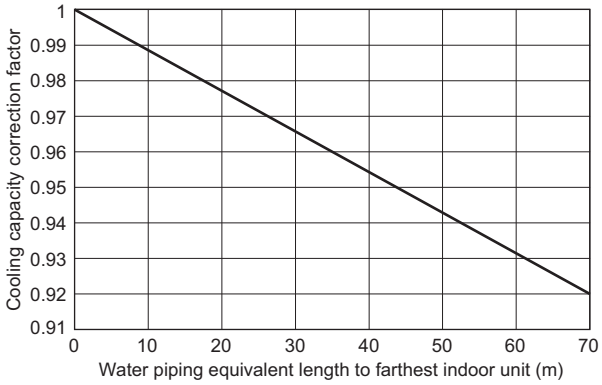
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 3-3-1 and 3-3-2 the capacity can be calculated. 3-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

3-3-1. Cooling capacity correction

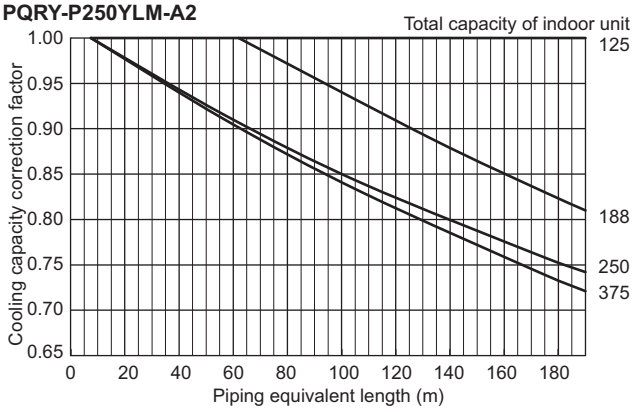
PQRY-P200YLM-A2



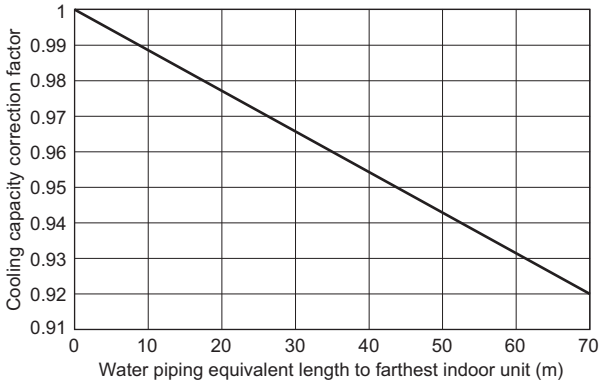
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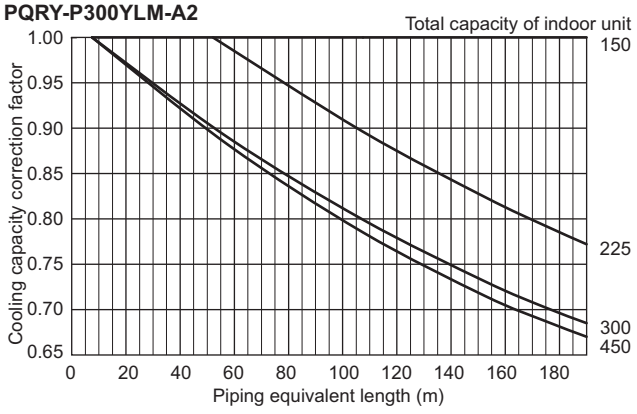
PQRY-P250YLM-A2



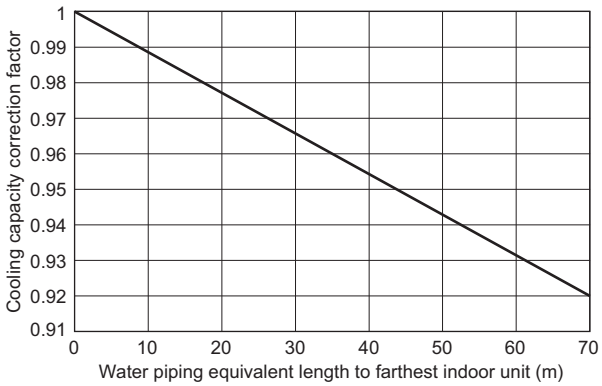
PQRY-P250YLM-A2



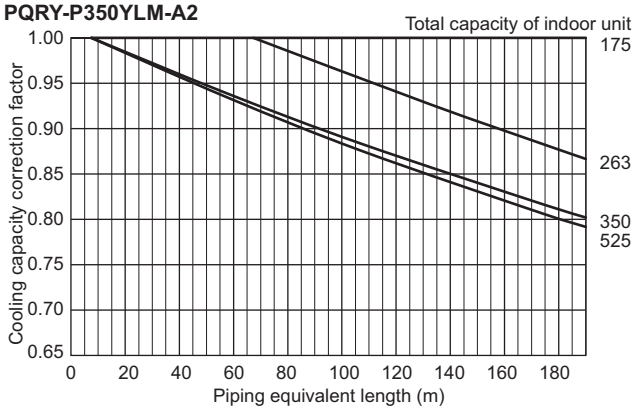
PQRY-P300YLM-A2



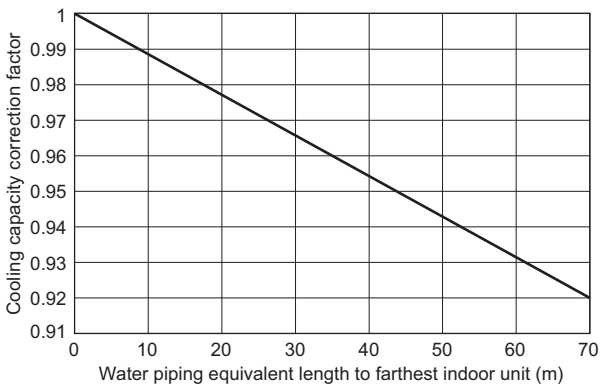
PQRY-P300YLM-A2



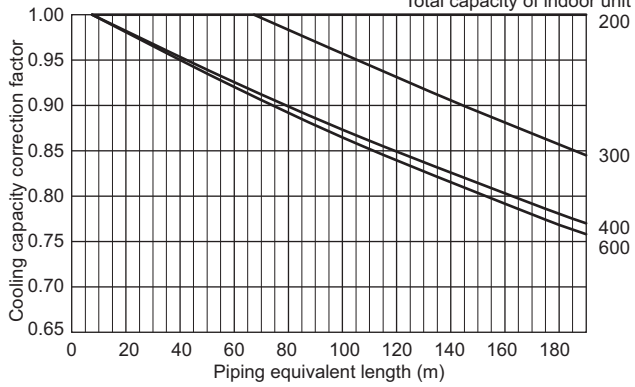
PQRY-P350YLM-A2



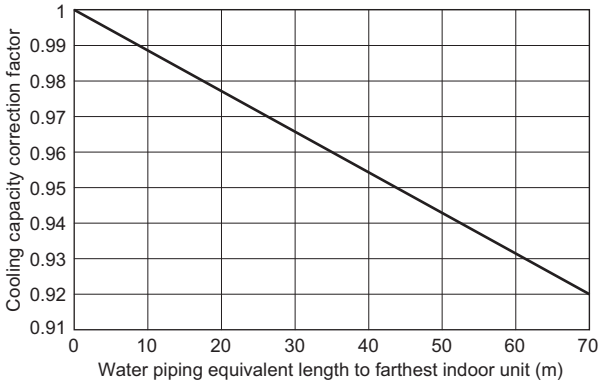
PQRY-P350YLM-A2



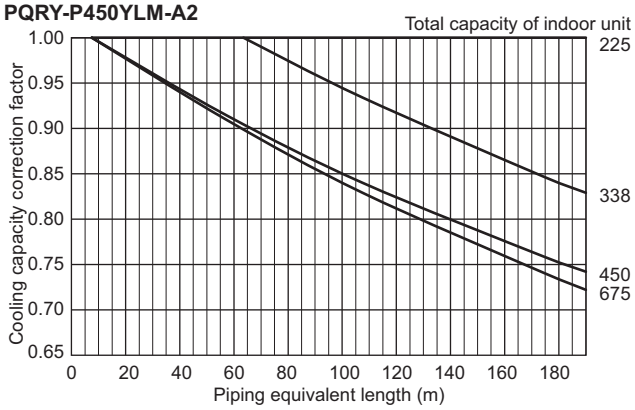
PQRY-P400YLM-A2



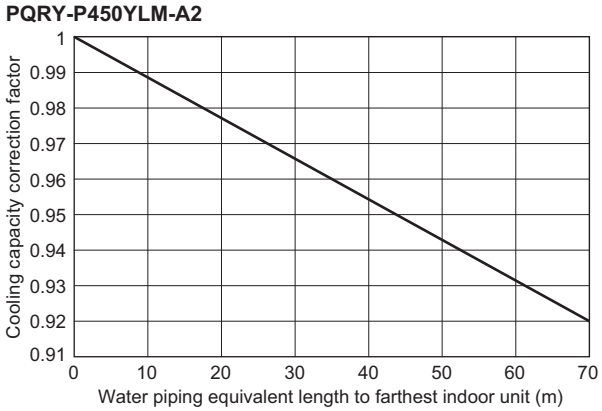
PQRY-P400YLM-A2



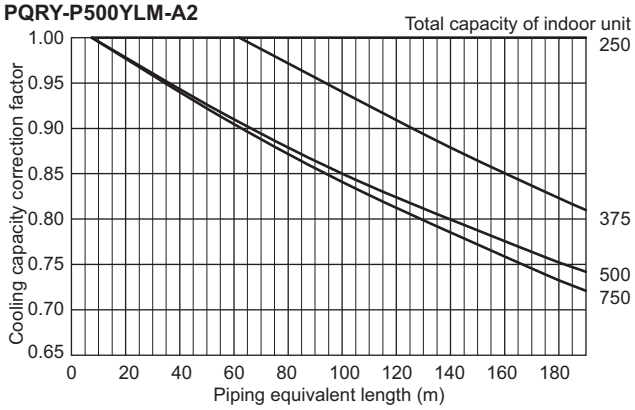
PQRY-P450YLM-A2



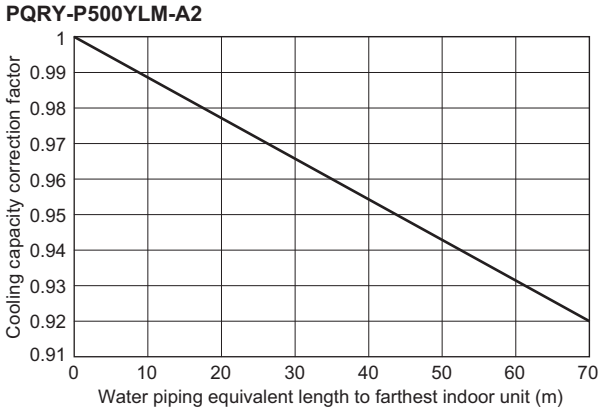
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PQRY-P500YLM-A2

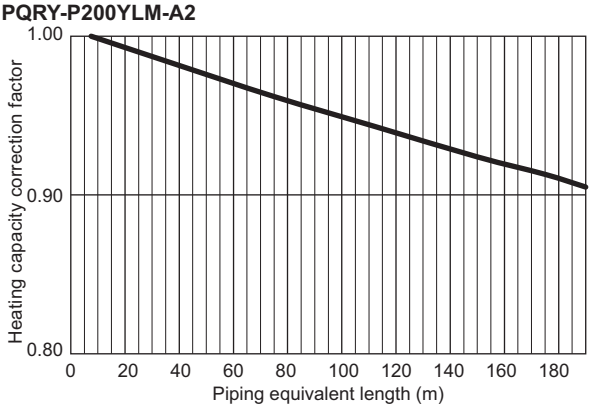


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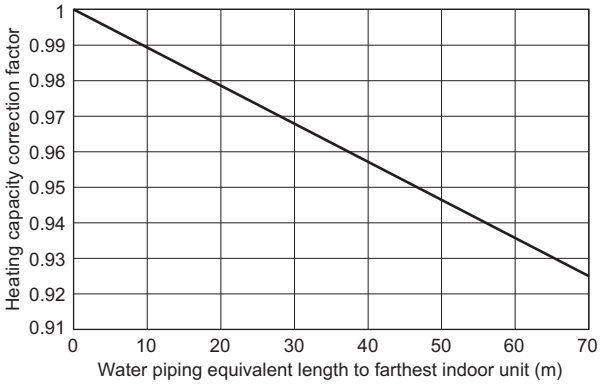


3-3-2. Heating capacity correction

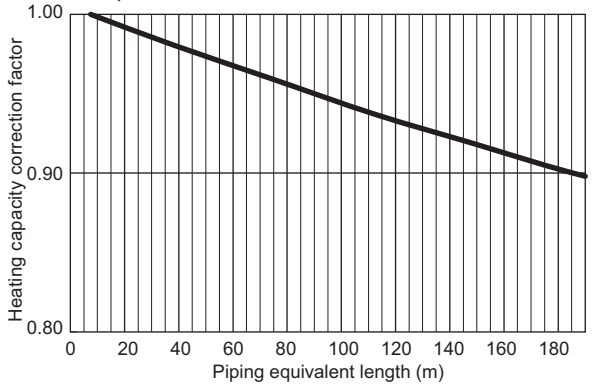
PQRY-P200YLM-A2



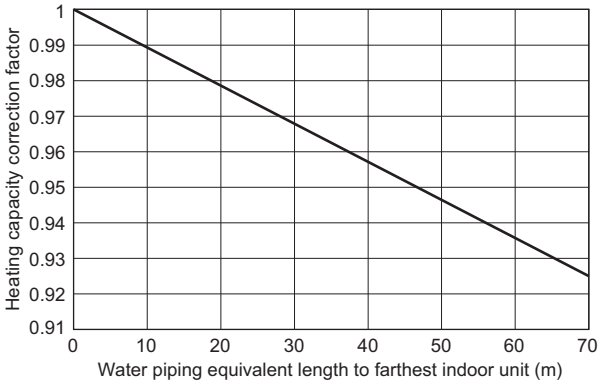
PQRY-P200YLM-A2



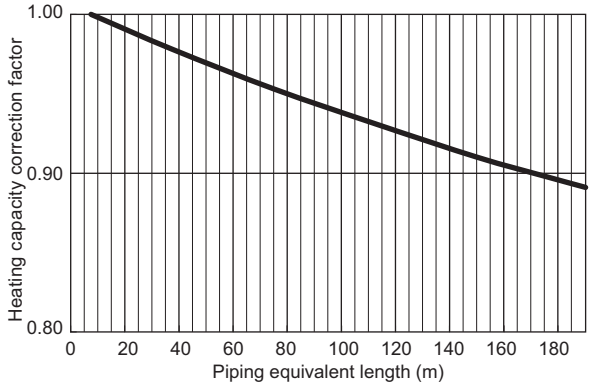
PQRY-P250, 300YLM-A2



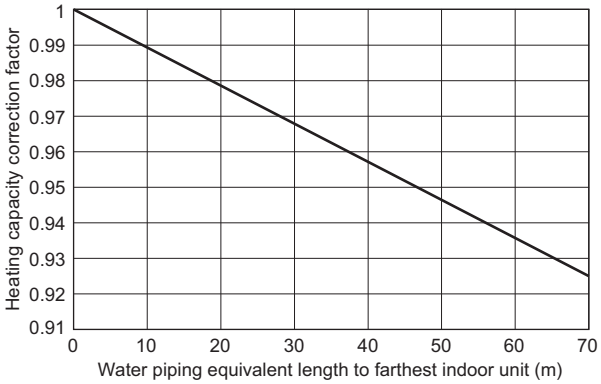
PQRY-P250, 300YLM-A2



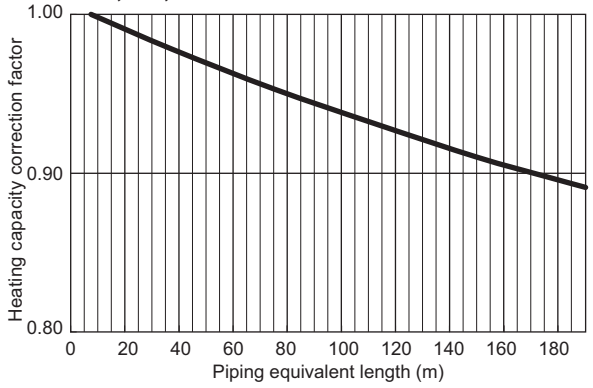
PQRY-P350YLM-A2



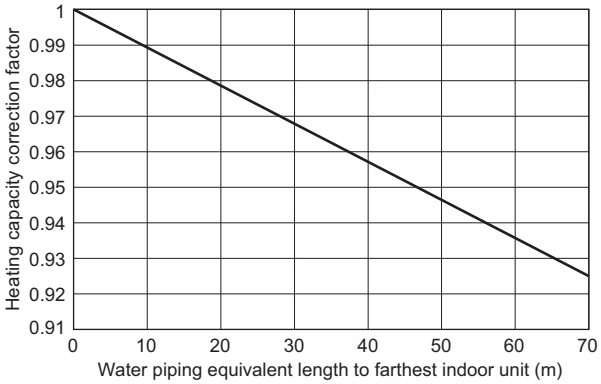
PQRY-P350YLM-A2



PQRY-P400, 450, 500YLM-A2



PQRY-P400, 450, 500YLM-A2



3-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PQRY-P200YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

2. PQRY-P250, 300YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PQRY-P350YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

4. PQRY-P400, 450, 500YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

3-4. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 3-4-1 for antifreeze solution concentration, 3-4-2 and 3-4-3 for capacity correction by antifreeze solution concentration.

3-4-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

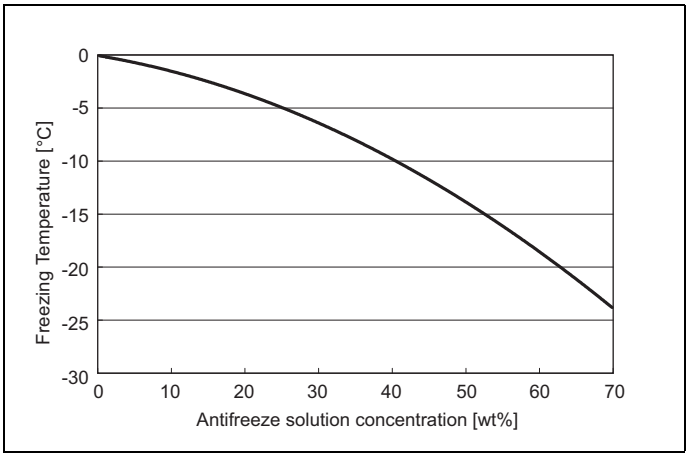
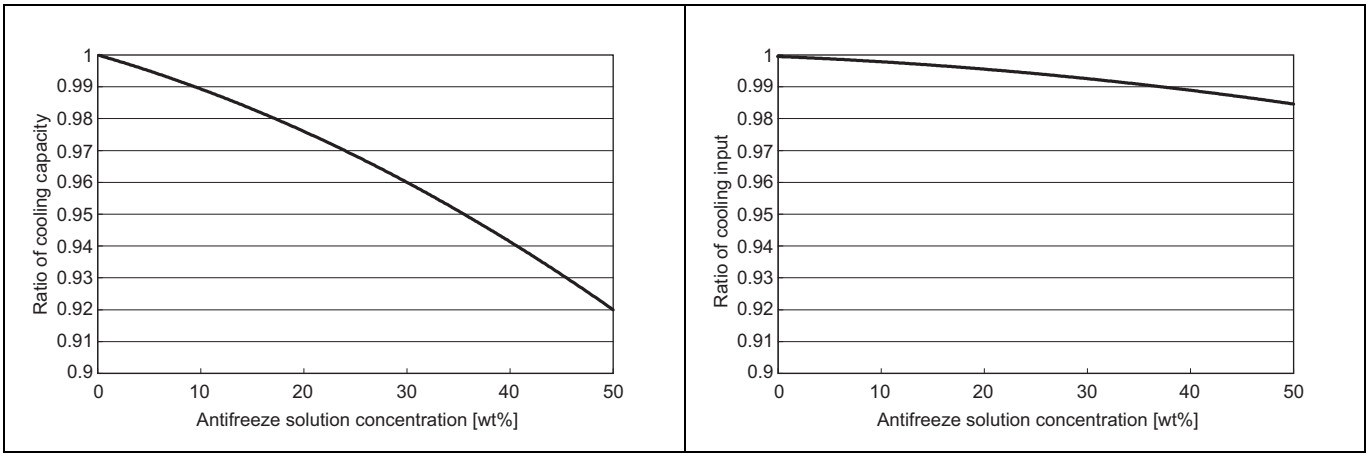


Table A

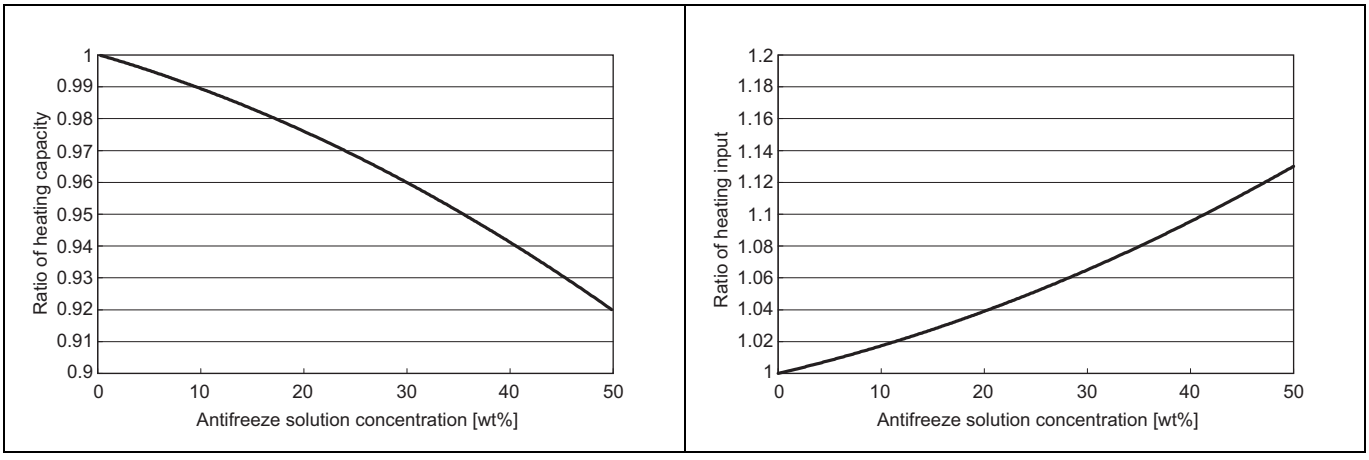
Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

PQRY-P-YLM-A2

3-4-2. Capacity correction by antifreeze solution concentration (cooling)



3-4-3. Capacity correction by antifreeze solution concentration (heating)

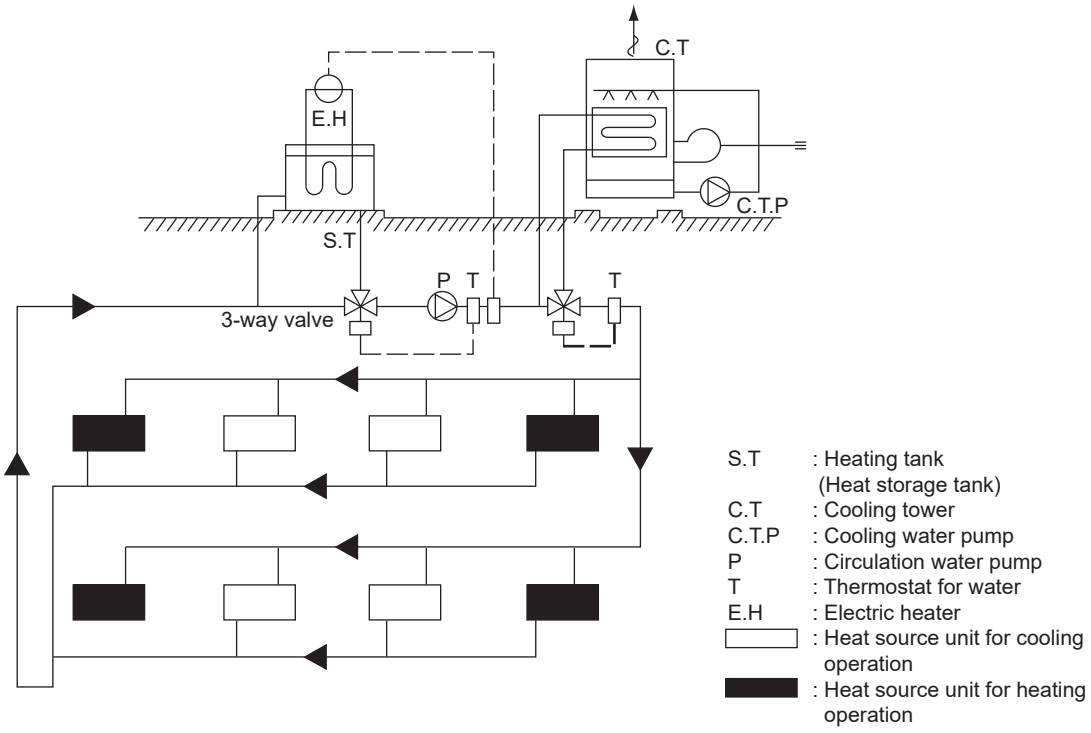


4-1. Designing of water circuit system

1) Example of basic water circuit

The water circuit of the water heat source HYBRID CITY MULTI connects the heat source unit with the cooling tower/auxiliary heat source/heat storage tank/circulation pump with a single system water piping as shown in the figure below. The selector valve automatically controls to circulate water toward the cooling tower in the cooling season, while toward the heat storage tank in the heating season. If the circulation water temperature is kept in a range of 10~45°C [50~113°F] regardless of the building load, the water heat source HYBRID CITY MULTI can be operated for either cooling or heating. Therefore in the summer when only cooling load exists, the temperature rise of circulation water will be suppressed by operating the cooling tower. While in the winter when heating load increases, the temperature of circulation water may be dropped below 10°C [50°F]. Under such situation, the circulation water will be heated with the auxiliary heat source if it drops below a certain temperature.
When the thermal balance between cooling and heating operation is in a correct proportion, the operation of the auxiliary heat source and cooling tower is not required.
In order to control the above thermal balance properly and use thermal energy effectively, utilizing of heat storage tanks, and night-time discounted electric power as a auxiliary heat source will be economical.
Meantime as this system uses plural sets of heat source unit equipped with water heat exchangers, water quality control is important. Therefore it is recommended to use closed type cooling towers as much as possible to prevent the circulation water from being contaminated.
When open type cooling towers are used, it is essential to provide proper maintenance control such as that to install water treatment system to prevent troubles caused by contaminated circulation water.

Example of basic water circuit for water heat source HYBRID CITY MULTI



The indoor unit and refrigerant piping system are excluded in this figure.

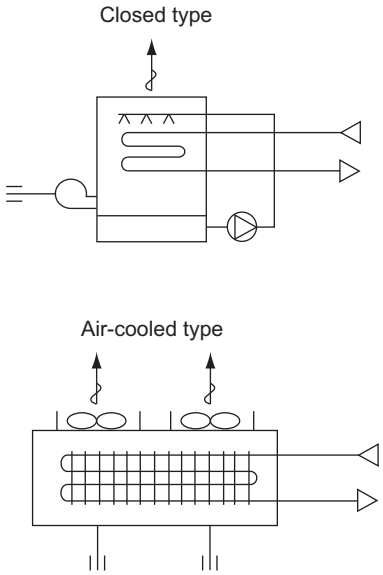
PQRY-P-YLM-A2

2) Cooling tower

a) Types of cooling tower

The cooling towers presently used include the open type cooling tower, open type cooling tower + heat exchanger, closed type cooling tower, and air-cooled type cooling tower. However, as the quality control of circulation water is essential when units are installed in decentralized state inside a building, the closed type cooling tower is generally employed in such case.
Although the circulation water will not be contaminated by atmospheric air, it is recommended to periodically blow water inside the system and replenish fresh water instead.
In a district where the coil may be frozen in the winter, it is necessary to apply antifreeze solution to the circulation water, or take freeze protection measures such as to automatically discharge water inside the cooling coil at the stopping of the pump.
When the open type cooling tower is used, be sure to install a water quality control device in addition to the freeze protection measures, as the water may be deteriorated by atmospheric contaminants entered into the cooling tower and dissolved into the circulation water.

Types of cooling towers



b) Calculation method of cooling tower capacity

All units of the water heat source HYBRID CITY MULTI may possibly be in cooling operation temporarily (at pulling down) in the summer, however, it is not necessary to determine the capacity according to the total cooling capacity of all HYBRID CITY MULTI units as this system has a wide operating water temperature range.
It is determined in accordance with the value obtained by adding the maximum cooling load of an actual building, the input heat equivalent value of all HYBRID CITY MULTI units, and the cooling load of the circulating pumps. Please check for the values of the cooling water volume and circulation water volume.

$$\text{Cooling tower capacity} = \frac{Qc + 860 \times (\Sigma Qw + Pw)}{3{,}900} \text{ (Refrigeration ton)}$$

Qc : Maximum cooling load under actual state (kcal/h)
Qw : Total input of water heat source HYBRID CITY MULTI at simultaneous operation under maximum state (kW)
Pw : Shaft power of circulation pumps (kW)

$$\text{Cooling tower capacity} = \frac{Qc + 3{,}412 \times (\Sigma Qw + Pw)}{15{,}500} \text{ (Refrigeration ton)}$$

Qc : Maximum cooling load under actual state (BTU/h)
Qw : Total input of water heat source HYBRID CITY MULTI at simultaneous operation under maximum state (kW)
Pw : Shaft power of circulation pumps (kW)

* 1 Refrigerant ton of cooling tower capacity ≈ US refrigerant ton × (1 + 0.3)
= 3,900 kcal/h = 15,500 BTU/h

3) Auxiliary heat source and heat storage tank

When the heating load is larger than the cooling load, the circulation water temperature lowers in accordance with the heat balance of the system. It should be heated by the auxiliary heat source in order to keep the inlet water temperature within the operating range of the water heat source HYBRID CITY MULTI.

Further in order to operate the water heat source HYBRID CITY MULTI effectively, it is recommended to utilize the heat storage tank to cover the warming up load in the morning and the insufficient heat amount.
Effective heat utilization can be expected to cover insufficient heat at the warming up in the next morning or peak load time by storing heat by installing a heat storage tank or operating a low load auxiliary heat source at the stopping of the water heat source HYBRID CITY MULTI. As it can also be possible to reduce the running cost through the heat storage by using the discounted night-time electric power, using both auxiliary heat source and heat storage tank together is recommended. The effective temperature difference of an ordinary heat storage tank shows about 5°C [41°F] even with the storing temperature at 45°C [113°F].
However with the water heat source HYBRID CITY MULTI, it can be utilized as heating heat source up to 15°C [59°F] with an effective temperature of a high 30°C [54°F] approximately, thus the capacity of the heat storage tank can be minimized.

a) Auxiliary heat source

The following can be used as the auxiliary heat source.

- Boiler (Heavy oil, kerosine, gas, electricity)
- Electric heat (Insertion of electric heater into heat storage tank)
- Outdoor air (Air-heat source heat pump chiller)
- Warm discharge water (Exhaust water heat from machines inside building and hot water supply)
- Utilization of night-time lighting
- Solar heat

Please note that the auxiliary heat source should be selected after studying your operating environment and economical feasibility.

Determining the auxiliary heat source capacity

For the HYBRID CITY MULTI water heat source system, a heat storage tank is recommended to use. When employment of the heat storage tank is difficult, the warming up operation should be arranged to cover the starting up heating load. Since the holding water inside the piping circuit owns heat capacity and the warming up operation can be assumed for about one hour except that in a cold region, the heat storage tank capacity is required to be that at the maximum daily heating load including the warming up load at the next morning of the holiday. However the auxiliary heat source capacity should be determined by the daily heating load including warming up load on the week day.
For the load at the next morning of the holiday, heat storage is required by operating the auxiliary heat source even outside of the ordinary working hour.

When heat storage tank is not used

$$QH = HC_T \left(1 - \frac{1}{COP_h}\right) - 1000 \times Vw \times \Delta T - 860 \times Pw$$

QH	: Auxiliary heat source capacity	(kcal/h)
HC_T	: Total heating capacity of each water heat source HYBRID CITY MULTI	(kcal/h)
COP_H	: COP of water heat source HYBRID CITY MULTI at heating	
Vw	: Holding water volume inside piping	(m^3)
ΔT	: Allowable water temperature drop = T_{WH} - T_{WL}	(°C)
T_{WH}	: Heat source water temperature at high temperature side	(°C)
T_{WL}	: Heat source water temperature at low temperature side	(°C)
Pw	: Heat source water pump shaft power	(kW)

$$QH = HC_T \left(1 - \frac{1}{COP_h}\right) - 8.343 \times Vw \times \Delta T - 3412 \times Pw$$

QH	: Auxiliary heat source capacity	(BTU/h)
HC_T	: Total heating capacity of each water heat source HYBRID CITY MULTI	(BTU/h)
COP_H	: COP of water heat source HYBRID CITY MULTI at heating	
Vw	: Holding water volume inside piping	(G)
ΔT	: Allowable water temperature drop = T_{WH} - T_{WL}	(°F)
T_{WH}	: Heat source water temperature at high temperature side	(°F)
T_{WL}	: Heat source water temperature at low temperature side	(°F)
Pw	: Heat source water pump shaft power	(kW)

When heat storage tank is not used

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2}{T1} \times K \quad \text{(kcal)}$$

QH_{1T}	: Total of heating load on weekday including warming up	(kcal/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3)\, (T2 - 1)$$

Q'a	: Thermal load from external wall/roof in each zone	(kcal/h)
Q'b	: Thermal load from glass window in each zone	(kcal/h)
Q'c	: Thermal load from partition/ceiling/floor in each zone	(kcal/h)
Q'd	: Thermal load by infiltration in each zone	(kcal/h)
Q'f	: Fresh outdoor air load in each zone	(kcal/h)
$Q'e_1$	: Thermal load from human body in each zone	(kcal/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(kcal/h)
$Q'e_3$	: Thermal load from equipment in each zone	(kcal/h)
ψ	: Radiation load rate	0.6~0.8
T2	: Air conditioning hour	

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2}{T1} \times K \quad \text{(BTU)}$$

QH_{1T}	: Total of heating load on weekday including warming up	(BTU/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3)\, (T2 - 1)$$

Q'a	: Thermal load from external wall/roof in each zone	(BTU/h)
Q'b	: Thermal load from glass window in each zone	(BTU/h)
Q'c	: Thermal load from partition/ceiling/floor in each zone	(BTU/h)
Q'd	: Thermal load by infiltration in each zone	(BTU/h)
Q'f	: Fresh outdoor air load in each zone	(BTU/h)
$Q'e_1$	: Thermal load from human body in each zone	(BTU/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(BTU/h)
$Q'e_3$	: Thermal load from equipment in each zone	(BTU/h)
ψ	: Radiation load rate	0.6~0.8
T2	: Air conditioning hour	

b) Heat storage tank

Heat storage tank can be classified by types into the open type heat storage tank exposed to atmosphere, and the closed type heat storage tank with structure separated from atmosphere. Although the size of the tank and its installation place should be taken into account, the closed type tank is being usually employed by considering corrosion problems.

The capacity of heat storage tanks is determined in accordance with the daily maximum heating load that includes warming up load to be applied for the day after the holiday.

When auxiliary heat source is operated during operation and even after stopping of water heat source HYBRID CITY MULTI unit

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2 - QH \times T_2}{\Delta T \times 1{,}000 \times \eta V} \quad \text{(ton)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
ΔT : Temperature difference utilized by heat storage tank (°C)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2 - QH \times T_2}{\Delta T \times \eta V} \quad \text{(lbs)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
ΔT : Temperature difference utilized by heat storage tank (°F)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

When auxiliary heat source is operated after stopping of water heat source HYBRID CITY MULTI unit

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2}{\Delta T \times 1{,}000 \times \eta V} \quad \text{(ton)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
ΔT : Temperature difference utilized by heat storage tank (°C)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2}{\Delta T \times \eta V} \quad \text{(lbs)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
ΔT : Temperature difference utilized by heat storage tank (°F)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

4) Piping system

The following items should be kept in your mind in planning / designing water circuits.

a) All units should be constituted in a single circuit in principle.

b) When plural numbers of the water heat source HYBRID CITY MULTI unit are installed, the rated circulating water flow rate should be kept by making the piping resistance to each unit almost same value. As an example, the reverse return system as shown below may be employed.

c) Depending on the structure of a building, the water circuit may be prefabricated by making the layout uniform.

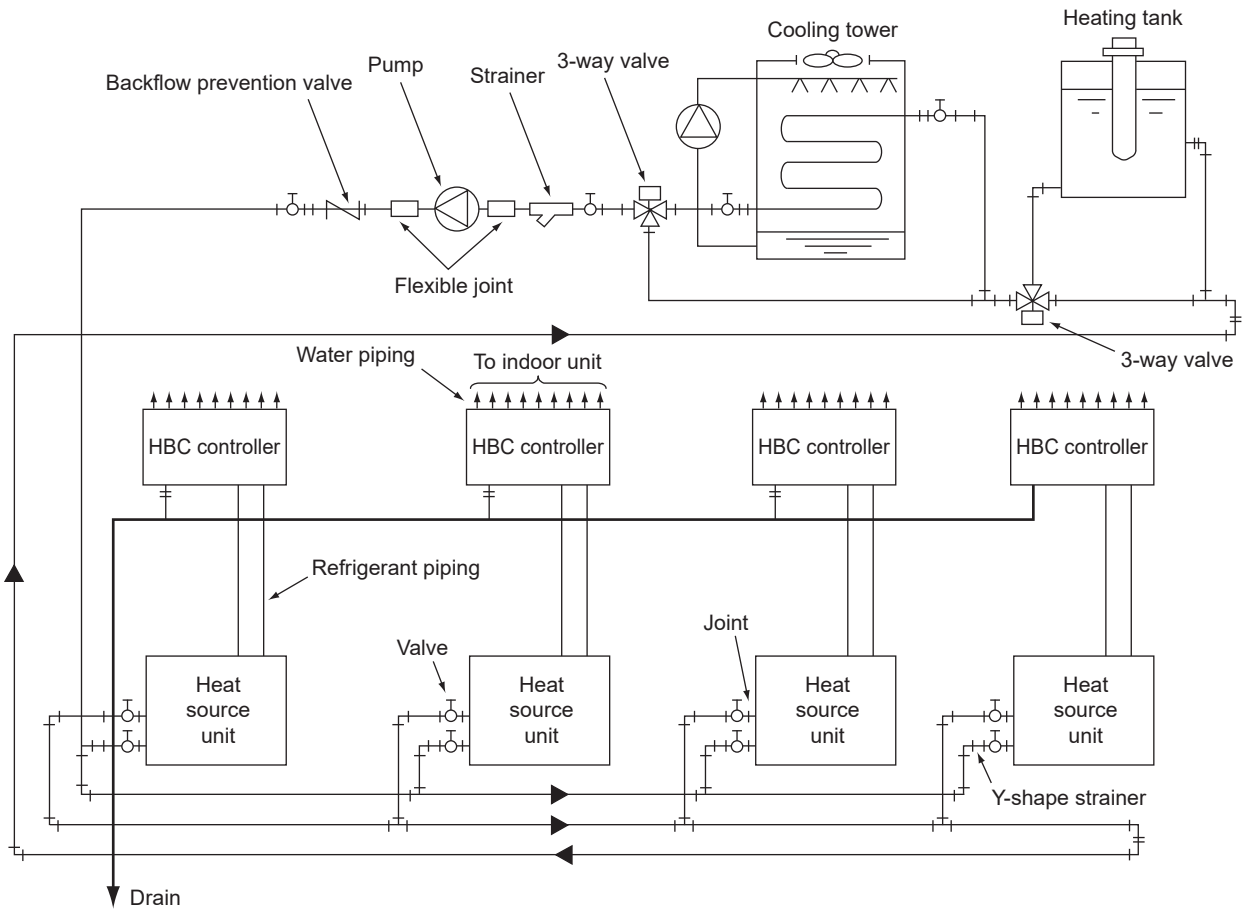
d) When a closed type piping circuit is constructed, install an expansion tank usable commonly for a make-up water tank to absorb the expansion/contraction of water caused by temperature fluctuation.

e) If the operating temperature range of circulation water stays within the temperature near the normal temperature (summer :29.4°C [85°F], winter :21.1°C [70°F]), thermal insulation or anti-sweating work is not required for the piping inside buildings.

In case of the conditions below, however, thermal insulation is required.

- When well water is used for heat source water.
- When piped to outdoor or a place where freezing may be caused.
- When vapor condensation may be generated on piping due to an increase in dry bulb temperature caused by the entry of fresh outdoor air.

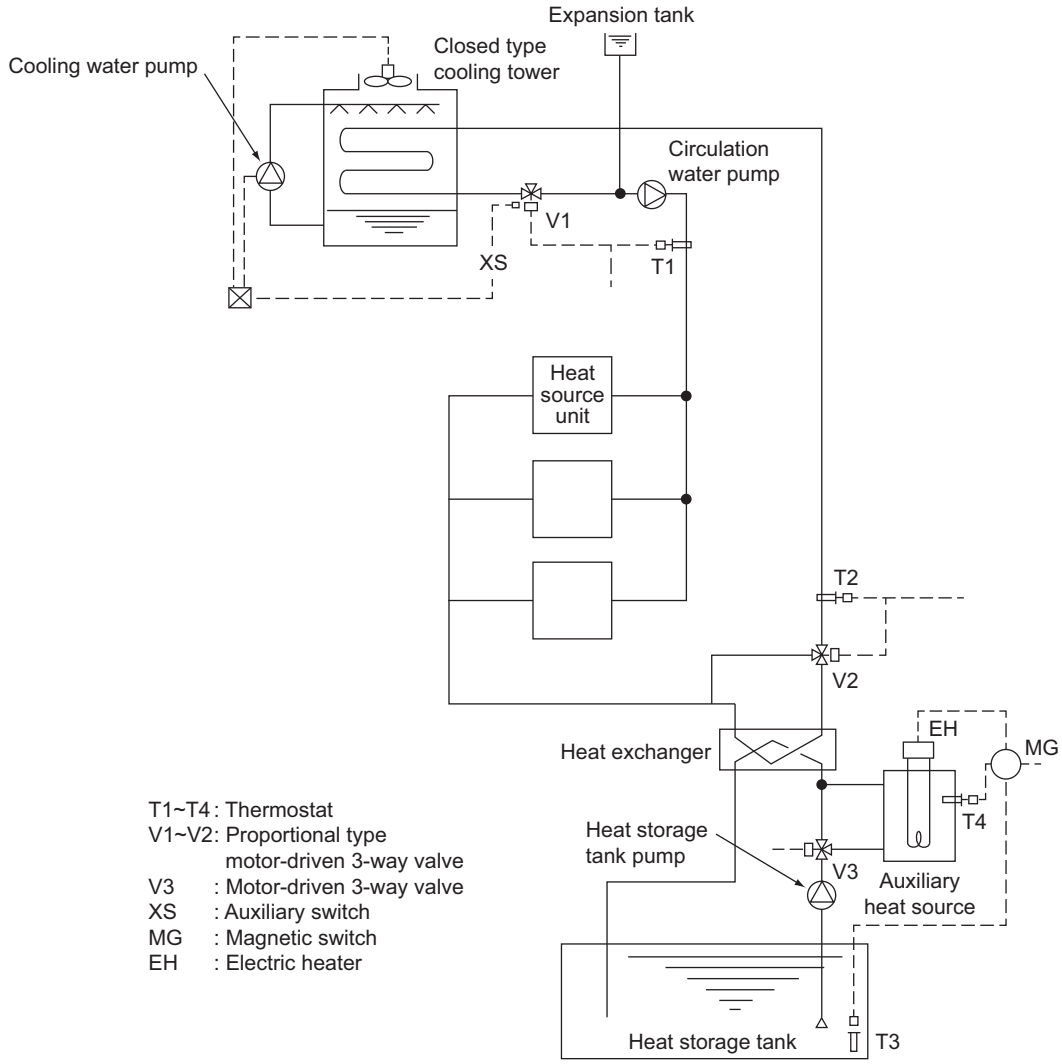
System example of water circuit



5) Practical System Examples and Circulation Water Control

Since the water heat source HYBRID CITY MULTI is of water heat source system, versatile systems can be constituted by combining it with various heat sources.
The practical system examples are given below.
Either cooling or heating operation can be performed if the circulation water temperature of the water heat source HYBRID CITY MULTI stays within a range of 15~45°C [59~113°F]. However, the circulation water temperature near 32°C [90°F] for cooling and 20°C [68°F] for heating is recommended by taking the life, power consumption and capacity of the air conditioning units into consideration. The detail of the control is also shown below.

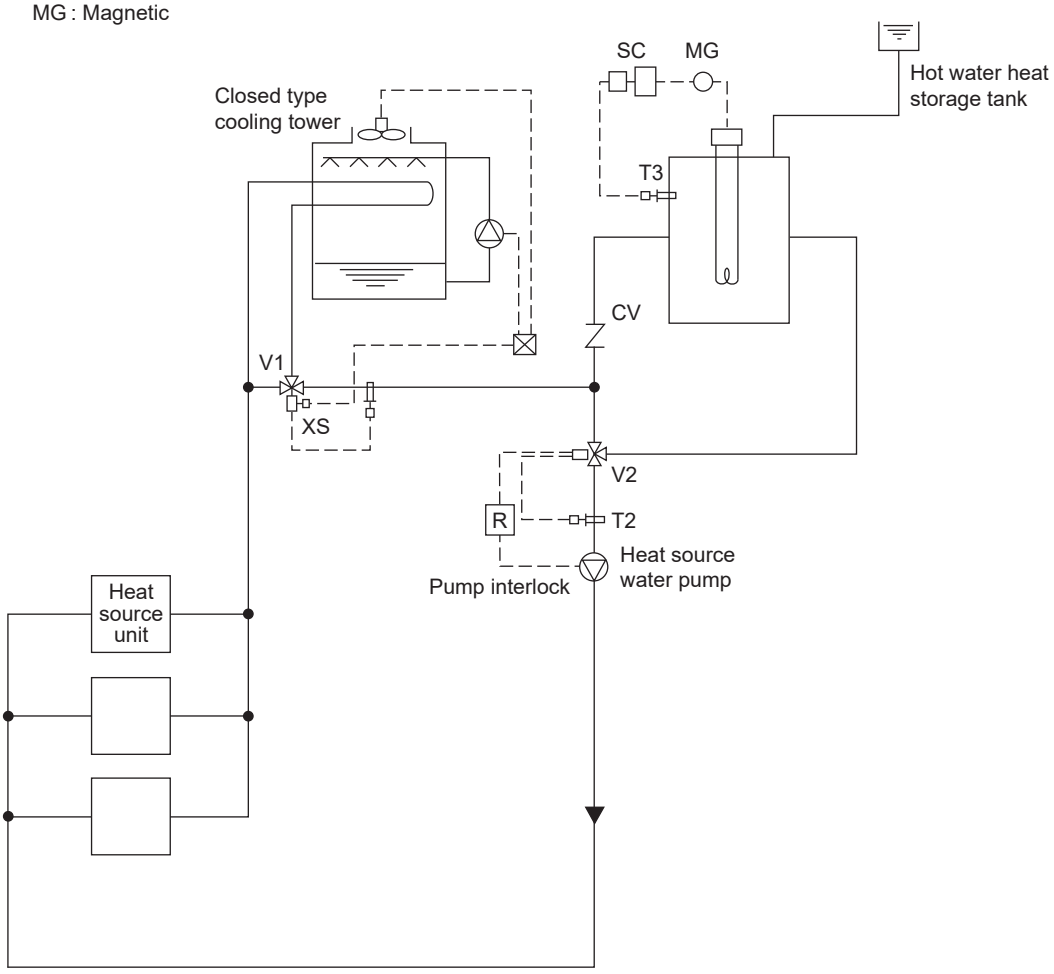
Example-1 Combination of closed type cooling tower and hot water heat storage tank (using underground hollow slab)



By detecting the circulation water temperature of the water heat source HYBRID CITY MULTI system with T1 (around 32°C [90°F]) and T2 (around 20°C [68°F]), the temperature will be controlled by opening/closing V1 in the summer and V2 in the winter.
In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the circulation water temperature. While in the winter, as the circulation water temperature drops, V2 will open following the command of T2 to rise the circulation water temperature.
The water inside the heat storage tank will be heated by the auxiliary heat source by V3 being opened with timer operation in the night-time. The electric heater of the auxiliary heat source will be controlled by T3 and the timer.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-2 Combination of closed type cooling tower and hot water heat storage tank

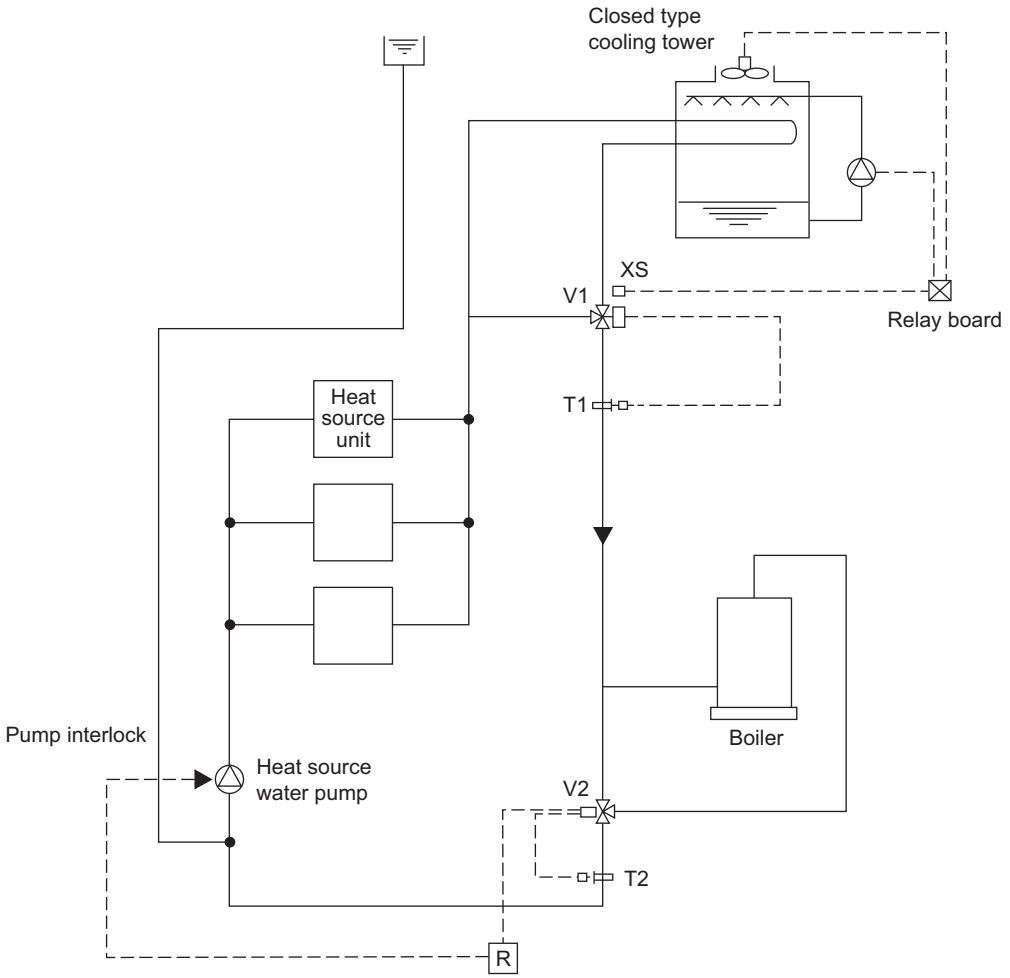
T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
T3 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
V2 : Proportional type, motor-driven 3-way valve
XS : Auxiliary switch (Duplex switch type)
SC : Step controller
R : Relay
MG : Magnetic



In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the inlet water temperature. In the winter, if the inlet water temperature stays below 25°C [77°F], V2 will open/close by the command of T2 to keep the inlet water temperature constant.
The temperature of the hot water inside the heat storage tank will be controlled through the step control of the electric heater by step controller operation following the command of T3.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking thus preventing the high temperature water from entering into the system at the starting of the pump.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-3 Combination of closed type cooling tower and boiler

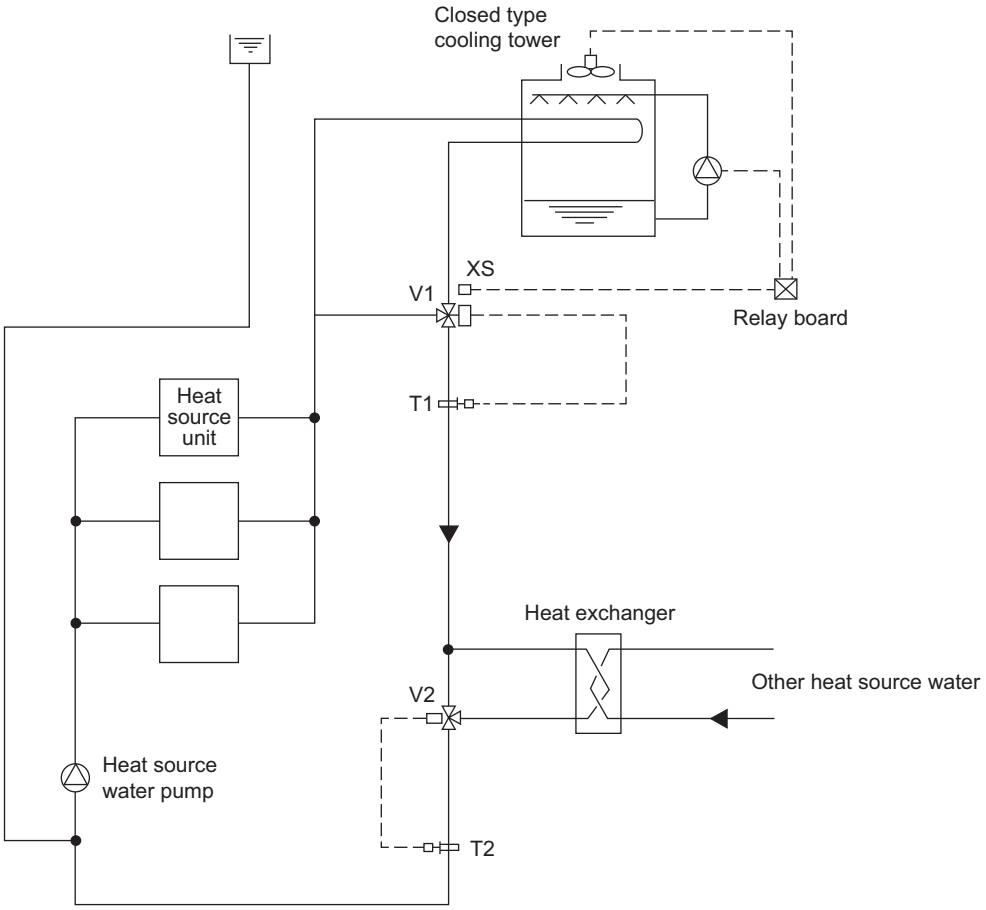
T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
T3 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
S : Selector switch
R : Relay
XS : Auxiliary switch (Duplex switch type)



In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the inlet water temperature. In the winter, if the inlet water temperature drops below 25°C [77°F], V2 will conduct water temperature control to keep the inlet water temperature constant.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

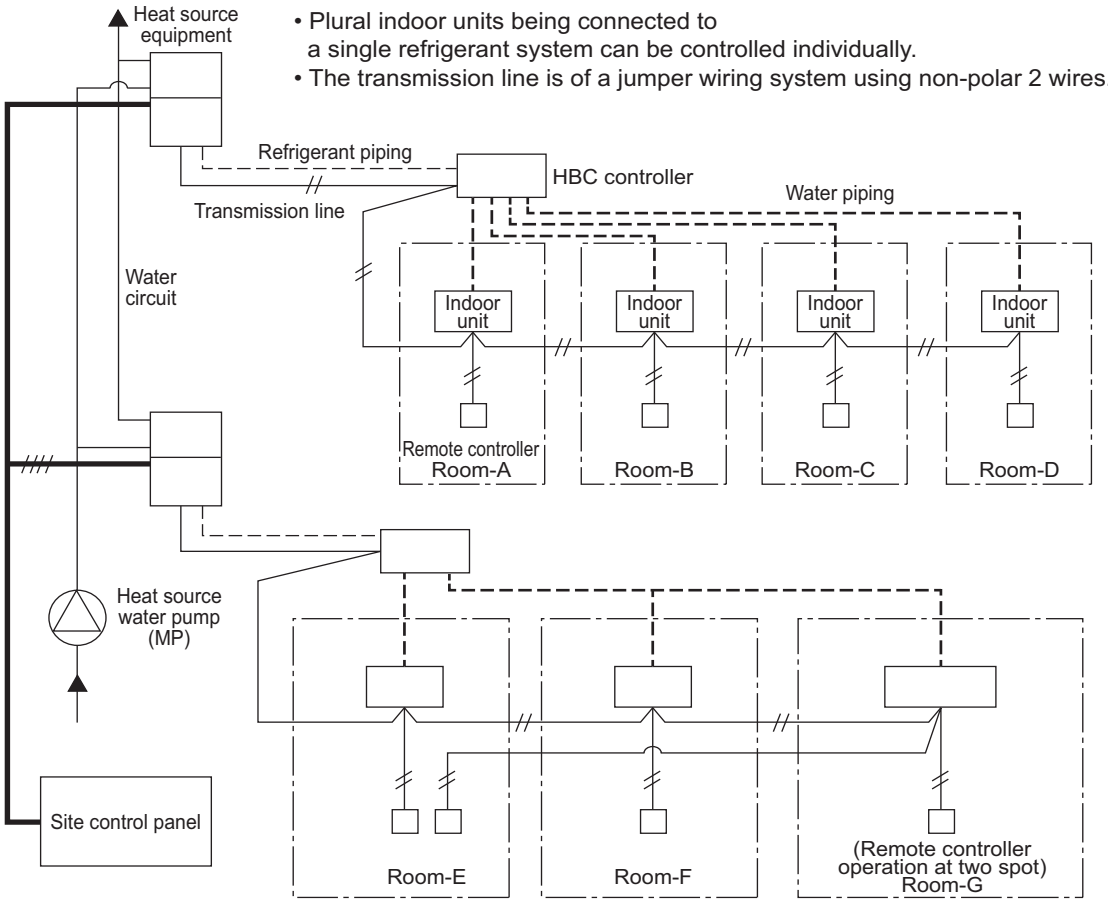
Example-4 Combination of closed type cooling tower and heat exchanger (of other heat source)

T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
V2 : Proportional type, motor-driven 3-way valve
S : Selector switch
R : Relay
XS : Auxiliary switch (Duplex switch type)



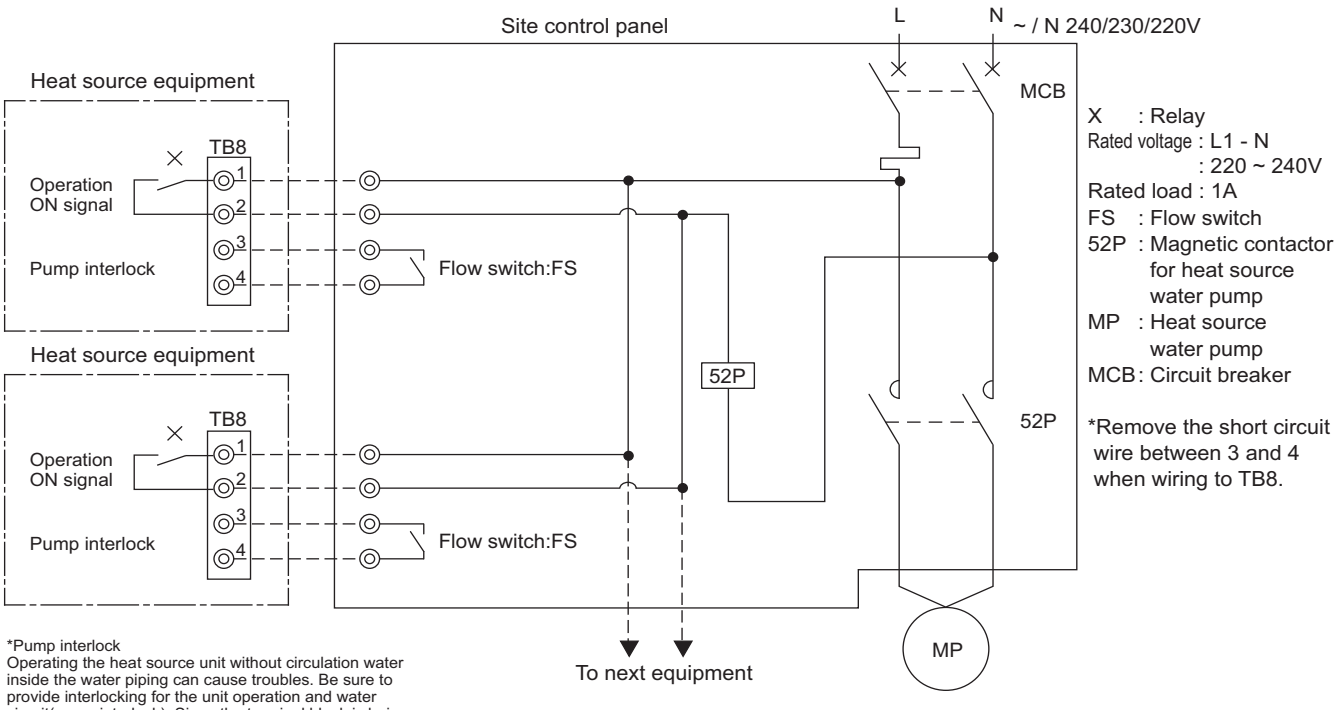
In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the inlet water temperature. In the winter, if the inlet water temperature drops below 26°C [79°F], V2 will conduct water temperature control to keep the inlet water temperature constant.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

6) Pump interlock circuit



Wiring diagram

This circuit uses the "Terminal block for pump interlock (TB8)" inside the electrical parts box of the heat source equipment.
This circuit is for interlocking of the heat source equipment operation and the heat source water pump.



*Pump interlock
Operating the heat source unit without circulation water inside the water piping can cause troubles. Be sure to provide interlocking for the unit operation and water circuit(pump interlock). Since the terminal block is being provided inside the unit, use it as required.

Use the flow switch (FS)

Operation ON signal

Terminal No.	TB8-1, 2
Output	Relay contacts output Rated voltage : L1 - N : 220 ~ 240V Rated load : 1A
Operation	• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is OFF. The relay closes during compressor operation.

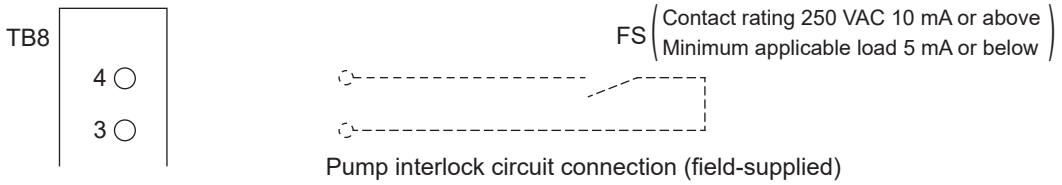
SW4 0: OFF, 1: ON									
1	2	3	4	5	6	7	8	9	10
1	0	1	0	1	0	0	1	1	1

• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is ON.
The relay closes during reception of cooling or the heating operation signal from the controller.
(Note : It is output even if the thermostat is OFF (when the compressor is stopped).)

Pump Interlock

Terminal No.	TB8-3, 4
Input	Level signal
Operation	If the circuit between TB8-3 and TB8-4 is open, compressor operation is prohibited.

* To prevent a false detection of error resulting from contact failure, use a flow switch with a minimum guaranteed current of 5 mA or below for FS.



Pump interlock circuit connection (field-supplied)

PQRY-P-YLM-A2

7) Water flow rate control

Refer to the CITY MULTI DATA BOOK for PQRY-P-YLM-A2.

4-2. Water piping work

Although the water piping for the HYBRID CITY MULTI WR2 system does not differ from that for ordinary air conditioning systems, pay special attention to the items below in conducting the piping work.

1) Items to be observed on installation work

- In order to equalize piping resistance for each unit, adapt the reverse return system.
- Mount a joint and a valve onto the water outlet/inlet of the unit to allow for maintenance, inspection and replacement work. Be sure to mount a strainer at the water inlet piping of the unit. (The strainer is required at the circulation water inlet to protect the heat source unit.)

* The installation example of the heat source unit is shown right.

- Be sure to provide an air relief opening on the water piping properly, and purge air after feeding water to the piping system.
- Condensate will generate at the low temperature part inside the heat source equipment. Connect drain piping to the drain piping connection located at the bottom of the heat source equipment to discharge it outside the equipment.
- At the center of the header of the heat exchanger water inlet inside the unit, a plug for water discharge is being provided.
  Use it for maintenance work or the like.
- Mount a backflow prevention valve and a flexible joint for vibration control onto the pump.
- Provide a sleeve to the penetrating parts of the wall to prevent the piping.
- Fasten the piping with metal fitting, arrange the piping not to expose to cutting or bending force, and pay sufficient care for possible vibration.
- Be careful not to erroneously judge the position of the inlet and outlet of water.
  (Lower position : Inlet, Upper position : Outlet)
- When connecting heat source unit water piping and water piping on site, apply liquid sealing material for water piping over the sealing tape before connection. (for Maximum water pressure above 1.0MPa)
- Wrap the sealing tape as follows.

a) Wrap the joint with sealing tape in the direction of the threads (clockwise), and do not let the tape run over the edge.

b) Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is pressed firmly against each thread.

c) Leave the 1.5th through 2nd farthest threads away from the pipe end unwrapped.

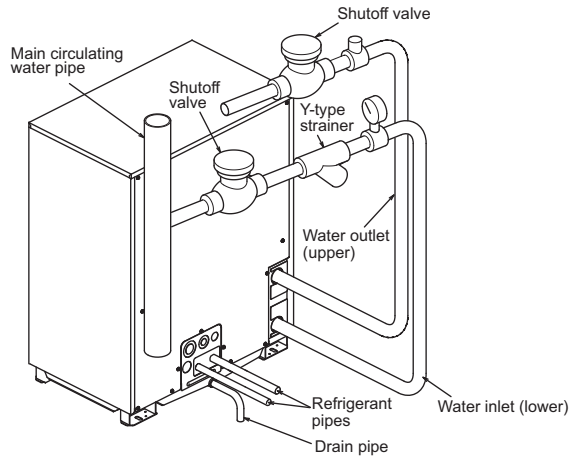
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 150N·m.

2) Thermal insulation work

Thermal insulation or anti sweating work is not required for the piping inside buildings in the case of the HYBRID CITY MULTI WR2 system if the operating temperature range of circulation water stays within the temperature near the normal (summer : 29.4°C[85°F], winter : 21.1°C[70°F]).
In case of the conditions below, however, thermal insulation is required.

- Use of well water for heat source water
- Outdoor piping portions
- Indoor piping portions where freezing may be caused in winter
- A place where vapor condensation may be generated on piping due to an increase in dry bulb temperature inside the ceiling caused by the entry of fresh outdoor air
- Drain piping portions

Installation example of heat source unit



3) Water treatment and water quality control

For the circulation water cooling tower of the HYBRID CITY MULTI WR2 system, employment of the closed type is recommended to keep water quality. However, in the case that an open type cooling tower is employed or the circulating water quality is inferior, scale will adhere onto the water heat exchanger leading to the decreased heat exchange capacity or the corrosion of the heat exchanger. Be sufficiently careful for water quality control and water treatment at the installation of the circulation water system

- Removal of impurities inside piping
  Be careful not to allow impurities such as welding fragment, remaining sealing material and rust from mixing into the piping during installation work.
- Water treatment
  The water quality standards have been established by the industry (Japan Refrigeration, Air Conditioning Industry Association, in case of Japan) for water treatment to be applied.

Items			Lower mid-range temperature water system		Tendency	
			Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])		7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity	(mS/m) (25°C[77°F])	30 or less	30 or less	○	○
		(μS/cm) (25°C[77°F])	[300 or less]	[300 or less]		
	Chloride ion	(mg Cl⁻/ℓ)	50 or less	50 or less	○	
	Sulfate ion	(mg SO_4^{2-}/ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8)	(mg $CaCO_3$/ℓ)	50 or less	50 or less		○
	Total hardness	(mg $CaCO_3$/ℓ)	70 or less	70 or less		○
	Calcium hardness	(mg $CaCO_3$/ℓ)	50 or less	50 or less		○
	Ionic silica	(mg SiO_2/ℓ)	30 or less	30 or less		○
Reference items	Iron	(mg Fe/ℓ)	1.0 or less	0.3 or less	○	○
	Copper	(mg Cu/ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion	(mg S^{2-}/ℓ)	not to be detected	not to be detected	○	
	Ammonium ion	(mg NH_4^+/ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine	(mg Cl/ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide	(mg CO_2/ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index		–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

In order to keep the water quality within such standards, you are kindly requested to conduct bleeding-off by overflow and periodical water quality tests, and use inhibitors to suppress condensation or corrosion. Since piping may be corroded by some kinds of inhibitor, consult an appropriate water treatment expert for proper water treatment.

4) Pump interlock

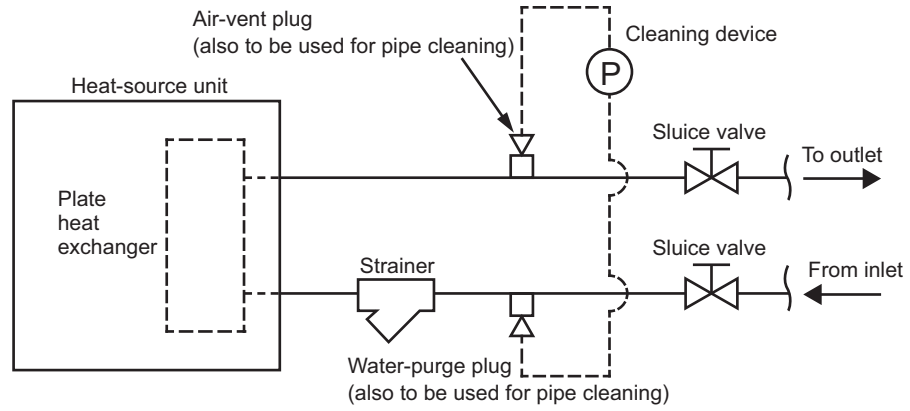
Operating the heat source unit without circulation water inside the water piping can cause a trouble. Be sure to provide interlocking for the unit operation and water circuit. Since the terminal block is being provided inside the unit, use it as required.

5) Handling plate heat exchangers for heat-source units

<Designing the piping system>

- Install a strainer (50 mesh or finer recommended) near the heat-source unit on the inlet side of the hot/cold water pipe and cooling-water pipe (hereafter referred to as water pipes) to prevent an infiltration of foreign materials of solid nature, such as dirt and sand, into the plate heat exchanger.
- Depending on the water quality, scale may form inside plate heat exchangers. Plate heat exchangers must be chemically cleaned regularly to remove scale formation. Install sluice valves on the water pipes, and provide ports for connecting a pipe between the sluice valves and the heat-source unit for chemical cleaning.
- On both the inlet and outlet sides of water pipes, provide a plug to remove trapped air and water (also to be used for cleaning heat-source units and for purging water before a period of nonuse in winter or at the end of an air conditioning season). Also, provide automatic air-vent valves where air is likely to be trapped (such as a pipe that runs vertically).
- In addition to installing the above-mentioned strainers, install a cleanable strainer near the pump pipe inlet.
- Keep the pipes properly insulated and take an appropriate measure against humidity to minimize heat loss and prevent freeze damage in severe cold climate.
- If the system is stopped during winter or at night in subfreezing temperatures, take appropriate measures to protect pipes from freezing (i.e., pipe purging and use of water-circulation pump or heater) and prevent resultant damage to the plate heat exchanger.

Example piping system configuration



<Test run>

- Before performing a test run, check that the piping system is properly installed, especially the strainers, air-vents, automatic water-supply valves, expansion tanks, and systems.
- After the pipe system is filled with water, first, operate the pump alone to check the system for trapped air and adjust the water flow rate to prevent the plate heat exchanger from freezing. Take into consideration the water pressure loss before and after each heat-source unit, and make sure the water flow rate falls within the design water flow rate range. Stop the test run and correct any problems found, if any.
- At the completion of a test run, check the strainer at the inlet pipe of the heat-source unit and clean it as necessary.

<Daily maintenance>

- Controlling the water quality
  Plate heat exchangers cannot be disassembled for cleaning and have no replaceable parts. Watch the water quality to prevent corrosion and scale formation. The quality of the water to be used for plate heat exchangers must meet the water quality guidelines JRA GL-02-1994 specified by Japan Refrigeration and Air conditioning Industry Association (JRAIA). (Refer to section 3) Water treatment and water quality control.)
- Controlling the circulation water flow rate
  Insufficient water rate will cause freeze damage to plate heat exchangers. Check for insufficient water flow caused by clogged strainer, trapped air in the system, or malfunction of the circulation water pump. Flow rate can also be checked by measuring the temperature or pressure difference between the inlet and outlet of plate heat exchangers.
  If the temperature or pressure difference goes outside of the specified range, stop the operation, remove the cause of the problem, and resume operation.
- What to do when the freeze protection trips
  If the freeze protection trips during operation, be sure to remove its cause before resuming operation. Tripped freeze protection indicates that the system is partially frozen, and resuming operation without removing the cause of the problem will result in freeze damage to plate heat exchangers and/or pipes as well as resultant refrigerant leaks and infiltration of water into the refrigerant circuit.

<Maintaining plate heat exchangers>

Plate heat exchangers must be maintained in a planned and periodical manner to prevent scale formation, which may cause performance loss or decrease water flow rate that result in freeze damage to the plate heat exchanger.

- Check the following items before the operating season.
  1. Check that the water quality meets the specified water quality.
  2. Clean the strainers.
  3. Check that the water flow rate is adequate.
  4. Check for proper operation (e.g., pressure, flow rate, inlet/outlet temperatures).

- Plate heat exchangers cannot be disassembled for cleaning. Clean them in the following way.
  1. Make sure that there is a pipe connection port on the water inlet pipe.
     Use formic acid, citric acid, oxalic acid, acetic acid, or phosphoric acid diluted to 5% to clean plate heat exchangers.
     Do not use highly corrosive acids, such as hydrochloric acid, sulfuric acid, or nitric acid.
  2. Make sure that valves are installed before the inlet connection port and after the outlet connection port.
  3. Connect a pipe for circulating cleaning solution to the inlet/outlet pipes of the plate heat exchanger, fill the plate heat exchanger with cleaning solution at a temperature between 50 and 60°C, and circulate the cleaning solution with a pump for 2 to 5 hours. The cleaning time will depend on the temperature of the cleaning solution and the degree of scale formation. Use the color of the cleaning solution as a guide to determine how long the system needs to be cleaned.
  4. When done, discharge the cleaning solution out of the plate heat exchanger, fill it with sodium hydrate (NaOH) or sodium bicarbonate ($NaHCO_3$) diluted with water to 1 to 2%, and let the solution be circulated for 15 to 20 minutes until the cleaning solution is neutralized.
  5. After neutralizing the cleaning solution, thoroughly rinse the plate heat exchanger with clean water.
  6. When using a commercially available cleaning solution, make sure to use a solution not corrosive to stainless steel or copper.
  7. Consult the cleaning solution manufacture for details.

- At the completion of cleaning, check the system for proper operation.

5-1. Power supply for Heat source unit

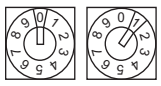
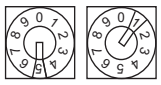
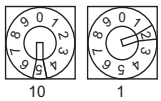
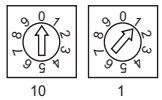
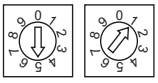
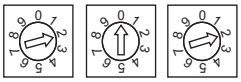
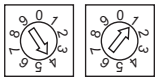
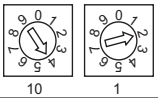
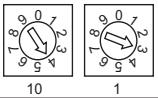
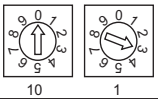
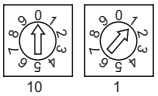
5-1-1. Electrical characteristics of Heat source unit at cooling mode

Symbols: MCA (Max Circuit Amps)
RLA (Rated Load Amps), SC (Starting Current)

PQRY-P-YLM	Unit combination	Heat source units				Compressor		RLA(A)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Cooling 380/400/415V	Heating 380/400/415V
PQRY-P200YLM	-	50/60	380 400 415	Max:456 Min:342	16.1	4.8	8	6.7/6.3/6.1	6.8/6.4/6.2
PQRY-P250YLM	-				16.1	6.2		9.1/8.7/8.4	9.1/8.6/8.3
PQRY-P300YLM	-				18.6	7.7		12.7/12.1/11.6	12.0/11.4/11.0
PQRY-P350YLM	-				23.1	9.5		16.8/16.0/15.4	14.9/14.2/13.7
PQRY-P400YLM	-				27.6	10.7		16.9/16.1/15.5	15.9/15.1/14.6
PQRY-P450YLM	-				32.9	11.6		20.3/19.3/18.6	18.7/17.8/17.1
PQRY-P500YLM	-				39.2	13.0		24.6/23.3/22.5	22.0/20.9/20.2

6-1. Address setting

6-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50	 10 1	Use the most recent address within the same group of indoor units.
Heat source unit		51 ~ 99, 100 (Note1)	 10 1	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the heat source units in one refrigerant circuit system. OC and OS are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100	 10 1	The address of the smallest address of indoor unit connected to the HBC controller + 50 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed  10 1	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
Local remote controller	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed  10 1	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250	 100 10 1	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
System controller	AE-C400E/EW-C50E AE-200E/AE-50E EW-50E AG-150A AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
System controller	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
System controller	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50	 10 1	
PI, AI, DIDO	PAC-YG63MCA	01 ~ 50	 10 1	
PI, AI, DIDO	PAC-YG66DCA	01 ~ 50	 10 1	
LOSSNAY, OA processing unit		01 ~ 50	 10 1	After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed  10 1	

Note1: To set the address to "100", set it to "50"
Note2: Heat source units OC and OS in one refrigerant circuit system are automatically detected. OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

7-1. R410A Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R410A air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

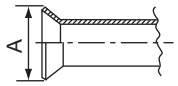
Table 1. Copper pipe size and radial thickness for R410A HYBRID CITY MULTI.

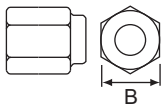
Size (mm)	Size (in.)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R410A air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

Flare

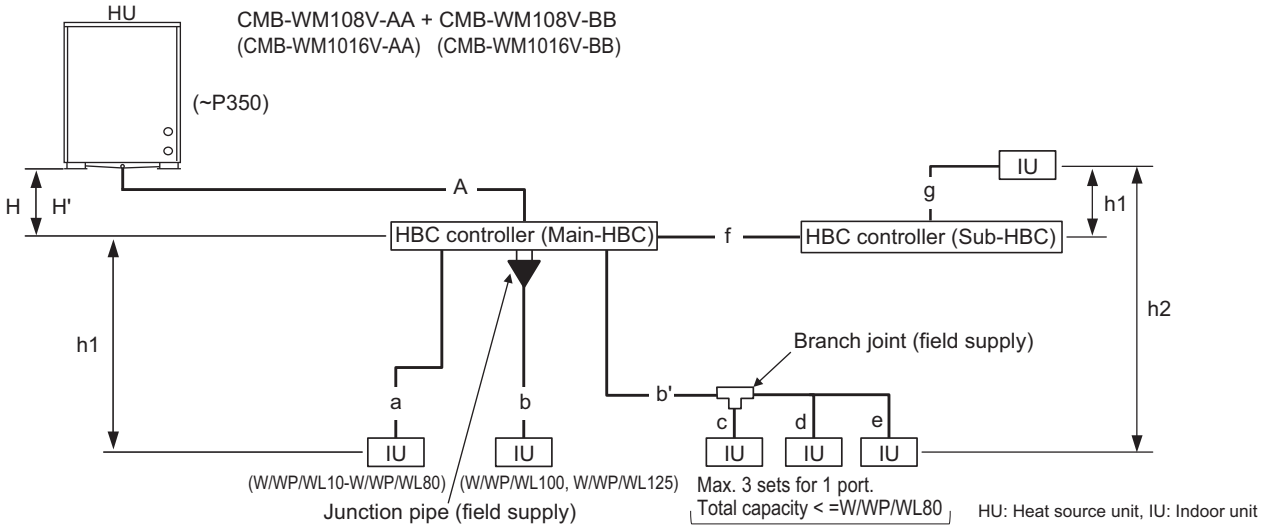
Due to the relative higher operation pressure of R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

Flare nut	Pipe size	B (For R410A) (mm[in.])
	ø6.35 [1/4"]	17.0
	ø9.52 [3/8"]	22.0
	ø12.70 [1/2"]	26.0
	ø15.88 [5/8"]	29.0
	ø19.05 [3/4"]	36.0

7-2. Piping Design

7-2-1. Restrictions on pipe length



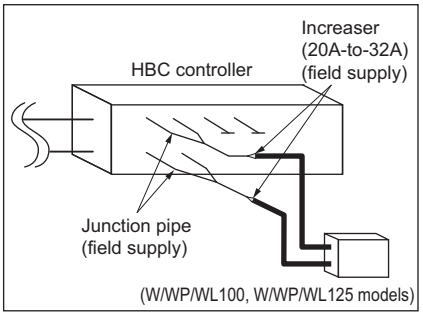
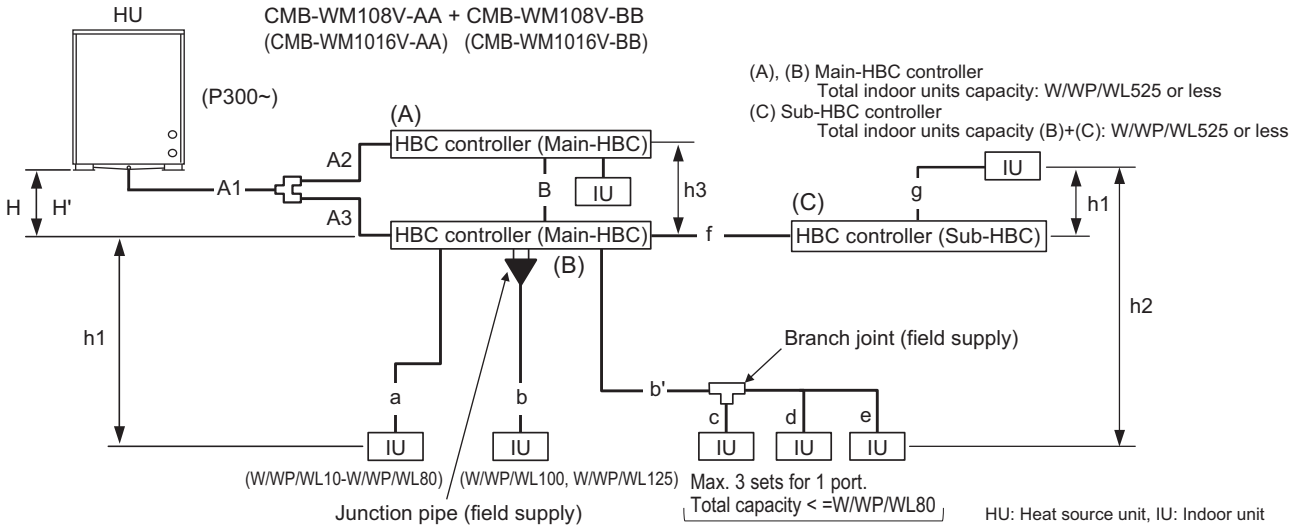


Fig. A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between heat source unit and HBC controller (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
Difference of elevation	Between HBC and heat source units	Heat source unit above HBC	H	50 or less
		Heat source unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of heat source unit capacity



(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between heat source unit and HBC controller (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
	Between HBC controllers		B	40 or less
Difference of elevation	Between HBC and heat source units	Heat source unit above HBC	H	50 or less
		Heat source unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1
	Between HBC controllers		h3	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of heat source unit capacity

1. Refrigerant and water pipe size

(1) Refrigerant pipe between heat source unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

		HBC controller		
Unit model		Model name	High pressure side	Low pressure side
Heat source unit side	PQRY-P200	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø15.88 (Brazing)	ø19.05 (Brazing)
	PQRY-P250		ø19.05 (Brazing)	ø22.2 (Brazing)
	PQRY-P300		ø19.05 (Brazing)	ø22.2 (Brazing)
	PQRY-P350		ø22.2 (Brazing)	ø28.58 (Brazing)

Use of two HBC controllers

		HBC controller			
Unit model		Model name	Between heat source unit and twining pipe		Between twining pipe and HBC	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Heat source unit side	PQRY-P300	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø19.05 (Brazing)	ø22.2 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P350		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P400		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P450		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC
	PQRY-P500		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC

***1. PQRY-P400YLM model or larger requires a connection of two Main-HBC controllers in parallel.**

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

(3) Water pipe between Main-HBC and Sub-HBC controller (Section f)

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC controller
W/WP/WL10–100	I.D. ≥ 20.0 mm
W/WP/WL101–200	I.D. ≥ 25.8 mm
W/WP/WL201–300	I.D. ≥ 30.0 mm
W/WP/WL301–400	I.D. ≥ 33.3 mm
W/WP/WL401–500	I.D. ≥ 36.2 mm
W/WP/WL501–525	I.D. ≥ 36.8 mm

* The diameter of Main-HBC ports is O.D. 22.0 mm.
* The diameter of Sub-HBC ports is O.D. 28.0 mm.

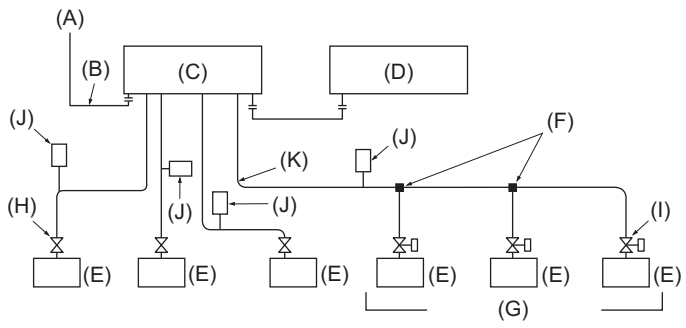
(4) Refrigerant pipe between HBC controller and HBC controller (Section B)

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To heat source unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Branch joint (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but in same mode, cooling/heating)
(H) Shutoff valve (field supply)
(I) Pressure control valve (field supply)
(J) Auto air vent valve (Highest point on the water pipe for each branch) (field supply)
(K) Water pipework

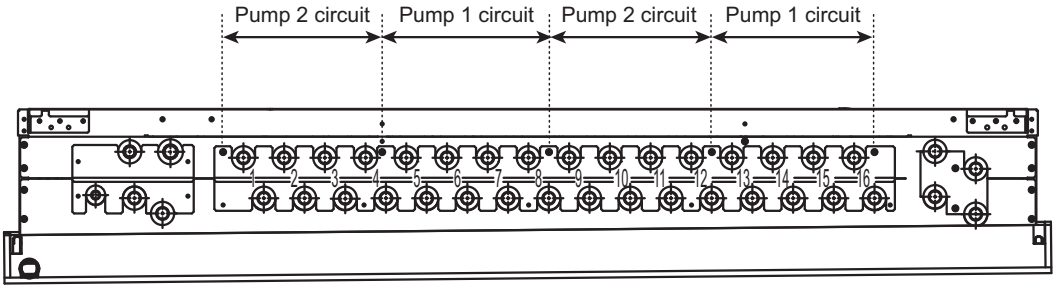


Fig. B

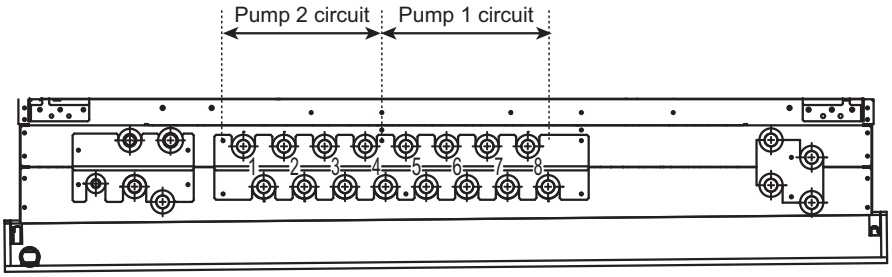


Fig. C

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: W/WP/WL80
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
- All the indoor units that are connected to the same port must be in the same group and perform the Thermo-ON/OFF operation simultaneously.
- The room temperatures of all the indoor units in the group need to be monitored via the connected remote controller.
- When connecting a W/WP/WL71 through 125 model indoor unit to an HBC controller, the pipes that connect the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- Selection of water piping
  Select the size according to the total capacity of indoor units to be installed downstream.
- Do not connect multiple indoor units to the same port when operating each of them in different modes (cooling, heating, stop, and thermo-OFF). The indoor units connected to the same port must be set to operate in the same mode. Set them to the same group to make them run/stop in the same mode all together. Alternatively, enable the thermo setting on the remote controller, or set the common thermostat (optional) to run/stop the units in the same mode based on the representative temperature.
- When multiple indoor units are connected to a single port, install a pressure control valve in the pipe to equalize the pressure of all indoor units.
- Pressure control valves are required for the “WP-type” and “WL-type without the optional valve kit” indoor units only, and not for the “W-type” and “WL-type with the optional valve kit” indoor units.

Note: 2

Connecting W/WP/WL100 or 125 indoor units to an HBC controller

- When connecting W/WP/WL100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two junction pipes (Y-joints). (See Fig. A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. A.)
- When the junction pipes are connected to 16 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5," "8 and 9," or "12 and 13" at the same time. (See Fig. B.)
- When the junction pipes are connected to 8 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5" at the same time. (See Fig. C.)
- When a W/WP/WL100 or a 125 model indoor unit is connected to an HBC controller, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.

Note: 3

Maximum capacity of indoor units connectable to an HBC controller for obtaining the rated performance

- An HBC controller has two pumps. Each pump can accommodate the capacity equivalent to W/WP/WL175 indoor units.
- When connecting the pipe to 16 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. B.)
  When connecting the pipe to 8 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4" or "5 through 8" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. C.)
  If the total capacity exceeds W/WP/WL175, the performance will be degraded.

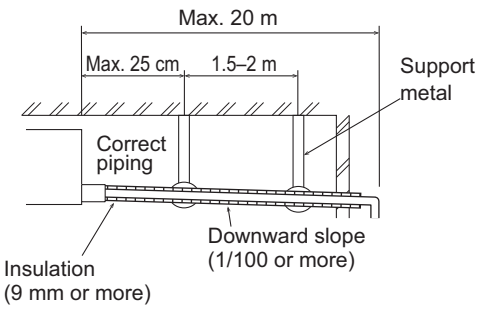
7-2-2. Drain piping work

1. Drain piping work

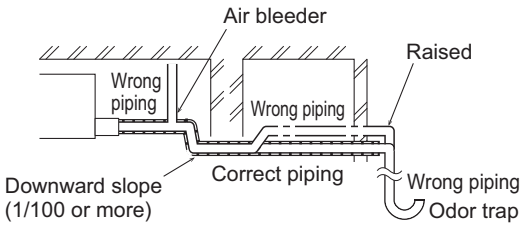
For Main-HBC and Sub-HBC controller

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Do not use any odor trap around the discharge port.
- As shown in (3), install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

(1)

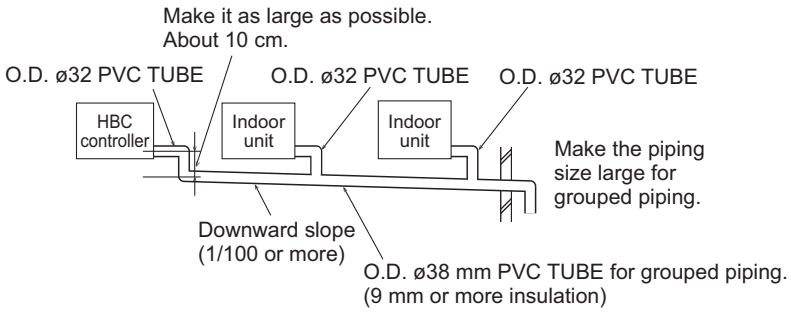


(2)



(3)

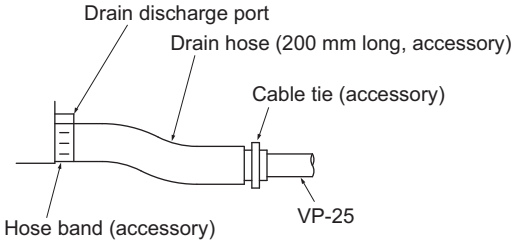
[Grouped piping]



For Main-HBC controller

- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)

(4)

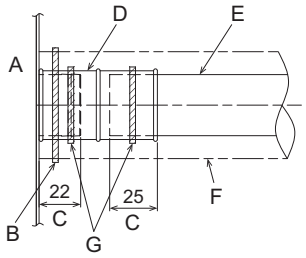


For Sub-HBC controller

♦For Sub-HBC controller, connect the drain pipe by following the steps described below.

1. Insert the drain hose (accessory) into the drain port (insertion margin: 32 mm).
   (The drain hose must not be bent more than 45° to prevent the hose from breaking or clogging.)
   (Attach the hose with glue, and fix it with the band (small, accessory).)
2. Attach the drain pipe (O.D. ø32 PVC TUBE PV-25, field supply).
   (Attach the pipe with glue, and fix it with the band (small, accessory).)
3. Perform insulation work on the drain pipe (O.D. ø32 PVC TUBE PV-25) and on the socket (including elbow).
4. Check the drainage.
5. Attach the insulating material, and fix it with the band (large, accessory) to insulate the drain port.

(5)



A: Sub-HBC controller
B: Tie band (accessory)
C: Insertion margin
D: Drain hose (accessory)
E: Drain pipe (O.D. ø32 PVC TUBE, field supply)
F: Insulating material (field supply)
G: Tie band (accessory)

2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

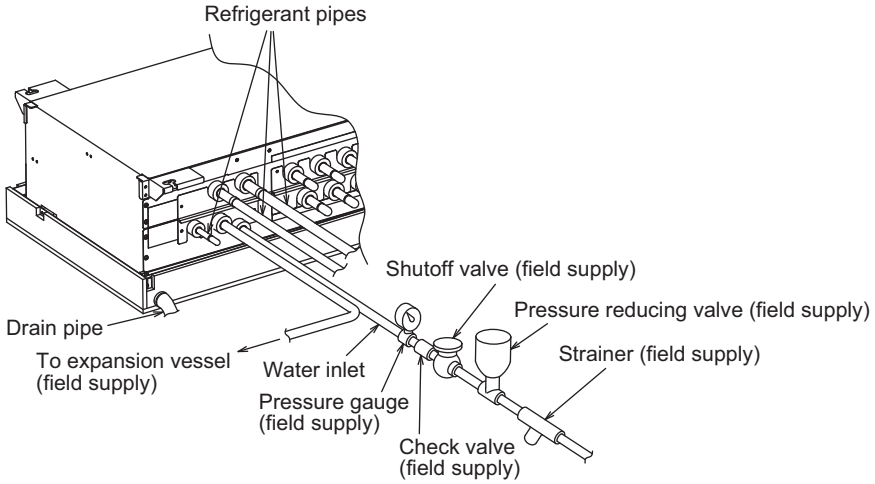
7-2-3. Connecting water pipe work

Please observe the following precautions during installation.

1. Important notes on water pipework installation

- The design pressure of the HBC controller water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC controller. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC controller with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC controller, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC controller water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
- Remove burr after cutting the piping to prevent entering the pipe connection. Prevent the particles that are generated during pipe cutting or cut edge treatment from entering the pipes. Check that there is no crack at the edge of the piping.
- Be sure to braze the water pipes after covering a wet cloth to the insulation pipes of the units in order to prevent them from burning and shrinking by heat. (There are some plastic parts in HBC controller.)
- Install the unit so that external force is not applied to the water pipes.
- After filling the pipes with water, immediately perform debris removal operation and air vent operation.

Example of heat source unit installation (using left piping)



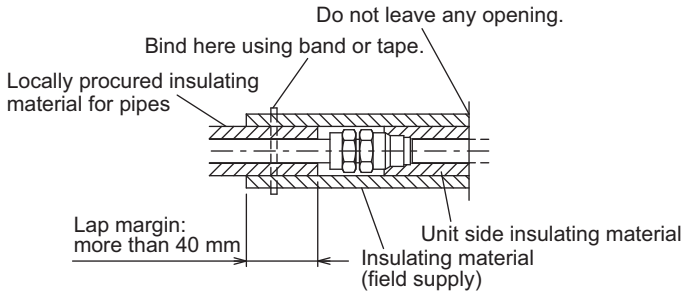
HBC controller sample installation (*1)

*1. Connect the pipes to the water pipes according to the local regulations.

- The HBC controller system must be serviced at least once a year.

2. Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



♦Insulation materials for the pipes to be added on site must meet the following specifications:

HBC – indoor unit	20 mm or more
Main-HBC – Sub-HBC	20 mm or more

♦This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
♦Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
♦When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel

♦Install an expansion tank to accommodate expanded water.
Expansion vessel selection criteria:
Water containment volume of the HBC controller
♦Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

Unit model	Water volume
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-BB	5
CMB-WM1016V-BB	9

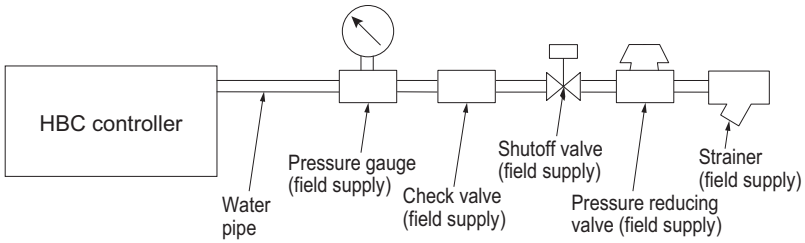
- The maximum water temperature is 60°C.
- The minimum water temperature is 5°C.
- The circuit protection valve set pressure is 370-490 kPa.
- The circulation pump head pressure is 0.24 MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC controller water pipe connection sizes and pipe sizes.

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
(A: Height difference (m) between the HBC controller and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 3-4. Correction by antifreeze solution concentration.

3. Water treatment and quality control

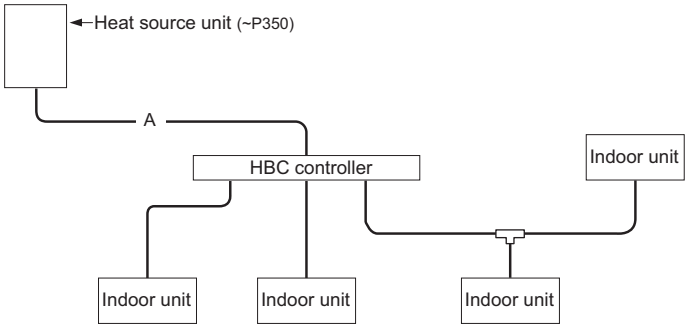
To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

♦Removing of foreign objects or impurities within the pipes.
During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.

♦Water Quality Processing
Depending on the quality of the cold-temperature water used in the air-conditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1 mg/ℓ.

7-3. Refrigerant charging calculation

Example

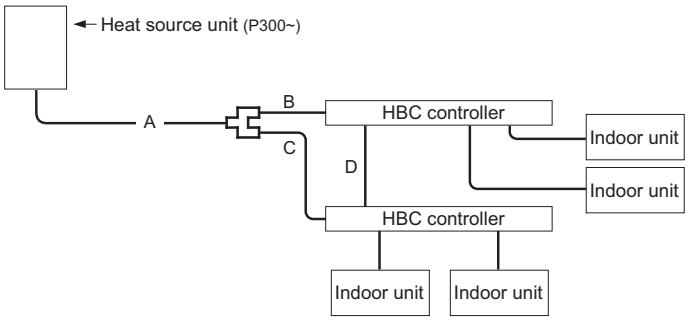


■ Sample calculation

Indoor 1: 50 A: ø19.05 42 m
2: 50
3: 50
4: 40
Heat source P250

The total length of each liquid line is as follows:
ø19.05: A = 42 m, α_1 = 3.0

Therefore,
Additional refrigerant charge
= 42 × 0.14 + 3.0
= 8.88 kg
≒ 8.9 kg
* All pipe work except A is water pipe work.



Indoor 1: 50 A:ø22.20 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Heat source P400

The total length of each liquid line is as follows:
ø22.20: A = 18 m, ø15.88: B + C = 15 m, α_1 = 3.0 × 2
Pipe between HBC controller and HBC controller: D = 8 m

Therefore,
Additional refrigerant charge
= 18 × 0.23 + (5 + 10) × 0.11 + 3.0 × 2 + 8 × 0.2
= 13.39 kg
≒ 13.4 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the heat source units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Heat source unit model	Amount of pre-charged refrigerant in the heat source unit (kg)	Heat source unit model	Amount of pre-charged refrigerant in the heat source unit (kg)
P200YLM	5.0	P400YLM	6.0
P250YLM	5.0	P450YLM	6.0
P300YLM	5.0	P500YLM	6.0
P350YLM	6.0		

■ Calculation formula

The amount of refrigerant to be added depends on the size and the length of field piping. (unit in m [ft])
1) When the distance between HBC controller and heat source unit is longer than 30.5m:
Amount of added refrigerant (kg) = (0.21 × L_1) + (0.14 × L_2) + (0.1 × L_3) + α_1 (+ 0.18 × L_4) *1
2) When the distance between HBC controller and heat source unit is 30.5 m or shorter:
Amount of added refrigerant (kg) = (0.23 × L_1) + (0.16 × L_2) + (0.11 × L_3) + α_1 (+ 0.2 × L_4) *1
L_1 : Length of ø22.20 [7/8"] high pressure pipe (m)
L_2 : Length of ø19.05 [3/4"] high pressure pipe (m)
L_3 : Length of ø15.88 [5/8"] high pressure pipe (m)
L_4 : Length of ø15.88 [5/8"] pipe between HBC controller and HBC controller (m)
α_1: Refer to the table below.
*1 Only when two main HBC controllers are used

Use of one HBC controller

Heat source unit index	Diameter of high-pressure pipe
P200	ø15.88
P250	ø19.05
P300	ø19.05
P350	ø19.05

Amount for the HBC controller
α_1 (kg)
3.0

Round up the calculation result to the nearest 0.1 kg. (Example: 18.04 kg to 18.1 kg)

Use of two HBC controllers

Heat source unit index	Diameter of high-pressure pipe
P300	ø19.05
P350	ø19.05
P400	ø22.20
P450	ø22.20
P500	ø22.20

Amount for the HBC controller
α_1 (kg)
3.0

× 2

Refrigerant pipe between main HBC controller and main HBC controller
ø15.88 [5/8]

* When connecting PEFY-W50/63/71/80/100/125VMA2-A units, add 0.25 kg of refrigerant for each of these units.

7-4. Water piping

7-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC controller branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

7-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items		Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])	7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion (mg Cl^-/ℓ)	50 or less	50 or less	○	
	Sulfate ion (mg SO_4^{2-}/ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8) (mg $CaCO_3$/ℓ)	50 or less	50 or less		○
	Total hardness (mg $CaCO_3$/ℓ)	70 or less	70 or less		○
	Calcium hardness (mg $CaCO_3$/ℓ)	50 or less	50 or less		○
	Ionic silica (mg SiO_2/ℓ)	30 or less	30 or less		○
Reference items	Iron (mg Fe/ℓ)	1.0 or less	0.3 or less	○	○
	Copper (mg Cu/ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion (mg S^{2-}/ℓ)	not to be detected	not to be detected	○	
	Ammonium ion (mg NH_4^+/ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine (mg Cl/ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide (mg CO_2/ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index	–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC controller and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC controller.
3. Connecting pipes made of different materials
   Connecting pipes used for HBC controller and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use.

7-5. Compatibility

<Horizontal type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Compatible
	WP type	WM-V-BB type	–	–	Compatible
	WP type	WM-V-AB type	–	–	Compatible
	WP type	WP type	–	–	Compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Compatible
	WP type	–	WM-V-AA type	–	Compatible
	WP type	–	WP type	–	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Compatible
	WM-V-AA type	WP type	WM-V-AA type		Compatible
	WM-V-AA type	WP type	WP type		Compatible
	WP type	WM-V-BB type	WM-V-AA type		Compatible
	WP type	WM-V-BB type	WP type		Compatible
	WP type	WM-V-AB type	WM-V-AA type		Compatible
	WP type	WM-V-AB type	WP type		Compatible
	WP type	WP type	WM-V-AA type		Compatible
	WP type	WP type	WP type		Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Compatible
	WM-V-AA type	–	WP type	WP type	Compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Compatible
	WP type	–	WM-V-AA type	WM-V-AB type	Compatible
	WP type	–	WM-V-AA type	WP type	Compatible
	WP type	–	WP type	WM-V-BB type	Compatible
	WP type	–	WP type	WM-V-AB type	Compatible
	WP type	–	WP type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WP type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WP type	WP type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WP type	WP type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WP type	WP type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WP type	WM-V-AA type	WP type	Compatible
	WP type	WP type	WP type	WM-V-BB type	Compatible
	WP type	WP type	WP type	WM-V-AB type	Compatible
	WP type	WP type	WP type	WP type	Compatible

<Vertical type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-F-AA type	–	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	–	–	Not compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

PQRY-P-YLM-A1

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Model			PQRY-P200YLM-A1	PQRY-P250YLM-A1
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	22.4	28.0
(Nominal) *1		BTU/h	76,400	95,500
	Power input	kW	3.97	5.44
	Current input	A	6.7-6.3-6.1	9.1-8.7-8.4
	EER	kW/kW	5.64	5.14
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Heating capacity *2		kW	25.0	31.5
(Nominal) *2		BTU/h	85,300	107,500
	Power input	kW	4.04	5.41
	Current input	A	6.8-6.4-6.2	9.1-8.6-8.3
	COP	kW/kW	6.18	5.82
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
connectable	Model/Quantity		W/WP/WL10~125/1~30	W/WP/WL10~125/1~37
Sound pressure level (measured in anechoic room)		dB <A>	46	48
Sound power level (measured in anechoic room)		dB <A>	60	62
Refrigerant	High pressure	mm (in.)	15.88 (5/8) Brazed	19.05 (3/4) Brazed
piping diameter	Low pressure	mm (in.)	19.05 (3/4) Brazed	22.2 (7/8) Brazed
Circulating water	Water flow rate	m^3/h	5.76	5.76
		L/min	96	96
		cfm	3.4	3.4
	Pressure drop	kPa	24	24
	Operating volume range	m^3/h	3.0 ~ 7.2	3.0 ~ 7.2
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	4.8	6.2
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,100 x 880 x 550	1,100 x 880 x 550
		in.	43-5/16 x 34-11/16 x 21-11/16	43-5/16 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	R410A x 5.0 kg (12 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	173 (382)	173 (382)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Drawing	External		WKL94C183	WKL94C183
	Wiring		WKE94G420	WKE94G420
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P300YLM-A1	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	33.5	
(Nominal) *1		BTU/h	114,300	
	Power input	kW	7.55	6.71
	Current input	A	12.7-12.1-11.6	11.3-10.7-10.3
	EER	kW/kW	4.43	4.99
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	37.5	
(Nominal) *2		BTU/h	128,000	
	Power input	kW	7.13	6.79
	Current input	A	12.0-11.4-11.0	11.4-10.8-10.4
	COP	kW/kW	5.25	5.52
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~45	
Sound pressure level (measured in anechoic room)		dB <A>	54	
Sound power level (measured in anechoic room)		dB <A>	68	
Refrigerant	High pressure	mm (in.)	19.05 (3/4) Brazed	
piping diameter	Low pressure	mm (in.)	22.2 (7/8) Brazed	
Circulating water	Water flow rate	m^3/h	5.76	
		L/min	96	
		cfm	3.4	
	Pressure drop	kPa	24	
	Operating volume range	m^3/h	3.0 ~ 7.2	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	7.7	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,100 x 880 x 550	
		in.	43-5/16 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 5.0 kg (12 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	173 (382)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C183	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P350YLM-A1	
Number of HBC controller			Single HBC	Double HBC
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	40.0	
(Nominal) *1		BTU/h	136,500	
	Power input	kW	9.98	8.72
	Current input	A	16.8-16.0-15.4	14.7-13.9-13.4
	EER	kW/kW	4.00	4.58
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	45.0	
(Nominal) *2		BTU/h	153,500	
	Power input	kW	8.87	8.25
	Current input	A	14.9-14.2-13.7	13.9-13.2-12.7
	COP	kW/kW	5.07	5.45
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room)		dB <A>	52	
Sound power level (measured in anechoic room)		dB <A>	66	
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
Circulating water	Water flow rate	m^3/h	7.20	
		L/min	120	
		cfm	4.2	
	Pressure drop	kPa	44	
	Operating volume range	m^3/h	4.5 ~ 11.6	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	9.5	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,450 x 880 x 550	
		in.	57-1/8 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	217 (479)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C184	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P400YLM-A1	PQRY-P450YLM-A1
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	3-phase 4-wire 380-400-415 V 50/60 Hz
Cooling capacity *1		kW	45.0	50.0
(Nominal) *1		BTU/h	153,500	170,600
	Power input	kW	10.05	12.05
	Current input	A	16.9-16.1-15.5	20.3-19.3-18.6
	EER	kW/kW	4.47	4.14
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	15.0~24.0°C (59~75°F)
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Heating capacity *2		kW	50.0	56.0
(Nominal) *2		BTU/h	170,600	191,100
	Power input	kW	9.45	11.11
	Current input	A	15.9-15.1-14.6	18.7-17.8-17.1
	COP	kW/kW	5.29	5.04
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	15.0~27.0°C (59~81°F)
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	10.0~45.0°C (50~113°F)
Indoor unit	Total capacity		50~150% of heat source unit capacity	50~150% of heat source unit capacity
connectable	Model/Quantity		W/WP/WL10~125/2~50	W/WP/WL10~125/2~50
Sound pressure level (measured in anechoic room)		dB <A>	52	54
Sound power level (measured in anechoic room)		dB <A>	66	70
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	22.2 (7/8) Brazed
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	28.58 (1-1/8) Brazed
Circulating water	Water flow rate	m^3/h	7.20	7.20
		L/min	120	120
		cfm	4.2	4.2
	Pressure drop	kPa	44	44
	Operating volume range	m^3/h	4.5 ~ 11.6	4.5 ~ 11.6
Compressor	Type		Inverter scroll hermetic compressor	Inverter scroll hermetic compressor
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	AC&R Works, MITSUBISHI ELECTRIC CORPORATION
	Starting method		Inverter	Inverter
	Motor output	kW	10.7	11.6
	Case heater	kW	-	-
	Lubricant		MEL32	MEL32
External finish			Galvanized steel sheets	Galvanized steel sheets
External dimension H x W x D		mm	1,450 x 880 x 550	1,450 x 880 x 550
		in.	57-1/8 x 34-11/16 x 21-11/16	57-1/8 x 34-11/16 x 21-11/16
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	High pressure sensor, High pressure switch at 4.15 MPa (601 psi)
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	Over-heat protection, Over-current protection
	Compressor		Over-heat protection	Over-heat protection
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	R410A x 6.0 kg (14 lbs)
	Control		HBC controller	HBC controller
Net weight		kg (lbs)	217 (479)	217 (479)
Heat exchanger			plate type	plate type
	Water volume in plate	l	5.0	5.0
	Water pressure Max.	MPa	2.0	2.0
HIC circuit (HIC: Heat Inter-Changer)			-	-
Drawing	External		WKL94C184	WKL94C184
	Wiring		WKE94G420	WKE94G420
Standard attachment	Document		Installation Manual	Installation Manual
	Accessory		Refrigerant conn. pipe	Refrigerant conn. pipe
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

Unit converter

BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model			PQRY-P500YLM-A1	
Power source			3-phase 4-wire 380-400-415 V 50/60 Hz	
Cooling capacity *1		kW	56.0	
(Nominal) *1		BTU/h	191,100	
	Power input	kW	14.58	
	Current input	A	24.6-23.3-22.5	
	EER	kW/kW	3.84	
Temp. range of	Indoor	W.B.	15.0~24.0°C (59~75°F)	
cooling	Circulating water	°C	10.0~45.0°C (50~113°F)	
Heating capacity *2		kW	63.0	
(Nominal) *2		BTU/h	215,000	
	Power input	kW	13.07	
	Current input	A	22.0-20.9-20.2	
	COP	kW/kW	4.82	
Temp. range of	Indoor	D.B.	15.0~27.0°C (59~81°F)	
heating	Circulating water	°C	10.0~45.0°C (50~113°F)	
Indoor unit	Total capacity		50~150% of heat source unit capacity	
connectable	Model/Quantity		W/WP/WL10~125/2~50	
Sound pressure level (measured in anechoic room)		dB <A>	54	
Sound power level (measured in anechoic room)		dB <A>	70.5	
Refrigerant	High pressure	mm (in.)	22.2 (7/8) Brazed	
piping diameter	Low pressure	mm (in.)	28.58 (1-1/8) Brazed	
Circulating water	Water flow rate	m^3/h	7.20	
		L/min	120	
		cfm	4.2	
	Pressure drop	kPa	44	
	Operating volume range	m^3/h	4.5 ~ 11.6	
Compressor	Type		Inverter scroll hermetic compressor	
	Manufacture		AC&R Works, MITSUBISHI ELECTRIC CORPORATION	
	Starting method		Inverter	
	Motor output	kW	13.0	
	Case heater	kW	-	
	Lubricant		MEL32	
External finish			Galvanized steel sheets	
External dimension H x W x D		mm	1,450 x 880 x 550	
		in.	57-1/8 x 34-11/16 x 21-11/16	
Protection devices	High pressure protection		High pressure sensor, High pressure switch at 4.15 MPa (601 psi)	
	Inverter circuit (COMP.)		Over-heat protection, Over-current protection	
	Compressor		Over-heat protection	
Refrigerant	Type x original charge		R410A x 6.0 kg (14 lbs)	
	Control		HBC controller	
Net weight		kg (lbs)	217 (479)	
Heat exchanger			plate type	
	Water volume in plate	l	5.0	
	Water pressure Max.	MPa	2.0	
HIC circuit (HIC: Heat Inter-Changer)			-	
Drawing	External		WKL94C184	
	Wiring		WKE94G420	
Standard attachment	Document		Installation Manual	
	Accessory		Refrigerant conn. pipe	
Optional parts			Main HBC controller: CMB-WM108,1016V-AA Sub HBC controller: CMB-WM108,1016V-BB	
Remarks			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. Due to continuing improvement, above specifications may be subject to change without notice. The ambient temperature of the heat source unit needs to be kept below 40°C D.B. The ambient relative humidity of the heat source unit needs to be kept below 80%. The heat source unit should not be installed at outdoor. Be sure to mount a strainer (more than 50 meshes) at the water inlet piping of the unit. Be sure to provide interlocking for the unit operation and water circuit. Install the supplied insulation material to the unused drain-socket. When installing insulation material around both water and refrigerant piping, follow the installation manual.	

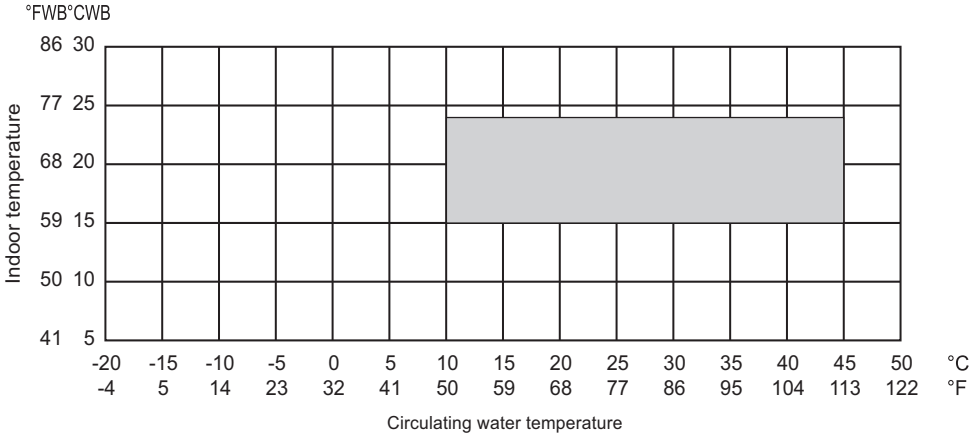
Notes:

1.Nominal cooling conditions (subject to JIS B8615-2)
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Water temperature: 30°C (86°F)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions (subject to JIS B8615-2)
Indoor: 20°CD.B. (68°FD.B.), Water temperature: 20°C (68°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)

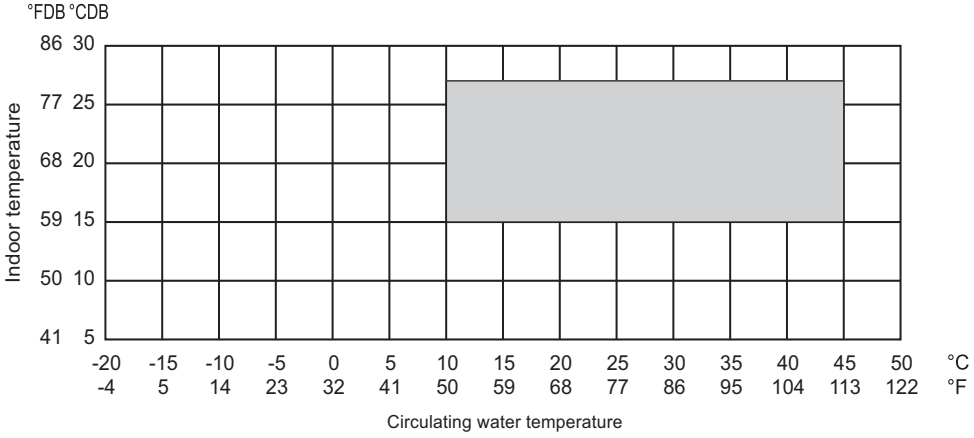
Unit converter	
BTU/h	=kW x 3,412
cfm	$=m^3/min$ x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

• **Cooling**



• **Heating**



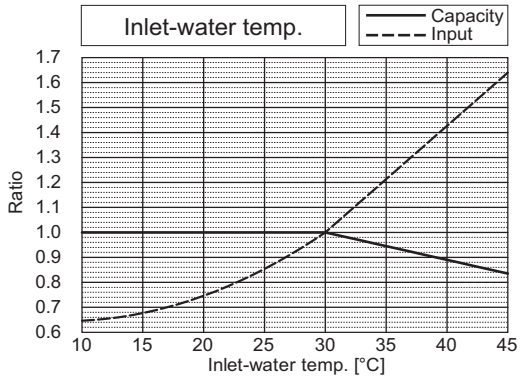
• **Combination of cooling/heating operation (Cooling main or Heating main)**

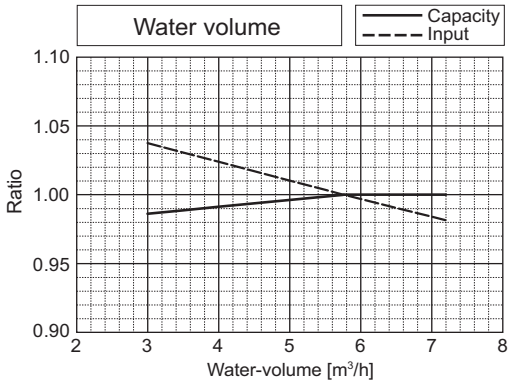
Water temperature	Indoor temperature	
	Cooling	Heating
10 to 45˚C (50 to 113˚F)	15 to 24˚CWB (59 to 75˚FWB)	15 to 27˚CDB (59 to 81˚FDB)

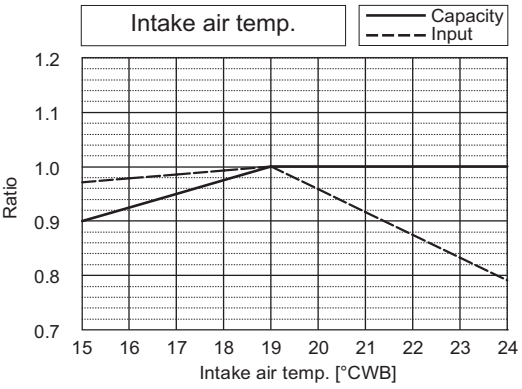
3-1. Correction by temperature

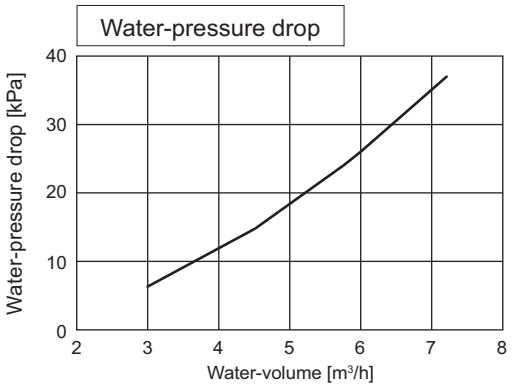
HYBRID CITY MULTI could have varied capacity at different designing temperature. Using the nominal cooling/heating capacity value and the ratio below, the capacity can be observed at various temperature.

		PQRY-P200YLM-A1
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.97

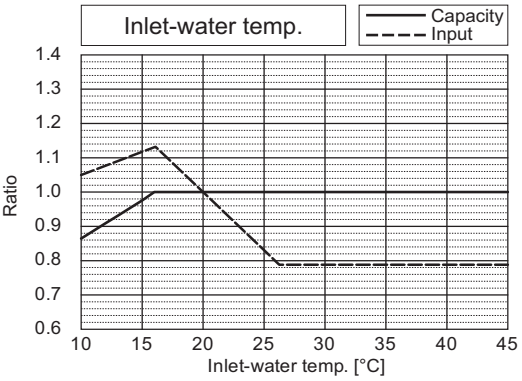


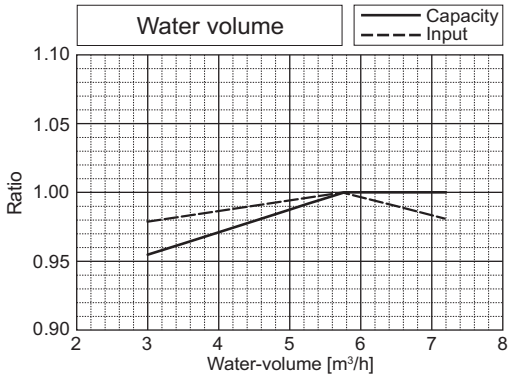


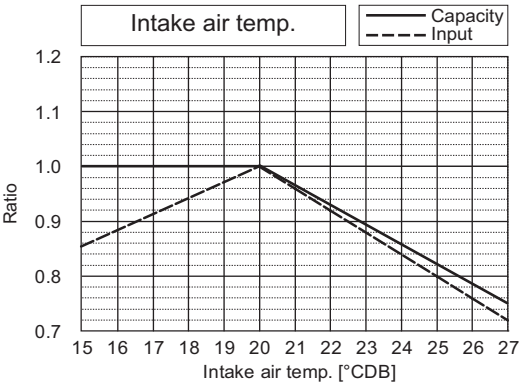


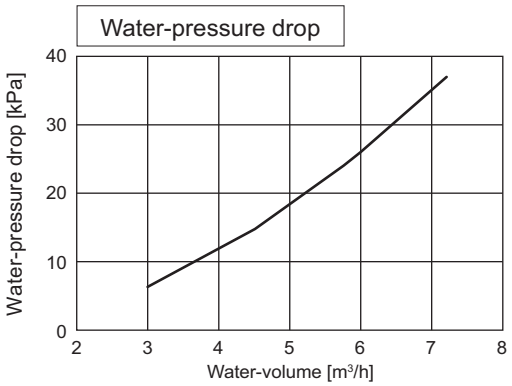


		PQRY-P200YLM-A1
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	4.04

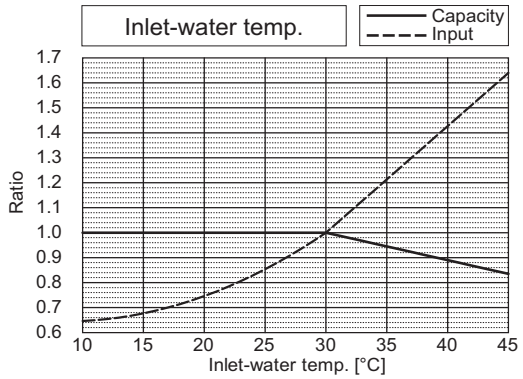


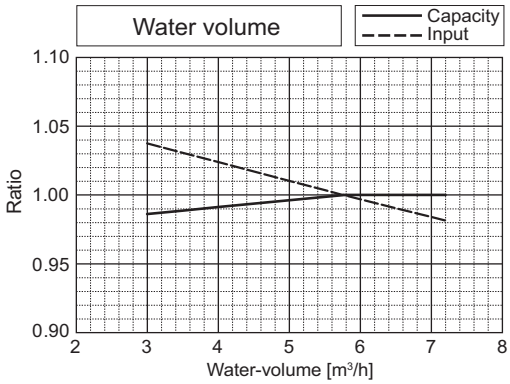


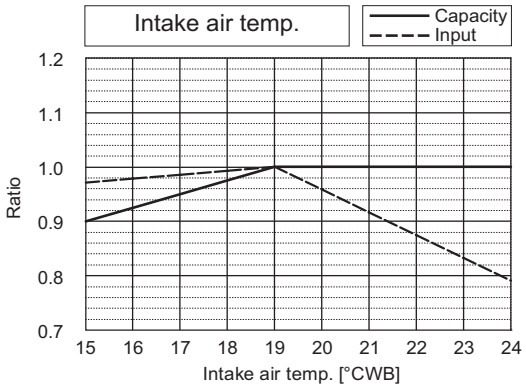


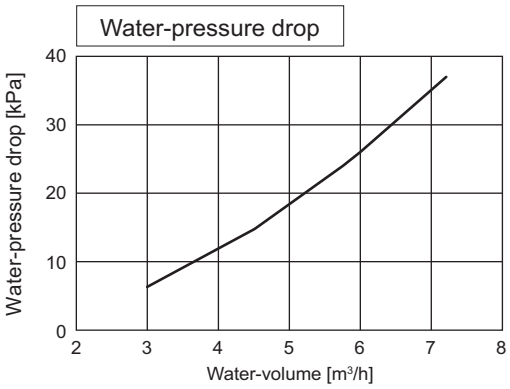


		PQRY-P250YLM-A1
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	5.44

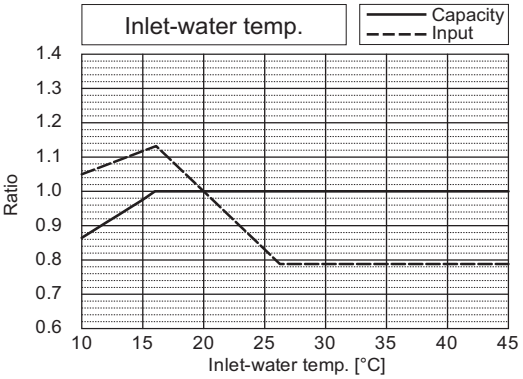


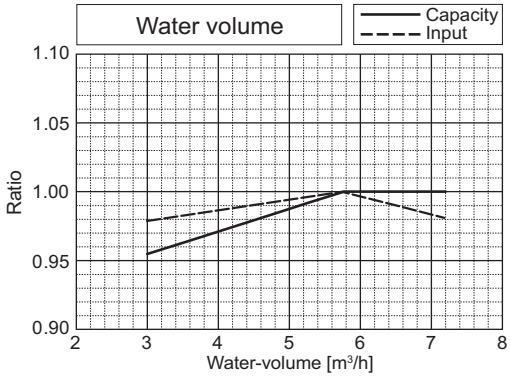


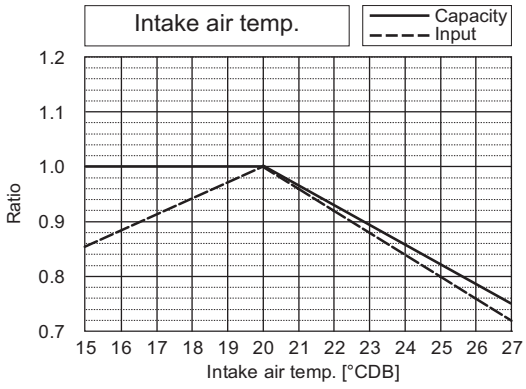


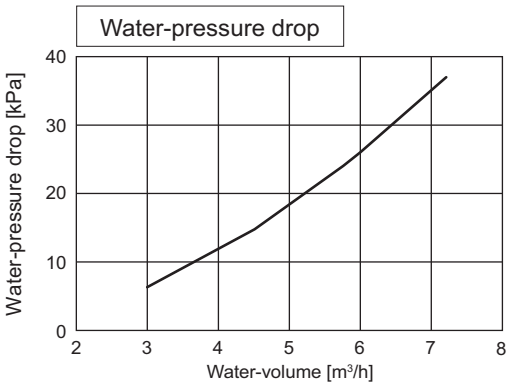


		PQRY-P250YLM-A1
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.41

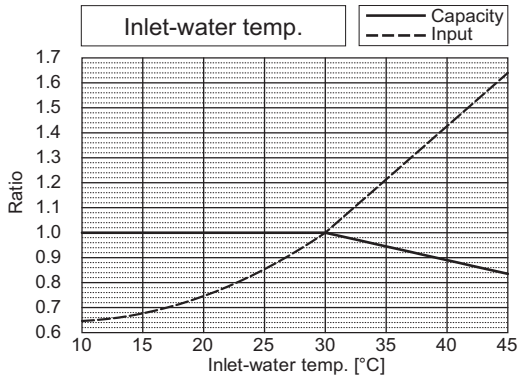


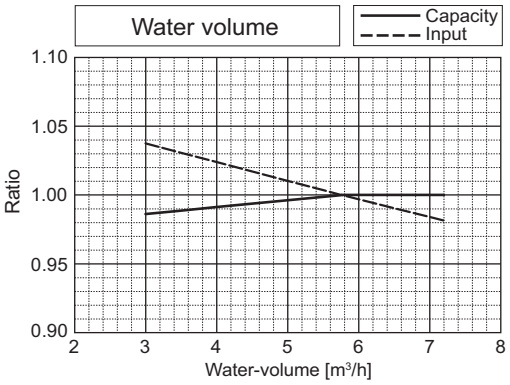


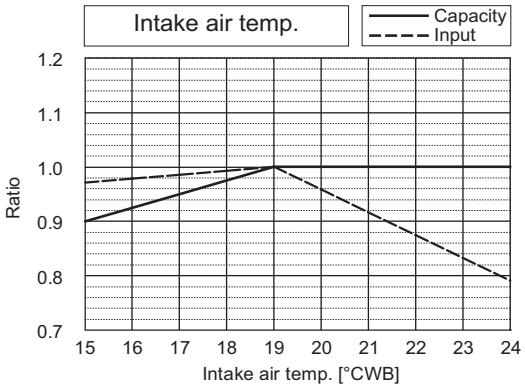


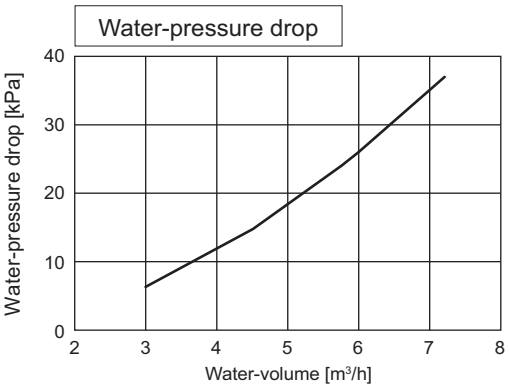


		PQRY-P300YLM-A1
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	7.55

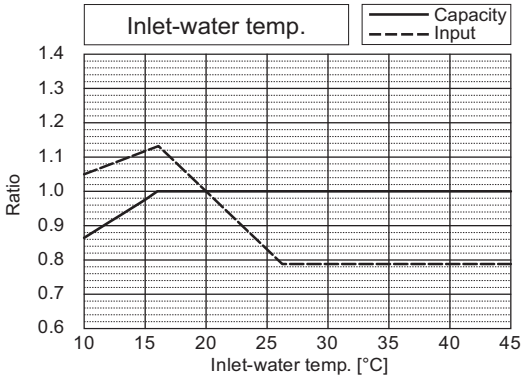


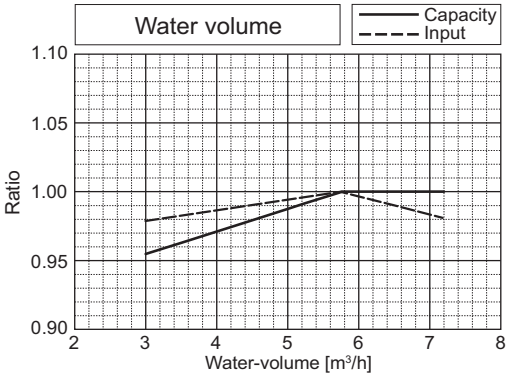


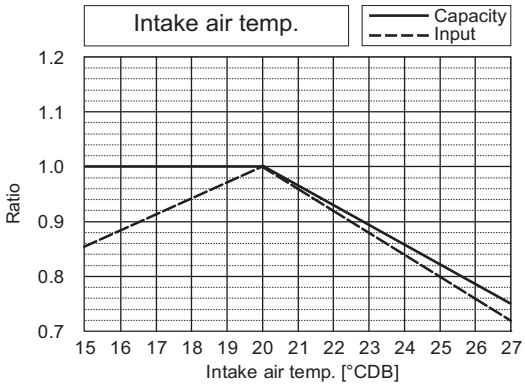


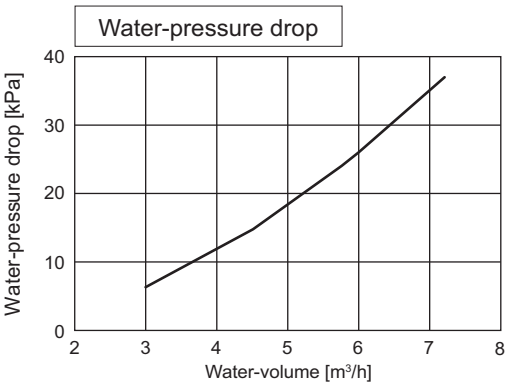


		PQRY-P300YLM-A1
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	7.13

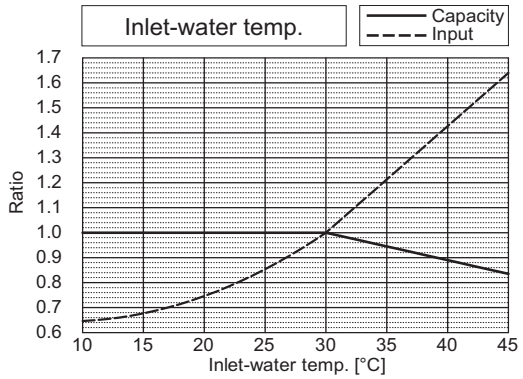


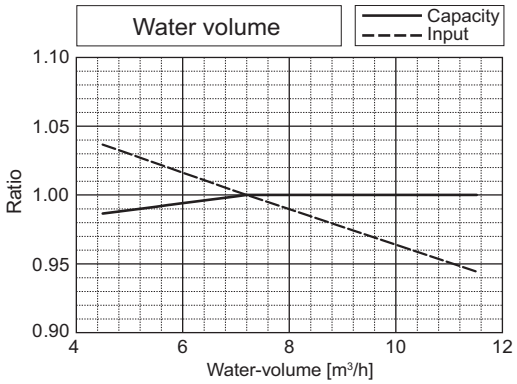


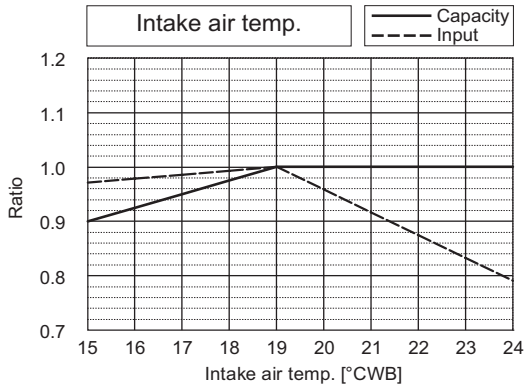


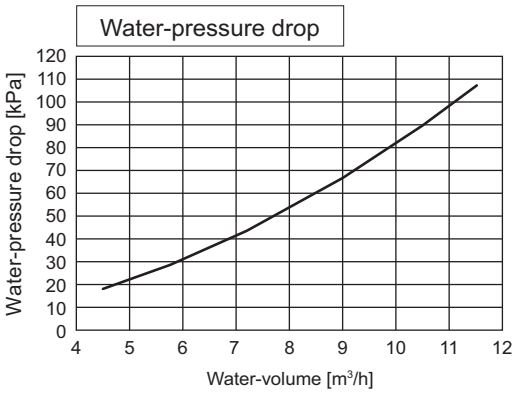


		PQRY-P350YLM-A1
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	9.98

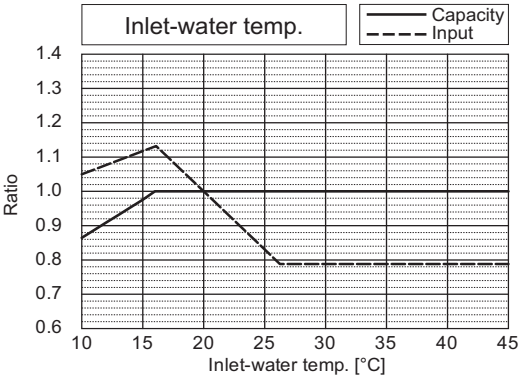


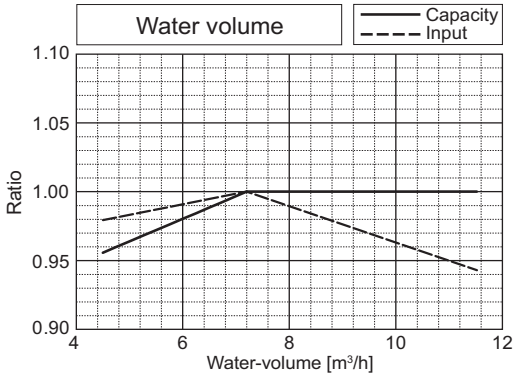


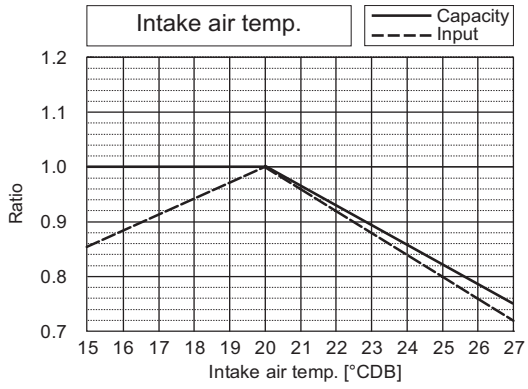


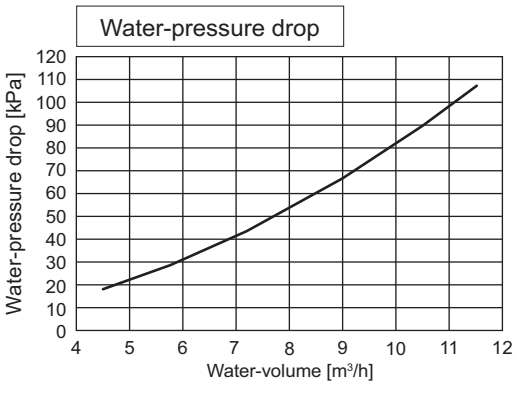


		PQRY-P350YLM-A1
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.87

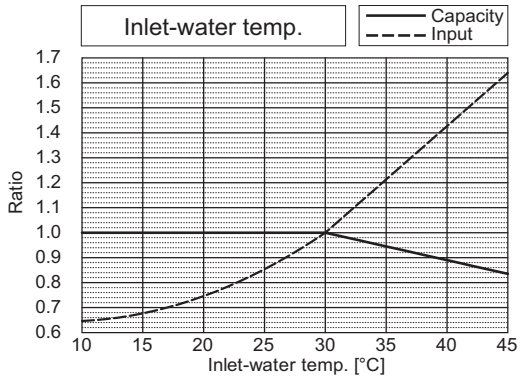


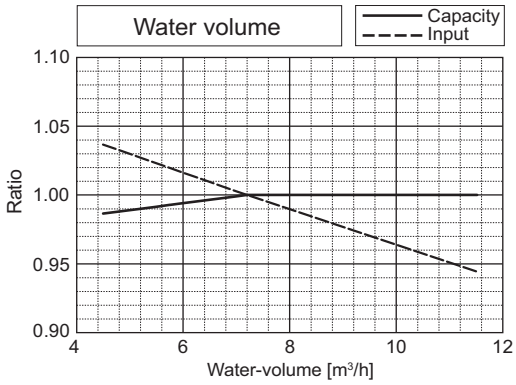


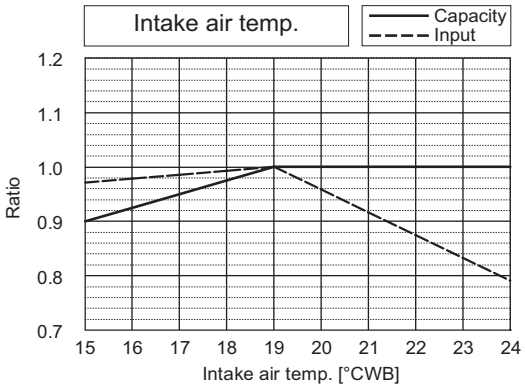


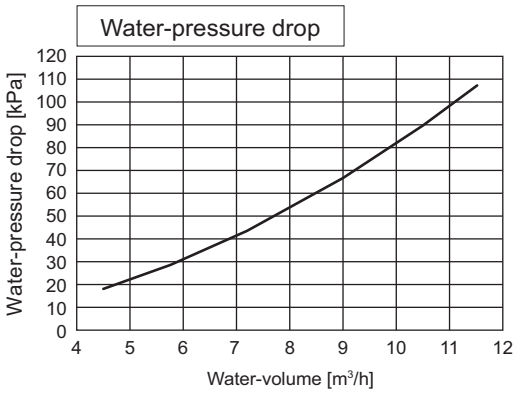


		PQRY-P400YLM-A1
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.05

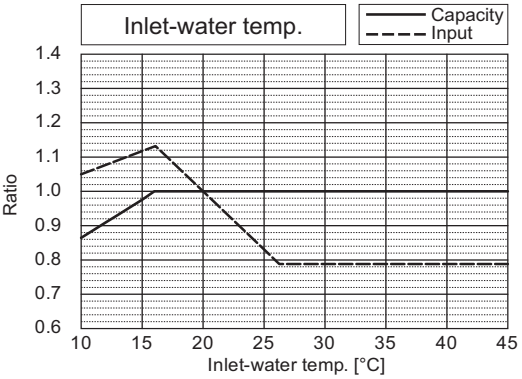


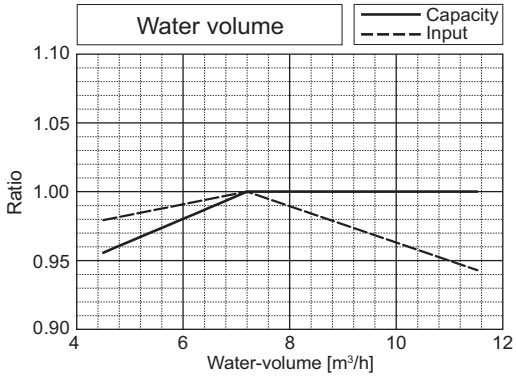


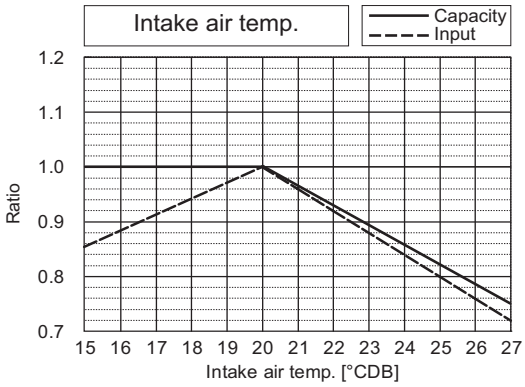


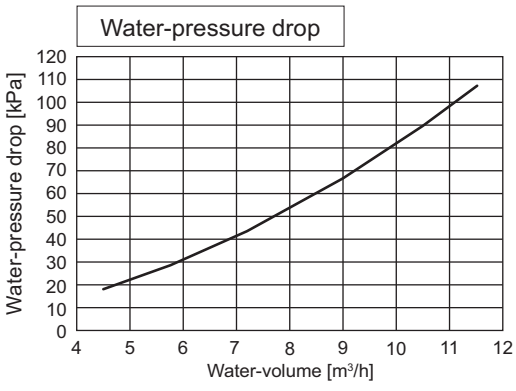


		PQRY-P400YLM-A1
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.45

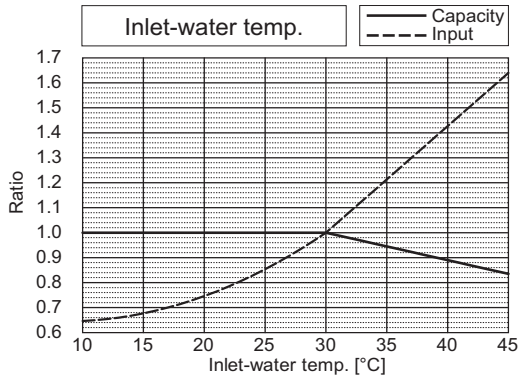


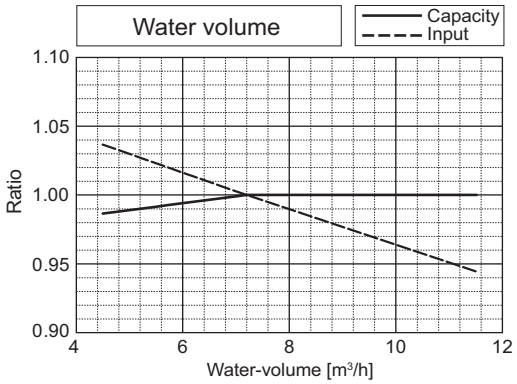


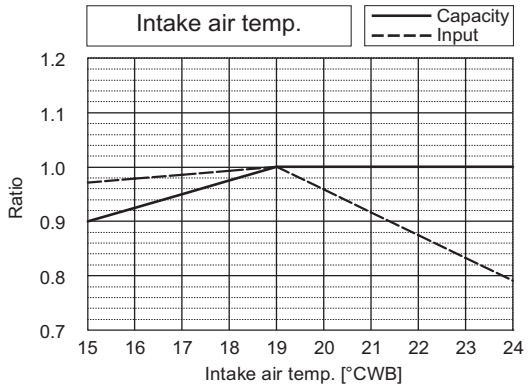


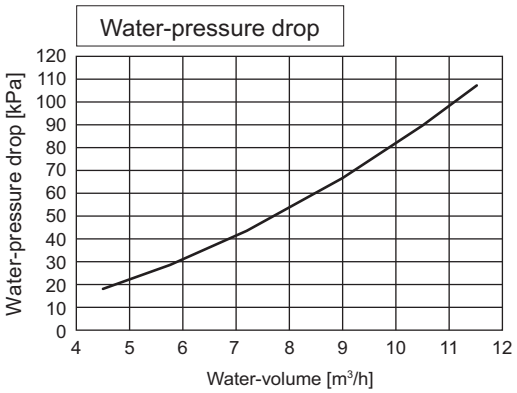


		PQRY-P450YLM-A1
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	12.05

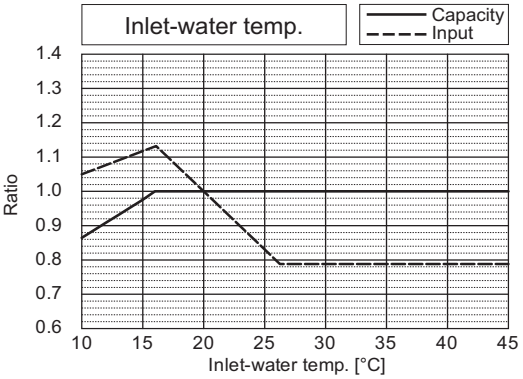


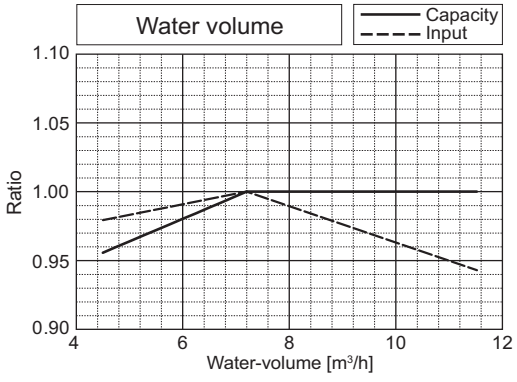


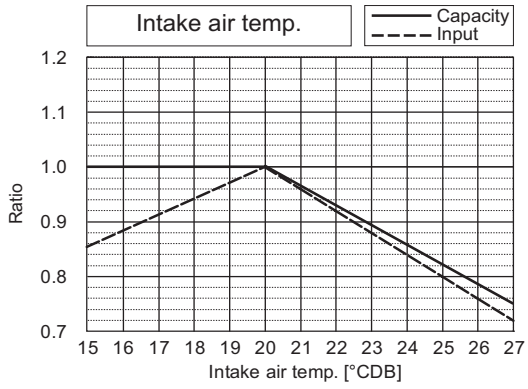


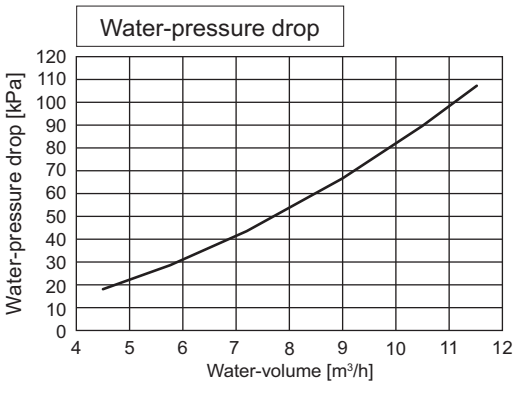


		PQRY-P450YLM-A1
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.11

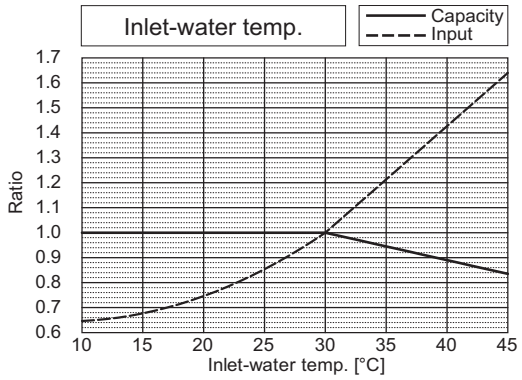


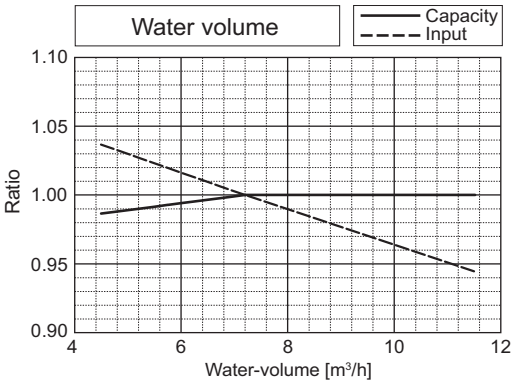


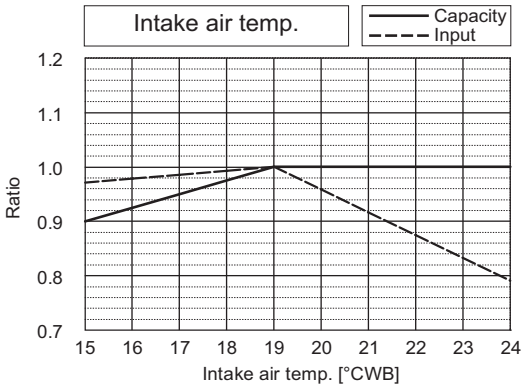


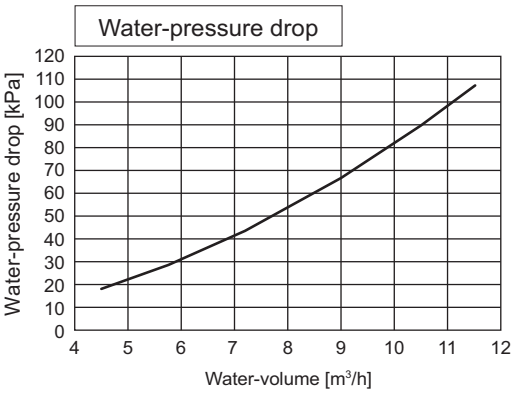


		PQRY-P500YLM-A1
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.58

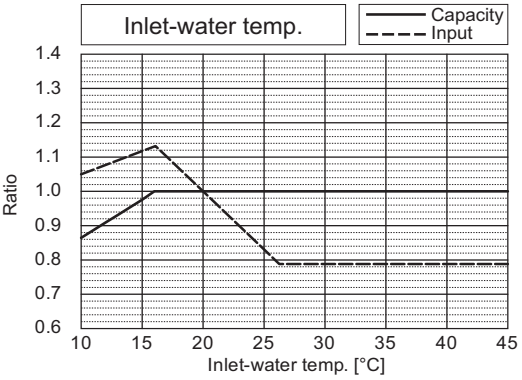


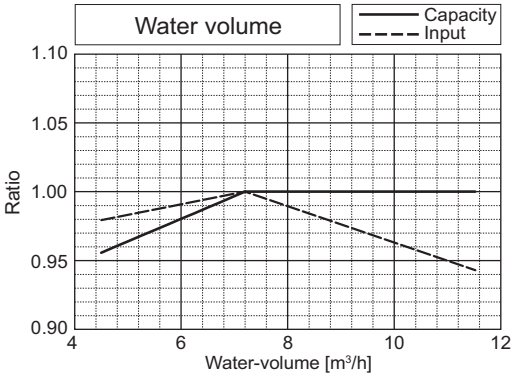


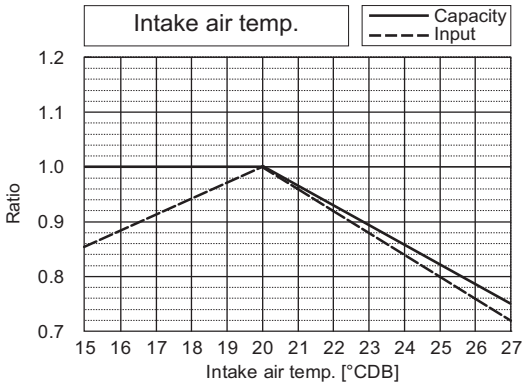


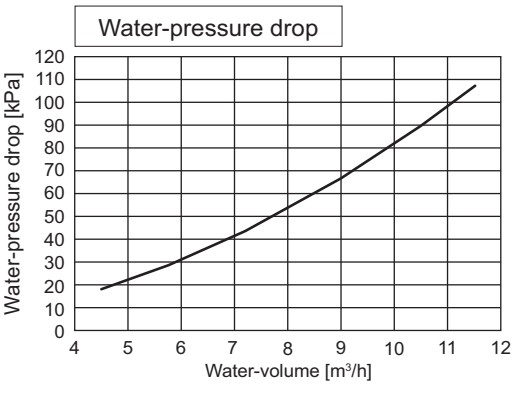


		PQRY-P500YLM-A1
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	13.07









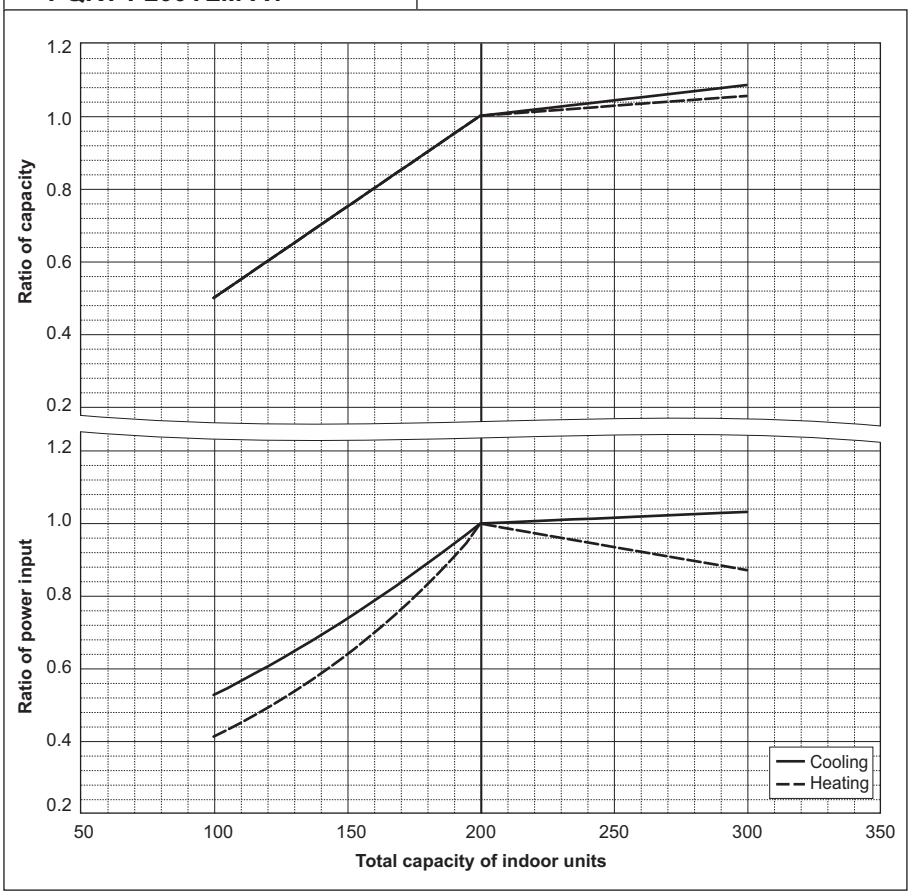
3-2. Correction by total indoor

HYBRID CITY MULTI system has different capacities and inputs when many combinations of indoor units with different total capacities are connected. Using following tables, the maximum capacity can be found to ensure the system is installed with enough capacity for a particular application.

PQRY-P200YLM-A1		
Nominal Cooling Capacity	kW	22.4
	BTU/h	76,400
Input	kW	3.97

PQRY-P200YLM-A1		
Nominal Heating Capacity	kW	25.0
	BTU/h	85,300
Input	kW	4.04

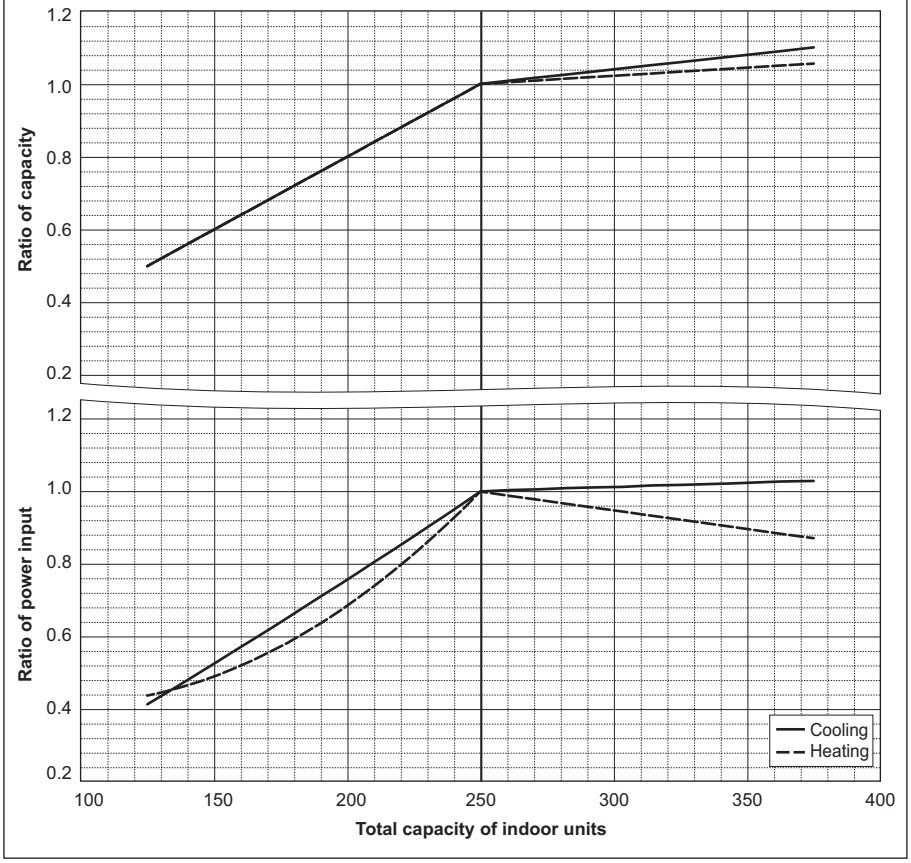
PQRY-P200YLM-A1



PQRY-P250YLM-A1		
Nominal Cooling Capacity	kW	28.0
	BTU/h	95,500
Input	kW	5.44

PQRY-P250YLM-A1		
Nominal Heating Capacity	kW	31.5
	BTU/h	107,500
Input	kW	5.41

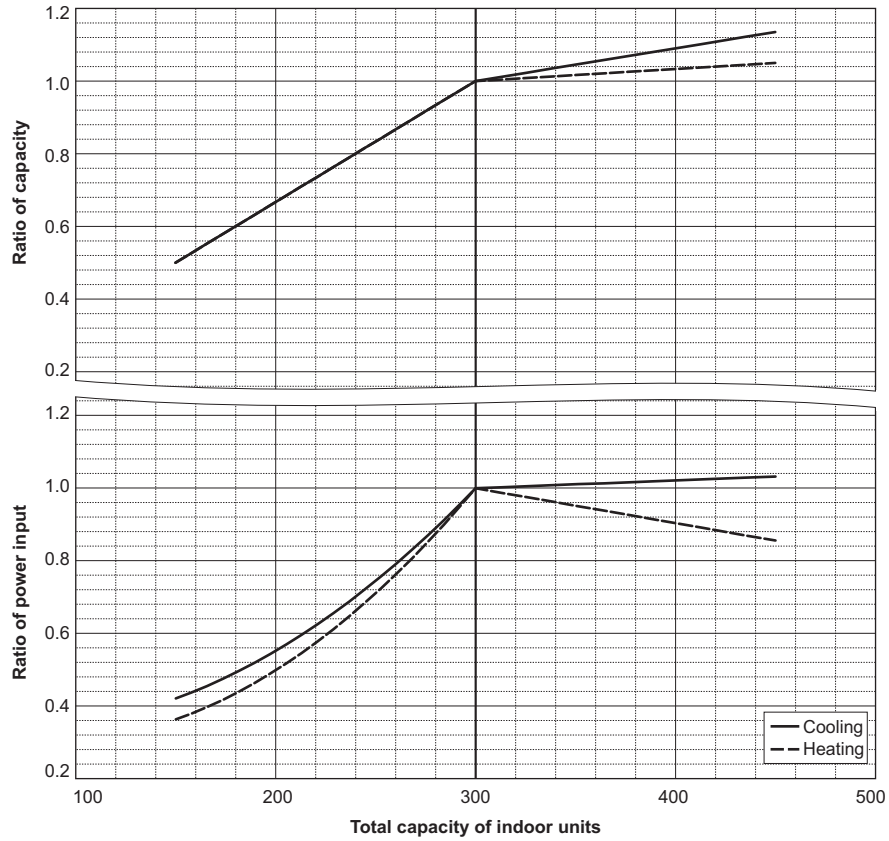
PQRY-P250YLM-A1



PQRY-P300YLM-A1		
Nominal Cooling Capacity	kW	33.5
	BTU/h	114,300
Input	kW	7.55

PQRY-P300YLM-A1		
Nominal Heating Capacity	kW	37.5
	BTU/h	128,000
Input	kW	7.13

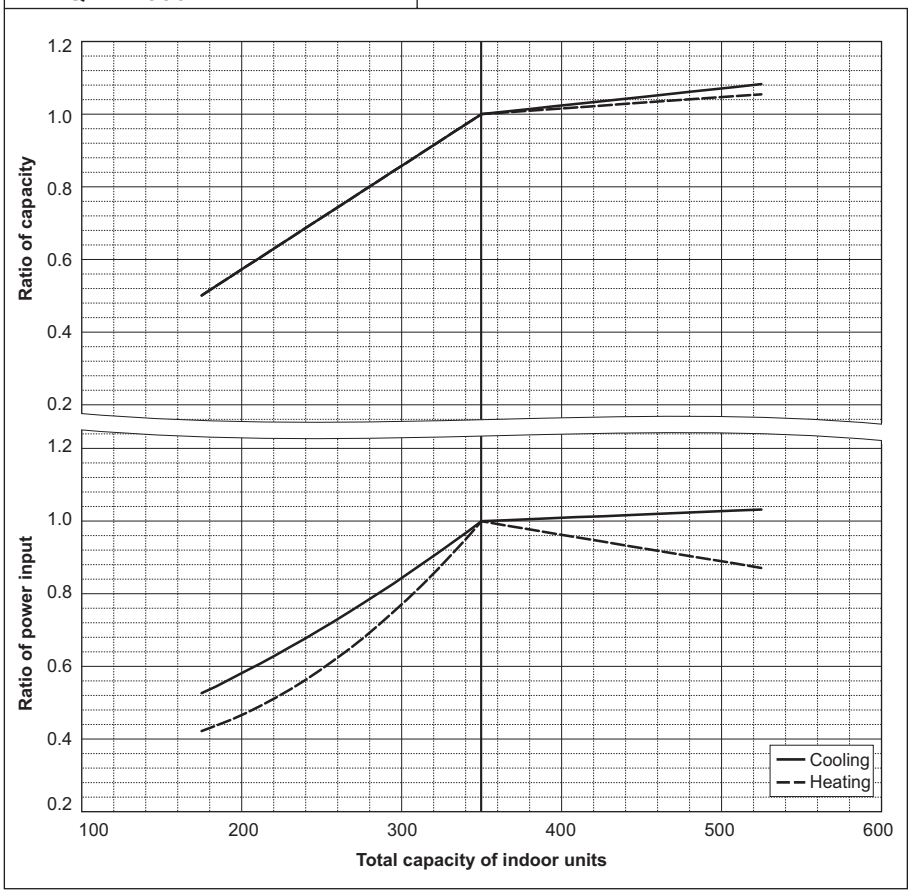
PQRY-P300YLM-A1



PQRY-P350YLM-A1		
Nominal Cooling Capacity	kW	40.0
	BTU/h	136,500
Input	kW	9.98

PQRY-P350YLM-A1		
Nominal Heating Capacity	kW	45.0
	BTU/h	153,500
Input	kW	8.87

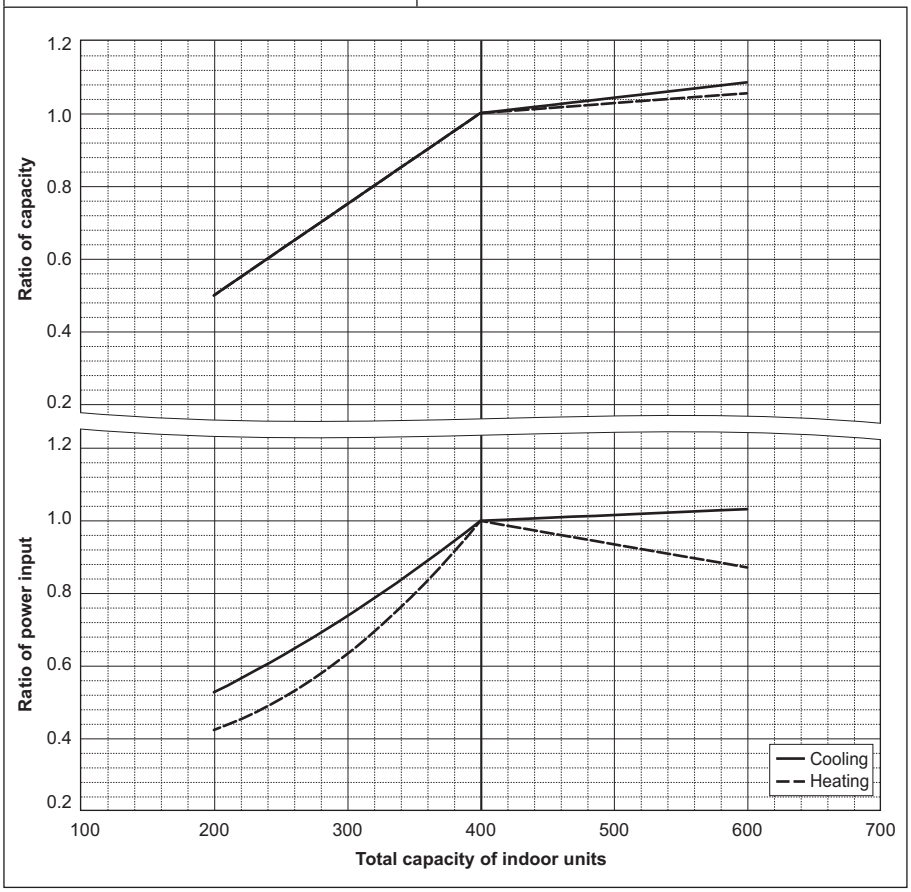
PQRY-P350YLM-A1



PQRY-P400YLM-A1		
Nominal Cooling Capacity	kW	45.0
	BTU/h	153,500
Input	kW	10.05

PQRY-P400YLM-A1		
Nominal Heating Capacity	kW	50.0
	BTU/h	170,600
Input	kW	9.45

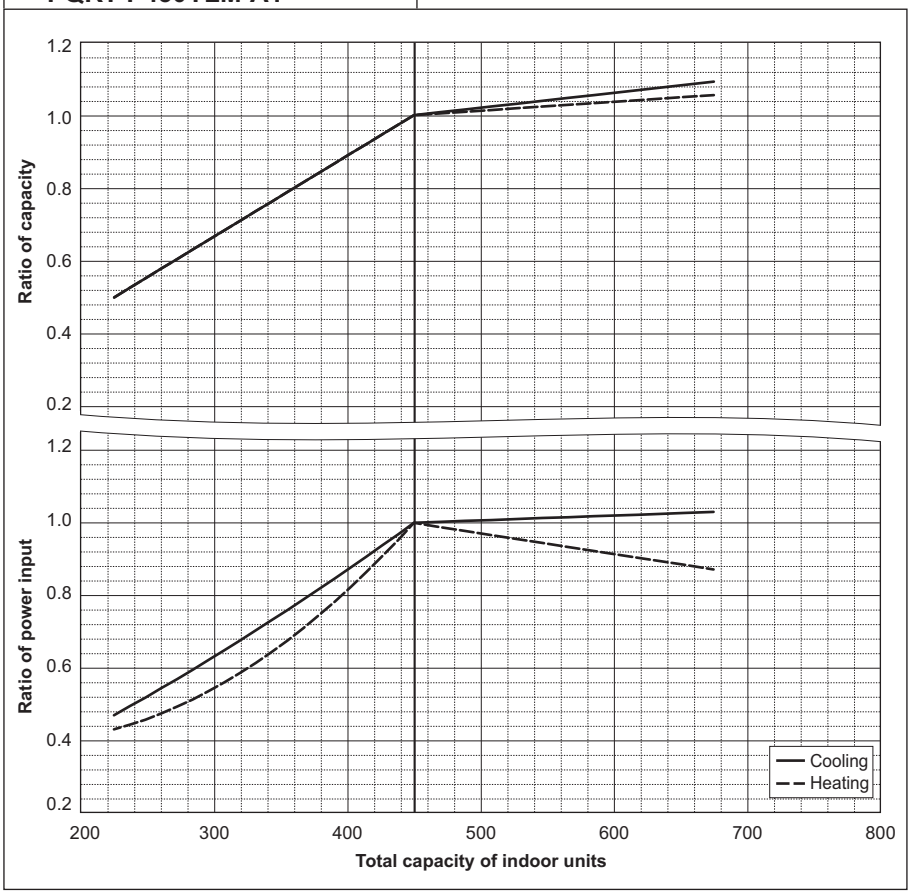
PQRY-P400YLM-A1



PQRY-P450YLM-A1		
Nominal Cooling Capacity	kW	50.0
	BTU/h	170,600
Input	kW	12.05

PQRY-P450YLM-A1		
Nominal Heating Capacity	kW	56.0
	BTU/h	191,100
Input	kW	11.11

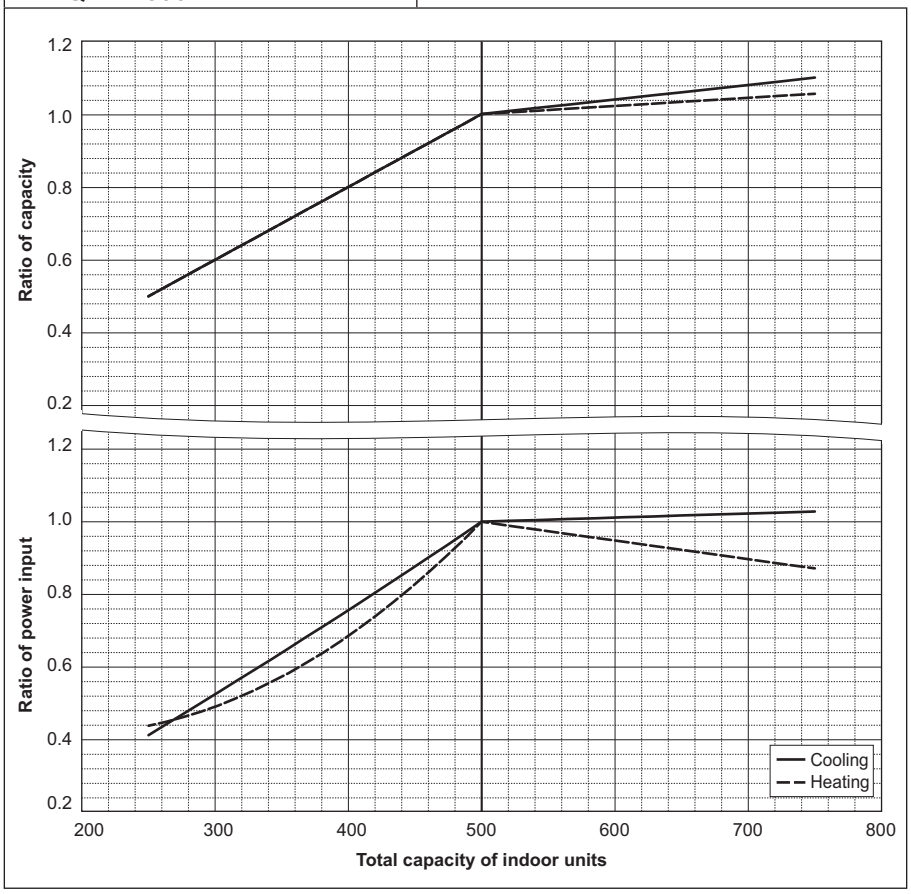
PQRY-P450YLM-A1



PQRY-P500YLM-A1		
Nominal Cooling Capacity	kW	56.0
	BTU/h	191,100
Input	kW	14.58

PQRY-P500YLM-A1		
Nominal Heating Capacity	kW	63.0
	BTU/h	215,000
Input	kW	13.07

PQRY-P500YLM-A1

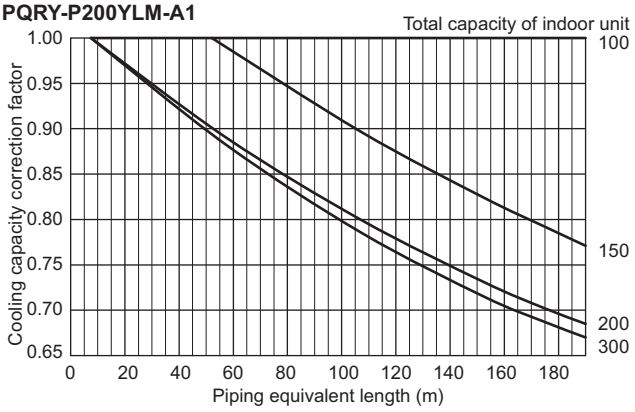


3-3. Correction by piping length

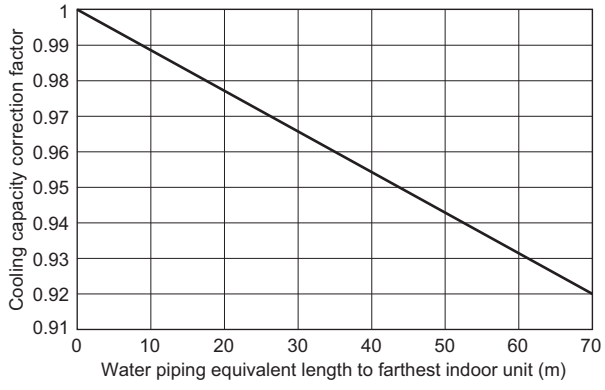
A decrease in cooling/heating capacity will occur due to piping length increase. Using the following correction factors according to the equivalent length of the piping shown at 3-3-1 and 3-3-2 the capacity can be calculated. 3-3-3 shows how to obtain the equivalent length of piping. Refrigerant piping and water piping have separate correction factors.

3-3-1. Cooling capacity correction

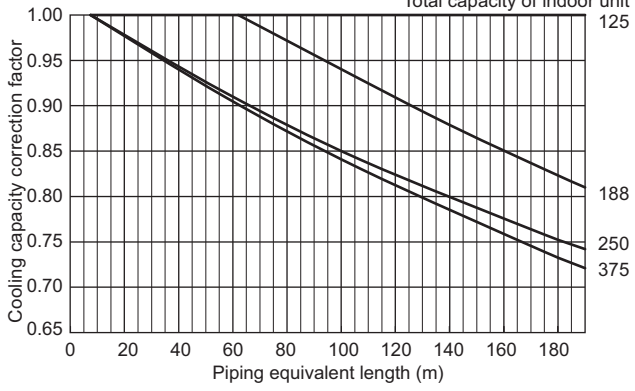
PQRY-P200YLM-A1



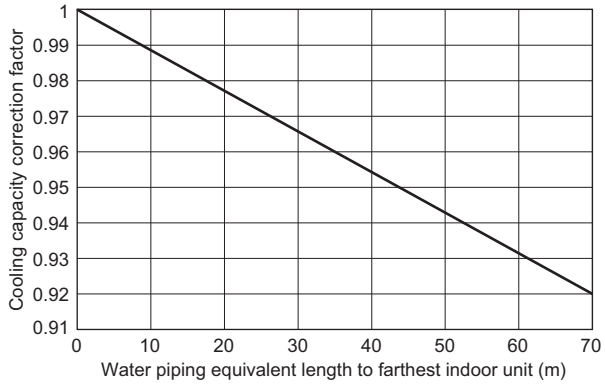
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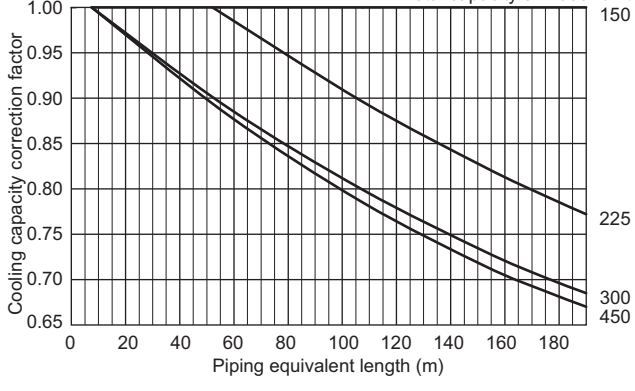
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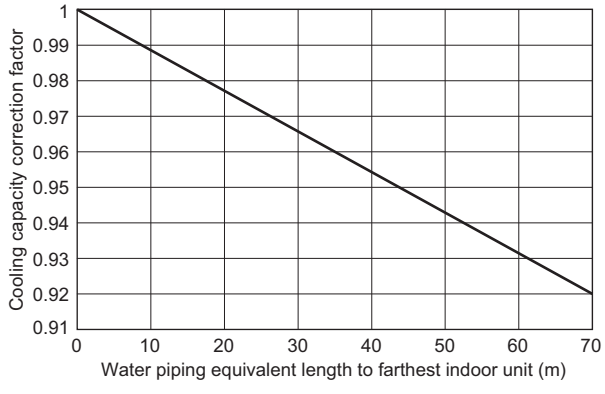
PQRY-P250YLM-A1



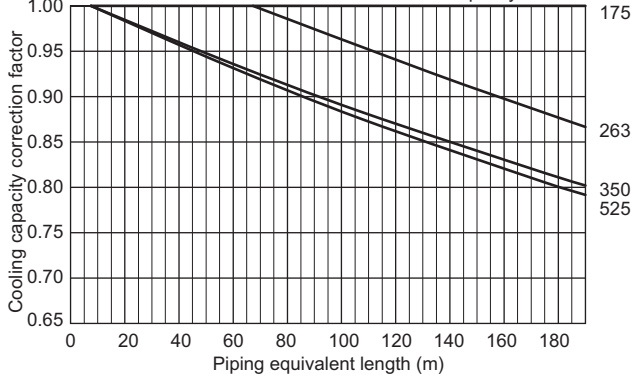
PQRY-P300YLM-A1



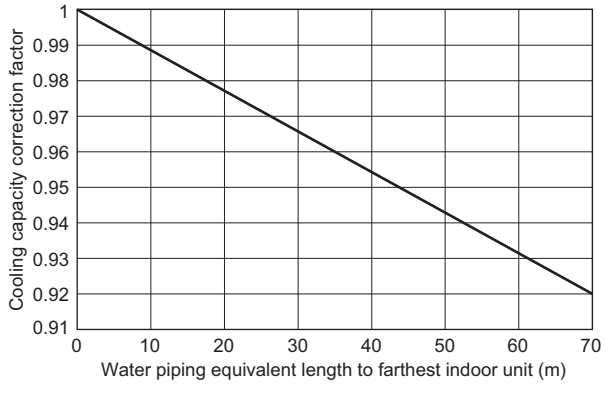
PQRY-P300YLM-A1



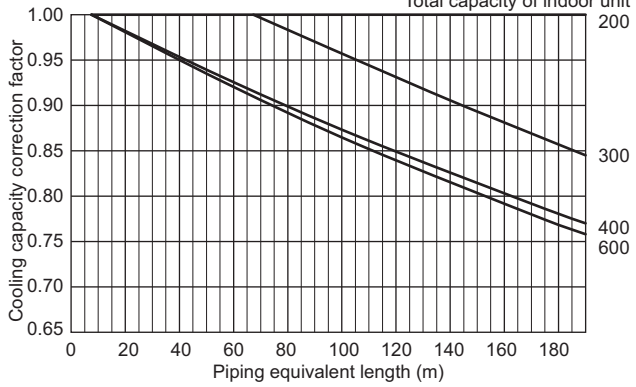
PQRY-P350YLM-A1



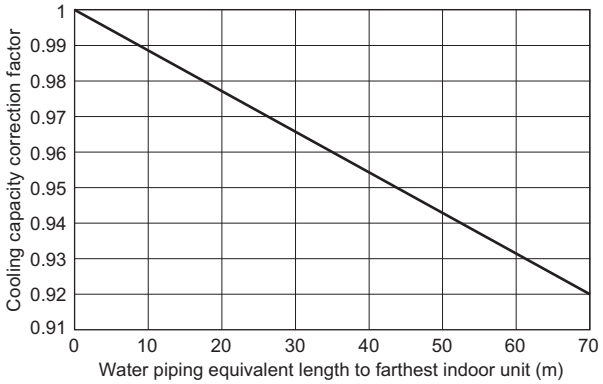
PQRY-P350YLM-A1



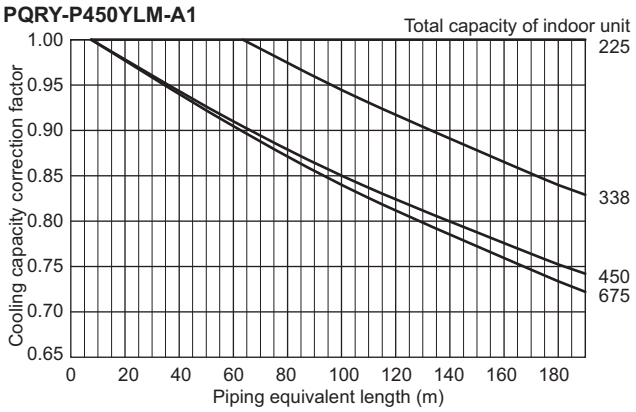
PQRY-P400YLM-A1



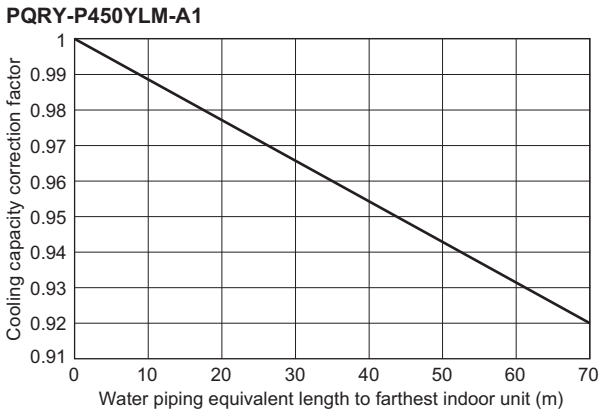
PQRY-P400YLM-A1



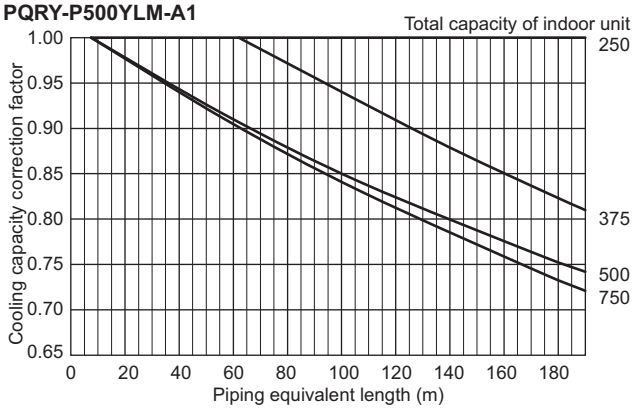
PQRY-P450YLM-A1



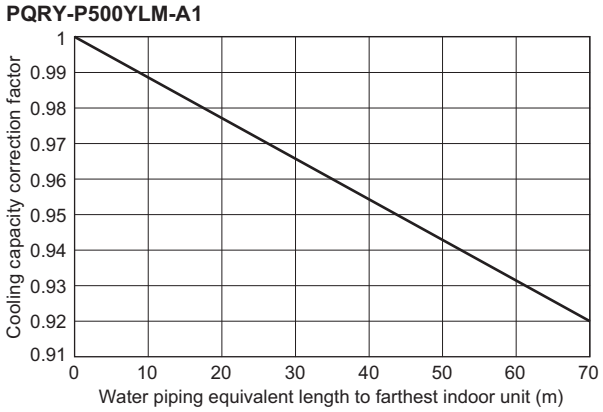
PQRY-P450YLM-A1



PQRY-P500YLM-A1

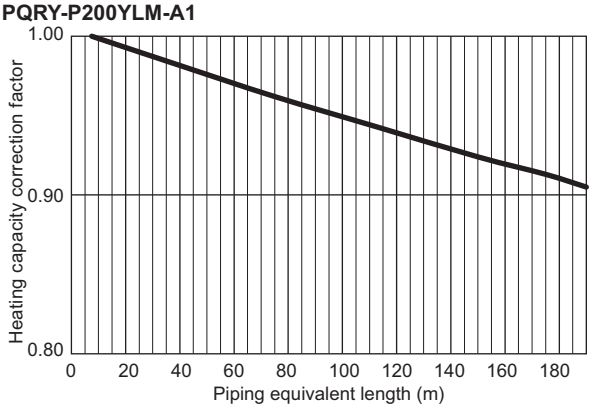


PQRY-P500YLM-A1

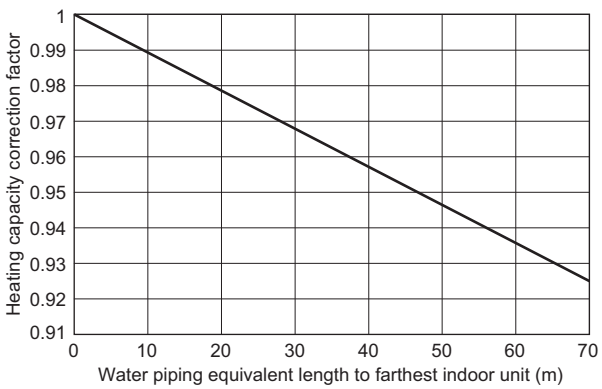


3-3-2. Heating capacity correction

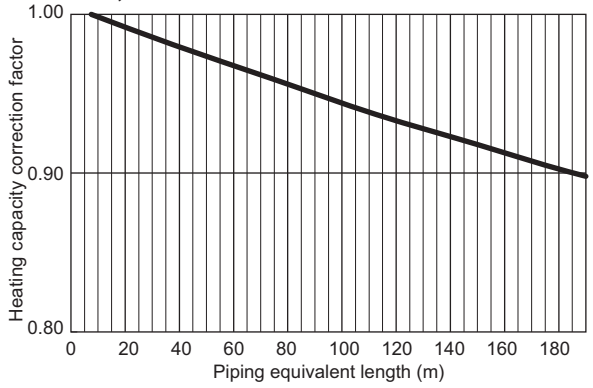
PQRY-P200YLM-A1



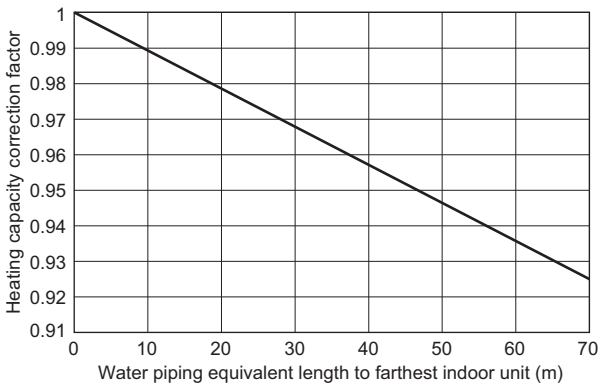
PQRY-P200YLM-A1



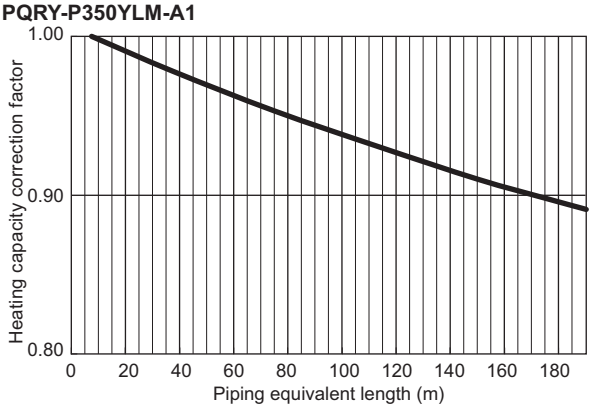
PQRY-P250, 300YLM-A1



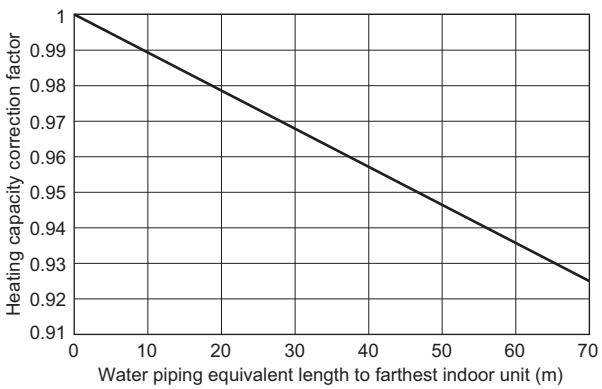
PQRY-P250, 300YLM-A1



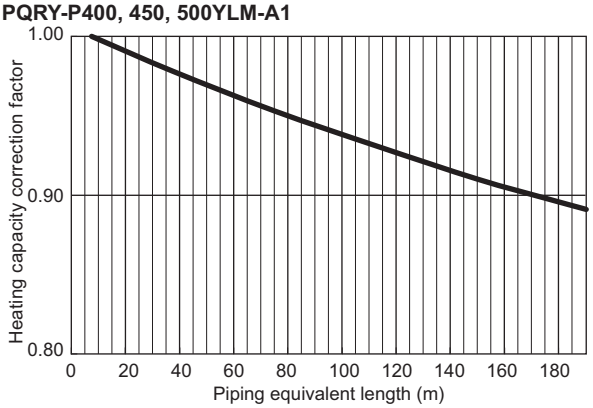
PQRY-P350YLM-A1



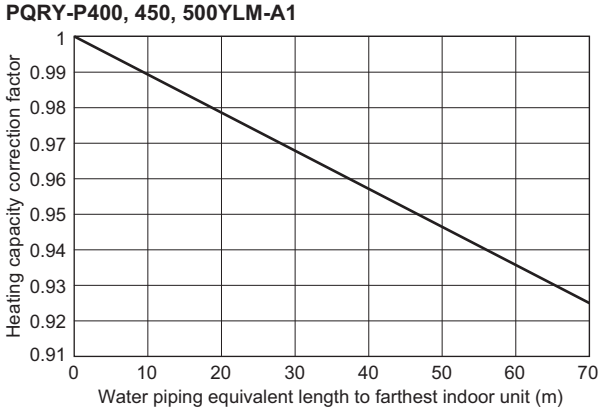
PQRY-P350YLM-A1



PQRY-P400, 450, 500YLM-A1



PQRY-P400, 450, 500YLM-A1



3-3-3. How to obtain the equivalent piping length

Refrigerant pipe

1. PQRY-P200YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.35 × number of bends in the piping) [m]

2. PQRY-P250, 300YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.42 × number of bends in the piping) [m]

3. PQRY-P350YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.47 × number of bends in the piping) [m]

4. PQRY-P400, 450, 500YLM

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.50 × number of bends in the piping) [m]

Water pipe

Equivalent length = (Actual piping length to the farthest indoor unit) + (0.55 × number of bends in the piping) [m]

3-4. Correction by antifreeze solution concentration

In HYBRID CITY MULTI system, antifreeze solution should be used to prevent the system from freezing. Refer to the following graphs for the capacity correction by antifreeze solution. Refer to 3-4-1 for antifreeze solution concentration, 3-4-2 and 3-4-3 for capacity correction by antifreeze solution concentration.

3-4-1. Antifreeze solution concentration

Use propylene glycol solution for antifreeze.
Refer to the following graph to estimate the antifreeze solution concentration required for freeze protection.
DipSW setting (SW5-4 and 5-5) is required in HBC unit depending on the antifreeze solution concentration.
Refer the table A for the setting.

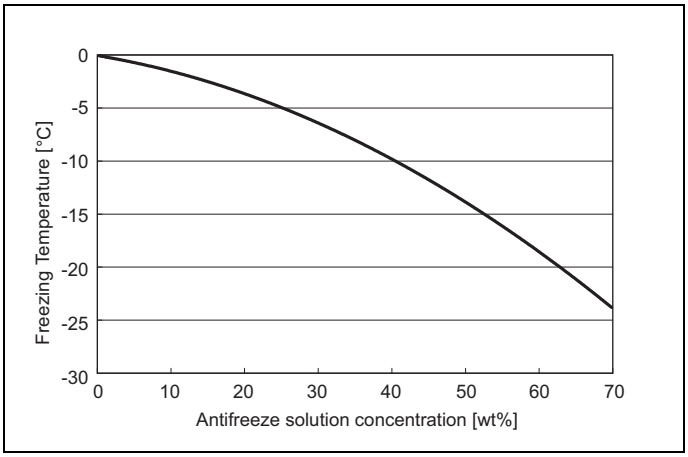
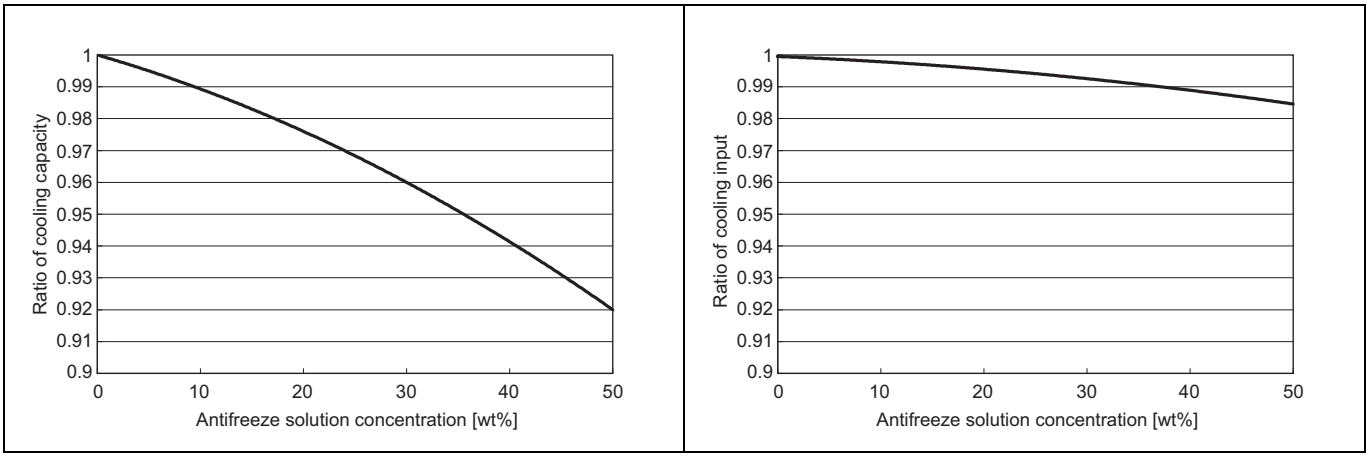


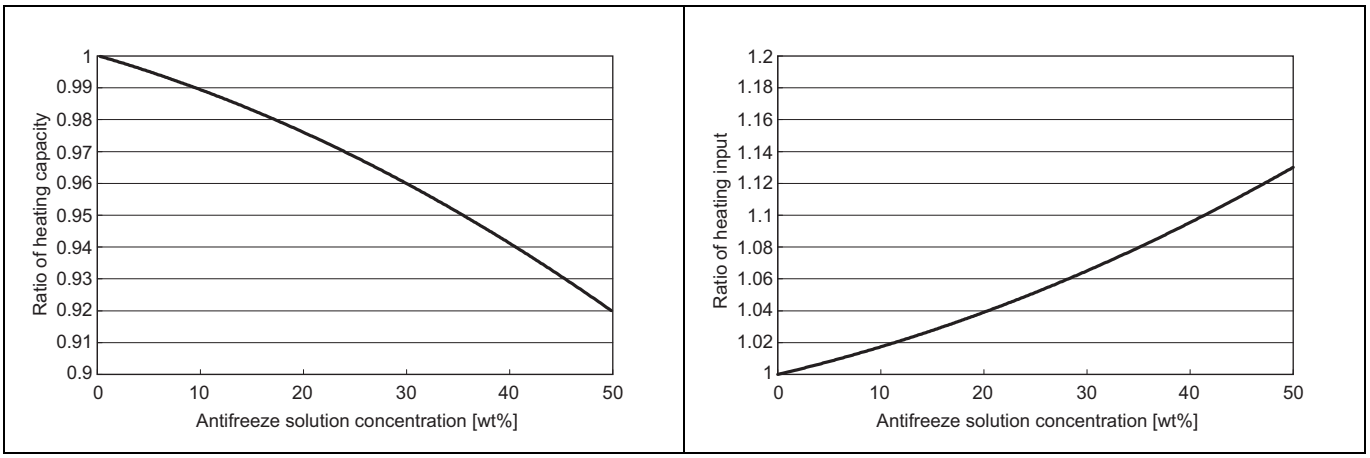
Table A

Brine concentration [%]		0 to 29%	30 to 49%	50 to 59%	60 to 70%
DipSW5-4		OFF	OFF	ON	ON
DipSW5-5		OFF	ON	OFF	ON
7seg LED	LD2	OFF	OFF	1	1
	LD3	OFF	1	OFF	1

3-4-2. Capacity correction by antifreeze solution concentration (cooling)



3-4-3. Capacity correction by antifreeze solution concentration (heating)

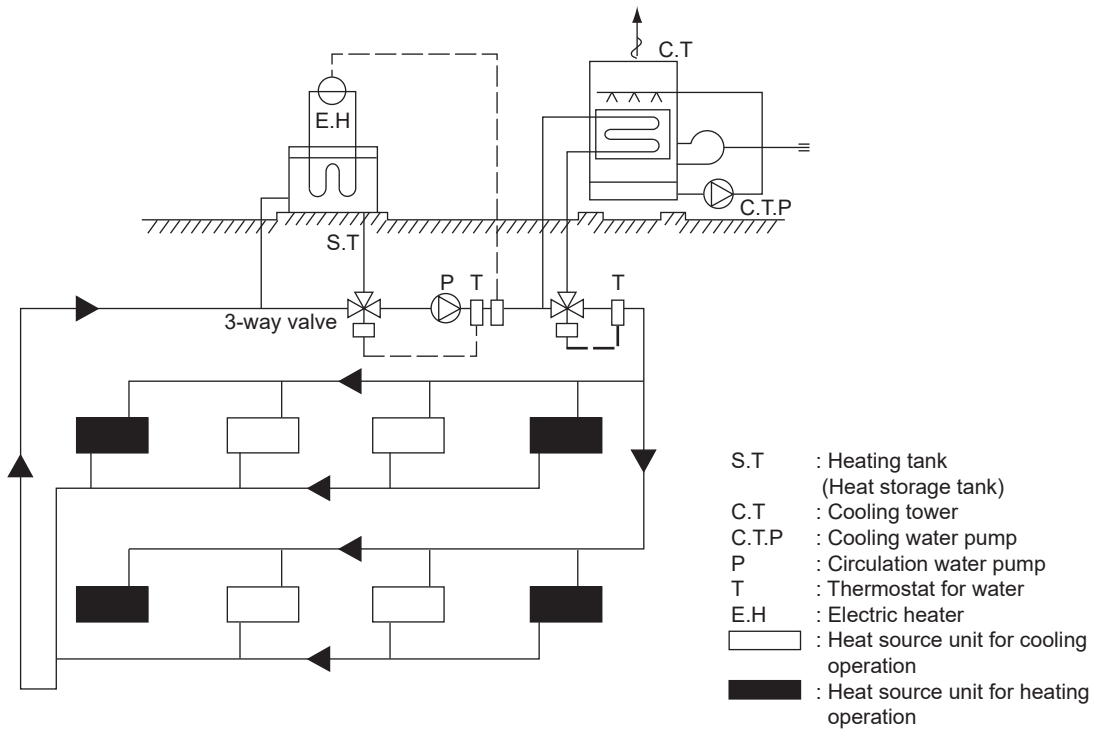


4-1. Designing of water circuit system

1) Example of basic water circuit

The water circuit of the water heat source HYBRID CITY MULTI connects the heat source unit with the cooling tower/auxiliary heat source/heat storage tank/circulation pump with a single system water piping as shown in the figure below. The selector valve automatically controls to circulate water toward the cooling tower in the cooling season, while toward the heat storage tank in the heating season. If the circulation water temperature is kept in a range of 10~45°C [50~113°F] regardless of the building load, the water heat source HYBRID CITY MULTI can be operated for either cooling or heating. Therefore in the summer when only cooling load exists, the temperature rise of circulation water will be suppressed by operating the cooling tower. While in the winter when heating load increases, the temperature of circulation water may be dropped below 10°C [50°F]. Under such situation, the circulation water will be heated with the auxiliary heat source if it drops below a certain temperature.
When the thermal balance between cooling and heating operation is in a correct proportion, the operation of the auxiliary heat source and cooling tower is not required.
In order to control the above thermal balance properly and use thermal energy effectively, utilizing of heat storage tanks, and night-time discounted electric power as a auxiliary heat source will be economical.
Meantime as this system uses plural sets of heat source unit equipped with water heat exchangers, water quality control is important. Therefore it is recommended to use closed type cooling towers as much as possible to prevent the circulation water from being contaminated.
When open type cooling towers are used, it is essential to provide proper maintenance control such as that to install water treatment system to prevent troubles caused by contaminated circulation water.

Example of basic water circuit for water heat source HYBRID CITY MULTI



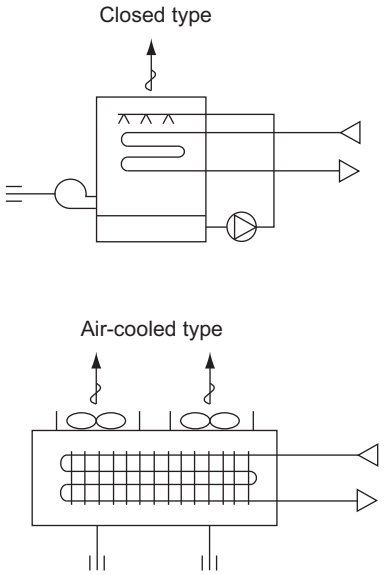
The indoor unit and refrigerant piping system are excluded in this figure.

2) Cooling tower

a) Types of cooling tower

The cooling towers presently used include the open type cooling tower, open type cooling tower + heat exchanger, closed type cooling tower, and air-cooled type cooling tower. However, as the quality control of circulation water is essential when units are installed in decentralized state inside a building, the closed type cooling tower is generally employed in such case.
Although the circulation water will not be contaminated by atmospheric air, it is recommended to periodically blow water inside the system and replenish fresh water instead.
In a district where the coil may be frozen in the winter, it is necessary to apply antifreeze solution to the circulation water, or take freeze protection measures such as to automatically discharge water inside the cooling coil at the stopping of the pump.
When the open type cooling tower is used, be sure to install a water quality control device in addition to the freeze protection measures, as the water may be deteriorated by atmospheric contaminants entered into the cooling tower and dissolved into the circulation water.

Types of cooling towers



b) Calculation method of cooling tower capacity

All units of the water heat source HYBRID CITY MULTI may possibly be in cooling operation temporarily (at pulling down) in the summer, however, it is not necessary to determine the capacity according to the total cooling capacity of all HYBRID CITY MULTI units as this system has a wide operating water temperature range.
It is determined in accordance with the value obtained by adding the maximum cooling load of an actual building, the input heat equivalent value of all HYBRID CITY MULTI units, and the cooling load of the circulating pumps. Please check for the values of the cooling water volume and circulation water volume.

$$\text{Cooling tower capacity} = \frac{Qc + 860 \times (\Sigma Qw + Pw)}{3{,}900} \text{ (Refrigeration ton)}$$

Qc : Maximum cooling load under actual state (kcal/h)
Qw : Total input of water heat source HYBRID CITY MULTI at simultaneous operation under maximum state (kW)
Pw : Shaft power of circulation pumps (kW)

$$\text{Cooling tower capacity} = \frac{Qc + 3{,}412 \times (\Sigma Qw + Pw)}{15{,}500} \text{ (Refrigeration ton)}$$

Qc : Maximum cooling load under actual state (BTU/h)
Qw : Total input of water heat source HYBRID CITY MULTI at simultaneous operation under maximum state (kW)
Pw : Shaft power of circulation pumps (kW)

* 1 Refrigerant ton of cooling tower capacity ≈ US refrigerant ton × (1 + 0.3)
= 3,900 kcal/h = 15,500 BTU/h

3) Auxiliary heat source and heat storage tank

When the heating load is larger than the cooling load, the circulation water temperature lowers in accordance with the heat balance of the system. It should be heated by the auxiliary heat source in order to keep the inlet water temperature within the operating range of the water heat source HYBRID CITY MULTI.

Further in order to operate the water heat source HYBRID CITY MULTI effectively, it is recommended to utilize the heat storage tank to cover the warming up load in the morning and the insufficient heat amount.
Effective heat utilization can be expected to cover insufficient heat at the warming up in the next morning or peak load time by storing heat by installing a heat storage tank or operating a low load auxiliary heat source at the stopping of the water heat source HYBRID CITY MULTI. As it can also be possible to reduce the running cost through the heat storage by using the discounted night-time electric power, using both auxiliary heat source and heat storage tank together is recommended. The effective temperature difference of an ordinary heat storage tank shows about 5°C [41°F] even with the storing temperature at 45°C [113°F].
However with the water heat source HYBRID CITY MULTI, it can be utilized as heating heat source up to 15°C [59°F] with an effective temperature of a high 30°C [54°F] approximately, thus the capacity of the heat storage tank can be minimized.

a) Auxiliary heat source

The following can be used as the auxiliary heat source.

- Boiler (Heavy oil, kerosine, gas, electricity)
- Electric heat (Insertion of electric heater into heat storage tank)
- Outdoor air (Air-heat source heat pump chiller)
- Warm discharge water (Exhaust water heat from machines inside building and hot water supply)
- Utilization of night-time lighting
- Solar heat

Please note that the auxiliary heat source should be selected after studying your operating environment and economical feasibility.

Determining the auxiliary heat source capacity

For the HYBRID CITY MULTI water heat source system, a heat storage tank is recommended to use. When employment of the heat storage tank is difficult, the warming up operation should be arranged to cover the starting up heating load. Since the holding water inside the piping circuit owns heat capacity and the warming up operation can be assumed for about one hour except that in a cold region, the heat storage tank capacity is required to be that at the maximum daily heating load including the warming up load at the next morning of the holiday. However the auxiliary heat source capacity should be determined by the daily heating load including warming up load on the week day.
For the load at the next morning of the holiday, heat storage is required by operating the auxiliary heat source even outside of the ordinary working hour.

When heat storage tank is not used

$$QH = HC_T \left(1 - \frac{1}{COP_h}\right) - 1000 \times Vw \times \Delta T - 860 \times Pw$$

QH	: Auxiliary heat source capacity	(kcal/h)
HC_T	: Total heating capacity of each water heat source HYBRID CITY MULTI	(kcal/h)
COP_H	: COP of water heat source HYBRID CITY MULTI at heating	
Vw	: Holding water volume inside piping	(m^3)
ΔT	: Allowable water temperature drop = T_{WH} - T_{WL}	(°C)
T_{WH}	: Heat source water temperature at high temperature side	(°C)
T_{WL}	: Heat source water temperature at low temperature side	(°C)
Pw	: Heat source water pump shaft power	(kW)

$$QH = HC_T \left(1 - \frac{1}{COP_h}\right) - 8.343 \times Vw \times \Delta T - 3412 \times Pw$$

QH	: Auxiliary heat source capacity	(BTU/h)
HC_T	: Total heating capacity of each water heat source HYBRID CITY MULTI	(BTU/h)
COP_H	: COP of water heat source HYBRID CITY MULTI at heating	
Vw	: Holding water volume inside piping	(G)
ΔT	: Allowable water temperature drop = T_{WH} - T_{WL}	(°F)
T_{WH}	: Heat source water temperature at high temperature side	(°F)
T_{WL}	: Heat source water temperature at low temperature side	(°F)
Pw	: Heat source water pump shaft power	(kW)

When heat storage tank is not used

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2}{T1} \times K \quad \text{(kcal)}$$

QH_{1T}	: Total of heating load on weekday including warming up	(kcal/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3)\, (T2 - 1)$$

Q'a	: Thermal load from external wall/roof in each zone	(kcal/h)
Q'b	: Thermal load from glass window in each zone	(kcal/h)
Q'c	: Thermal load from partition/ceiling/floor in each zone	(kcal/h)
Q'd	: Thermal load by infiltration in each zone	(kcal/h)
Q'f	: Fresh outdoor air load in each zone	(kcal/h)
$Q'e_1$	: Thermal load from human body in each zone	(kcal/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(kcal/h)
$Q'e_3$	: Thermal load from equipment in each zone	(kcal/h)
ψ	: Radiation load rate	0.6~0.8
T2	: Air conditioning hour	

$$QH = \frac{HQ_{1T} \cdot \left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2}{T1} \times K \quad \text{(BTU)}$$

QH_{1T}	: Total of heating load on weekday including warming up	(BTU/day)
T_1	: Operating hour of auxiliary heat source	(h)
T_2	: Operating hour of heat source water pump	(h)
K	: Allowance factor (Heat storage tank, piping loss, etc.)	1.05~1.10

HQ_{1T} is calculated from the result of steady state load calculation similarly by using the equation below.

$$HQ_{1T} = 1.15 \times (\Sigma Q'a + \Sigma Q'b + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe_1 + \Sigma Qe_2 + \Sigma Qe_3)\, (T2 - 1)$$

Q'a	: Thermal load from external wall/roof in each zone	(BTU/h)
Q'b	: Thermal load from glass window in each zone	(BTU/h)
Q'c	: Thermal load from partition/ceiling/floor in each zone	(BTU/h)
Q'd	: Thermal load by infiltration in each zone	(BTU/h)
Q'f	: Fresh outdoor air load in each zone	(BTU/h)
$Q'e_1$	: Thermal load from human body in each zone	(BTU/h)
$Q'e_2$	: Thermal load from lighting fixture in each zone	(BTU/h)
$Q'e_3$	: Thermal load from equipment in each zone	(BTU/h)
ψ	: Radiation load rate	0.6~0.8
T2	: Air conditioning hour	

b) Heat storage tank

Heat storage tank can be classified by types into the open type heat storage tank exposed to atmosphere, and the closed type heat storage tank with structure separated from atmosphere. Although the size of the tank and its installation place should be taken into account, the closed type tank is being usually employed by considering corrosion problems.

The capacity of heat storage tanks is determined in accordance with the daily maximum heating load that includes warming up load to be applied for the day after the holiday.

When auxiliary heat source is operated during operation and even after stopping of water heat source HYBRID CITY MULTI unit

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2 - QH \times T_2}{\Delta T \times 1{,}000 \times \eta V} \quad \text{(ton)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
ΔT : Temperature difference utilized by heat storage tank (°C)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2 - QH \times T_2}{\Delta T \times \eta V} \quad \text{(lbs)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
ΔT : Temperature difference utilized by heat storage tank (°F)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

When auxiliary heat source is operated after stopping of water heat source HYBRID CITY MULTI unit

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 860 \times Pw \times T_2}{\Delta T \times 1{,}000 \times \eta V} \quad \text{(ton)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (kcal/day)
ΔT : Temperature difference utilized by heat storage tank (°C)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

$$V = \frac{HQ_{2T}\left(1 - \frac{1}{COP_h}\right) - 3{,}412 \times Pw \times T_2}{\Delta T \times \eta V} \quad \text{(lbs)}$$

HQ_{2T} : Maximum heating load including load required for the day after the holiday (BTU/day)
ΔT : Temperature difference utilized by heat storage tank (°F)
ηV : Heat storage tank efficiency

HQ_{2T} : $1.3 \times (\Sigma Q'a + \Sigma Q'c + \Sigma Q'd + \Sigma Q'f)\, T_2 - \psi\, (\Sigma Qe2 + \Sigma Qe3)\, (T2 - 1)$

4) Piping system

The following items should be kept in your mind in planning / designing water circuits.

a) All units should be constituted in a single circuit in principle.

b) When plural numbers of the water heat source HYBRID CITY MULTI unit are installed, the rated circulating water flow rate should be kept by making the piping resistance to each unit almost same value. As an example, the reverse return system as shown below may be employed.

c) Depending on the structure of a building, the water circuit may be prefabricated by making the layout uniform.

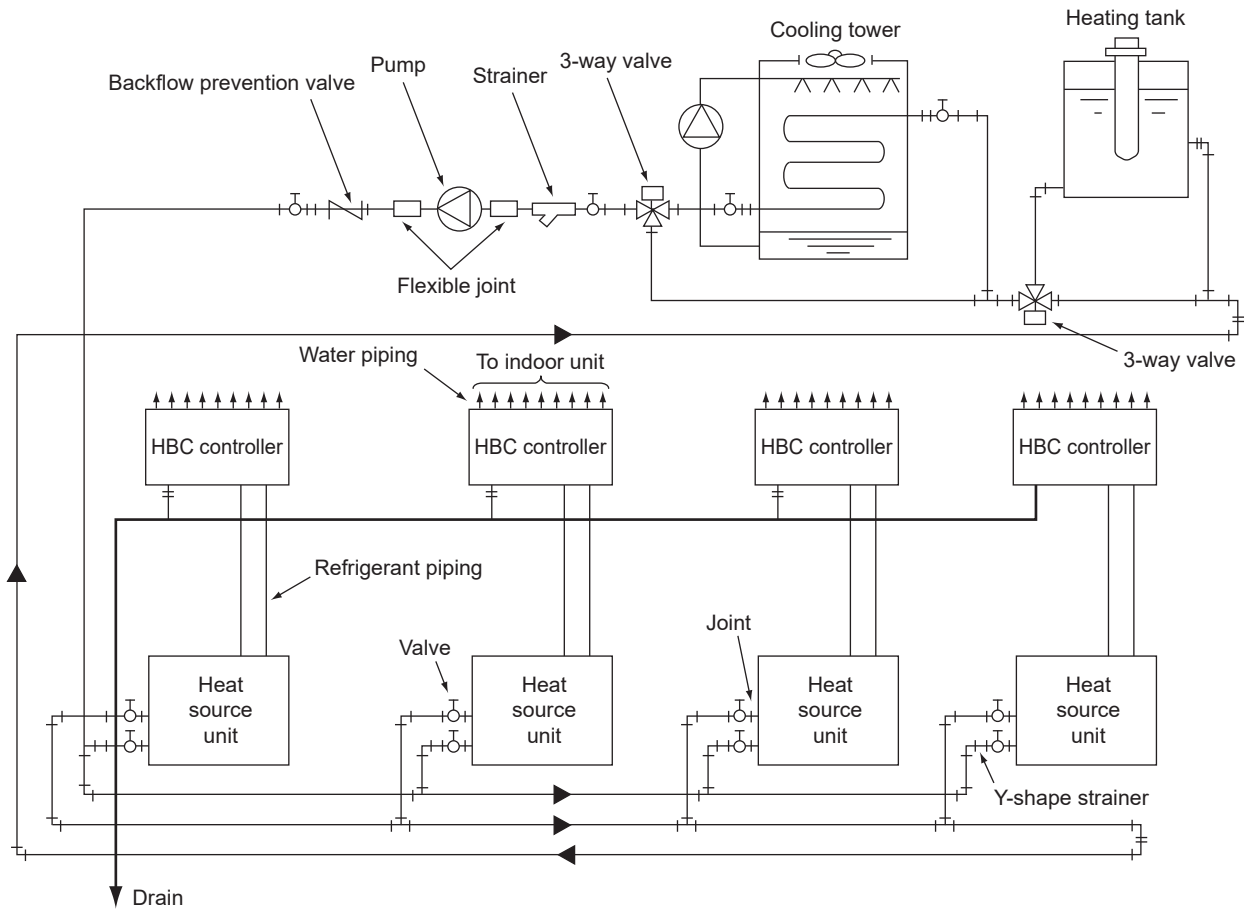
d) When a closed type piping circuit is constructed, install an expansion tank usable commonly for a make-up water tank to absorb the expansion/contraction of water caused by temperature fluctuation.

e) If the operating temperature range of circulation water stays within the temperature near the normal temperature (summer :29.4°C [85°F], winter :21.1°C [70°F]), thermal insulation or anti-sweating work is not required for the piping inside buildings.

In case of the conditions below, however, thermal insulation is required.

- When well water is used for heat source water.
- When piped to outdoor or a place where freezing may be caused.
- When vapor condensation may be generated on piping due to an increase in dry bulb temperature caused by the entry of fresh outdoor air.

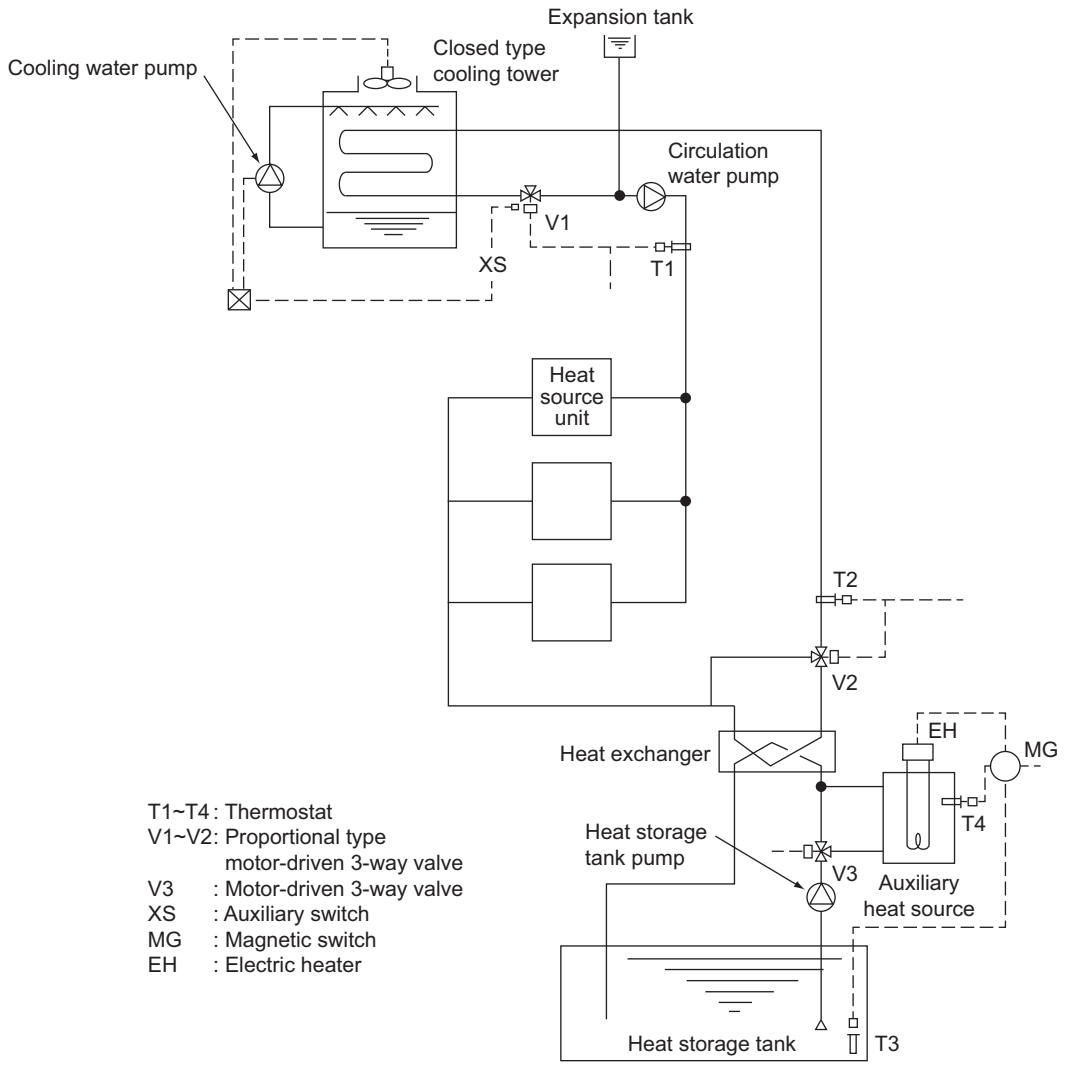
System example of water circuit



5) Practical System Examples and Circulation Water Control

Since the water heat source HYBRID CITY MULTI is of water heat source system, versatile systems can be constituted by combining it with various heat sources.
The practical system examples are given below.
Either cooling or heating operation can be performed if the circulation water temperature of the water heat source HYBRID CITY MULTI stays within a range of 15~45°C [59~113°F]. However, the circulation water temperature near 32°C [90°F] for cooling and 20°C [68°F] for heating is recommended by taking the life, power consumption and capacity of the air conditioning units into consideration. The detail of the control is also shown below.

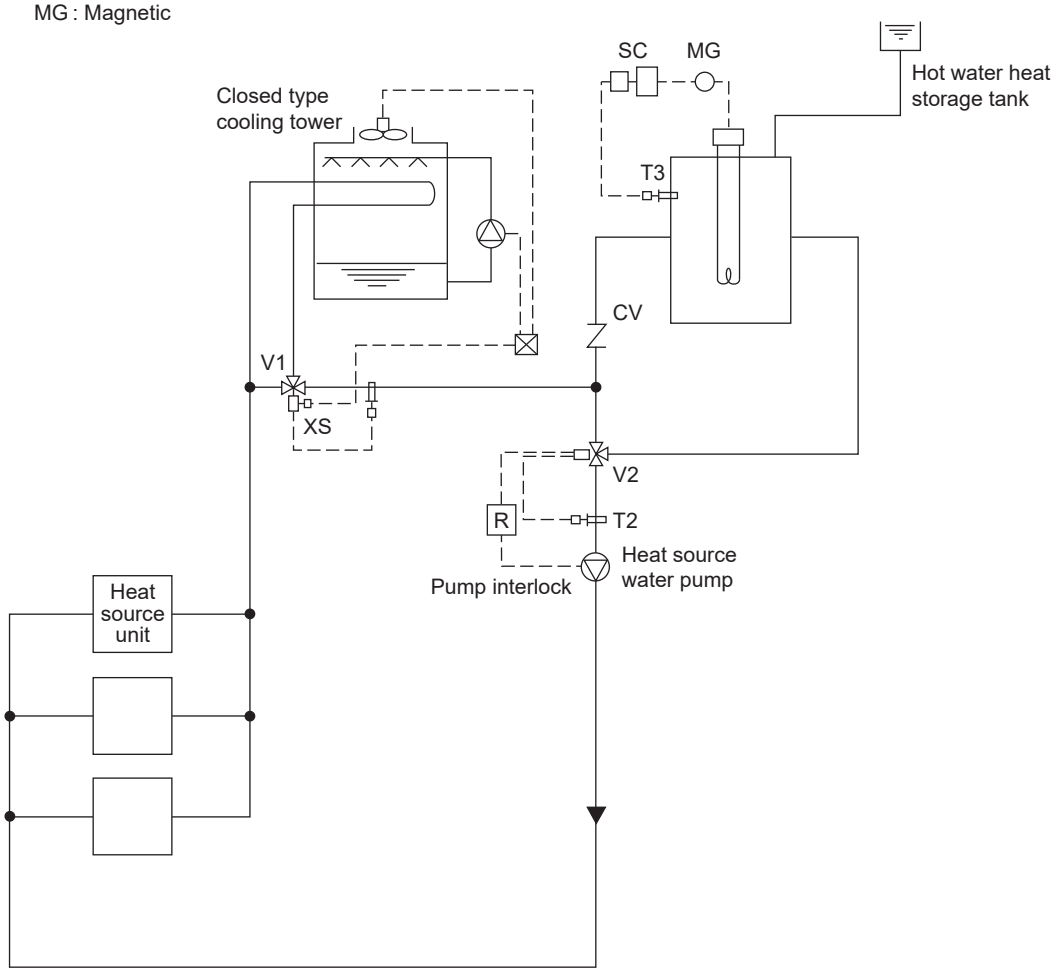
Example-1 Combination of closed type cooling tower and hot water heat storage tank (using underground hollow slab)



By detecting the circulation water temperature of the water heat source HYBRID CITY MULTI system with T1 (around 32°C [90°F]) and T2 (around 20°C [68°F]), the temperature will be controlled by opening/closing V1 in the summer and V2 in the winter.
In the summer, as the circulation water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the circulation water temperature. While in the winter, as the circulation water temperature drops, V2 will open following the command of T2 to rise the circulation water temperature.
The water inside the heat storage tank will be heated by the auxiliary heat source by V3 being opened with timer operation in the night-time. The electric heater of the auxiliary heat source will be controlled by T3 and the timer.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-2 Combination of closed type cooling tower and hot water heat storage tank

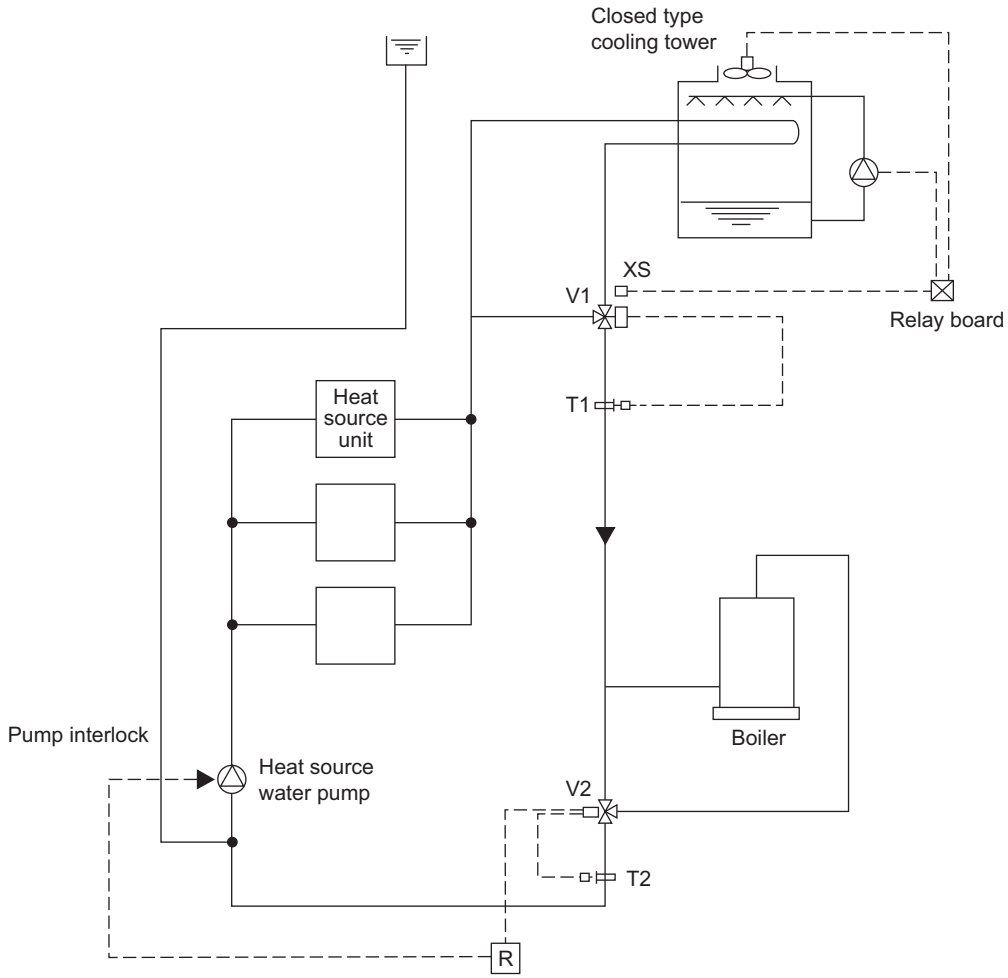
T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
T3 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
V2 : Proportional type, motor-driven 3-way valve
XS : Auxiliary switch (Duplex switch type)
SC : Step controller
R : Relay
MG : Magnetic



In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will open to lower the inlet water temperature. In the winter, if the inlet water temperature stays below 25°C [77°F], V2 will open/close by the command of T2 to keep the inlet water temperature constant.
The temperature of the hot water inside the heat storage tank will be controlled through the step control of the electric heater by step controller operation following the command of T3.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking thus preventing the high temperature water from entering into the system at the starting of the pump.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control of the fan and pump following the command of the auxiliary switch XS of V1, that operates only the fan at the light load while the fan and pump at the maximum load thus controlling water temperature and saving motor power.

Example-3 Combination of closed type cooling tower and boiler

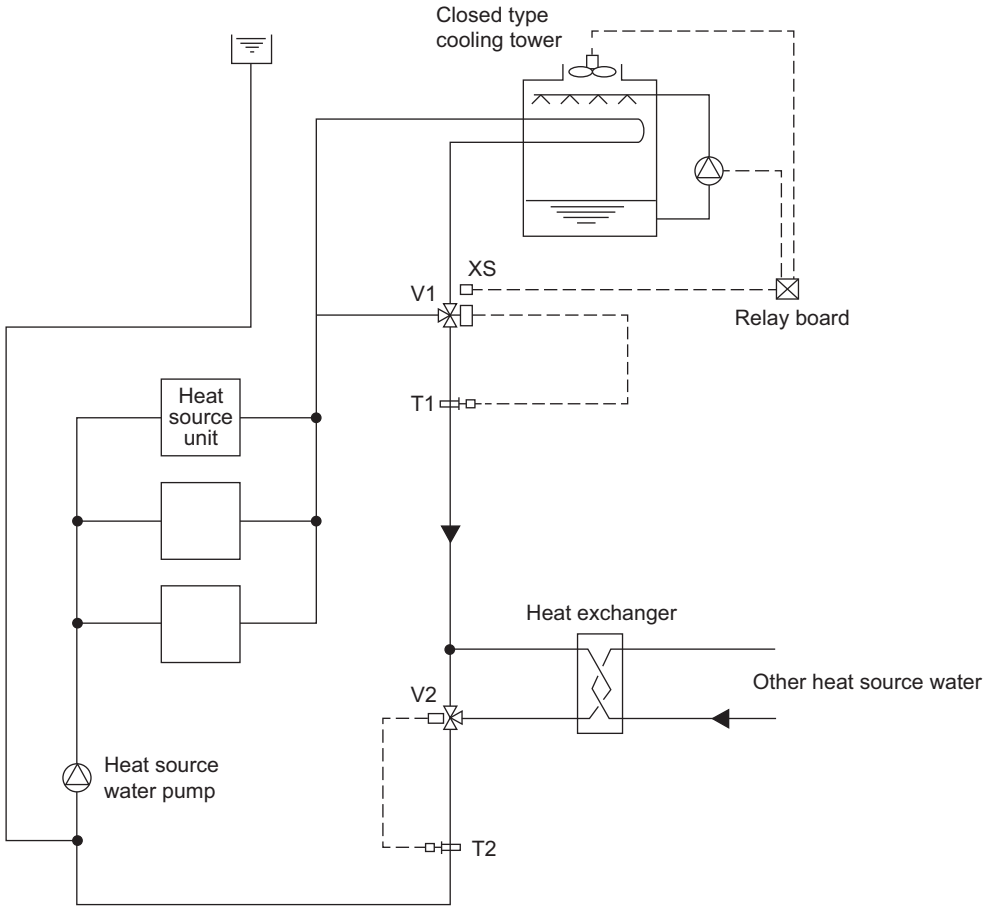
T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
T3 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
S : Selector switch
R : Relay
XS : Auxiliary switch (Duplex switch type)



In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the inlet water temperature. In the winter, if the inlet water temperature drops below 25°C [77°F], V2 will conduct water temperature control to keep the inlet water temperature constant.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

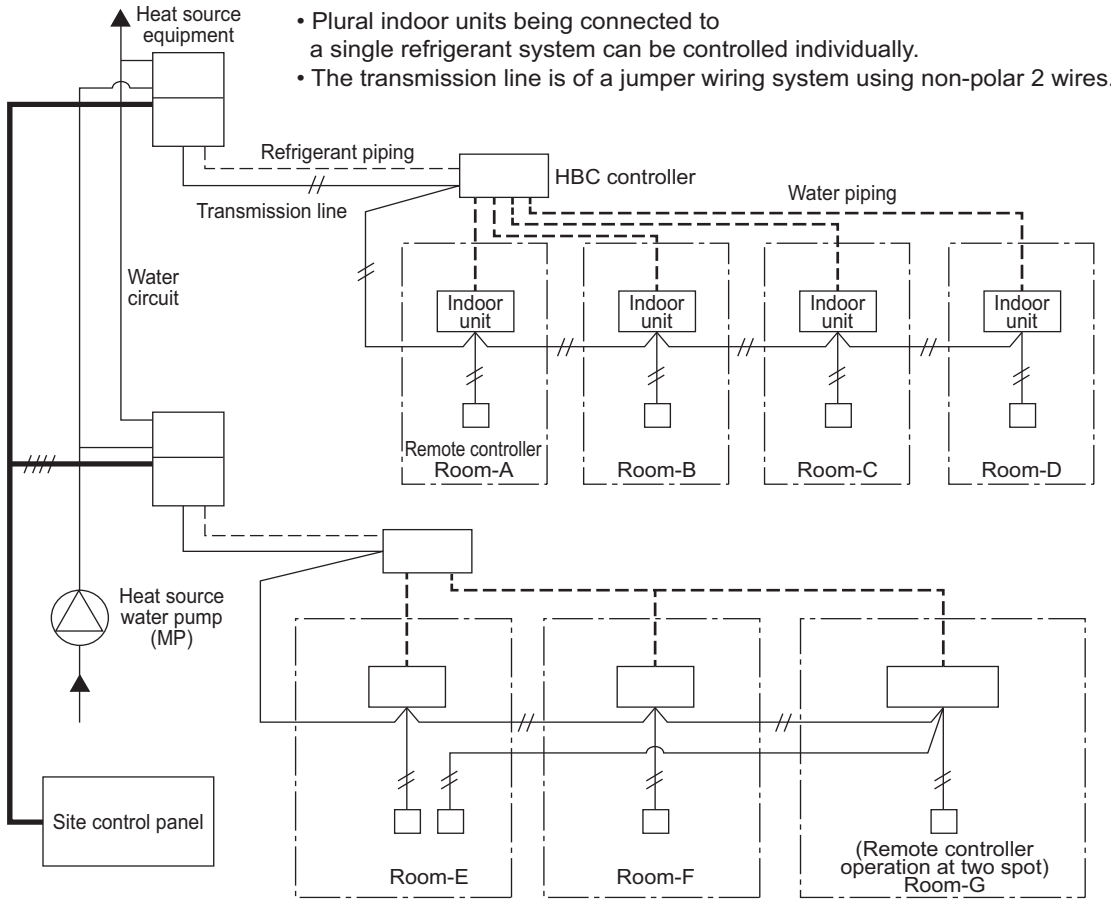
Example-4 Combination of closed type cooling tower and heat exchanger (of other heat source)

T1 : Proportional type, insertion system thermostat
T2 : Proportional type, insertion system thermostat
V1 : Proportional type, motor-driven 3-way valve
V2 : Proportional type, motor-driven 3-way valve
S : Selector switch
R : Relay
XS : Auxiliary switch (Duplex switch type)



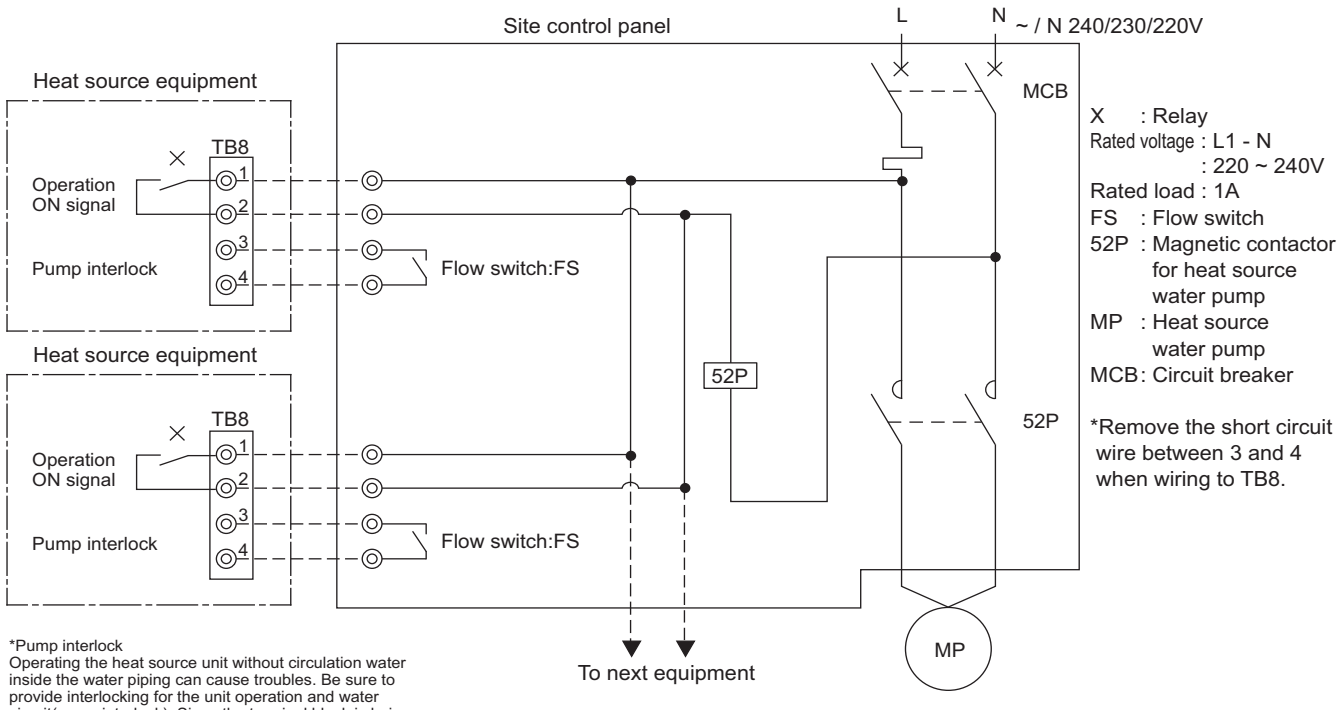
In the summer, as the inlet water temperature rises exceeding the set temperature of T1, the bypass port of V1 will close to lower the inlet water temperature. In the winter, if the inlet water temperature drops below 26°C [79°F], V2 will conduct water temperature control to keep the inlet water temperature constant.
During the stopping of the heat source water pump, the bypass port of V2 will be closed fully by interlocking.
The start/stop control of the fan and pump of the closed type cooling tower is applied with the step control following the command of the auxiliary switch XS of V1, thus controlling water temperature and saving motor power.

6) Pump interlock circuit



Wiring diagram

This circuit uses the “Terminal block for pump interlock (TB8)“ inside the electrical parts box of the heat source equipment.
This circuit is for interlocking of the heat source equipment operation and the heat source water pump.



*Pump interlock
Operating the heat source unit without circulation water inside the water piping can cause troubles. Be sure to provide interlocking for the unit operation and water circuit(pump interlock). Since the terminal block is being provided inside the unit, use it as required.

Use the flow switch (FS)

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Operation ON signal

Terminal No.	TB8-1, 2
Output	Relay contacts output Rated voltage : L1 - N : 220 ~ 240V Rated load : 1A
Operation	• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is OFF. The relay closes during compressor operation.

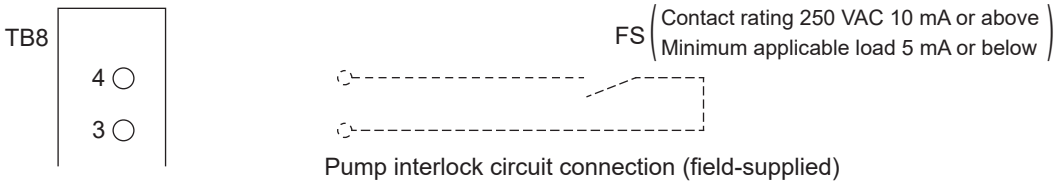
SW4 0: OFF, 1: ON									
1	2	3	4	5	6	7	8	9	10
1	0	1	0	1	0	0	1	1	1

• When setting No.917 for Dip switch 4 (Dip switch 6-10 is ON) is ON.
The relay closes during reception of cooling or the heating operation signal from the controller.
(Note : It is output even if the thermostat is OFF (when the compressor is stopped).)

Pump Interlock

Terminal No.	TB8-3, 4
Input	Level signal
Operation	If the circuit between TB8-3 and TB8-4 is open, compressor operation is prohibited.

* To prevent a false detection of error resulting from contact failure, use a flow switch with a minimum guaranteed current of 5 mA or below for FS.



Pump interlock circuit connection (field-supplied)

7) Water flow rate control

Refer to the CITY MULTI DATA BOOK for PQRY-P-YLM-A1.

4-2. Water piping work

Although the water piping for the HYBRID CITY MULTI WR2 system does not differ from that for ordinary air conditioning systems, pay special attention to the items below in conducting the piping work.

1) Items to be observed on installation work

- In order to equalize piping resistance for each unit, adapt the reverse return system.
- Mount a joint and a valve onto the water outlet/inlet of the unit to allow for maintenance, inspection and replacement work. Be sure to mount a strainer at the water inlet piping of the unit. (The strainer is required at the circulation water inlet to protect the heat source unit.)

* The installation example of the heat source unit is shown right.

- Be sure to provide an air relief opening on the water piping properly, and purge air after feeding water to the piping system.
- Condensate will generate at the low temperature part inside the heat source equipment. Connect drain piping to the drain piping connection located at the bottom of the heat source equipment to discharge it outside the equipment.
- At the center of the header of the heat exchanger water inlet inside the unit, a plug for water discharge is being provided.
  Use it for maintenance work or the like.
- Mount a backflow prevention valve and a flexible joint for vibration control onto the pump.
- Provide a sleeve to the penetrating parts of the wall to prevent the piping.
- Fasten the piping with metal fitting, arrange the piping not to expose to cutting or bending force, and pay sufficient care for possible vibration.
- Be careful not to erroneously judge the position of the inlet and outlet of water.
  (Lower position : Inlet, Upper position : Outlet)
- When connecting heat source unit water piping and water piping on site, apply liquid sealing material for water piping over the sealing tape before connection. (for Maximum water pressure above 1.0MPa)
- Wrap the sealing tape as follows.

a) Wrap the joint with sealing tape in the direction of the threads (clockwise), and do not let the tape run over the edge.

b) Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is pressed firmly against each thread.

c) Leave the 1.5th through 2nd farthest threads away from the pipe end unwrapped.

- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 150N·m.

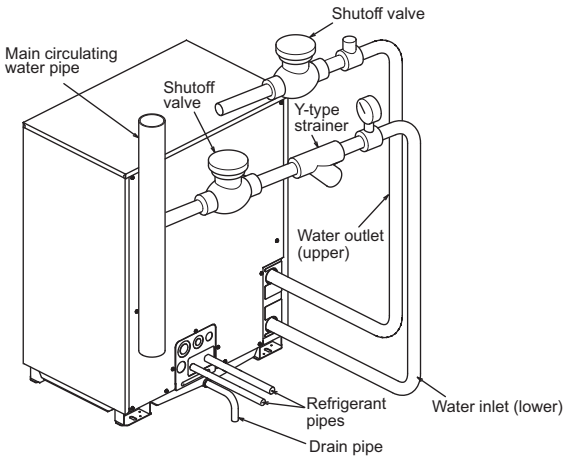
2) Thermal insulation work

Thermal insulation or anti sweating work is not required for the piping inside buildings in the case of the HYBRID CITY MULTI WR2 system if the operating temperature range of circulation water stays within the temperature near the normal (summer : 29.4°C[85°F], winter : 21.1°C[70°F]).

In case of the conditions below, however, thermal insulation is required.

- Use of well water for heat source water
- Outdoor piping portions
- Indoor piping portions where freezing may be caused in winter
- A place where vapor condensation may be generated on piping due to an increase in dry bulb temperature inside the ceiling caused by the entry of fresh outdoor air
- Drain piping portions

Installation example of heat source unit



3) Water treatment and water quality control

For the circulation water cooling tower of the HYBRID CITY MULTI WR2 system, employment of the closed type is recommended to keep water quality. However, in the case that an open type cooling tower is employed or the circulating water quality is inferior, scale will adhere onto the water heat exchanger leading to the decreased heat exchange capacity or the corrosion of the heat exchanger. Be sufficiently careful for water quality control and water treatment at the installation of the circulation water system

- Removal of impurities inside piping

  Be careful not to allow impurities such as welding fragment, remaining sealing material and rust from mixing into the piping during installation work.

- Water treatment

  The water quality standards have been established by the industry (Japan Refrigeration, Air Conditioning Industry Association, in case of Japan) for water treatment to be applied.

Items			Lower mid-range temperature water system		Tendency	
			Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])		7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity	(mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion	(mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion	(mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8)	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness	(mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness	(mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica	(mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron	(mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper	(mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion	(mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion	(mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine	(mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide	(mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index		–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

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In order to keep the water quality within such standards, you are kindly requested to conduct bleeding-off by overflow and periodical water quality tests, and use inhibitors to suppress condensation or corrosion. Since piping may be corroded by some kinds of inhibitor, consult an appropriate water treatment expert for proper water treatment.

4) Pump interlock

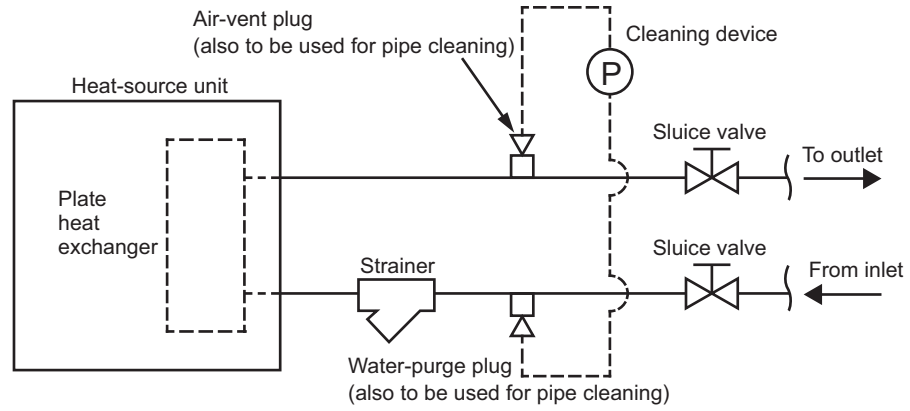
Operating the heat source unit without circulation water inside the water piping can cause a trouble. Be sure to provide interlocking for the unit operation and water circuit. Since the terminal block is being provided inside the unit, use it as required.

5) Handling plate heat exchangers for heat-source units

<Designing the piping system>

- Install a strainer (50 mesh or finer recommended) near the heat-source unit on the inlet side of the hot/cold water pipe and cooling-water pipe (hereafter referred to as water pipes) to prevent an infiltration of foreign materials of solid nature, such as dirt and sand, into the plate heat exchanger.
- Depending on the water quality, scale may form inside plate heat exchangers. Plate heat exchangers must be chemically cleaned regularly to remove scale formation. Install sluice valves on the water pipes, and provide ports for connecting a pipe between the sluice valves and the heat-source unit for chemical cleaning.
- On both the inlet and outlet sides of water pipes, provide a plug to remove trapped air and water (also to be used for cleaning heat-source units and for purging water before a period of nonuse in winter or at the end of an air conditioning season). Also, provide automatic air-vent valves where air is likely to be trapped (such as a pipe that runs vertically).
- In addition to installing the above-mentioned strainers, install a cleanable strainer near the pump pipe inlet.
- Keep the pipes properly insulated and take an appropriate measure against humidity to minimize heat loss and prevent freeze damage in severe cold climate.
- If the system is stopped during winter or at night in subfreezing temperatures, take appropriate measures to protect pipes from freezing (i.e., pipe purging and use of water-circulation pump or heater) and prevent resultant damage to the plate heat exchanger.

Example piping system configuration



<Test run>

- Before performing a test run, check that the piping system is properly installed, especially the strainers, air-vents, automatic water-supply valves, expansion tanks, and systems.
- After the pipe system is filled with water, first, operate the pump alone to check the system for trapped air and adjust the water flow rate to prevent the plate heat exchanger from freezing. Take into consideration the water pressure loss before and after each heat-source unit, and make sure the water flow rate falls within the design water flow rate range. Stop the test run and correct any problems found, if any.
- At the completion of a test run, check the strainer at the inlet pipe of the heat-source unit and clean it as necessary.

<Daily maintenance>

- Controlling the water quality
  Plate heat exchangers cannot be disassembled for cleaning and have no replaceable parts. Watch the water quality to prevent corrosion and scale formation. The quality of the water to be used for plate heat exchangers must meet the water quality guidelines JRA GL-02-1994 specified by Japan Refrigeration and Air conditioning Industry Association (JRAIA). (Refer to section 3) Water treatment and water quality control.)
- Controlling the circulation water flow rate
  Insufficient water rate will cause freeze damage to plate heat exchangers. Check for insufficient water flow caused by clogged strainer, trapped air in the system, or malfunction of the circulation water pump. Flow rate can also be checked by measuring the temperature or pressure difference between the inlet and outlet of plate heat exchangers.
  If the temperature or pressure difference goes outside of the specified range, stop the operation, remove the cause of the problem, and resume operation.
- What to do when the freeze protection trips
  If the freeze protection trips during operation, be sure to remove its cause before resuming operation. Tripped freeze protection indicates that the system is partially frozen, and resuming operation without removing the cause of the problem will result in freeze damage to plate heat exchangers and/or pipes as well as resultant refrigerant leaks and infiltration of water into the refrigerant circuit.

<Maintaining plate heat exchangers>

Plate heat exchangers must be maintained in a planned and periodical manner to prevent scale formation, which may cause performance loss or decrease water flow rate that result in freeze damage to the plate heat exchanger.

- Check the following items before the operating season.
  1. Check that the water quality meets the specified water quality.
  2. Clean the strainers.
  3. Check that the water flow rate is adequate.
  4. Check for proper operation (e.g., pressure, flow rate, inlet/outlet temperatures).

- Plate heat exchangers cannot be disassembled for cleaning. Clean them in the following way.
  1. Make sure that there is a pipe connection port on the water inlet pipe.
     Use formic acid, citric acid, oxalic acid, acetic acid, or phosphoric acid diluted to 5% to clean plate heat exchangers. Do not use highly corrosive acids, such as hydrochloric acid, sulfuric acid, or nitric acid.
  2. Make sure that valves are installed before the inlet connection port and after the outlet connection port.
  3. Connect a pipe for circulating cleaning solution to the inlet/outlet pipes of the plate heat exchanger, fill the plate heat exchanger with cleaning solution at a temperature between 50 and 60°C, and circulate the cleaning solution with a pump for 2 to 5 hours. The cleaning time will depend on the temperature of the cleaning solution and the degree of scale formation. Use the color of the cleaning solution as a guide to determine how long the system needs to be cleaned.
  4. When done, discharge the cleaning solution out of the plate heat exchanger, fill it with sodium hydrate (NaOH) or sodium bicarbonate ($NaHCO_3$) diluted with water to 1 to 2%, and let the solution be circulated for 15 to 20 minutes until the cleaning solution is neutralized.
  5. After neutralizing the cleaning solution, thoroughly rinse the plate heat exchanger with clean water.
  6. When using a commercially available cleaning solution, make sure to use a solution not corrosive to stainless steel or copper.
  7. Consult the cleaning solution manufacture for details.

- At the completion of cleaning, check the system for proper operation.

5-1. Power supply for Heat source unit

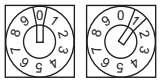
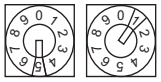
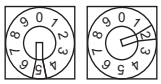
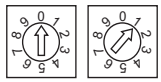
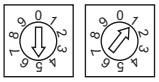
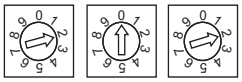
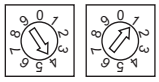
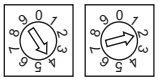
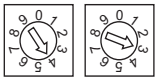
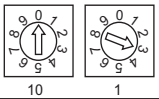
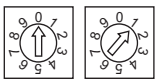
5-1-1. Electrical characteristics of Heat source unit at cooling mode

Symbols: MCA (Max Circuit Amps)
RLA (Rated Load Amps), SC (Starting Current)

PQRY-P-YLM	Unit combination	Heat source units				Compressor		RLA(A)	
		Hz	Volts	Voltage range	MCA(A)	Output (kW)	SC(A)	Cooling 380/400/415V	Heating 380/400/415V
PQRY-P200YLM	-	50/60	380 400 415	Max:456 Min:342	16.1	4.8	8	6.7/6.3/6.1	6.8/6.4/6.2
PQRY-P250YLM	-				16.1	6.2		9.1/8.7/8.4	9.1/8.6/8.3
PQRY-P300YLM	-				18.6	7.7		12.7/12.1/11.6	12.0/11.4/11.0
PQRY-P350YLM	-				23.1	9.5		16.8/16.0/15.4	14.9/14.2/13.7
PQRY-P400YLM	-				27.6	10.7		16.9/16.1/15.5	15.9/15.1/14.6
PQRY-P450YLM	-				32.9	11.6		20.3/19.3/18.6	18.7/17.8/17.1
PQRY-P500YLM	-				39.2	13.0		24.6/23.3/22.5	22.0/20.9/20.2

6-1. Address setting

6-1-1. Rule of setting address

Unit		Address setting	Example	Note
Indoor unit		01 ~ 50	 10 1	Use the most recent address within the same group of indoor units.
Heat source unit		51 ~ 99, 100 (Note1)	 10 1	The smallest address of indoor unit in same refrigerant system + 50 Assign sequential address numbers to the heat source units in one refrigerant circuit system. OC and OS are automatically detected. (Note 2) * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
HBC controller		52 ~ 99, 100	 10 1	The address of the smallest address of indoor unit connected to the HBC controller + 50 * Please reset one of them to an address between 51 and 99 when two addresses overlap. * The address automatically becomes "100" if it is set as "01~ 50"
Local remote controller	ME Remote controller (Main)	101 ~ 150	1 Fixed  10 1	The smallest address of indoor unit in the group + 100 * The place of "100" is fixed to "1"
	ME Remote controller (Sub)	151 ~ 199, 200	1 Fixed  10 1	The address of main remote controller + 50 * The address automatically becomes "200" if it is set as "00"
System controller	ON/OFF remote controller	201 ~ 250	 100 10 1	The smallest group No. to be managed + 200 * The smallest group No. to be managed is changeable.
	AE-C400E/EW-C50E AE-200E/AE-50E EW-50E AG-150A AT-50B	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* AT-50B cannot be set to "000".
	PAC-YG50ECA	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made on the initial screen of AG-150A.
	BAC-HD150	000, 201 ~ 250	0,2 0~5 0~9 100 10 1	* Settings are made with setting tool of BM ADAPTER.
PI, AI, DIDO	PAC-YG60MCA	01 ~ 50	 10 1	
	PAC-YG63MCA	01 ~ 50	 10 1	
	PAC-YG66DCA	01 ~ 50	 10 1	
LOSSNAY, OA processing unit		01 ~ 50	 10 1	After setting the addresses of all the indoor units, assign an arbitrary address.
PAC-IF01AHC		201 ~ 250	2 Fixed  10 1	

Note1: To set the address to "100", set it to "50"

Note2: Heat source units OC and OS in one refrigerant circuit system are automatically detected. OC and OS are ranked in descending order of capacity. If units are the same capacity, they are ranked in ascending order of their address.

7-1. R410A Piping material

Refrigerant pipe for HYBRID CITY MULTI shall be made of phosphorus deoxidized copper, and has two types.
A. Type-O: Soft copper pipe (annealed copper pipe), can be easily bent with human's hand.
B. Type-1/2H pipe: Hard copper pipe (Straight pipe), being stronger than Type-O pipe of the same radical thickness.

The maximum operation pressure of R410A air conditioner is 4.30 MPa [623psi]. The refrigerant piping should ensure the safety under the maximum operation pressure. MITSUBISHI ELECTRIC recommends pipe size as Table 1, or You shall follow the local industrial standard. Pipes of radical thickness 0.7mm or less shall not be used.

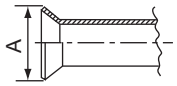
Table 1. Copper pipe size and radial thickness for R410A HYBRID CITY MULTI.

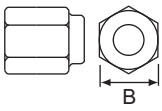
Size (mm)	Size (in.)	Radial thickness (mm)	Radial thickness (mil)	Pipe type
ø6.35	ø1/4"	0.8	[32]	Type-O
ø9.52	ø3/8"	0.8	[32]	Type-O
ø12.7	ø1/2"	0.8	[32]	Type-O
ø15.88	ø5/8"	1.0	[40]	Type-O
ø19.05	ø3/4"	1.2	[48]	Type-O
ø19.05	ø3/4"	1.0	[40]	Type-1/2H or H
ø22.2	ø7/8"	1.0	[40]	Type-1/2H or H
ø25.4	ø1"	1.0	[40]	Type-1/2H or H
ø28.58	ø1-1/8"	1.0	[40]	Type-1/2H or H
ø31.75	ø1-1/4"	1.1	[44]	Type-1/2H or H
ø34.93	ø1-3/8"	1.2	[48]	Type-1/2H or H
ø41.28	ø1-5/8"	1.4	[56]	Type-1/2H or H

* For pipe sized ø19.05 (3/4") for R410A air conditioner, choice of pipe type is up to you.
* The figures in the radial thickness column are based on the Japanese standards and provided only as a reference. Use pipes that meet the local standards.

Flare

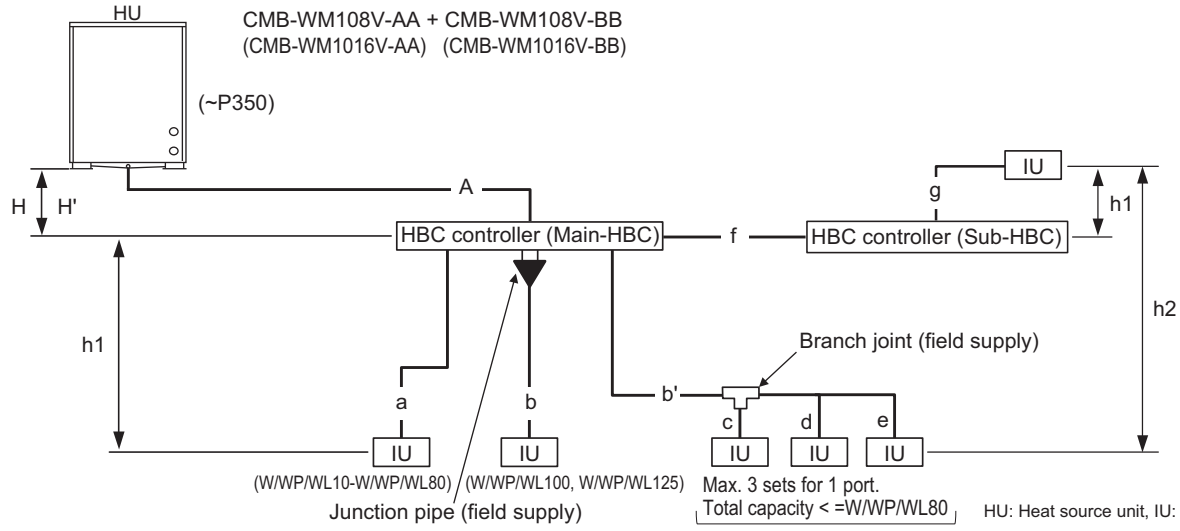
Due to the relative higher operation pressure of R410A compared to R22, the flare connection should follow dimensions mentioned below so as to achieve enough the air-tightness.

Flare pipe	Pipe size	A (For R410A) (mm[in.])
	ø6.35 [1/4"]	9.1
	ø9.52 [3/8"]	13.2
	ø12.70 [1/2"]	16.6
	ø15.88 [5/8"]	19.7
	ø19.05 [3/4"]	24.0

Flare nut	Pipe size	B (For R410A) (mm[in.])
	ø6.35 [1/4"]	17.0
	ø9.52 [3/8"]	22.0
	ø12.70 [1/2"]	26.0
	ø15.88 [5/8"]	29.0
	ø19.05 [3/4"]	36.0

7-2. Piping Design

7-2-1. Restrictions on pipe length



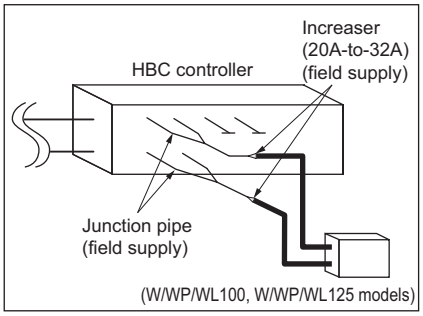
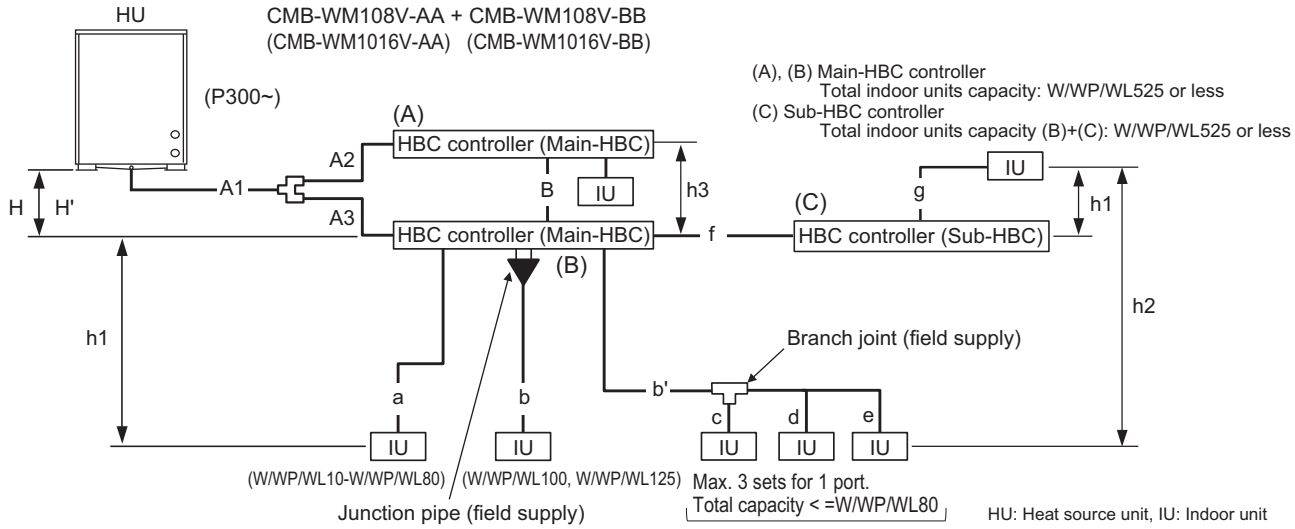


Fig. A

(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between heat source unit and HBC controller (refrigerant pipework)		A	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
Difference of elevation	Between HBC and heat source units	Heat source unit above HBC	H	50 or less
		Heat source unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of heat source unit capacity



(Unit: m)

	Item		Piping portion	Allowable value
Pipe Lengths	Between heat source unit and HBC controller (refrigerant pipework)		A1 + A2 + A3	110 or less
	Water pipework between indoor units and HBC controller		f + g	60 or less
	Between HBC controllers		B	40 or less
Difference of elevation	Between HBC and heat source units	Heat source unit above HBC	H	50 or less
		Heat source unit below HBC	H'	40 or less
	Between indoor units and HBC controller		h1	15(10) or less*1
	Between indoor units		h2	15(10) or less*1
	Between HBC controllers		h3	15(10) or less*1

*1. Values in ( ) are applied when indoor total capacity exceeds 130% of heat source unit capacity

1. Refrigerant and water pipe size

(1) Refrigerant pipe between heat source unit and HBC controller (Part A, A1, A2, and A3)

Use of one HBC controller

		HBC controller		
Unit model		Model name	High pressure side	Low pressure side
Heat source unit side	PQRY-P200	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø15.88 (Brazing)	ø19.05 (Brazing)
	PQRY-P250		ø19.05 (Brazing)	ø22.2 (Brazing)
	PQRY-P300		ø19.05 (Brazing)	ø22.2 (Brazing)
	PQRY-P350		ø22.2 (Brazing)	ø28.58 (Brazing)

Use of two HBC controllers

		HBC controller			
Unit model		Model name	Between heat source unit and twining pipe		Between twining pipe and HBC	
			High pressure side	Low pressure side	High pressure side	Low pressure side
Heat source unit side	PQRY-P300	(HBC controller) CMB-WM108V-AA CMB-WM1016V-AA *1	ø19.05 (Brazing)	ø22.2 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P350		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P400		ø22.2 (Brazing)	ø28.58 (Brazing)	ø15.88 (Brazing) for each HBC	ø19.05 (Brazing) for each HBC
	PQRY-P450		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC
	PQRY-P500		ø22.2 (Brazing)	ø28.58 (Brazing)	ø19.05 (Brazing) for each HBC	ø22.2 (Brazing) for each HBC

***1. PQRY-P400YLM model or larger requires a connection of two Main-HBC controllers in parallel.**

(2) Water pipe between HBC controller and indoor units (Sections a, b, c, d, e, and g)

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

(3) Water pipe between Main-HBC and Sub-HBC controller (Section f)

Total down-stream indoor unit capacity	Pipe size between Main-HBC and Sub-HBC controller
W/WP/WL10–100	I.D. ≥ 20.0 mm
W/WP/WL101–200	I.D. ≥ 25.8 mm
W/WP/WL201–300	I.D. ≥ 30.0 mm
W/WP/WL301–400	I.D. ≥ 33.3 mm
W/WP/WL401–500	I.D. ≥ 36.2 mm
W/WP/WL501–525	I.D. ≥ 36.8 mm

* The diameter of Main-HBC ports is O.D. 22.0 mm.
* The diameter of Sub-HBC ports is O.D. 28.0 mm.

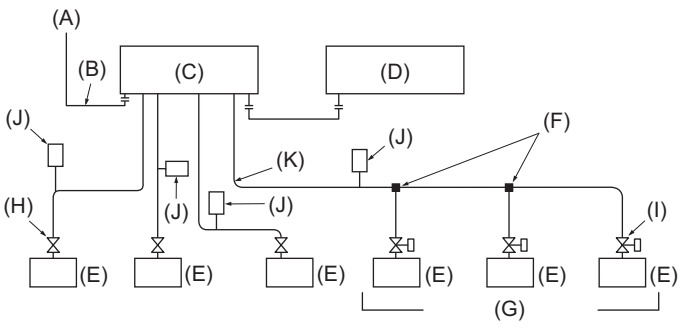
(4) Refrigerant pipe between HBC controller and HBC controller (Section B)

Unit: mm [inch]

ø15.88 [5/8"] (Brazed connection)

2. Connecting the HBC controller

(1) Size of the pipe that fits the standard HBC controller ports



(A) To heat source unit
(B) End connection (brazing)
(C) Main-HBC controller
(D) Sub-HBC controller
(E) Indoor unit
(F) Branch joint (field supply)
(G) Up to three units for 1 branch hole; total capacity: below 80 (but in same mode, cooling/heating)
(H) Shutoff valve (field supply)
(I) Pressure control valve (field supply)
(J) Auto air vent valve (Highest point on the water pipe for each branch) (field supply)
(K) Water pipework

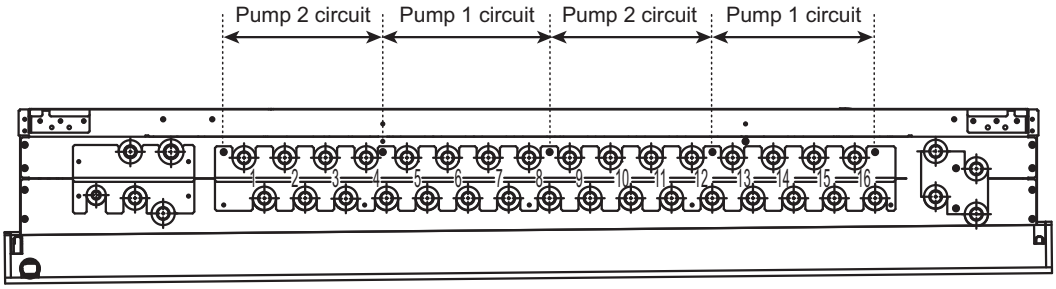


Fig. B

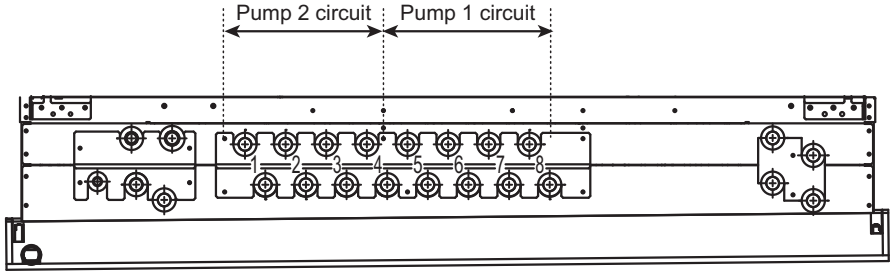


Fig. C

Note: 1

To connect multiple indoor units to a port

- Maximum total capacity of connected indoor units: W/WP/WL80
- Maximum number of connectable indoor units: 3 units
- Branch joints are field-supplied.
- All the indoor units that are connected to the same port must be in the same group and perform the Thermo-ON/OFF operation simultaneously.
- The room temperatures of all the indoor units in the group need to be monitored via the connected remote controller.
- When connecting a W/WP/WL71 through 125 model indoor unit to an HBC controller, the pipes that connect the unit to the same set of HBC controller ports cannot be branched out to connect additional units.
- Selection of water piping
  Select the size according to the total capacity of indoor units to be installed downstream.
- Do not connect multiple indoor units to the same port when operating each of them in different modes (cooling, heating, stop, and thermo-OFF). The indoor units connected to the same port must be set to operate in the same mode. Set them to the same group to make them run/stop in the same mode all together. Alternatively, enable the thermo setting on the remote controller, or set the common thermostat (optional) to run/stop the units in the same mode based on the representative temperature.
- When multiple indoor units are connected to a single port, install a pressure control valve in the pipe to equalize the pressure of all indoor units.
- Pressure control valves are required for the “WP-type” and “WL-type without the optional valve kit” indoor units only, and not for the “W-type” and “WL-type with the optional valve kit” indoor units.

Note: 2

Connecting W/WP/WL100 or 125 indoor units to an HBC controller

- When connecting W/WP/WL100 or 125 indoor units to an HBC controller, connect each unit to two sets of two ports on the HBC controller, using two junction pipes (Y-joints). (See Fig. A.)
- Connect an increaser (20A-to-32A) to the merged side of each junction pipe. (See Fig. A.)
- When the junction pipes are connected to 16 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5," "8 and 9," or "12 and 13" at the same time. (See Fig. B.)
- When the junction pipes are connected to 8 HBC ports, the branched sides of the junction pipes cannot be connected to the ports "4 and 5" at the same time. (See Fig. C.)
- When a W/WP/WL100 or a 125 model indoor unit is connected to an HBC controller, the pipes that connect the unit to the same set of HBC ports cannot be branched out to connect additional units.

Note: 3

Maximum capacity of indoor units connectable to an HBC controller for obtaining the rated performance

- An HBC controller has two pumps. Each pump can accommodate the capacity equivalent to W/WP/WL175 indoor units.
- When connecting the pipe to 16 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4 and 9 through 12" or "5 through 8 and 13 through 16" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. B.)
  When connecting the pipe to 8 HBC ports, make sure that the total capacity of the indoor units connected to ports "1 through 4" or "5 through 8" will not exceed W/WP/WL175 and will be equal as much as possible. (See Fig. C.)
  If the total capacity exceeds W/WP/WL175, the performance will be degraded.

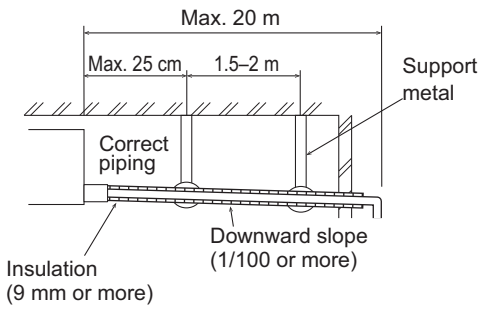
7-2-2. Drain piping work

1. Drain piping work

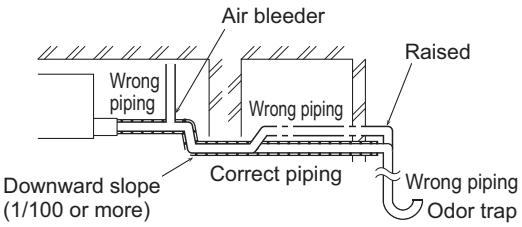
For Main-HBC and Sub-HBC controller

- Ensure that the drain piping is sloped downward (sloped gradient of more than 1/100) toward the discharge side. If it is impossible to take any downward pitch, use an optionally available drain pump to obtain a downward pitch of more than 1/100.
- Ensure that any horizontal drain piping sections that are longer than 20 m are supported with metal brackets to prevent it from bending, warping, or vibrating.
- Do not use any odor trap around the discharge port.
- As shown in (3), install a collecting pipe about 10 cm below the drain ports and give it a downward pitch of more than 1/100. This collecting pipe should be of VP-30.
- Set the end of drain piping in a place without any risk of odor generation.
- Do not put the end of the drain piping into any drain where ionic gases are generated.
- Drain piping may be installed in any direction. However, please be sure to observe the above instructions.

(1)

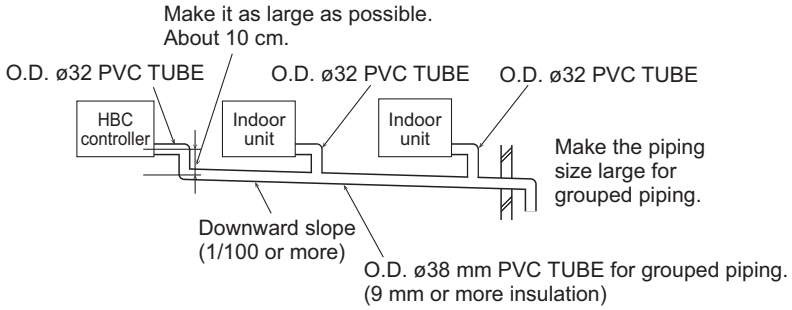


(2)



(3)

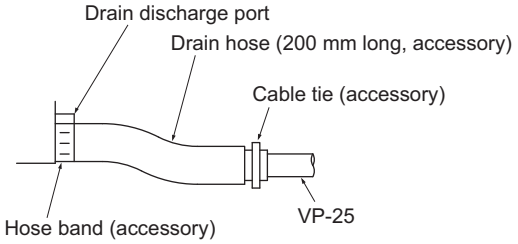
[Grouped piping]



For Main-HBC controller

- Connect the supplied drain hose to the discharge port on the unit. Use hardvinyl chloride pipes VP-25 (ø32). Tighten the supplied drain hose onto the discharge port using the supplied hose band. (For this, do not use any adhesive because the drain hose will need to be removed for servicing at a later date.)

(4)

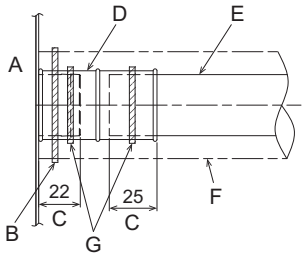


For Sub-HBC controller

♦For Sub-HBC controller, connect the drain pipe by following the steps described below.

1. Insert the drain hose (accessory) into the drain port (insertion margin: 32 mm).
   (The drain hose must not be bent more than 45° to prevent the hose from breaking or clogging.)
   (Attach the hose with glue, and fix it with the band (small, accessory).)
2. Attach the drain pipe (O.D. ø32 PVC TUBE PV-25, field supply).
   (Attach the pipe with glue, and fix it with the band (small, accessory).)
3. Perform insulation work on the drain pipe (O.D. ø32 PVC TUBE PV-25) and on the socket (including elbow).
4. Check the drainage.
5. Attach the insulating material, and fix it with the band (large, accessory) to insulate the drain port.

(5)



A: Sub-HBC controller
B: Tie band (accessory)
C: Insertion margin
D: Drain hose (accessory)
E: Drain pipe (O.D. ø32 PVC TUBE, field supply)
F: Insulating material (field supply)
G: Tie band (accessory)

2. Discharge test

After completing drain piping work, open the HBC controller panel, and test drain discharge using a small amount of water. Also, check to see that there is no water leakage from the connections.

3. Insulating drain pipes

Provide sufficient insulation to the drain pipes just as for refrigerant pipes.

⚠CAUTION

Be sure to provide drain piping with heat insulation in order to prevent excess condensation. Without drain piping, water may leak from the unit causing damage to your property.

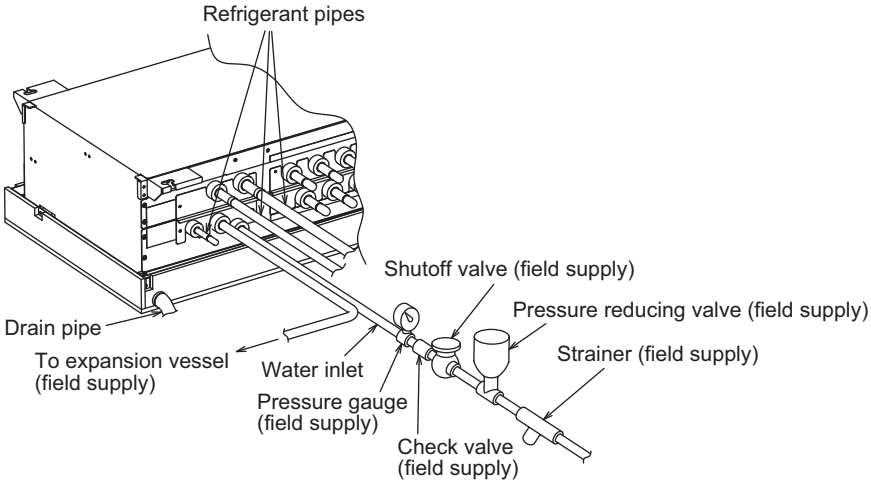
7-2-3. Connecting water pipe work

Please observe the following precautions during installation.

1. Important notes on water pipework installation

- The design pressure of the HBC controller water system is 0.6MPa.
- Use water pipe-work with a design pressure of at least 1.0MPa.
- When performing a water leak check, please do not allow the water pressure to go above 0.3MPa.
- Please connect the water pipework of each indoor unit to the correct port on the HBC controller. Failure to do so will result in incorrect running.
- Please list the indoor units on the naming plate in the HBC controller with addresses and end connection numbers.
- If the number of indoor units are less than the number of ports on the HBC controller, the unused ports must be capped. Without a cap, water will leak.
- Use the reverse-return method to insure proper pipe resistance to each unit.
- Provide some joints and valves around inlet/outlet of each unit for easy maintenance, checkup, and replacement.
- Install a suitable air vent on the water pipe. After flowing water through the pipe, vent any excess air.
- Secure the pipes with metal fittings, positioning them in locations to protect pipes against breakage and bending.
- Do not confuse the water intake and outlet piping. (Error code 5102 will appear on the remote controller if a test run is performed with the pipe-work installed incorrectly (inlet connected to outlet and vice versa).)
- This unit doesn't include a heater to prevent freezing within the pipe work. If the system is stopped for an extended period during low ambient conditions, drain the water out.
- The unused knockout holes should be closed and the refrigerant pipes, water pipes, power source and transmission wires access holes should be filled with putty.
- Install water pipe so that the water flow rate will be maintained.
- Wrap sealing tape as follows.
  1. Wrap the joint with sealing tape following the direction of the threads (clockwise), do not wrap the tape over the edge.
  2. Overlap the sealing tape by two-thirds to three-fourths of its width on each turn. Press the tape with your fingers so that it is tight against each thread.
  3. Do not wrap the 1.5th through 2nd farthest threads away from the pipe end.
- Hold the pipe on the unit side in place with a spanner when installing the pipes or strainer. Tighten screws to a torque of 40 N·m.
- If there is a risk of freezing, take precautions to prevent this happening.
- When connecting the HBC controller water piping and on site water piping, apply liquid sealing material for water piping over the sealing tape before connection.
- Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work, use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
- Remove burr after cutting the piping to prevent entering the pipe connection. Prevent the particles that are generated during pipe cutting or cut edge treatment from entering the pipes. Check that there is no crack at the edge of the piping.
- Be sure to braze the water pipes after covering a wet cloth to the insulation pipes of the units in order to prevent them from burning and shrinking by heat. (There are some plastic parts in HBC controller.)
- Install the unit so that external force is not applied to the water pipes.
- After filling the pipes with water, immediately perform debris removal operation and air vent operation.

Example of heat source unit installation (using left piping)



HBC controller sample installation (*1)

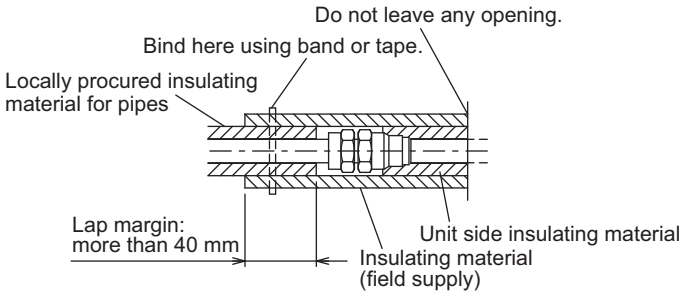
*1. Connect the pipes to the water pipes according to the local regulations.

- The HBC controller system must be serviced at least once a year.

PQRY-P-YLM-A1

2. Water pipe insulation

1. Connect the water pipes of each indoor unit to the same (correct) end connection numbers as indicated on the indoor unit connection section of each HBC controller. If connected to wrong end connection numbers, there will be no normal operation.
2. List indoor unit model names in the name plate on the HBC controller control box (for identification purposes), and HBC controller end connection numbers and address numbers in the name plate on the indoor unit side.
   Seal unused end connections using cover caps (field supply, dezincification resistant brass (DZR) or bronze only). Not replacing the rubber end caps will lead to water leakage.
3. Be sure to add insulation work to water piping by covering water pipework separately with enough thickness heat-resistant polyethylene, so that no gap is observed in the joint between indoor unit and insulating material, and insulating materials themselves. When insulation work is insufficient, there is a possibility of condensation, etc. Pay special attention to insulation work in the ceiling plenum.



- Insulation materials for the pipes to be added on site must meet the following specifications:

HBC – indoor unit	20 mm or more
Main-HBC – Sub-HBC	20 mm or more

- This specification is based on copper for water piping. When using plastic pipework, choose a thickness based on the plastic pipe performance.
- Installation of pipes in a high-temperature high-humidity environment, such as the top floor of a building, may require the use of insulation materials thicker than the ones specified in the chart above.
- When certain specifications presented by the client must be met, ensure that they also meet the specifications on the chart above.

4. Expansion vessel

- Install an expansion tank to accommodate expanded water.

Expansion vessel selection criteria:

Water containment volume of the HBC controller

- Refer to the relevant indoor unit specifications for information on the water volume.

(Unit: L)

Unit model	Water volume
CMB-WM108V-AA	10
CMB-WM1016V-AA	13
CMB-WM108V-BB	5
CMB-WM1016V-BB	9

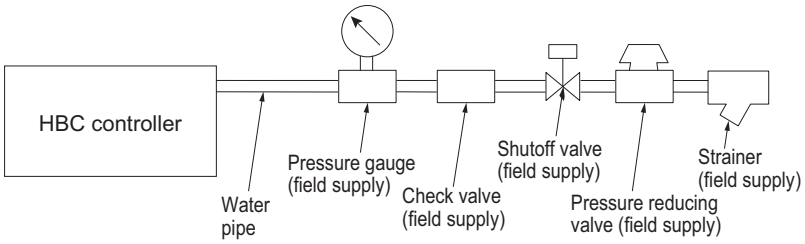
- The maximum water temperature is 60°C.
- The minimum water temperature is 5°C.
- The circuit protection valve set pressure is 370-490 kPa.
- The circulation pump head pressure is 0.24 MPa.

5. Leakproof the water pipework, valves and drain pipework. Leakproof all the way to, and include pipe ends so that condensation cannot enter the insulated pipework.
6. Apply caulking around the ends of the insulation to prevent condensation getting between the pipework and insulation.
7. Add a drain valve so that the unit and pipework can be drained.
8. Ensure there are no gaps in the pipework insulation. Insulate the pipework right up to the unit.
9. Ensure that the gradient of the drain pan pipework is such that discharge can only flow out.
10. HBC controller water pipe connection sizes and pipe sizes.

Total down-stream indoor unit capacity	Connection size		Pipe size	
	Water inlet	Water outlet	Water out	Water return
W/WP/WL10–50	O.D. 22 mm	O.D. 22 mm	I.D. ≥ 20 mm	I.D. ≥ 20 mm
W/WP/WL51–125			I.D. ≥ 30 mm	I.D. ≥ 30 mm

* For other indoor units, refer to the indoor unit's DATA BOOK.
* The pipe diameter depends on the capacity of indoor units.
Refer to the indoor unit's DATA BOOK for details.

11. Please refer to the figure below when connecting the water supply.



12. Use formula 0.1 ≤ 0.01 + 0.01 × A ≤ 0.16 for the supply pressure range to be used.
(A: Height difference (m) between the HBC controller and the highest indoor unit)
If the supply pressure is greater than 0.16 MPa, use a pressure reducing valve to keep the pressure within the range.
If the head pressure is unknown, set it to 0.16 MPa.
13. Install a shut off valve and strainer in a place that is easy to operate and makes maintenance work easy.
14. Apply insulation to the indoor unit pipework, strainer, shut off valve, and pressure reducing valve.
15. Please do not use a corrosion inhibitor in the water system.
16. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze (Propylene Glycol only) to the circulating water. For the brine selection, refer to 3-4. Correction by antifreeze solution concentration.

3. Water treatment and quality control

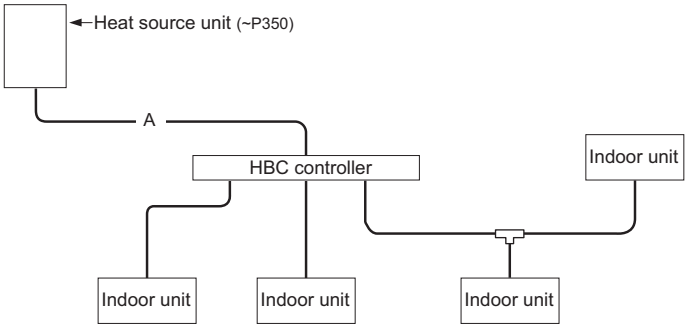
To preserve water quality, use the closed type of water circuit. When the circulating water quality is poor, the water heat exchanger can develop scale, leading to a reduction in heat-exchange power and possible corrosion. Pay careful attention to water processing and water quality control when installing the water circulation system.

♦Removing of foreign objects or impurities within the pipes.
During installation, make sure that foreign objects, such as welding fragments, sealant particles, or rust, do not enter the pipes.

♦Water Quality Processing
Depending on the quality of the cold-temperature water used in the air-conditioner, the copper piping of the heat exchanger may corrode. Regular water quality processing is recommended. If a water supply tank is installed, keep air contact to a minimum, and keep the level of dissolved oxygen in the water no higher than 1 mg/ℓ.

7-3. Refrigerant charging calculation

Example

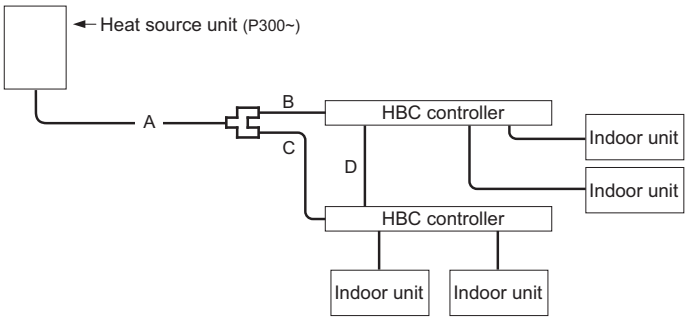


■ Sample calculation

Indoor 1: 50 A: ø19.05 42 m
2: 50
3: 50
4: 40
Heat source P250

The total length of each liquid line is as follows:
ø19.05: A = 42 m, α1 = 3.0

Therefore,
Additional refrigerant charge
= 42 × 0.14 + 3.0
= 8.88 kg
≒ 8.9 kg
* All pipe work except A is water pipe work.



Indoor 1: 50 A:ø22.20 18 m
2: 50 B:ø15.88 5 m
3: 50 C:ø15.88 10 m
4: 50 D:ø15.88 8 m
Heat source P400

The total length of each liquid line is as follows:
ø22.20: A = 18 m, ø15.88: B + C = 15 m, α1 = 3.0 × 2
Pipe between HBC controller and HBC controller: D = 8 m

Therefore,
Additional refrigerant charge
= 18 × 0.23 + (5 + 10) × 0.11 + 3.0 × 2 + 8 × 0.2
= 13.39 kg
≒ 13.4 kg
* All pipe work except A, B, C, D is water pipe work.

<Amount of refrigerant to be added>

The amount of refrigerant that is shown in the table below is factory-charged to the heat source units.
The amount necessary for extended pipe (field piping) is not included and must be added on site.

Heat source unit model	Amount of pre-charged refrigerant in the heat source unit (kg)	Heat source unit model	Amount of pre-charged refrigerant in the heat source unit (kg)
P200YLM	5.0	P400YLM	6.0
P250YLM	5.0	P450YLM	6.0
P300YLM	5.0	P500YLM	6.0
P350YLM	6.0		

■ Calculation formula

The amount of refrigerant to be added depends on the size and the length of field piping. (unit in m [ft])

1) When the distance between HBC controller and heat source unit is longer than 30.5m:
Amount of added refrigerant (kg) = $(0.21 \times L_1) + (0.14 \times L_2) + (0.1 \times L_3) + \alpha_1 (+ 0.18 \times L_4)$ *1
2) When the distance between HBC controller and heat source unit is 30.5 m or shorter:
Amount of added refrigerant (kg) = $(0.23 \times L_1) + (0.16 \times L_2) + (0.11 \times L_3) + \alpha_1 (+ 0.2 \times L_4)$ *1

L_1 : Length of ø22.20 [7/8"] high pressure pipe (m)
L_2 : Length of ø19.05 [3/4"] high pressure pipe (m)
L_3 : Length of ø15.88 [5/8"] high pressure pipe (m)
L_4 : Length of ø15.88 [5/8"] pipe between HBC controller and HBC controller (m)
α_1: Refer to the table below.
*1 Only when two main HBC controllers are used

Use of one HBC controller

Heat source unit index	Diameter of high-pressure pipe
P200	ø15.88
P250	ø19.05
P300	ø19.05
P350	ø19.05

Amount for the HBC controller
α1 (kg)
3.0

Round up the calculation result to the nearest 0.1 kg. (Example: 18.04 kg to 18.1 kg)

Use of two HBC controllers

Heat source unit index	Diameter of high-pressure pipe
P300	ø19.05
P350	ø19.05
P400	ø22.20
P450	ø22.20
P500	ø22.20

Amount for the HBC controller
α1 (kg)
3.0

× 2

Refrigerant pipe between main HBC controller and main HBC controller
ø15.88 [5/8]

* When connecting PEFY-W50/63/71/80/100/125VMA2-A units, add 0.25 kg of refrigerant for each of these units.

7-4. Water piping

7-4-1. Precautions for water piping

Consider the following when installing a water piping system.

1. Design pressure of the water piping
   Use a water pipe that is strong enough to withstand the design pressure (1.0 MPa).
2. Water pipe type
   Use of plastic pipe is recommended.
   When using copper pipes, be sure to braze the pipes under a nitrogen purge. (Oxidation during may shorten the life of the pump.)
3. Expansion vessel
   Install an expansion vessel to accommodate expanded water.
4. Drain piping
   Install the drain pipe with a downward inclination of between 1/100 and 1/200. To prevent drain water from freezing in winter, install the drain pipe as steep an angle as practically possible and minimize the straight line. For cold climate installation, take an appropriate measure (e.g., drain heater) to prevent the drain water from freezing.
5. Insulation
   Cover the water pipe with insulating materials with the specified thickness or more to prevent thermal loss or condensation from collecting.
6. Air vent valve
   Install air vent valves to the highest places where air can accumulate.
7. Maintenance valve
   It is recommended to install valves on the inlet/outlet for each HBC controller branch for maintenance.
8. Water pressure gauge
   Install a water pressure gauge to check the charged pressure.

7-4-2. Notes on corrosion

1. Water quality
   It is important to check the water quality beforehand. See table below (Circulating water/Makeup Water Quality Standards).

Items		Lower mid-range temperature water system		Tendency	
		Recirculating water [20<T<60°C] [68<T<140°F]	Make-up water	Corrosive	Scale-forming
Standard items	pH (25°C[77°F])	7.0 ~ 8.0	7.0 ~ 8.0	○	○
	Electric conductivity (mS/m) (25°C[77°F]) (μS/cm) (25°C[77°F])	30 or less [300 or less]	30 or less [300 or less]	○	○
	Chloride ion (mg Cl^-/ ℓ)	50 or less	50 or less	○	
	Sulfate ion (mg SO_4^{2-}/ ℓ)	50 or less	50 or less	○	
	Acid consumption (pH4.8) (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Total hardness (mg $CaCO_3$/ ℓ)	70 or less	70 or less		○
	Calcium hardness (mg $CaCO_3$/ ℓ)	50 or less	50 or less		○
	Ionic silica (mg SiO_2/ ℓ)	30 or less	30 or less		○
Reference items	Iron (mg Fe/ ℓ)	1.0 or less	0.3 or less	○	○
	Copper (mg Cu/ ℓ)	1.0 or less	0.1 or less	○	
	Sulfide ion (mg S^{2-}/ ℓ)	not to be detected	not to be detected	○	
	Ammonium ion (mg NH_4^+/ ℓ)	0.3 or less	0.1 or less	○	
	Residual chlorine (mg Cl/ ℓ)	0.25 or less	0.3 or less	○	
	Free carbon dioxide (mg CO_2/ ℓ)	0.4 or less	4.0 or less	○	
	Ryzner stability index	–	–	○	○

Reference : Guideline of Water Quality for Refrigeration and Air Conditioning Equipment. (JRA GL02E-1994)

2. Debris in the water
   Sand, pebbles, suspended solids, and corrosion products in water can damage the metal pipe and heat exchanger on the HBC controller and may cause corrosion. When installing, prevent debris from entering the water. If there is debris in the water, perform debris removal operation after test run by cleaning the strainers inside the HBC controller.
3. Connecting pipes made of different materials
   Connecting pipes used for HBC controller and indoor unit are copper alloy pipes. If steel pipes are connected to the pipes, the contact surface will corrode. Do not use steel pipes to avoid corrosion.
4. Residual air
   Residual air in the pipe results in water pump malfunction, noise, or water pipe corrosion in the water circuit. Ensure air is purged before use.

7-5. Compatibility

<Horizontal type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Compatible
	WP type	WM-V-BB type	–	–	Compatible
	WP type	WM-V-AB type	–	–	Compatible
	WP type	WP type	–	–	Compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Compatible
	WP type	–	WM-V-AA type	–	Compatible
	WP type	–	WP type	–	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Compatible
	WM-V-AA type	WP type	WM-V-AA type		Compatible
	WM-V-AA type	WP type	WP type		Compatible
	WP type	WM-V-BB type	WM-V-AA type		Compatible
	WP type	WM-V-BB type	WP type		Compatible
	WP type	WM-V-AB type	WM-V-AA type		Compatible
	WP type	WM-V-AB type	WP type		Compatible
	WP type	WP type	WM-V-AA type		Compatible
	WP type	WP type	WP type		Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Compatible
	WM-V-AA type	–	WP type	WP type	Compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Compatible
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	WP type	–	WM-V-AA type	WP type	Compatible
	WP type	–	WP type	WM-V-BB type	Compatible
	WP type	–	WP type	WM-V-AB type	Compatible
	WP type	–	WP type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
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	WP type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WP type	WP type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WP type	WP type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WP type	WM-V-AA type	WP type	Compatible
	WP type	WP type	WP type	WM-V-BB type	Compatible
	WP type	WP type	WP type	WM-V-AB type	Compatible
	WP type	WP type	WP type	WP type	Compatible

<Vertical type Main HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY(E)P-YNW PQRY-P-YLM	WM-F-AA type	–	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	–	–	Not compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-BB type	Not compatible
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	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB

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Model				CMB-WM108V-AA				
Number of branch				8				
Power source				1-phase 220-230-240 V				
				50 Hz			60 Hz	
Power input	Cooling		kW	0.45-0.46-0.47			0.45-0.46-0.47	
(220-230-240)	Heating		kW	0.45-0.46-0.47			0.45-0.46-0.47	
Current input	Cooling		A	2.89-2.83-2.79			2.89-2.83-2.79	
(220-230-240)	Heating		A	2.89-2.83-2.79			2.89-2.83-2.79	
Sound pressure level (measured in anechoic room) *21			dB <A>	41				
Applicable temperature range of installation site *22			°C (D.B.)	0 to 32				
External finish				Galvanized steel plate (Drain pan: Pre-coated galvanized sheets + powder coating)				
Connectable outdoor/heat source unit model				PURY- (E)P200~500YNW-A/A1/A2 (-BS) PURY- (E)M200~500YNW-A/A1 (-BS) PURY- (E)P200~500YLM-A1 (-BS),PQRY-P200~500YLM-A1/A2				
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL81.)				
External dimension H × W × D			mm	300 x 1,520 x 630				
			in.	11-13/16 x 59-7/8 x 24-13/16				
Refrigerant *23 piping diameter	To outdoor/heat source unit			Connectable outdoor/heat source unit capacity				
				P200/P400/M200/M400	P450/M250/M300/M450/M500	M350	P250/P300/P500	P350
	High press. Pipe		mm (in.) O.D.	15.88 (5/8) Brazed	15.88 (5/8) Brazed	15.88 (5/8) Brazed	19.05 (3/4) Brazed	19.05 (3/4) Brazed
	Low press. Pipe		mm (in.) O.D.	19.05 (3/4) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed
	To Main-HBC controller		mm (in.) O.D.	15.88 (5/8) Brazed				
Water piping diameter								
Connection size	To Sub-HBC controller	Inlet/Outlet	mm O.D.	22				
	To Indoor unit	Inlet/Outlet	mm O.D.	22				
Field pipe size	To Sub-HBC controller	Total down-steam indoor unit capacity		W/WP/WL 10-100	W/WP/WL 101-200	W/WP/WL 201-300	W/WP/WL 301-400	W/WP/WL 401-500	W/WP/WL 501-525
		Inlet/Outlet	mm I.D. (Min)	20.0	25.8	30.0	33.3	36.2	36.8
	To Indoor unit	Total down-steam indoor unit capacity		W/WP/WL10-50			W/WP/WL51-125		
		Inlet/Outlet	mm I.D. (Min)	20			30		
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)				
Net weight			kg (lbs)	86 (190) [96 (212) with water]				
Standard attachment	Document			-				
	Accessories			Drain Connection pipe (with flexible hose and insulation), Tie band, Hose band, Wrench				
Optional parts				-				

Notes:
1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for R410A or R32 refrigerant.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the HBC controller at least 5 m away from any indoor units.)
4. Please install the HBC controller in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please install a pressure reducing valve and a strainer on the water supply to the HBC controller.
10. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
11. This unit is not designed for outside installations.
12. Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.
13. Please do not use ground water and well water.
14. The unit cannot be used when the outdoor temperature is outside the guaranteed operation range. If the unit is used in such condition, the unit may not go into the Thermo-ON mode. Guaranteed operation range: -5 to 52°C in cooling mode, -20 to 15.5°C in heating mode.
15. This product is not designed for preservation of food, animals, plants, precision equipment, or art objects. To prevent quality loss, do not use the product for purposes other than what it is designed for.
16. The ambient relative humidity of the HBC controller needs to be kept below 80%.
17. Sound pressure level differs depending on the connected outdoor/heat source unit capacity or operation condition.
18. The sound pressure level values were obtained in an anechoic room. Actual sound pressure level is usually greater than that measured in anechoic room due to ambient noise and deflection sound.
19. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
20. R32 is flammable, and certain restrictions apply to the installation of units. When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed. For detail, refer to the section in the DATA BOOK on installation restrictions.
21. The sound pressure level measured by the conventional method in JIS for reference purpose.
22. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).
23. For the refrigerant pipe size, refer to Installation Manual of outdoor units/heat source units.

Model				CMB-WM1016V-AA					
Number of branch				16					
Power source				1-phase 220-230-240 V					
				50 Hz			60 Hz		
Power input	Cooling		kW	0.45-0.46-0.47			0.45-0.46-0.47		
(220-230-240)	Heating		kW	0.45-0.46-0.47			0.45-0.46-0.47		
Current input	Cooling		A	2.89-2.83-2.79			2.89-2.83-2.79		
(220-230-240)	Heating		A	2.89-2.83-2.79			2.89-2.83-2.79		
Sound pressure level (measured in anechoic room) *21			dB <A>	41					
Applicable temperature range of installation site *22			°C (D.B.)	0 to 32					
External finish				Galvanized steel plate (Drain pan: Pre-coated galvanized sheets + powder coating)					
Connectable outdoor/heat source unit model				PURY- (E)P200~500YNW-A/A1/A2 (-BS) PURY- (E)M200~500YNW-A/A1 (-BS) PURY- (E)P200~500YLM-A1 (-BS),PQRY-P200~500YLM-A1/A2					
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL81.)					
External dimension H × W × D			mm	300 x 1,800 x 630					
			in.	11-13/16 x 70-7/8 x 24-13/16					
Refrigerant *23 piping diameter	To outdoor/heat source unit			Connectable outdoor/heat source unit capacity					
				P200/P400/M200/M400	P450/M250/M300/M450/M500	M350	P250/P300/P500	P350	
	High press. Pipe		mm (in.) O.D.	15.88 (5/8) Brazed	15.88 (5/8) Brazed	15.88 (5/8) Brazed	19.05 (3/4) Brazed	19.05 (3/4) Brazed	
	Low press. Pipe		mm (in.) O.D.	19.05 (3/4) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed	
	To Main-HBC controller		mm (in.) O.D.	15.88 (5/8) Brazed					
Water piping diameter									
Connection size	To Sub-HBC controller	Inlet/Outlet	mm O.D.	22					
	To Indoor unit	Inlet/Outlet	mm O.D.	22					
Field pipe size	To Sub-HBC controller	Total down-steam indoor unit capacity		W/WP/WL 10-100	W/WP/WL 101-200	W/WP/WL 201-300	W/WP/WL 301-400	W/WP/WL 401-500	W/WP/WL 501-525
		Inlet/Outlet	mm I.D. (Min)	20.0	25.8	30.0	33.3	36.2	36.8
	To Indoor unit	Total down-steam indoor unit capacity		W/WP/WL10-50			W/WP/WL51-125		
		Inlet/Outlet	mm I.D. (Min)	20			30		
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)					
Net weight			kg (lbs)	98 (217) [111 (245) with water]					
Standard attachment	Document			-					
	Accessories			Drain Connection pipe (with flexible hose and insulation), Tie band, Hose band, Wrench					
Optional parts				-					

Notes:

1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for R410A or R32 refrigerant.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the HBC controller at least 5 m away from any indoor units.)
4. Please install the HBC controller in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please install a pressure reducing valve and a strainer on the water supply to the HBC controller.
10. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
11. This unit is not designed for outside installations.
12. Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.
13. Please do not use ground water and well water.
14. The unit cannot be used when the outdoor temperature is outside the guaranteed operation range. If the unit is used in such condition, the unit may not go into the Thermo-ON mode. Guaranteed operation range: -5 to 52°C in cooling mode, -20 to 15.5°C in heating mode.
15. This product is not designed for preservation of food, animals, plants, precision equipment, or art objects. To prevent quality loss, do not use the product for purposes other than what it is designed for.
16. The ambient relative humidity of the HBC controller needs to be kept below 80%.
17. Sound pressure level differs depending on the connected outdoor/heat source unit capacity or operation condition.
18. The sound pressure level values were obtained in an anechoic room. Actual sound pressure level is usually greater than that measured in anechoic room due to ambient noise and deflection sound.
19. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
20. R32 is flammable, and certain restrictions apply to the installation of units. When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed. For detail, refer to the section in the DATA BOOK on installation restrictions.
21. The sound pressure level measured by the conventional method in JIS for reference purpose.
22. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).
23. For the refrigerant pipe size, refer to Installation Manual of outdoor units/heat source units.

Model				CMB-WM350F-AA	
Number of branch				6	
Power source				1-phase 220-230-240 V	
				50 Hz	60 Hz
Power input	Cooling		kW	1.50-1.50-1.50	1.50-1.50-1.50
(220-230-240)	Heating		kW	1.50-1.50-1.50	1.50-1.50-1.50
Current input	Cooling		A	6.82-6.52-6.25	6.82-6.52-6.25
(220-230-240)	Heating		A	6.82-6.52-6.25	6.82-6.52-6.25
Sound pressure level (measured in anechoic room)			dB <A>	54	
Applicable temperature range of installation site			°C (D.B.)	0~40	
External finish				Galvanized steel plate	
Connectable outdoor/heat source unit capacity				PURY-M200~350YNW-A1 (-BS)/PURY-EM200~350YNW-A1 (-BS)	
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL80.)	
External dimension H x W x D			mm	1,500 x 800 x 500	
			in.	59-1/16 x 31-1/2 x 19-11/16	
Refrigerant piping diameter	To outdoor/heat source unit			Connectable outdoor/heat source unit capacity	
				M200	M250/M300	M350
	High press. Pipe		mm (in.) O.D.	15.88 (5/8) Brazed	15.88 (5/8) Brazed	15.88 (5/8) Brazed
	Low press. Pipe		mm (in.) O.D.	19.05 (3/4) Brazed	22.2 (7/8) Brazed	28.58 (1-1/8) Brazed
Water piping diameter					
Connection size	To Sub-HBC	Inlet/Outlet	mm O.D.	42	
	To Indoor unit	Inlet/Outlet	mm O.D.	22	
Field pipe size		Inlet/Outlet	mm I.D. (Min)	Total down-stream Indoor unit capacity	Piping length from Main-HBC to farthest Indoor unit		
					Max 20m	Max 40m	Max 60m
				W/WP/WL10	12	12	12
				W/WP/WL11-15	12	12	15.5
				W/WP/WL16-25	15.5	15.5	15.5
				W/WP/WL26-32	15.5	19.9	19.9
				W/WP/WL33-50	19.9	19.9	19.9
				W/WP/WL51-63	19.9	25.2	25.2
				W/WP/WL64-80	25.2	25.2	25.2
				W/WP/WL81-100	25.2	25.2	32.6
				W/WP/WL101-150	32.6	32.6	32.6
				W/WP/WL151-250	32.6	32.6	39.6
				W/WP/WL251-300	32.6	39.6	50.8
				W/WP/WL301-750	50.8	50.8	50.8
Field drain pipe size			mm (in.)	O.D. 26.7 (1-1/16)			
Net weight			kg (lbs)	196 (433) [216 (477) with water]			
Standard attachment	Document			-			
	Accessories			-			
Optional parts				-			

Notes:

1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for R32 refrigerant.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the HBC at least 5 m away from any indoor units.)
4. Please install the HBC in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please install a pressure reducing valve and a strainer on the water supply to the HBC.
10. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
11. This unit is not designed for outside installations.
12. Please always make water circulate or pull out the circulation water completely when not using it.
    *Please do not use it as a drinking water.
13. Please do not use ground water and well water.
14. When installing the HBC in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).
15. R32 is flammable, and certain restrictions apply to the installation of units. When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed. For detail, refer to the section in the DATA BOOK on installation restrictions.

1. SPECIFICATIONS

Model				**CMB-WM500F-AA**		
Number of branch				6		
Power source				1-phase 220-230-240 V		
				50 Hz	60 Hz	
Power input (220-230-240)	Cooling		kW	1.50-1.50-1.50	1.50-1.50-1.50	
	Heating		kW	1.50-1.50-1.50	1.50-1.50-1.50	
Current input (220-230-240)	Cooling		A	6.82-6.52-6.25	6.82-6.52-6.25	
	Heating		A	6.82-6.52-6.25	6.82-6.52-6.25	
Sound pressure level (measured in anechoic room)			dB <A>	54		
Applicable temperature range of installation site			°C (D.B.)	0~40		
External finish				Galvanized steel plate		
Connectable outdoor/heat source unit capacity				PURY-M400~500YNW-A1 (-BS)/PURY-EM400~500YNW-A1 (-BS)		
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL80.)		
External dimension H x W x D			mm	1,500 x 800 x 500		
			in.	59-1/16 x 31-1/2 x 19-11/16		
Refrigerant piping diameter	To outdoor/heat source unit			Connectable outdoor/heat source unit capacity		
				M400/M450/M500		
	High press. Pipe		mm (in.) O.D.	19.05 (3/4) Brazed		
	Low press. Pipe		mm (in.) O.D.	28.58 (1-1/8) Brazed		
Water piping diameter						
Connection size	To Sub-HBC	Inlet/Outlet	mm O.D.	42		
	To Indoor unit	Inlet/Outlet	mm O.D.	22		
Field pipe size		Inlet/Outlet	mm I.D. (Min)	Total down-stream Indoor unit capacity	Piping length from Main-HBC to farthest Indoor unit	
					Max 20m	Max 40m	Max 60m
				W/WP/WL10	12	12	12
				W/WP/WL11-15	12	12	15.5
				W/WP/WL16-25	15.5	15.5	15.5
				W/WP/WL26-32	15.5	19.9	19.9
				W/WP/WL33-50	19.9	19.9	19.9
				W/WP/WL51-63	19.9	25.2	25.2
				W/WP/WL64-80	25.2	25.2	25.2
				W/WP/WL81-100	25.2	25.2	32.6
				W/WP/WL101-150	32.6	32.6	32.6
				W/WP/WL151-250	32.6	32.6	39.6
				W/WP/WL251-300	32.6	39.6	50.8
				W/WP/WL301-750	50.8	50.8	50.8
Field drain pipe size			mm (in.)	O.D. 26.7 (1-1/16)		
Net weight			kg (lbs)	209 (461) [233 (514) with water]		
Standard attachment	Document			-		
	Accessories			-		
Optional parts				-		

Notes:

1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for R32 refrigerant.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the HBC at least 5 m away from any indoor units.)
4. Please install the HBC in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please install a pressure reducing valve and a strainer on the water supply to the HBC.
10. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
11. This unit is not designed for outside installations.
12. Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.
13. Please do not use ground water and well water.
14. When installing the HBC in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).
15. R32 is flammable, and certain restrictions apply to the installation of units. When installing new units, moving the existing units, or changing the layout of the room, ensure that installation restrictions are observed. For detail, refer to the section in the DATA BOOK on installation restrictions.

Model				CMB-WM108V-BB						
Number of branch				8						
Power source				1-phase 220-230-240 V						
				50 Hz			60 Hz			
Power input	Cooling		kW	0.01-0.01-0.01			0.01-0.01-0.01			
(220-230-240)	Heating		kW	0.01-0.01-0.01			0.01-0.01-0.01			
Current input	Cooling		A	0.14-0.14-0.14			0.14-0.14-0.14			
(220-230-240)	Heating		A	0.14-0.14-0.14			0.14-0.14-0.14			
Sound pressure level (measured in anechoic room)			dB <A>	-						
Applicable temperature range of installation site *18			°C (D.B.)	0 to 32						
External finish				Galvanized steel plate						
Connectable outdoor/heat source unit model				-						
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL81.)						
External dimension H x W x D			mm	310 x 930 x 630						
			in.	12-1/4 x 36-5/8 x 24-13/16						
Water piping diameter (Horizontal type HBC connection)										
Connection size	To Main-HBC controller	Inlet/Outlet	mm O.D.	28						
Connection size	To Indoor unit	Inlet/Outlet	mm O.D.	22						
Field pipe size	To Main-HBC controller	Total down-steam indoor unit capacity		W/WP/WL 10-100	W/WP/WL 101-200	W/WP/WL 201-300	W/WP/WL 301-400	W/WP/WL 401-500	W/WP/WL 501-525	
		Inlet/Outlet	mm I.D. (Min)	20.0	25.8	30.0	33.3	36.2	36.8	
	To Indoor unit	Total down-steam indoor unit capacity		W/WP/WL10-50			W/WP/WL51-125			
		Inlet/Outlet	mm I.D. (Min)	20			30			
Water piping diameter (Vertical type HBC connection)										
Connection size	To Main-HBC controller	Inlet/Outlet	mm O.D.	28						
Connection size	To Indoor unit	Inlet/Outlet	mm O.D.	22						
Field pipe size		Inlet/Outlet	mm I.D. (Min)	Total down-stream Indoor unit capacity	Piping length from Main-HBC to farthest Indoor unit					
					Max 20m		Max 40m		Max 60m	
				W/WP/WL10	12		12		12	
				W/WP/WL11-15	12		12		15.5	
				W/WP/WL16-25	15.5		15.5		15.5	
				W/WP/WL26-32	15.5		19.9		19.9	
				W/WP/WL33-50	19.9		19.9		19.9	
				W/WP/WL51-63	19.9		25.2		25.2	
				W/WP/WL64-80	25.2		25.2		25.2	
				W/WP/WL81-100	25.2		25.2		32.6	
				W/WP/WL101-150	32.6		32.6		32.6	
				W/WP/WL151-250	32.6		32.6		39.6	
				W/WP/WL251-300	32.6		39.6		50.8	
				W/WP/WL301-750	50.8		50.8		50.8	
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)						
Net weight			kg (lbs)	40 (89) [45 (100) with water]						
Standard attachment	Document			-						
	Accessories			Drain Connection pipe, Washer, Tie band						
Optional parts				-						

Notes:

1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for water.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the Sub-HBC controller at least 5 m away from any indoor units.)
4. Please install the Sub-HBC controller in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
10. This unit is not designed for outside installations.
11. Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.
12. Please do not use ground water and well water.
13. Can't use singleness. (Main-HBC controller is necessary)
14. The unit cannot be used when the outdoor temperature is outside the guaranteed operation range. If the unit is used in such condition, the unit may not go into the Thermo-ON mode. Guaranteed operation range: -5 to 52°C in cooling mode, -20 to 15.5°C in heating mode.
15. This product is not designed for preservation of food, animals, plants, precision equipment, or art objects. To prevent quality loss, do not use the product for purposes other than what it is designed for.
16. The ambient relative humidity of the HBC controller needs to be kept below 80%.
17. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
18. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).

1. SPECIFICATIONS

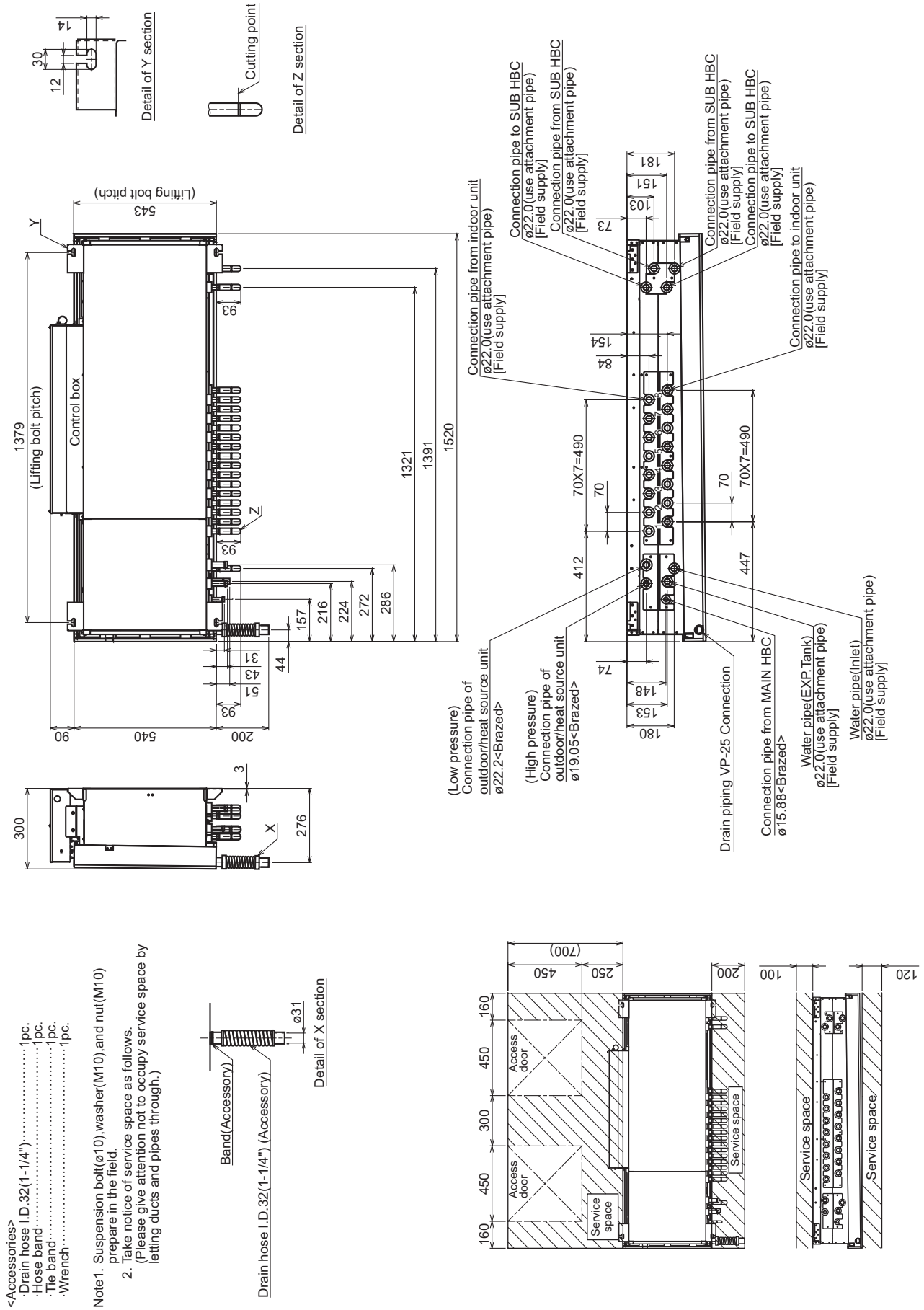
Model				CMB-WM1016V-BB					
Number of branch				16					
Power source				1-phase 220-230-240 V					
				50 Hz			60 Hz		
Power input (220-230-240)	Cooling		kW	0.01-0.01-0.01			0.01-0.01-0.01		
	Heating		kW	0.01-0.01-0.01			0.01-0.01-0.01		
Current input (220-230-240)	Cooling		A	0.14-0.14-0.14			0.14-0.14-0.14		
	Heating		A	0.14-0.14-0.14			0.14-0.14-0.14		
Sound pressure level (measured in anechoic room)			dB <A>	-					
Applicable temperature range of installation site *18			°C (D.B.)	0 to 32					
External finish				Galvanized steel plate					
Connectable outdoor/heat source unit model				-					
Indoor unit capacity connectable to 1 branch				Model WP/W/WL80 or smaller (Use optional joint pipe combining 2 branches when the total unit capacity exceeds WP/W/WL81.)					
External dimension H x W x D			mm	310 x 1,210 x 630					
			in.	12-1/4 x 47-11/16 x 24-13/16					
Water piping diameter (Horizontal type HBC connection)									
Connection size	To Main-HBC controller	Inlet/Outlet	mm O.D.	28					
	To Indoor unit	Inlet/Outlet	mm O.D.	22					
Field pipe size	To Main-HBC controller	Total down-steam indoor unit capacity		W/WP/WL 10-100	W/WP/WL 101-200	W/WP/WL 201-300	W/WP/WL 301-400	W/WP/WL 401-500	W/WP/WL 501-525
		Inlet/Outlet	mm I.D. (Min)	20.0	25.8	30.0	33.3	36.2	36.8
	To Indoor unit	Total down-steam indoor unit capacity		W/WP/WL10-50			W/WP/WL51-125		
		Inlet/Outlet	mm I.D. (Min)	20			30		
Water piping diameter (Vertical type HBC connection)									
Connection size	To Main-HBC controller	Inlet/Outlet	mm O.D.	28					
	To Indoor unit	Inlet/Outlet	mm O.D.	22					
Field pipe size		Inlet/Outlet	mm I.D. (Min)	Total down-stream Indoor unit capacity	Piping length from Main-HBC to farthest Indoor unit				
					Max 20m		Max 40m		Max 60m
				W/WP/WL10	12		12		12
				W/WP/WL11-15	12		12		15.5
				W/WP/WL16-25	15.5		15.5		15.5
				W/WP/WL26-32	15.5		19.9		19.9
				W/WP/WL33-50	19.9		19.9		19.9
				W/WP/WL51-63	19.9		25.2		25.2
				W/WP/WL64-80	25.2		25.2		25.2
				W/WP/WL81-100	25.2		25.2		32.6
				W/WP/WL101-150	32.6		32.6		32.6
				W/WP/WL151-250	32.6		32.6		39.6
				W/WP/WL251-300	32.6		39.6		50.8
				W/WP/WL301-750	50.8		50.8		50.8
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)					
Net weight			kg (lbs)	53 (117) [62 (137) with water]					
Standard attachment	Document			-					
	Accessories			Drain Connection pipe, Washer, Tie band					
Optional parts				-					

Notes:

1. Installation/foundation work, electrical connection work, duct work, insulation work, power source switch, and other items shall be referred to the Installation Manual.
2. This unit is for water.
3. Install this unit in a location where noise (refrigerant noise) emitted by the unit will not disturb the neighbors. (For use in quiet environments with low background noise, position the Sub-HBC controller at least 5 m away from any indoor units.)
4. Please install the Sub-HBC controller in a place where noise will not be an issue.
5. Please attach an expansion vessel (field supply).
6. Please use copper or plastic pipes for the water circuit. Do not use steel or stainless steel pipework. Furthermore, when using copper pipe-work use a non-oxidative brazing method. Oxidation of the pipe-work will reduce the pump life.
7. When brazing the pipes, be sure to braze, after covering a wet cloth to the insulation pipes of the units in order to prevent it from burning and shrinking by heat.
8. Please install an air purge valve where air will gather in the water circuit.
9. Please refer to the DATA BOOK or the Installation Manual for the specified water quality.
10. This unit is not designed for outside installations.
11. Please always make water circulate or pull out the circulation water completely when not using it. *Please do not use it as a drinking water.
12. Please do not use ground water and well water.
13. Can't use singleness. (Main-HBC controller is necessary)
14. The unit cannot be used when the outdoor temperature is outside the guaranteed operation range. If the unit is used in such condition, the unit may not go into the Thermo-ON mode. Guaranteed operation range: -5 to 52°C in cooling mode, -20 to 15.5°C in heating mode.
15. This product is not designed for preservation of food, animals, plants, precision equipment, or art objects. To prevent quality loss, do not use the product for purposes other than what it is designed for.
16. The ambient relative humidity of the HBC controller needs to be kept below 80%.
17. Indoor unit capacity connectable to 1 branch is changed depending on the indoor unit type and connection method. Please refer to the Installation Manual for more information.
18. When installing the HBC controller in an environment which may drop below 0°C, please add antifreeze liquid to the circulating water. (Refer to the DATA BOOK and the Installation Manual).

CMB-WM108V-AA

Unit : mm

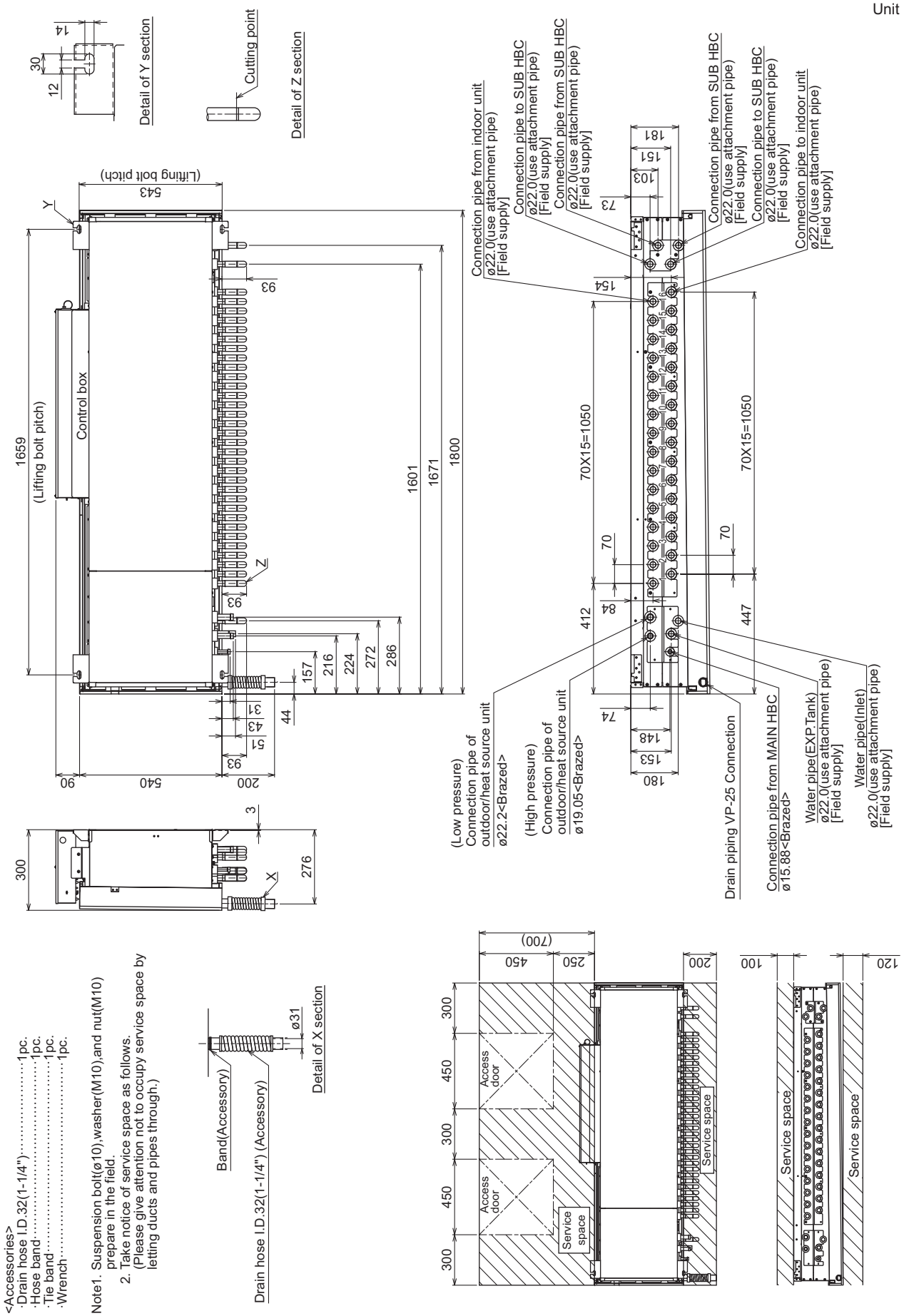


<Accessories>
·Drain hose I.D.32(1-1/4")……1pc.
·Hose band……1pc.
·Tie band……1pc.
·Wrench……1pc.

Note1. Suspension bolt(ø10),washer(M10),and nut(M10) prepare in the field.
2. Take notice of service space as follows.
(Please give attention not to occupy service space by letting ducts and pipes through.)

CMB-WM1016V-AA

Unit : mm



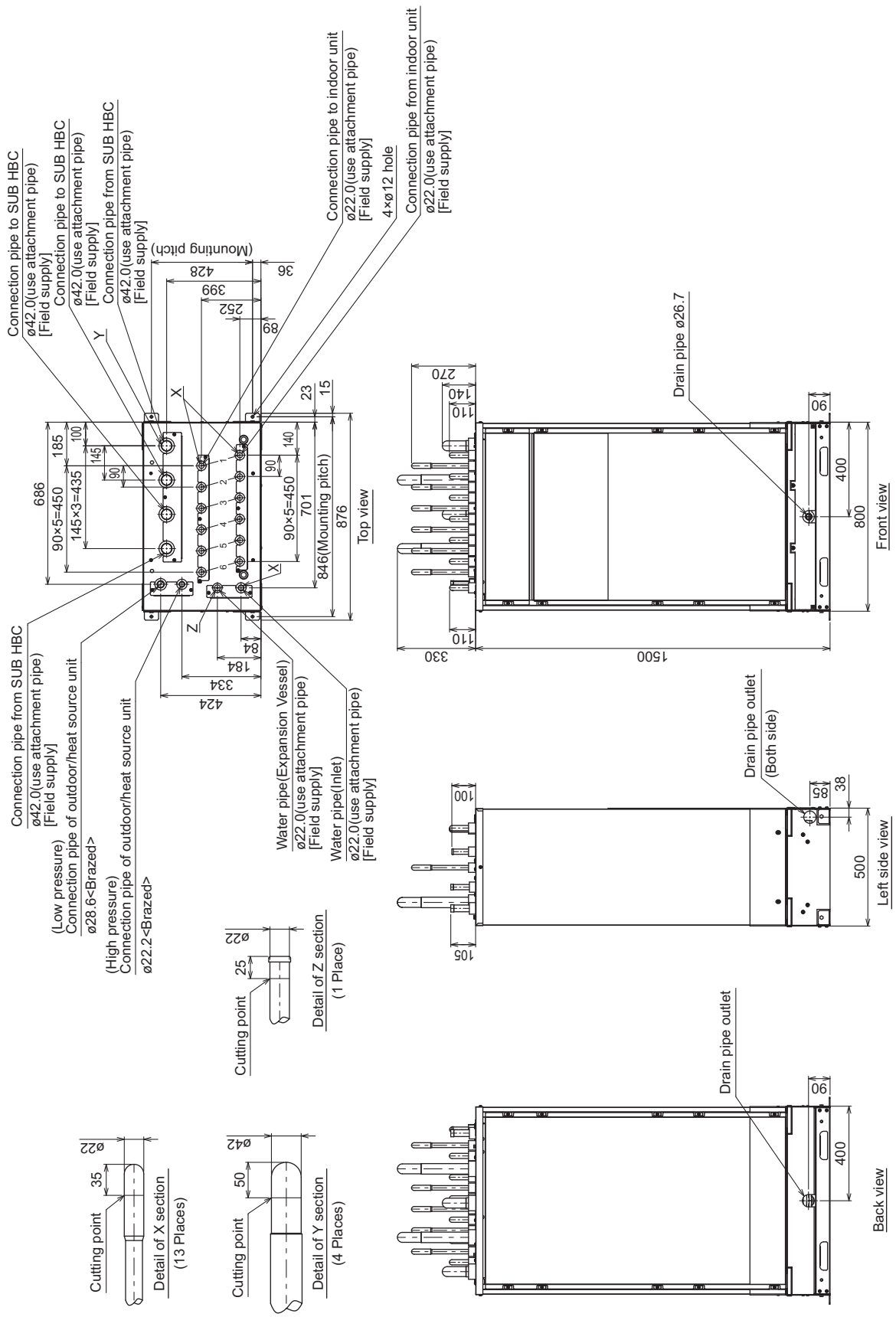
<Accessories>
·Drain hose I.D.32(1-1/4")·····1pc.
·Hose band·····1pc.
·Tie band·····1pc.
·Wrench·····1pc.

Note1. Suspension bolt(ø10),washer(M10),and nut(M10) prepare in the field.
2. Take notice of service space as follows.
(Please give attention not to occupy service space by letting ducts and pipes through.)

Band(Accessory)
Drain hose I.D.32(1-1/4") (Accessory)
ø31
Detail of X section

CMB-WM350, 500F-AA

Unit : mm



Note1.Take notice of service space as Fig.A.
(Please give attention not to occupy service space by letting pipes through.)
2.By changing the direction of the drain pan,it is possible to connect the drain pipe from the back side.
In case of removing the drain pan after the unit is installed, please secure a service space of 150 mm to the left and right sides.
Refer to the Installation Manual for changing the direction of the drain pan.
3.Maintenance is possible only from the front, however the serviceability can be improved by securing a service space of 450mm on the left, right and back side and removing the panels.
4.It is also possible to hold the unit as shown in Fig. B and Fig. C.
Refer to the Installation Manual for holding the unit.
5.Refer to the DATA BOOK about connection pipe and drain pipe diameter size.
6.Refer to the Installation Manual about the specification for connection pipe and drain pipe insulation.

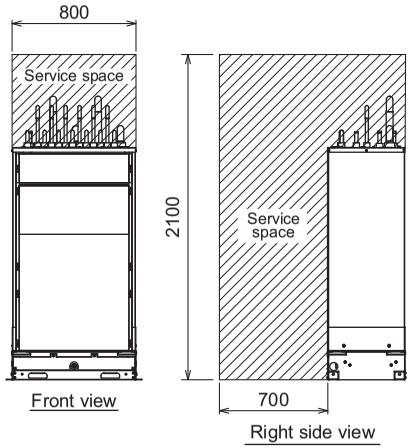
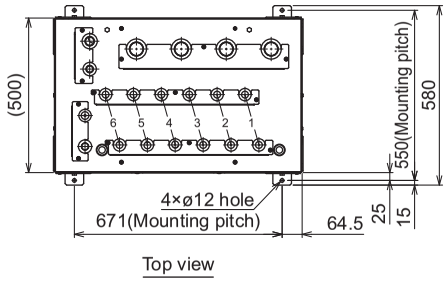
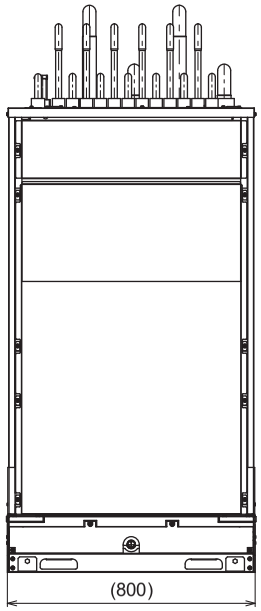


Fig.A

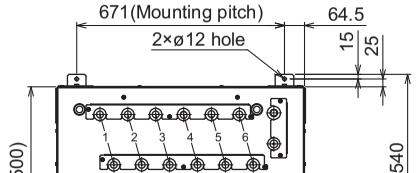


Top view

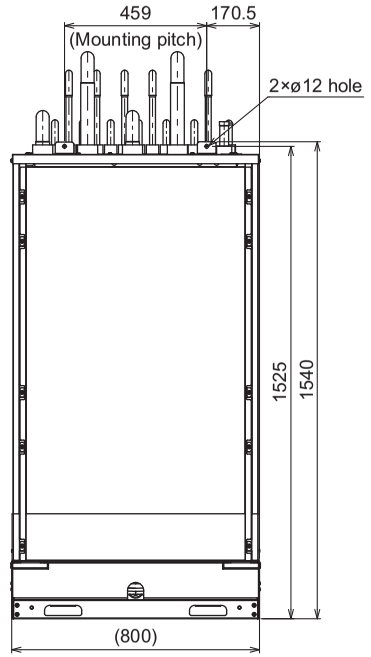


Front view

Fig.B



Top view



Back view

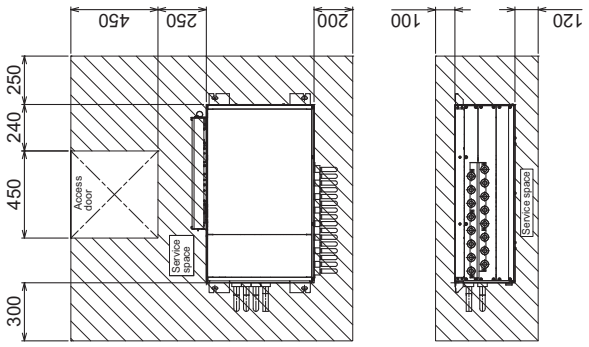
Fig.C

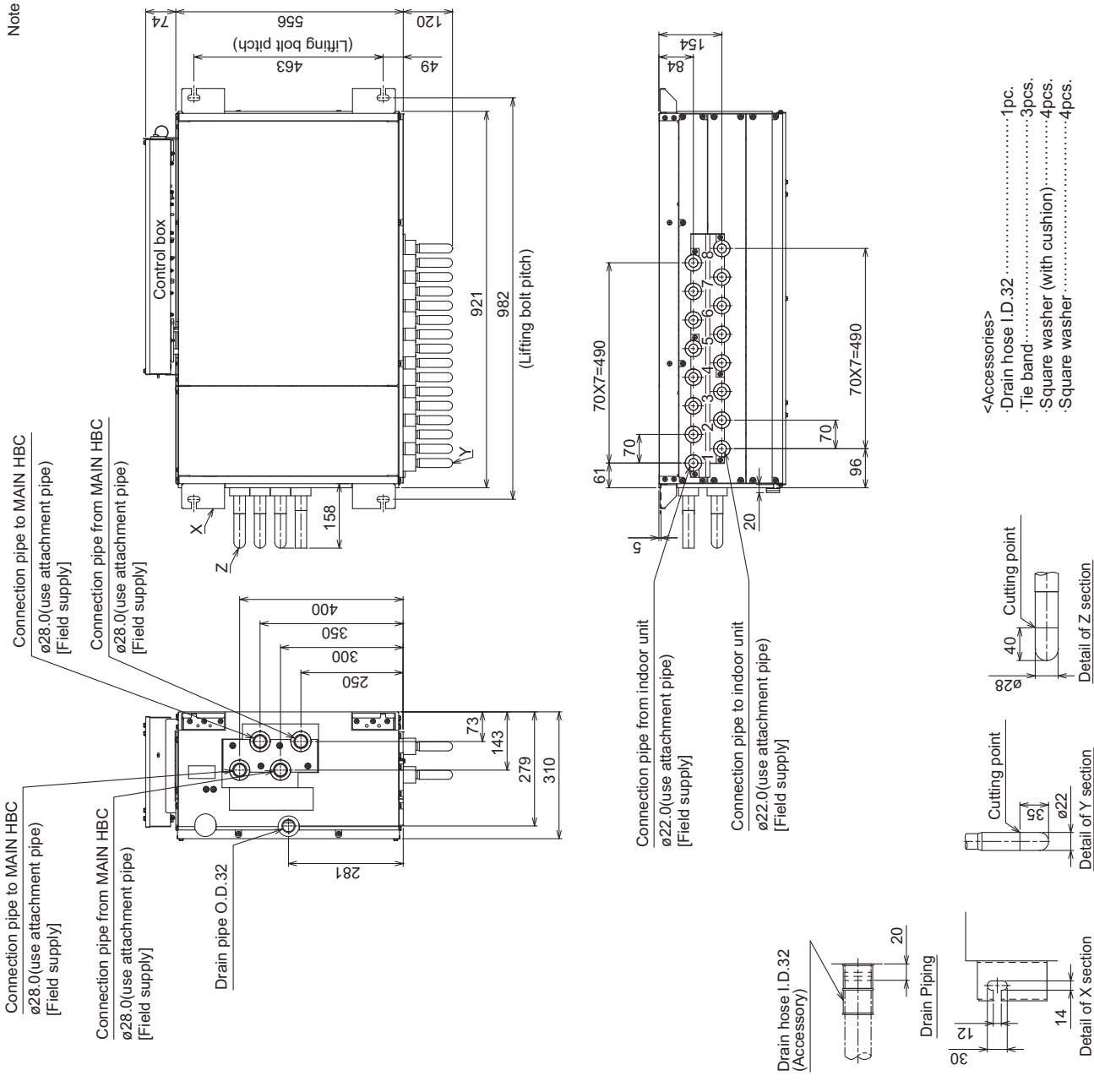
Unit : mm

CMB-WM108V-BB

Unit : mm

Note 1. Suspension bolt(ø10) and nut(M10) prepare in the field.
2. Take notice of service space as shown.
(Please give attention not to occupy service space by letting ducts and pipes through.)
3. To remove the drain pan, the screws (5 points) on the front side and back side of the bottom have to be removed below the unit.

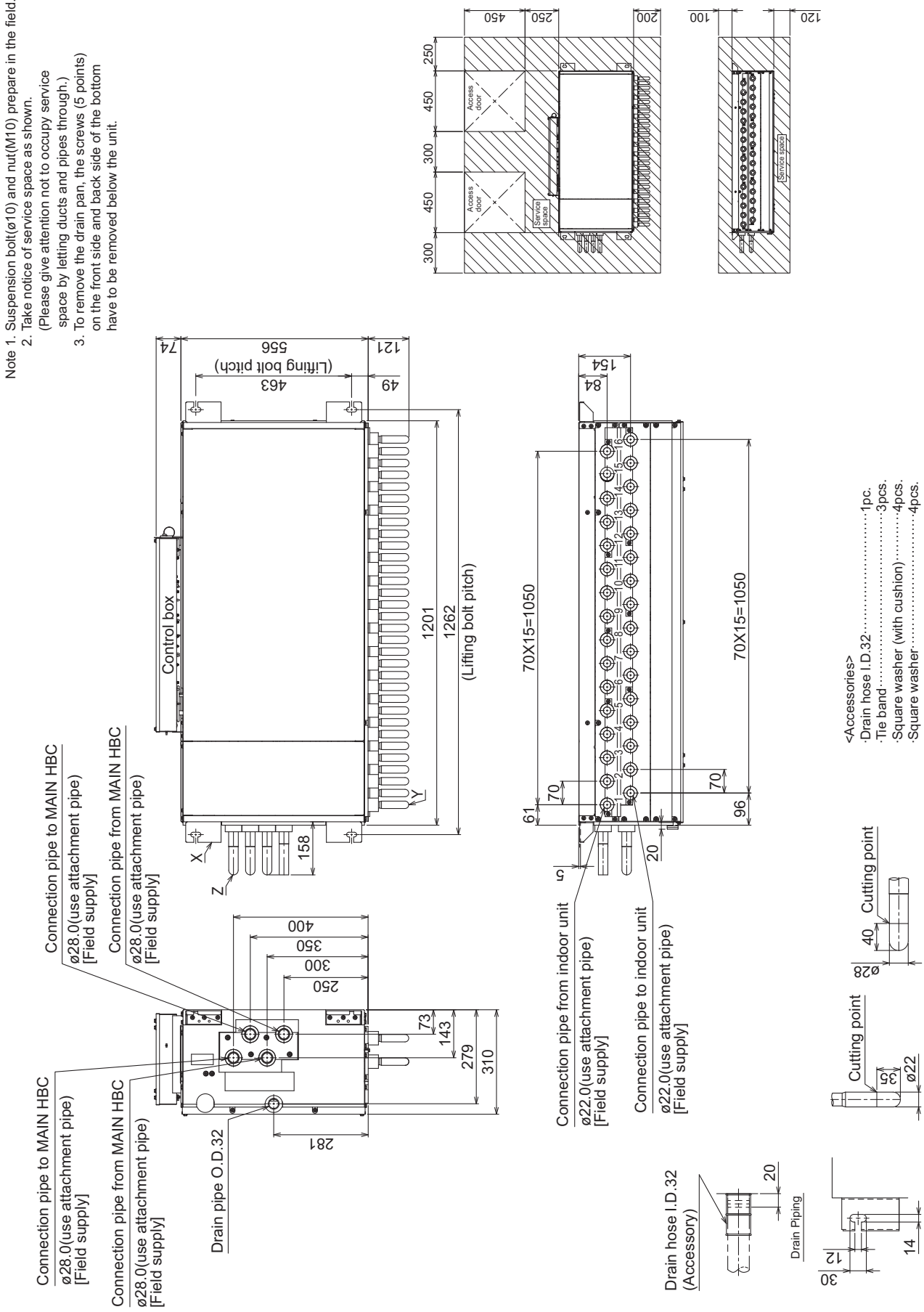




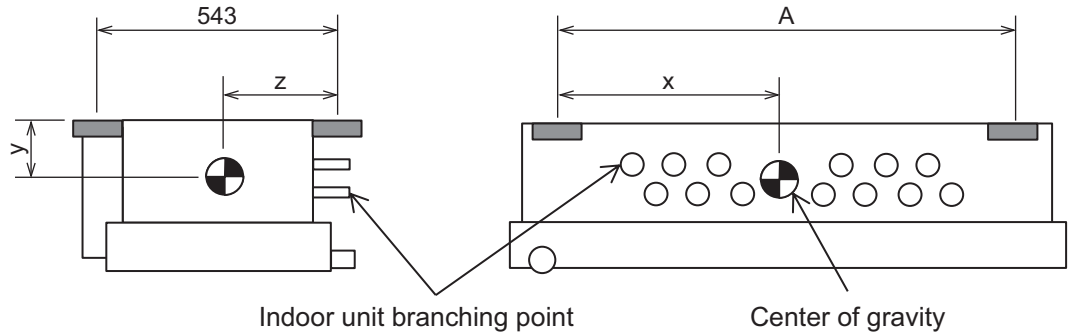
CMB-WM1016V-BB

Unit : mm

Note 1. Suspension bolt(ø10) and nut(M10) prepare in the field.
2. Take notice of service space as shown.
(Please give attention not to occupy service space by letting ducts and pipes through.)
3. To remove the drain pan, the screws (5 points) on the front side and back side of the bottom have to be removed below the unit.

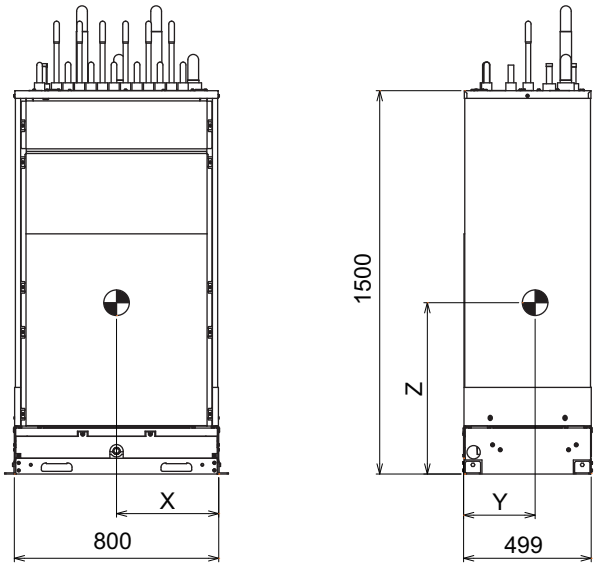


CMB-WM108, 1016V-AA



	CMB-WM108V-AA	CMB-WM1016V-AA
A (mm)	1379	1659
x (mm)	680	825
y (mm)	145	145
z (mm)	285	285

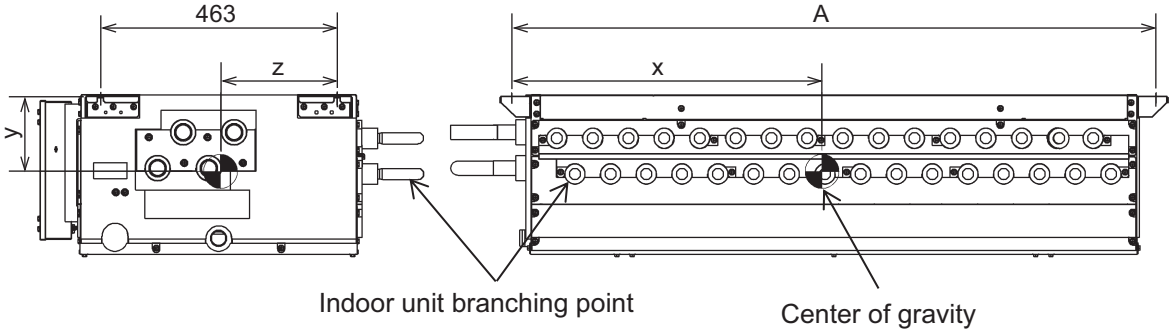
CMB-WM350, 500F-AA



	CMB-WM350F-AA	CMB-WM500F-AA
x (mm)	400	400
y (mm)	270	280
z (mm)	650	670

HBC controller

CMB-WM108, 1016V-BB



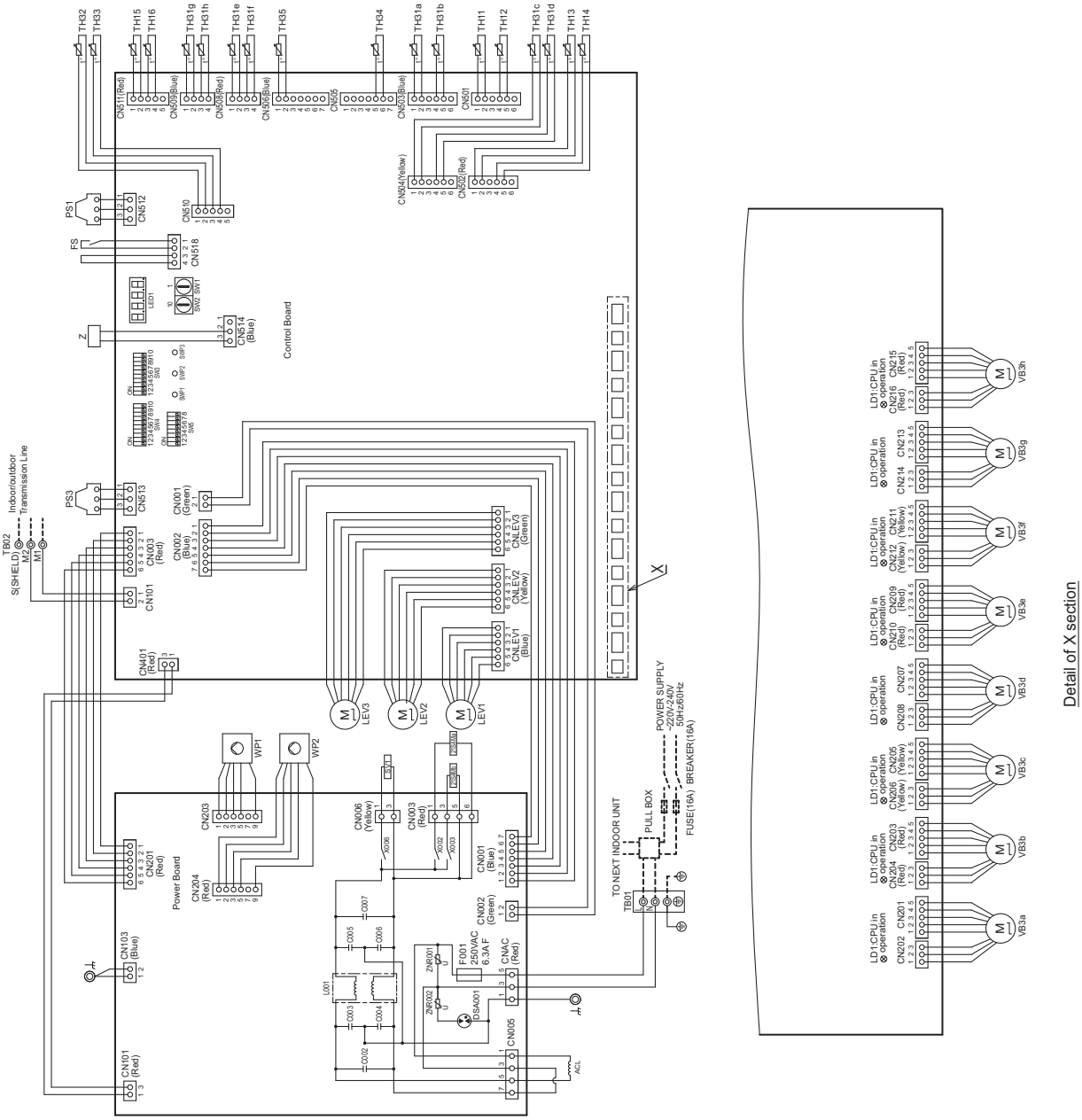
	CMB-WM108V-BB	CMB-WM1016V-BB
A (mm)	982	1262
x (mm)	466	608
y (mm)	142	146
z (mm)	249	228

CMB-WM108V-AA

(Symbol explanation)

Symbol	Name	Symbol	Name
ACL	AC reactor	SV1	Solenoid valve
TH11~16,TH32~35,	Thermister sensor	F001	Fuse AC250V 6.3A F
TH31a~h		21S4Ma,21S4Mb	4 way valve
LEV1~3	Expansion valve	WP1,WP2	Pump
PS1,PS3	Pressure sensor	VB3a~h	Valve block
TB01	Terminal block (for power source)	FS	Float switch
		Z	Function setting connector
TB02	Terminal block (for Transmission)		

NOTE:1. TB02 is transmission terminal block.
Never connect power line to it.
2. The initial set values of switch on Control Board are as follows.
SW1:0
SW2:0
3. The wirings to TB01 and TB02 shown in dotted line are field work.



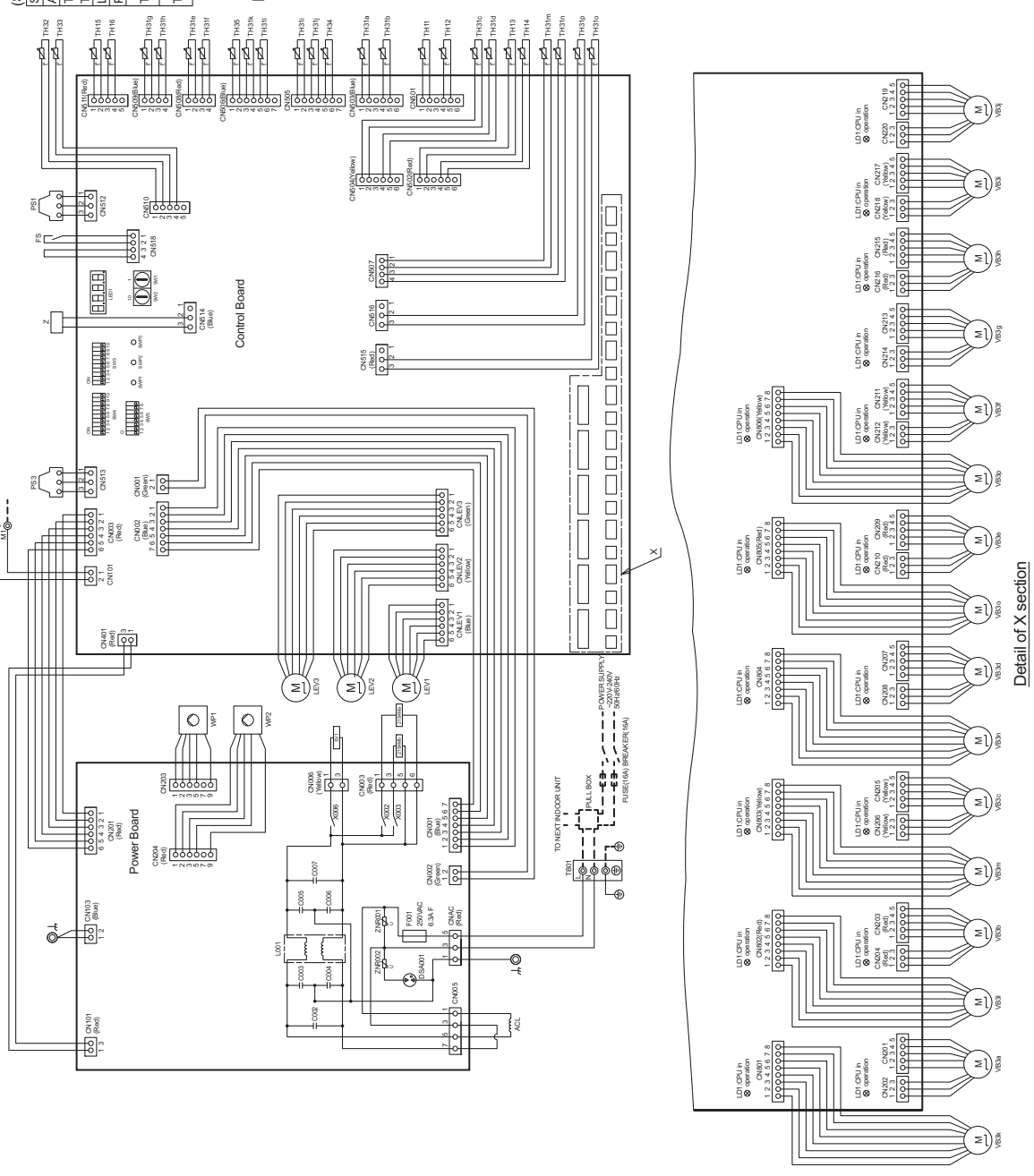
CMB-WM1016V-AA

(Symbol explanation)

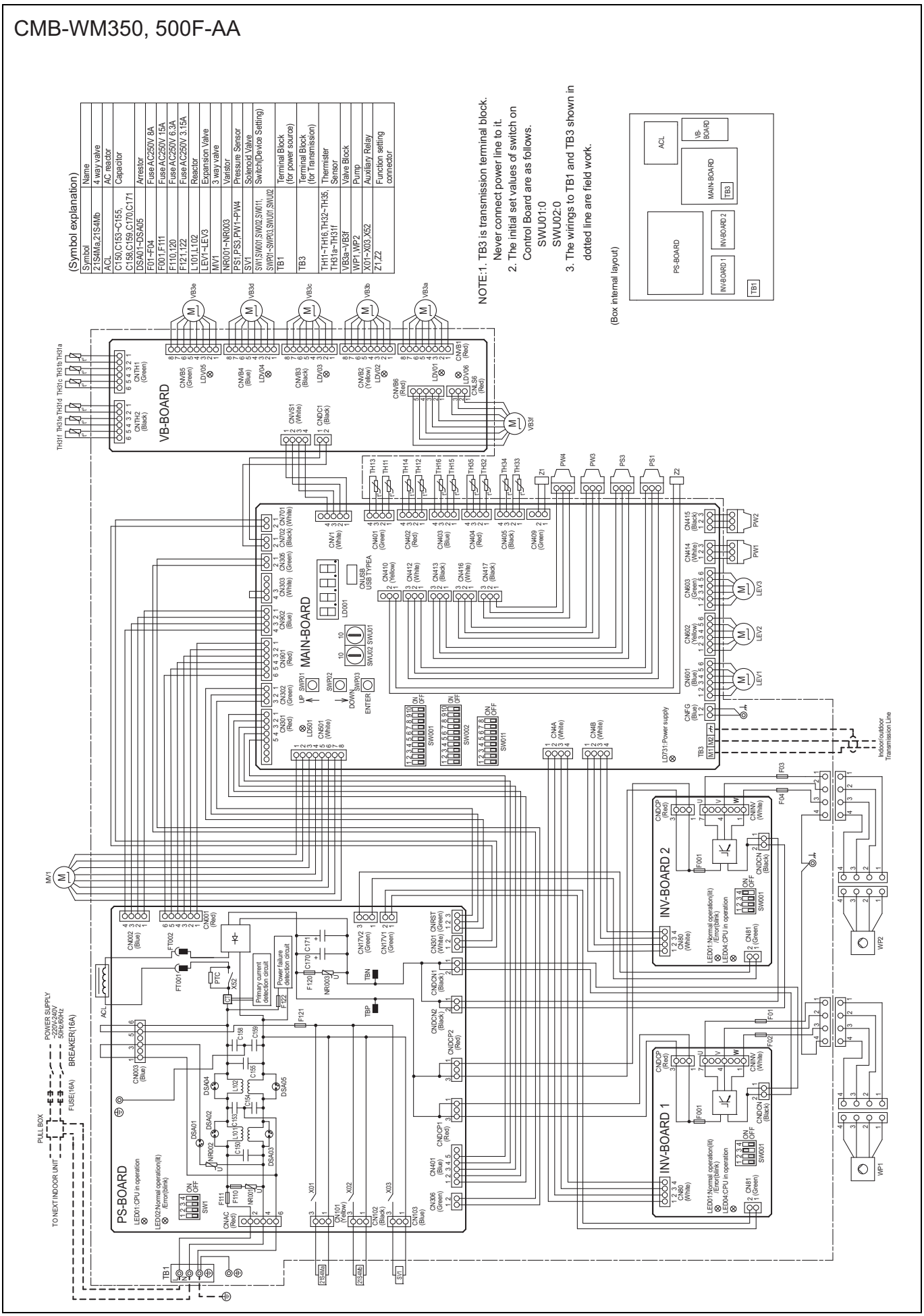
Symbol	Name
ACL	AC reactor
TH11~16,TH32~35, TH31a~p	Thermister sensor
LEV1~3	Expansion valve
PS1,PS3	Pressure sensor
TB01	Terminal block (for power source)
TB02	Terminal block (for Transmission)

Symbol	Name
SV1	Solenoid valve
F001	Fuse AC250V 6.3A F
21S4Ma,21S4Mb	4 way valve
WP1,WP2	Pump
VB3a~p	Valve block
FS	Float switch
Z	Function setting connector

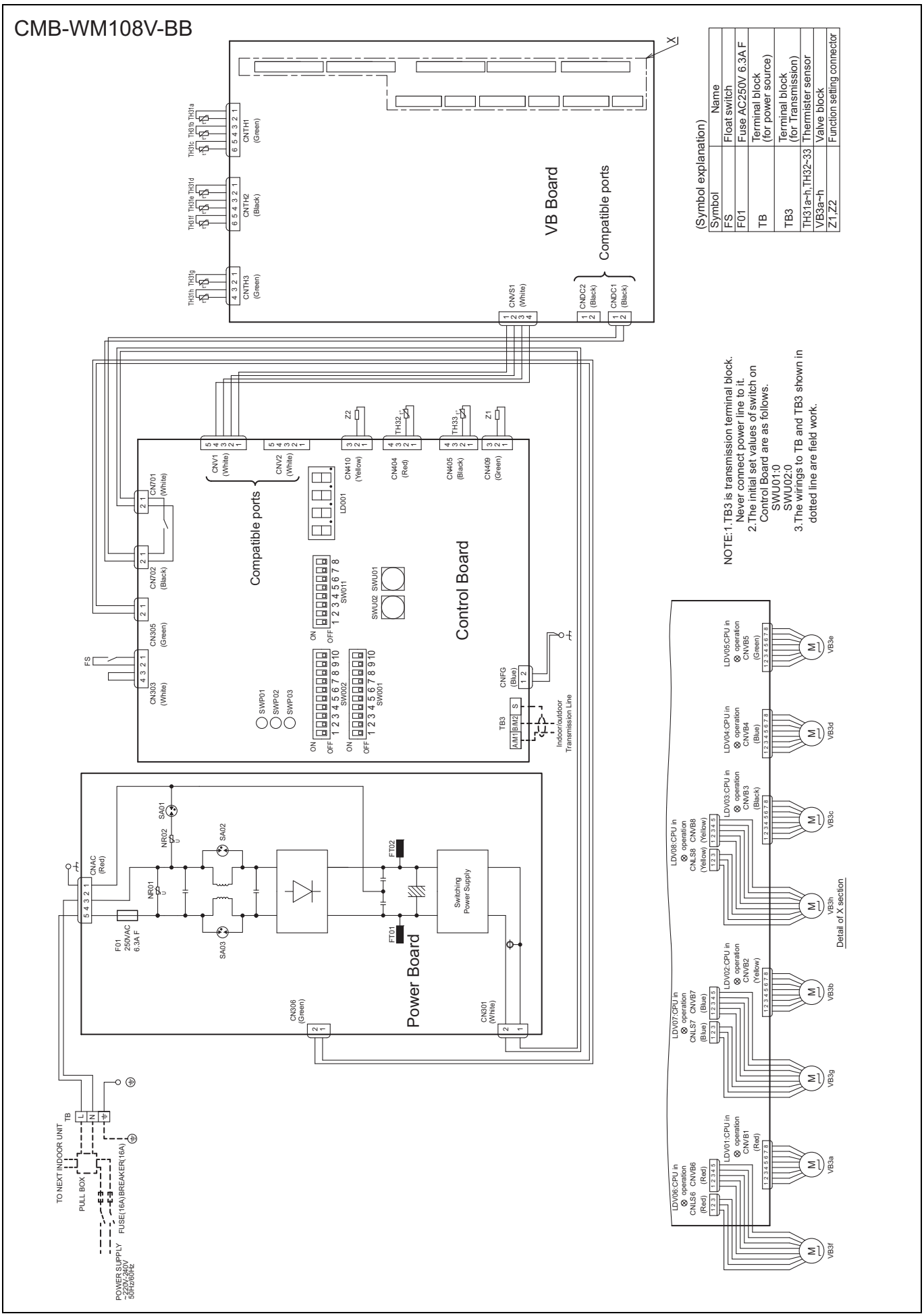
NOTE:1.TB02 is transmission terminal block.
Never connect power line to it.
2.The initial set values of switch on Control Board are as follows.
SW1:0
SW2:0
3.The wirings to TB01 and TB02 shown in dotted line are field work.



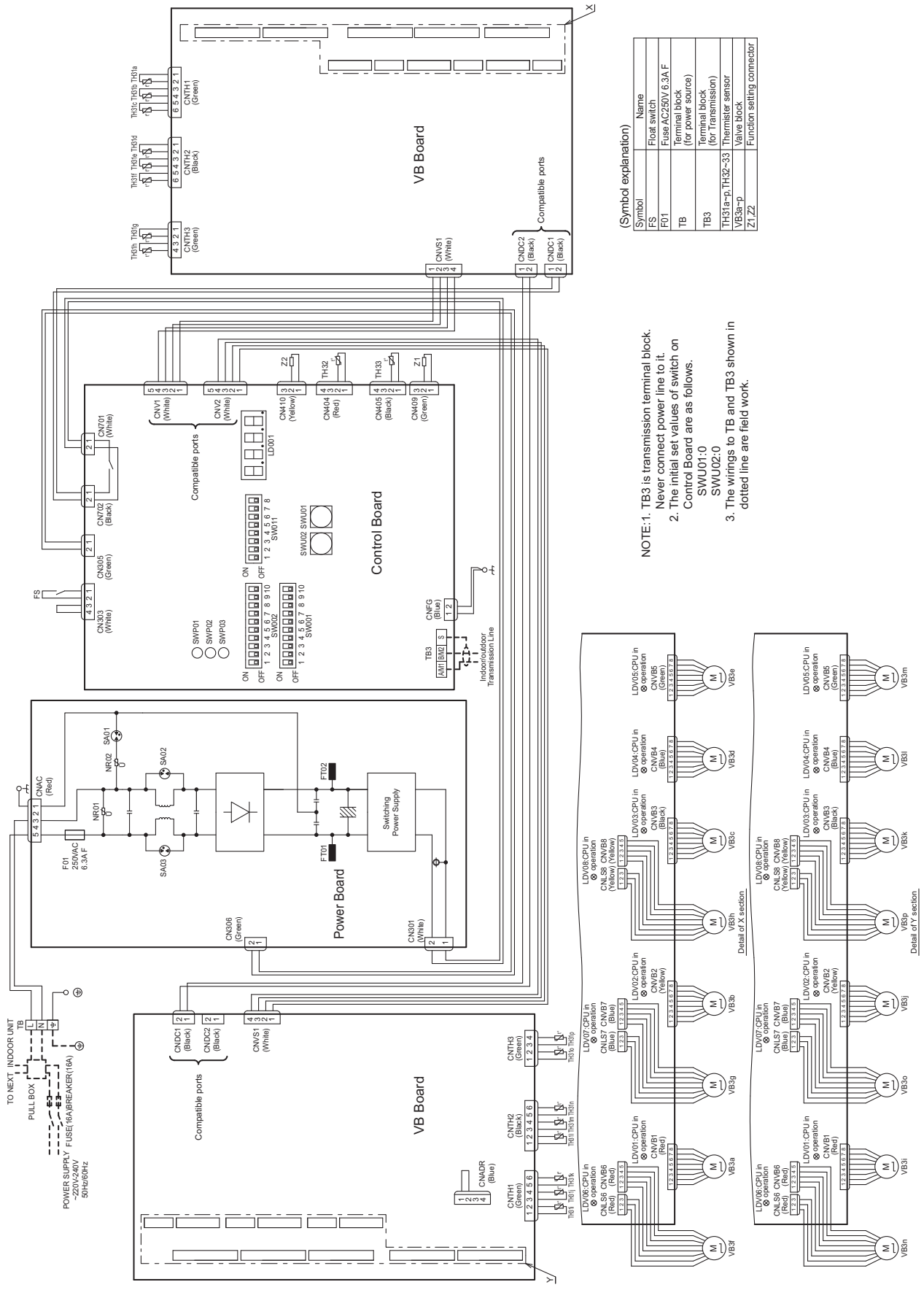
CMB-WM350, 500F-AA



CMB-WM108V-BB



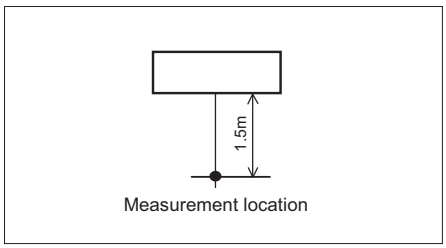
CMB-WM1016V-BB



5-1. Sound levels

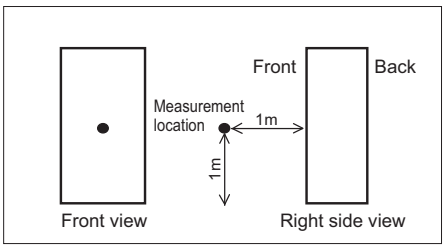
(Measured point)

CMB-WM108V-AA
CMB-WM1016V-AA



* Measured in anechoic room.

CMB-WM350F-AA
CMB-WM500F-AA

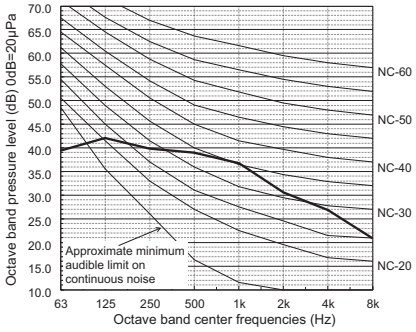


* Measured in anechoic room.

5-2. NC curves

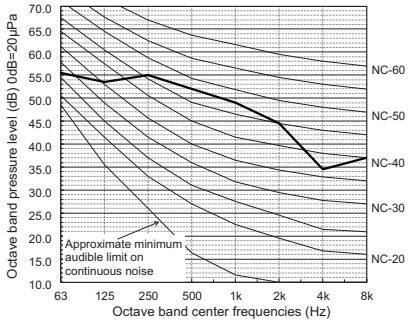
CMB-WM108V-AA,CMB-WM1016V-AA

Power Source: 220-230-240V, 50/60Hz



CMB-WM350F-AA,CMB-WM500F-AA

Power Source: 220-230-240V, 50/60Hz



♦For Horizontal type HBC, it is recommended to be installed in places such as ceilings of corridor, rest rooms and plant rooms.
For Vertical type HBC, it is recommended to be installed in places such as machinery room and linen room.

Symbols: MCA: Max. Circuit Amps, MFA: Max. Fuse Amps, RLA: Rated Load Amps

HBC controller	Power supply					RLA(A)
	Hz	Volts	Range+-10%	MCA(A)	MFA(A)	
CMB-WM108V-AA CMB-WM1016V-AA	50/60	220	Max.: 264V Min.: 198V	3.49	15	2.89
		230				2.83
		240				2.79
CMB-WM350F-AA CMB-WM500F-AA	50/60	220	Max.: 264V Min.: 198V	7.81	15	6.82
		230				6.52
		240				6.25
CMB-WM108V-BB CMB-WM1016V-BB	50/60	220	Max.: 264V Min.: 198V	0.17	15	0.14
		230				0.14
		240				0.14

7-1. Compatibility

<Horizontal type Main-HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY-(E)M-YNW	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Not compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Not compatible
	WP type	WM-V-BB type	–	–	Not compatible
	WP type	WM-V-AB type	–	–	Not compatible
	WP type	WP type	–	–	Not compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Not compatible
	WP type	–	WM-V-AA type	–	Not compatible
	WP type	–	WP type	–	Not compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Not compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Not compatible
	WM-V-AA type	WP type	WM-V-AA type		Not compatible
	WM-V-AA type	WP type	WP type		Not compatible
	WP type	WM-V-BB type	WM-V-AA type		Not compatible
	WP type	WM-V-BB type	WP type		Not compatible
	WP type	WM-V-AB type	WM-V-AA type		Not compatible
	WP type	WM-V-AB type	WP type		Not compatible
	WP type	WP type	WM-V-AA type		Not compatible
	WP type	WP type	WP type		Not compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	–	WP type	WP type	Not compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	–	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	–	WM-V-AA type	WP type	Not compatible
	WP type	–	WP type	WM-V-BB type	Not compatible
	WP type	–	WP type	WM-V-AB type	Not compatible
	WP type	–	WP type	WP type	Not compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-BB type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-AB type	Not compatible
	WM-V-AA type	WP type	WM-V-AA type	WP type	Not compatible
	WM-V-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-V-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-V-AA type	WP type	WP type	WP type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WM-V-BB type	WM-V-AA type	WP type	Not compatible
	WP type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WP type	WM-V-BB type	WP type	WP type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Not compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WP type	WM-V-AB type	WP type	WP type	Not compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Not compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Not compatible
	WP type	WP type	WM-V-AA type	WP type	Not compatible
	WP type	WP type	WP type	WM-V-BB type	Not compatible
	WP type	WP type	WP type	WM-V-AB type	Not compatible
	WP type	WP type	WP type	WP type	Not compatible

Outdoor/Heat source unit	Main 1	Sub 1	Main 2	Sub 2	Compatibility
PURY-(E)P-YNW PURY-(E)P-YLM PQRY-P-YLM	WM-V-AA type	–	–	–	Compatible
	WP type	–	–	–	Compatible
	WM-V-AA type	WM-V-BB type	–	–	Compatible
	WM-V-AA type	WM-V-AB type	–	–	Compatible
	WM-V-AA type	WP type	–	–	Compatible
	WP type	WM-V-BB type	–	–	Compatible
	WP type	WM-V-AB type	–	–	Compatible
	WP type	WP type	–	–	Compatible
	WM-V-AA type	–	WM-V-AA type	–	Compatible
	WM-V-AA type	–	WP type	–	Compatible
	WP type	–	WM-V-AA type	–	Compatible
	WP type	–	WP type	–	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	–	Compatible
	WM-V-AA type	WM-V-BB type	WP type		Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type		Compatible
	WM-V-AA type	WM-V-AB type	WP type		Compatible
	WM-V-AA type	WP type	WM-V-AA type		Compatible
	WM-V-AA type	WP type	WP type		Compatible
	WP type	WM-V-BB type	WM-V-AA type		Compatible
	WP type	WM-V-BB type	WP type		Compatible
	WP type	WM-V-AB type	WM-V-AA type		Compatible
	WP type	WM-V-AB type	WP type		Compatible
	WP type	WP type	WM-V-AA type		Compatible
	WP type	WP type	WP type		Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	–	WM-V-AA type	WP type	Compatible
	WM-V-AA type	–	WP type	WM-V-BB type	Compatible
	WM-V-AA type	–	WP type	WM-V-AB type	Compatible
	WM-V-AA type	–	WP type	WP type	Compatible
	WP type	–	WM-V-AA type	WM-V-BB type	Compatible
	WP type	–	WM-V-AA type	WM-V-AB type	Compatible
	WP type	–	WM-V-AA type	WP type	Compatible
	WP type	–	WP type	WM-V-BB type	Compatible
	WP type	–	WP type	WM-V-AB type	Compatible
	WP type	–	WP type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-BB type	WP type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WM-V-AB type	WP type	WP type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WM-V-AA type	WP type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-BB type	Compatible
	WM-V-AA type	WP type	WP type	WM-V-AB type	Compatible
	WM-V-AA type	WP type	WP type	WP type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-BB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-BB type	WP type	WP type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WM-V-AA type	WP type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-BB type	Compatible
	WP type	WM-V-AB type	WP type	WM-V-AB type	Compatible
	WP type	WM-V-AB type	WP type	WP type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-BB type	Compatible
	WP type	WP type	WM-V-AA type	WM-V-AB type	Compatible
	WP type	WP type	WM-V-AA type	WP type	Compatible
	WP type	WP type	WP type	WM-V-BB type	Compatible
	WP type	WP type	WP type	WM-V-AB type	Compatible
	WP type	WP type	WP type	WP type	Compatible

<Vertical type Main-HBC connection>

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY-(E)M-YNW-A1	WM-F-AA type	–	–	–	Compatible
	WM-F-AA type	WM-V-BB type	–	–	Compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

Outdoor/Heat source unit	Main 1	Sub 1	Sub 2	Sub 3	Compatibility
PURY-(E)P-YNW PURY-(E)P-YLM PQRY-P-YLM	WM-F-AA type	–	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	–	–	Not compatible
	WM-F-AA type	WM-V-AB type	–	–	Not compatible
	WM-F-AA type	WP type	–	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	–	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	–	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	–	Not compatible
	WM-F-AA type	WP type	WP type	–	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-BB type	WP type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WM-V-AB type	WP type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-BB type	WP type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WM-V-AB type	WP type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-BB type	Not compatible
	WM-F-AA type	WP type	WP type	WM-V-AB type	Not compatible
	WM-F-AA type	WP type	WP type	WP type	Not compatible

HYBRID CITY MULTI R32/R410A Series

2. INDOOR UNITS

GENERAL LINE-UP

Compatibility

Ceiling cassette (4-way flow type)

PLFY-WL-VEM-E....2 - 1

PLFY-EWL-VEM-E....2 - 21

PLFY-WL-VFM-E....2 - 35

Ceiling concealed (Low static pressure type)

PEFY-WP-VMS1-E....2 - 47

PEFY-W-VMS-A....2 - 69

Ceiling concealed (Medium static pressure type)

PEFY-WP-VMA-E....2 - 93

PEFY-W-VMA(L)-A....2 - 125

PEFY-W-VMA2-A....2 - 163

Ceiling concealed (High static pressure type)

PEFY-WL-VMHS-A....2 - 181

Ceiling suspended

PCFY-WL-VKM-E....2 - 201

Wall mounted

PKFY-WL-VLM-E, PKFY-WL-VKM-E....2 - 215

Floor standing (Exposed type)

PFFY-WL-VEM-A....2 - 237

Floor standing (Concealed type)

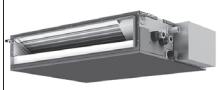
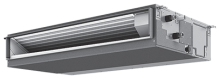
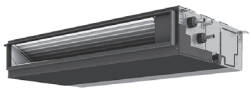
PFFY-W-VCM-A....2 - 255

PFFY-WL-VCM-A....2 - 271

GENERAL LINE-UP

Indoor Units Line-up of HYBRID CITY MULTI.

All the indoor units are subject to CE regulation.

Model size		10	15	20	25	32	40	50	63	71	80	100	125	140	200	250
Nominal HP		0.4HP	0.6HP	0.8HP	1.0HP	1.3HP	1.6HP	2.0HP	2.5HP	2.8HP	3.2HP	4.0HP	5.0HP	5.6HP	8.0HP	10.0HP
Nominal cooling cap.	kW	1.2	1.7	2.2	2.8	3.6	4.5	5.6	7.1	8.0	9.0	11.2	14.0	16.0	22.4	28.0
	Btu/h	4,100	5,800	7,500	9,600	12,300	15,400	19,100	24,200	27,300	30,700	38,200	47,800	54,600	76,400	95,500
Nominal heating cap.	kW	1.4	1.9	2.5	3.2	4.0	5.0	6.3	8.0	9.0	10.0	12.5	16.0	18.0	25.0	31.5
	Btu/h	4,800	6,500	8,500	10,900	13,600	17,100	21,500	27,300	30,700	34,100	42,700	54,600	61,400	85,300	107,500
Ceiling cassette		 PLFY-WL-VEM-E					 PLFY-EWL-VEM-E				 PLFY-WL-VFM-E					
PLFY-WL-VEM-E				●	●	●	●	●	●		●	●	●			
PLFY-EWL-VEM-E								●	●		●					
PLFY-WL-VFM-E		●	●	●	●	●	●									
Ceiling concealed		 PEFY-WP-VMS1-E			 PEFY-W-VMS-A		 PEFY-WP-VMA-E				 PEFY-W-VMA(L)-A PEFY-W-VMA2-A		 PEFY-WL-VMHS-A			
PEFY-WP-VMS1-E		●	●	●	●	●	●	●								
PEFY-W-VMS-A		●	●	●	●	●	●	●								
PEFY-WP-VMA-E				●	●	●	●	●	●	●	●	●	●			
PEFY-W-VMA(L)-A				●	●	●	●	●	●	●	●	●	●			
PEFY-W-VMA2-A				●	●	●	●	●	●	●	●	●	●			
PEFY-WL-VMHS-A							●	●	●	●	●	●	●			
Ceiling suspended		 PCFY-WL-VKM-E														
PCFY-WL-VKM-E							●		●		●	●				
Wall mounted		 PKFY-WL-VLM-E								 PKFY-WL-VKM-E						
PKFY-WL-VLM-E		●	●	●	●	●	●									
PKFY-WL-VKM-E								●	●		●					
Floor standing		 PFFY-WL-VEM-A									 PFFY-W-VCM-A PFFY-WL-VCM-A					
PFFY-WL-VEM-A				●	●	●	●	●								
PFFY-W-VCM-A				●	●	●	●	●								
PFFY-WL-VCM-A				●	●	●	●	●								

* BTU/h=round (kWx3,412,-2)

* Nominal conditions are referable at the Specification sheet.

The table below summarizes different types of indoor units with and without the flow control valve.

Model name	WP	(E)WL	W
Flow control valve	Excluded	Excluded	Built-in

WP-model

The WP-model indoor unit does not have a built-in flow control valve, and is not compatible with the optional valve kit.

Model:
PEFY-WP VMS1-E
PEFY-WP VMA-E

W-model

The W-model indoor unit has a built-in flow control valve.

Model:
PEFY-W VMS-A
PEFY-W VMA(L)-A
PEFY-W VMA2-A
PFFY-W VCM-A

(E)WL-model

The WL-model indoor unit does not have a built-in flow control valve, and it is compatible with the optional valve kit (PAC-SK35VK-E).

Model:
PLFY-(E)WL VEM-E
PLFY-WL VFM-E
PEFY-WL VMHS-A
PCFY-WL VKM-E
PKFY-WL VLM-E
PKFY-WL VKM-E
PFFY-WL VEM-A
PFFY-WL VCM-A

• Compatibility table of indoor units and outdoor systems

Indoor unit	Connectable outdoor system
■ W-model PEFY-W-VMS-A PEFY-W-VMA(L)-A PEFY-W-VMA2-A PFFY-W-VCM-A ■ WL-model PLFY-(E)WL-VEM-E PLFY-WL-VFM-E PEFY-WL-VMHS-A PCFY-WL VKM-E PKFY-WL-VLM/VKM-E PFFY-WL VEM-A PFFY-WL VCM-A	Y-Series + Hydro unit* R2-Series + HBC controller
■ WP-model PEFY-WP-VMS1-E PEFY-WP-VMA-E	R2-Series + HBC controller

*When connecting to WL-model indoor units, the optional valve kit (PAC-SK35VK-E) is required to all WL-models.

• Compatibility of different combinations of indoor units

In an HVRF-Y system, only indoor units with a flow control valve are compatible (W-model, and WL-model with an optional valve kit).
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

Compatibility

CONTENTS

PLFY-WL-VEM-E

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1. SPECIFICATIONS

Model				PLFY-WL20VEM-E	PLFY-WL25VEM-E	PLFY-WL32VEM-E
Power source				1-phase 220-240 V 50Hz, 1-phase 220V 60Hz		
Cooling capacity *1			kW	2.2	2.8	3.6
(Nominal) *1			BTU/h	7,500	9,600	12,300
	Power input		kW	0.03	0.03	0.03
	Current input		A	0.26	0.29	0.33
Heating capacity *2			kW	2.5	3.2	4.0
(Nominal) *2			BTU/h	8,500	10,900	13,600
	Power input		kW	0.03	0.03	0.03
	Current input		A	0.20	0.23	0.27
External finish				Galvanized steel sheet		
External dimension H x W x D			mm	258 × 840 × 840		
			in.	10-3/16 × 33-1/16× 33-1/16		
Net weight			kg (lbs)	18(40)	18(40)	20(44)
Decoration panel	Model			**PLP-6EA**	**PLP-6EA**	**PLP-6EA**
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	40 x 950 x 950		
	H x W x D		in.	1-9/16 x 37-13/32 x 37-13/32		
	Net weight		kg (lbs)	5 (11)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	1.0	1.0	1.8
FAN	Type x Quantity			Turbo Fan × 1	Turbo Fan × 1	Turbo Fan × 1
	External static press.		Pa (mmH_2O)	0	0	0
	Motor type			DC motor		
	Motor output		kW	0.050	0.050	0.050
	Driving mechanism			Direct-driven by motor		
	Airflow rate		m^3/min	12-13-14-15	12-13-15-17	14-15-16-17
	(Low-Mid2-Mid1-High)		L/s	200-217-233-250	200-217-250-283	233-250-267-283
			cfm	424-459-494-530	424-459-530-600	494-530-565-600
Sound pressure level				(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
(measured in anechoic room)			dB <A>	24-26-27-28	24-26-28-30	26-27-29-30
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
*3, *4	Field pipe size	Inlet	mm I.D	20	20	20
		Outlet	mm I.D	20	20	20
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N266	RK01N266	RK01N266
	Wiring			RG79Y864	RG79Y864	RG79Y864
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Remark	Optional parts					
	Decoration panel **1			PLP-6EA	PLP-6EA	PLP-6EA
	Signal receiver panel **1			PLP-6EAL	PLP-6EAL	PLP-6EAL
	3D i-see Sensor panel **1			PLP-6EAE	PLP-6EAE	PLP-6EAE
	3D i-see Sensor and signal receiver panel **1			PLP-6EALE	PLP-6EALE	PLP-6EALE
	Auto elevation and signal receiver panel **1			PLP-6EAJ	PLP-6EAJ	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel **1			PLP-6EAJE	PLP-6EAJE	PLP-6EAJE
	With wireless remote controller and signal receiver panel **1			PLP-6EALM2	PLP-6EALM2	PLP-6EALM2
	With wireless remote controller, signal receiver and 3D i-see Sensor panel **1			PLP-6EALME2	PLP-6EALME2	PLP-6EALME2
	3D i-see Sensor corner panel			PAC-SE1ME-E	PAC-SE1ME-E	PAC-SE1ME-E
	Wireless signal receiver			PAR-SE9FA-E	PAR-SE9FA-E	PAR-SE9FA-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			PAC-SK51FT-E	PAC-SK51FT-E	PAC-SK51FT-E
				**1.PLFY-WL-VEM-E should be used together with PLP-6EA/EAL/EAE/EALE/EAJ/EAJE/EALM2/EALME2.		
	Installation			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.		

Notes:

1. Nominal cooling conditions
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Be sure to install a valve on the water outlet.
4. Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5. Certain restrictions apply to indoor unit combinations.
   Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
   When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
   The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.

*Please group units that operate on 1 branch.
*Due to continuing improvement, above specifications may be subject to change without notice.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

1. SPECIFICATIONS

Model				PLFY-WL40VEM-E	PLFY-WL50VEM-E	PLFY-WL63VEM-E
Power source				1-phase 220-240 V 50Hz, 1-phase 220V 60Hz		
Cooling capacity *1			kW	4.5	5.6	7.1
(Nominal) *1			BTU/h	15,400	19,100	24,200
	Power input		kW	0.03	0.04	0.04
	Current input		A	0.35	0.40	0.40
Heating capacity *2			kW	5.0	6.3	8.0
(Nominal) *2			BTU/h	17,100	21,500	27,300
	Power input		kW	0.03	0.04	0.04
	Current input		A	0.29	0.34	0.34
External finish				Galvanized steel sheet		
External dimension H x W x D			mm	258 × 840 × 840		298 × 840 × 840
			in.	10-3/16 × 33-1/16× 33-1/16		11-3/4 × 33-1/16× 33-1/16
Net weight			kg (lbs)	20(44)	20(44)	23(51)
Decoration panel	Model			**PLP-6EA**	**PLP-6EA**	**PLP-6EA**
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	40 x 950 x 950		
	H x W x D		in.	1-9/16 x 37-13/32 x 37-13/32		
	Net weight		kg (lbs)	5 (11)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	1.8	1.8	2.1
FAN	Type x Quantity			Turbo Fan × 1	Turbo Fan × 1	Turbo Fan × 1
	External static press.		Pa (mmH_2O)	0	0	0
	Motor type			DC motor		
	Motor output		kW	0.050	0.050	0.120
	Driving mechanism			Direct-driven by motor		
	Airflow rate		m^3/min	14-15-16-17	14-16-18-20	15-17-19-21
	(Low-Mid2-Mid1-High)		L/s	233-250-267-283	233-267-300-333	250-283-317-350
			cfm	494-530-565-600	494-565-636-706	530-600-671-742
Sound pressure level				(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
(measured in anechoic room)			dB <A>	26-28-29-31	27-29-31-33	27-29-31-33
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
	Field pipe size	Inlet	mm I.D	20	20	30
*3, *4		Outlet	mm I.D	20	20	30
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N266	RK01N266	RK01N266
	Wiring			RG79Y864	RG79Y864	RG79Y864
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Remark	Optional parts					
	Decoration panel **1			PLP-6EA	PLP-6EA	PLP-6EA
	Signal receiver panel **1			PLP-6EAL	PLP-6EAL	PLP-6EAL
	3D i-see Sensor panel **1			PLP-6EAE	PLP-6EAE	PLP-6EAE
	3D i-see Sensor and signal receiver panel **1			PLP-6EALE	PLP-6EALE	PLP-6EALE
	Auto elevation and signal receiver panel **1			PLP-6EAJ	PLP-6EAJ	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel **1			PLP-6EAJE	PLP-6EAJE	PLP-6EAJE
	With wireless remote controller and signal receiver panel **1			PLP-6EALM2	PLP-6EALM2	PLP-6EALM2
	With wireless remote controller, signal receiver and 3D i-see Sensor panel **1			PLP-6EALME2	PLP-6EALME2	PLP-6EALME2
	3D i-see Sensor corner panel			PAC-SE1ME-E	PAC-SE1ME-E	PAC-SE1ME-E
	Wireless signal receiver			PAR-SE9FA-E	PAR-SE9FA-E	PAR-SE9FA-E
	Valve kit *5			PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			PAC-SK51FT-E	PAC-SK51FT-E	PAC-SK51FT-E
				**1.PLFY-WL-VEM-E should be used together with PLP-6EA/EAL/EAE/EALE/EAJ/EAJE/EALM2/EALME2.		
	Installation			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.		

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.
*Due to continuing improvement, above specifications may be subject to change without notice.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PLFY-WL80VEM-E	PLFY-WL100VEM-E	PLFY-WL125VEM-E
Power source				1-phase 220-240 V 50Hz, 1-phase 220V 60Hz		
Cooling capacity *1			kW	9.0	11.2	14.0
(Nominal) *1			BTU/h	30,700	38,200	47,800
	Power input		kW	0.05	0.08	0.11
	Current input		A	0.46	0.66	1.05
Heating capacity *2			kW	10.0	12.5	16.0
(Nominal) *2			BTU/h	34,100	42,700	54,600
	Power input		kW	0.05	0.08	0.11
	Current input		A	0.40	0.60	0.99
External finish				Galvanized steel sheet		
External dimension H x W x D			mm	298 × 840 × 840		
			in.	11-3/4 × 33-1/16× 33-1/16		
Net weight			kg (lbs)	23(51)	23(51)	25(55)
Decoration panel	Model			**PLP-6EA**	**PLP-6EA**	**PLP-6EA**
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	40 x 950 x 950		
	H x W x D		in.	1-9/16 x 37-13/32 x 37-13/32		
	Net weight		kg (lbs)	5 (11)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	2.1	2.2	3.1
FAN	Type x Quantity			Turbo Fan × 1	Turbo Fan × 1	Turbo Fan × 1
	External static press.		Pa (mmH_2O)	0	0	0
	Motor type			DC motor		
	Motor output		kW	0.120	0.120	0.120
	Driving mechanism			Direct-driven by motor		
	Airflow rate		m^3/min	15-18-21-23	19-23-26-30	20-25-30-35
	(Low-Mid2-Mid1-High)		L/s	250-300-350-383	317-383-433-500	333-417-500-583
			cfm	530-636-742-812	671-812-918-1059	706-883-1059-1236
Sound pressure level				(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
(measured in anechoic room)			dB <A>	27-30-33-35	31-35-37-40	33-37-40-46
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
*3, *4	Field pipe size	Inlet	mm I.D	30	30	30
		Outlet	mm I.D	30	30	30
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N266	RK01N266	RK01N266
	Wiring			RG79Y864	RG79Y864	RG79Y864
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Remark	Optional parts					
	Decoration panel **1			PLP-6EA	PLP-6EA	PLP-6EA
	Signal receiver panel **1			PLP-6EAL	PLP-6EAL	PLP-6EAL
	3D i-see Sensor panel **1			PLP-6EAE	PLP-6EAE	PLP-6EAE
	3D i-see Sensor and signal receiver panel **1			PLP-6EALE	PLP-6EALE	PLP-6EALE
	Auto elevation and signal receiver panel **1			PLP-6EAJ	PLP-6EAJ	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel **1			PLP-6EAJE	PLP-6EAJE	PLP-6EAJE
	With wireless remote controller and signal receiver panel **1			PLP-6EALM2	PLP-6EALM2	PLP-6EALM2
	With wireless remote controller, signal receiver and 3D i-see Sensor panel **1			PLP-6EALME2	PLP-6EALME2	PLP-6EALME2
	3D i-see Sensor corner panel			PAC-SE1ME-E	PAC-SE1ME-E	PAC-SE1ME-E
	Wireless signal receiver			PAR-SE9FA-E	PAR-SE9FA-E	PAR-SE9FA-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			PAC-SK51FT-E	PAC-SK51FT-E	PAC-SK51FT-E
				**1.PLFY-WL-VEM-E should be used together with PLP-6EA/EAL/EAE/EALE/EAJ/EAJE/EALM2/EALME2.		
	Installation			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.		

Notes:

1. Nominal cooling conditions
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Be sure to install a valve on the water outlet.
4. Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5. Certain restrictions apply to indoor unit combinations.
   Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
   When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
   The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.

*Please group units that operate on 1 branch.
*Due to continuing improvement, above specifications may be subject to change without notice.

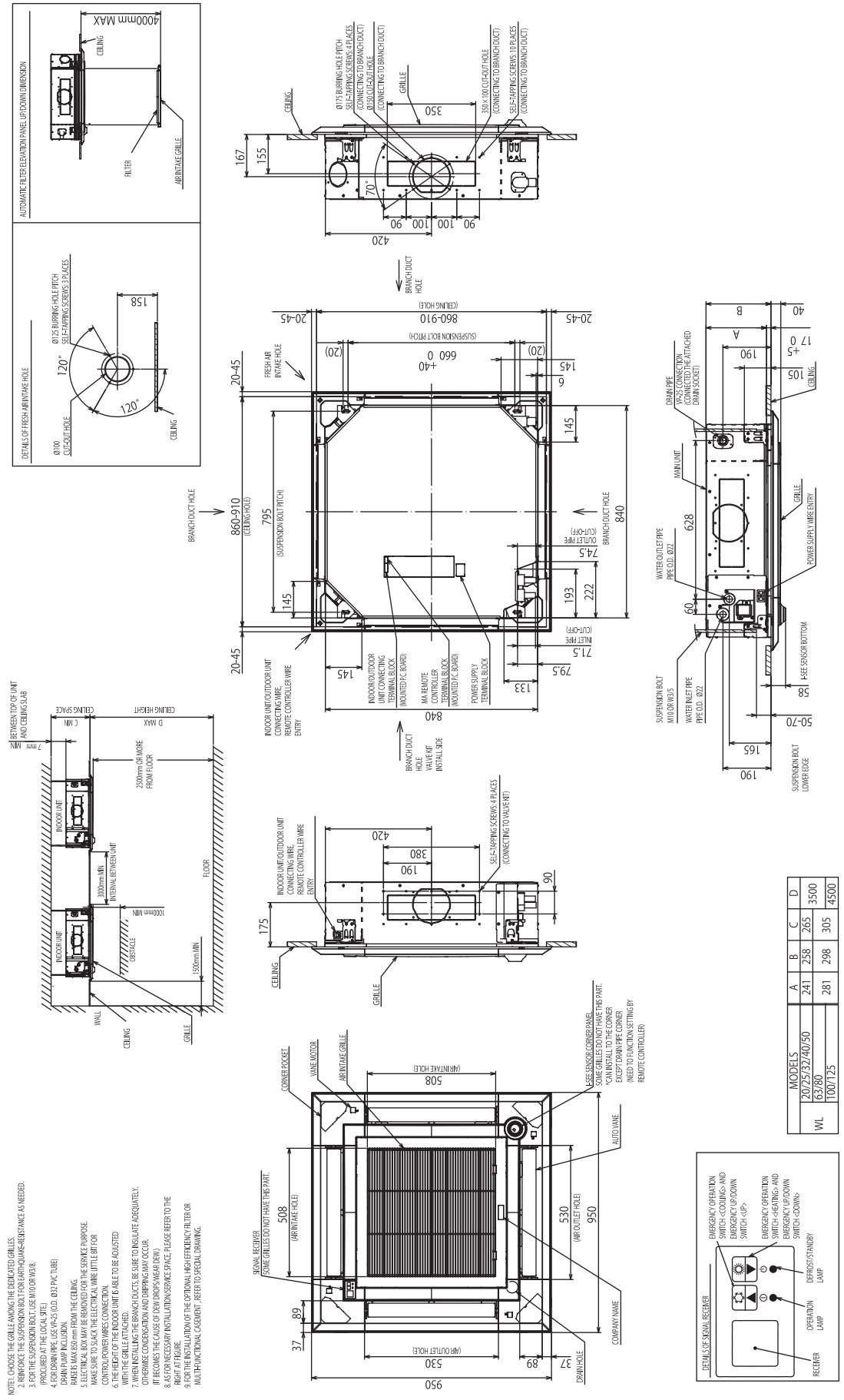
Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

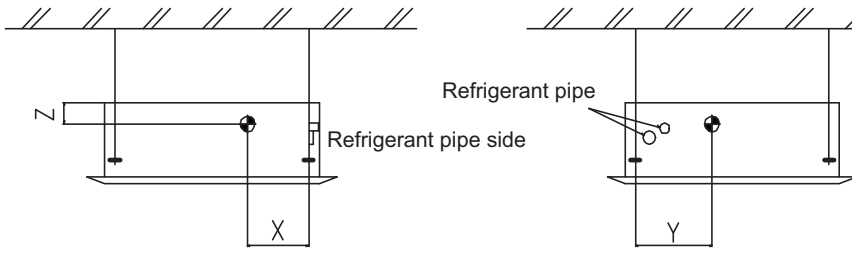
*Above specification data is subject to rounding variation.

PLFY-WL20, 25, 32, 40, 50, 63, 80, 100, 125VEM-E

Unit: mm



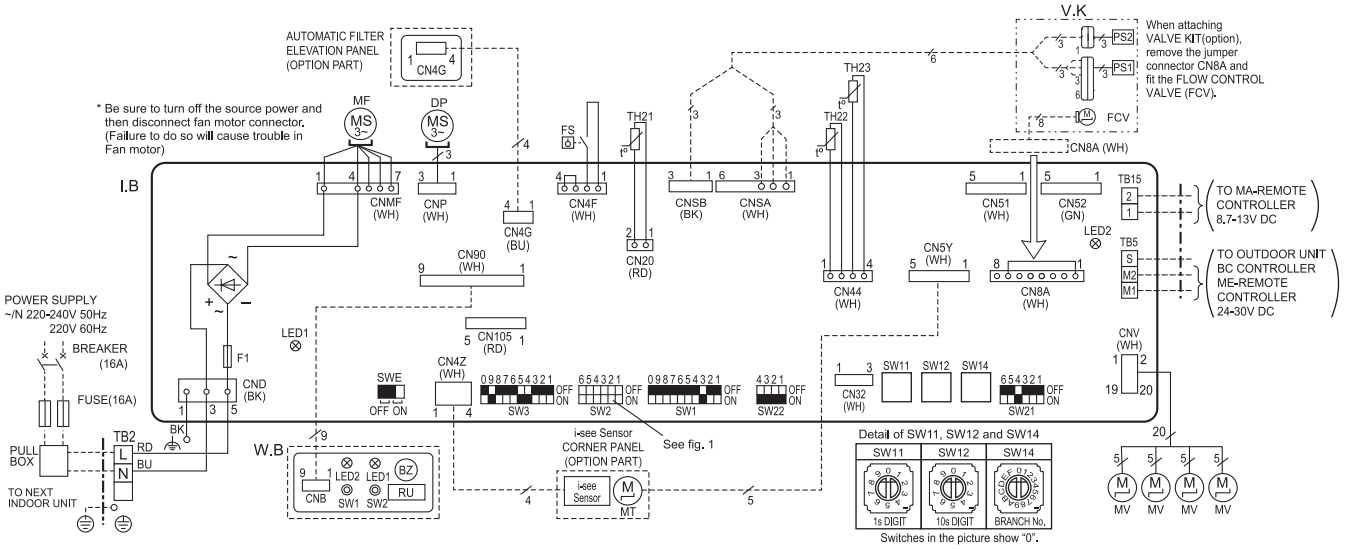
PLFY-WL20, 25, 32, 40, 50, 63, 80, 100, 125VEM-E



(mm)[in]

Model name	X	Y	Z
PLFY-WL20VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL25VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL32VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL40VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL50VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL63VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL80VEM-E	325 [12-13/16]	390 [15-3/8]	115 [4-17/32]
PLFY-WL100VEM-E	325 [12-13/16]	380 [14-31/32]	100 [3-15/16]
PLFY-WL125VEM-E	325 [12-13/16]	380 [14-31/32]	100 [3-15/16]

PLFY-WL20, 25, 32, 40, 50, 63, 80, 100, 125VEM-E



NOTES:
1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15.
   (Remote controller wire is non-polar.)
3. In case of using ME-Remote controller, please connect to TB5.
   (Transmission line is non-polar.)
4. Symbol [S]of TB5 is the shield wire connection.
5. Symbols used in wiring diagram are,
   : terminal block, : connector.
6. The setting of SW2 differs in the capacity.
   For the detail, refer to the fig. 1.
7. Make sure to turn off the indoor and the outdoor units before replacing indoor controller board.
8. ■ is the switch position.

【LEGEND】

SYMBOL	NAME		SYMBOL	NAME	
I. B	INDOOR CONTROLLER BOARD		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5.4kΩ)
CN32	CONNECTOR	REMOTE SWITCH			
CN51		CENTRALLY CONTROL	TH22		PIPE TEMP. DETECTION / INLET (0°C/15kΩ, 25°C/5.4kΩ)
CN52		REMOTE INDICATION			
CN105		IT TERMINAL	TH23		PIPE TEMP. DETECTION / OUTLET (0°C/15kΩ, 25°C/5.4kΩ)
F1	FUSE (T 6.3AL 250V)				
SW1	SWITCH	MODE SELECTION	TB2	TERMINAL BLOCK	POWER SUPPLY
SW2		CAPACITY CODE	TB5		TRANSMISSION
SW3		MODE SELECTION	TB15		MA-REMOTE CONTROLLER
SW11		ADDRESS SETTING 1s DIGIT	OPTION PART		
SW12		ADDRESS SETTING 10s DIGIT	W.B		PCB FOR WIRELESS REMOTE CONTROLLER
SW14		BRANCH NO.	BZ		BUZZER
SW21		CEILING HEIGHT DISCHARGE OUTLET NUMBER OPTION SELECTOR	LED1		LED (OPERATION INDICATION : GREEN)
			LED2		LED (PREPARATION FOR HEATING : ORANGE)
			RU		RECEIVING UNIT
SW22		PAIR NO. SETTING	SW1		EMERGENCY OPERATION (HEAT / DOWN)
SWE		DRAIN PUMP (TEST MODE)	SW2		EMERGENCY OPERATION (COOL / UP)
DP	DRAIN PUMP		MT		i-see Sensor MOTOR
FS	DRAIN FLOAT SWITCH		V.K		VALVE KIT
MF	FAN MOTOR		PS1		PRESSURE SENSOR 1 (INLET)
MV	VANE MOTOR		PS2		PRESSURE SENSOR 2 (OUTLET)
			FCV		FLOW CONTROL VALVE

<fig. 1> SW2 (CAPACITY CODE)

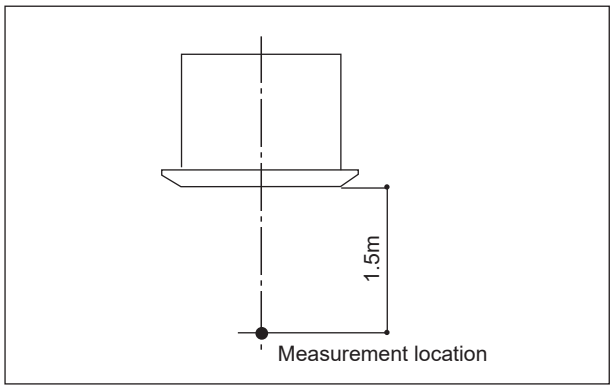
MODELS	SW2	MODELS	SW2	MODELS	SW2
WL20	ON OFF 1 2 3 4 5 6	WL25	ON OFF 1 2 3 4 5 6	WL32	ON OFF 1 2 3 4 5 6
WL40	ON OFF 1 2 3 4 5 6	WL50	ON OFF 1 2 3 4 5 6	WL63	ON OFF 1 2 3 4 5 6
WL80	ON OFF 1 2 3 4 5 6	WL100	ON OFF 1 2 3 4 5 6	WL125	ON OFF 1 2 3 4 5 6

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

5-1. Sound levels

PLFY-WL-VEM-E



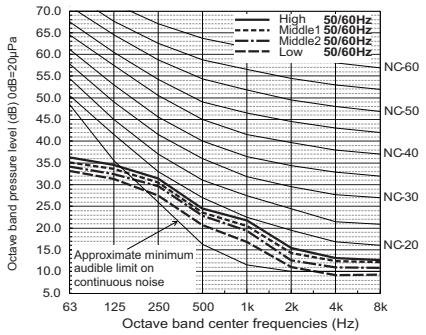
* Measured in anechoic room.

Sound level at anechoic room: Low-Mid2-Mid1-High

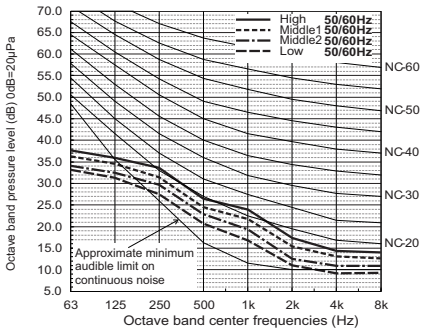
	Sound level dB (A)
PLFY-WL20VEM-E	24-26-27-28
PLFY-WL25VEM-E	24-26-28-30
PLFY-WL32VEM-E	26-27-29-30
PLFY-WL40VEM-E	26-28-29-31
PLFY-WL50VEM-E	27-29-31-33
PLFY-WL63VEM-E	27-29-31-33
PLFY-WL80VEM-E	27-30-33-35
PLFY-WL100VEM-E	31-35-37-40
PLFY-WL125VEM-E	33-37-40-46

5-2. NC curves

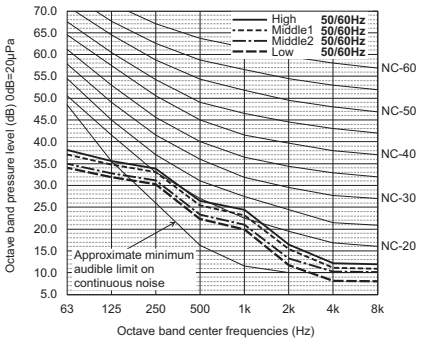
PLFY-WL20VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



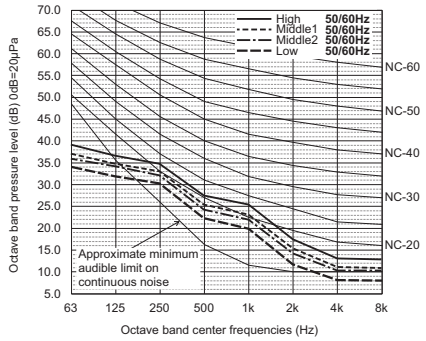
PLFY-WL25VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



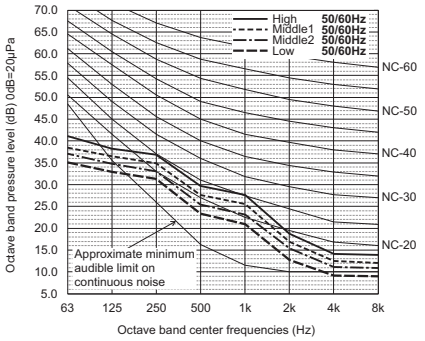
PLFY-WL32VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



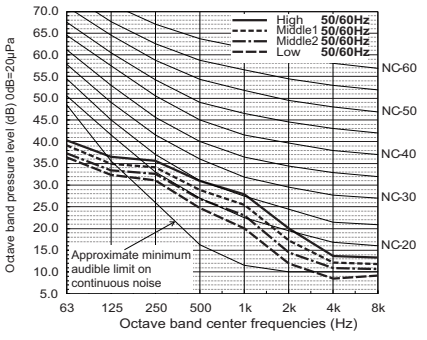
PLFY-WL40VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



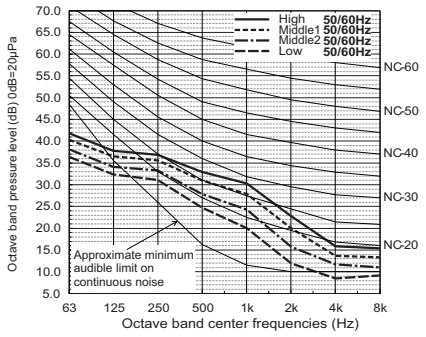
PLFY-WL50VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



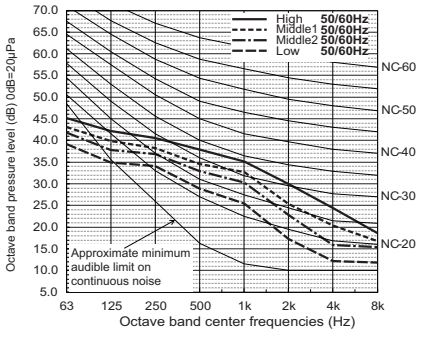
PLFY-WL63VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



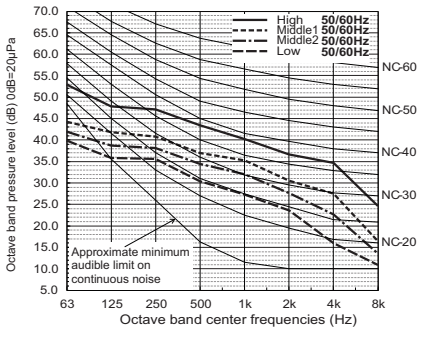
PLFY-WL80VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



PLFY-WL100VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz

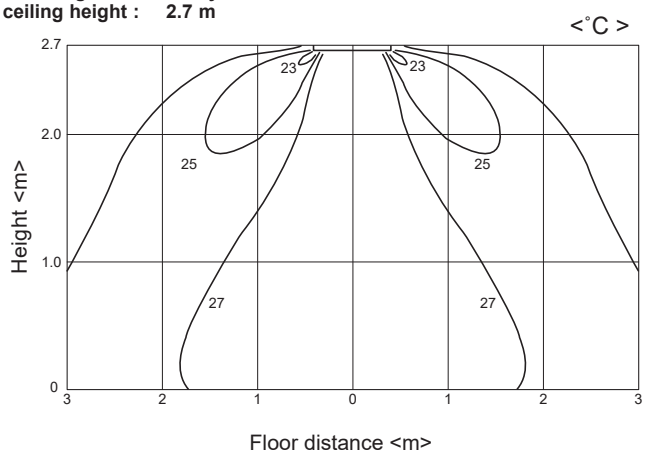


PLFY-WL125VEM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz

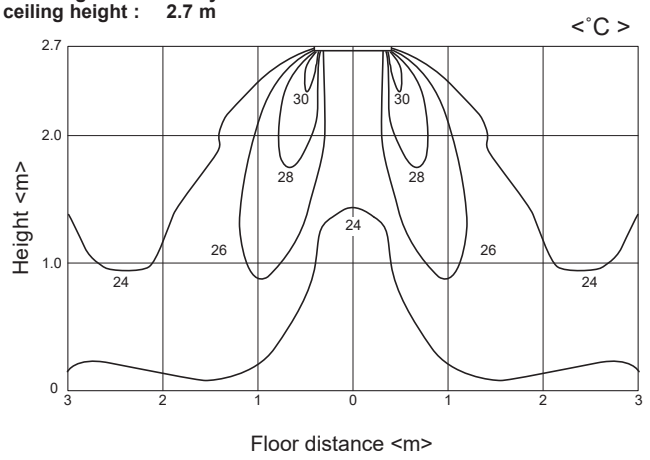


6-1. Temperature distributions

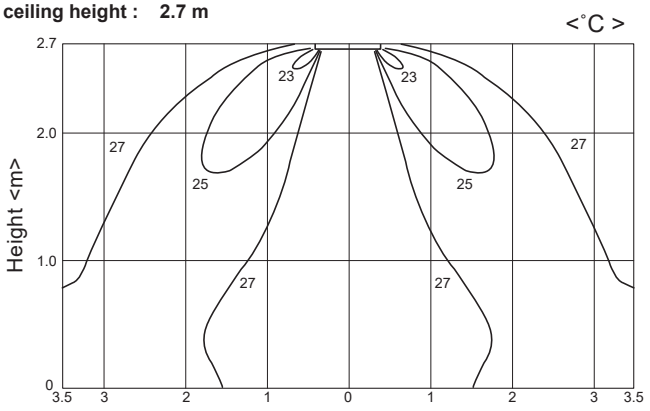
• PLFY-WL32, 40VEM-E
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 2.7 m



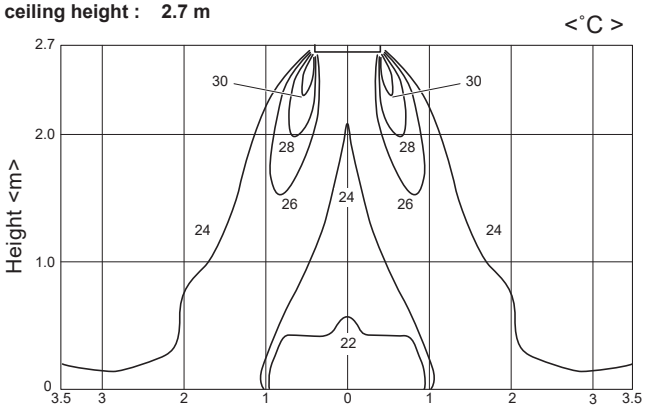
<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m



• PLFY-WL50VEM-E
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 2.7 m

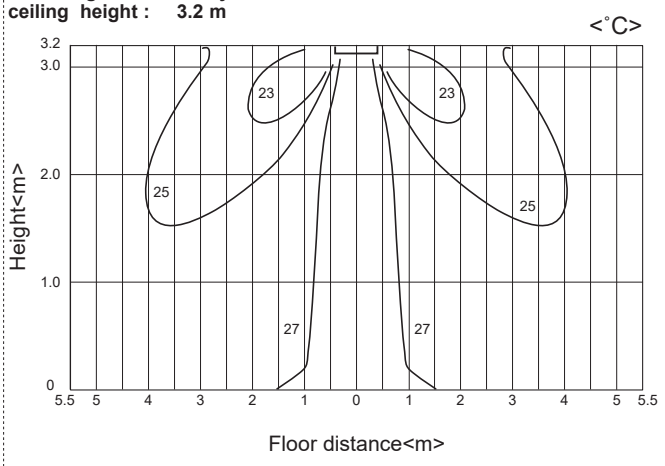


<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m

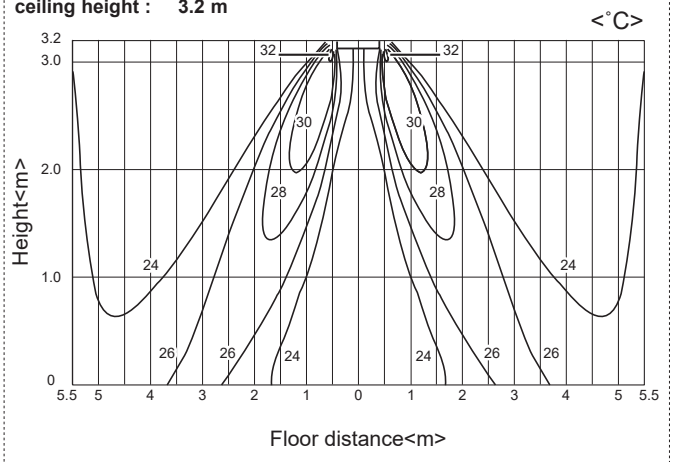


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

• **PLFY-WL125VEM-E**
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 3.2 m



<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 3.2 m

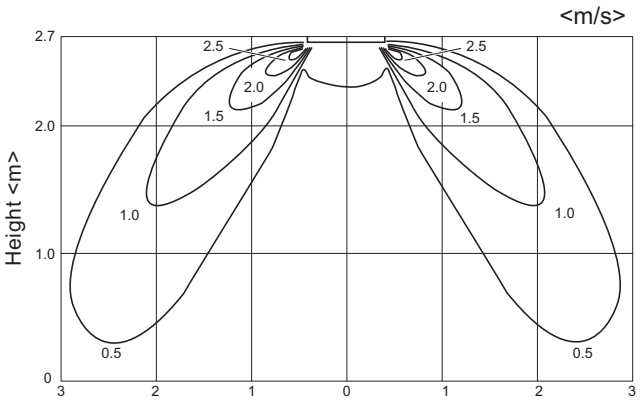


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

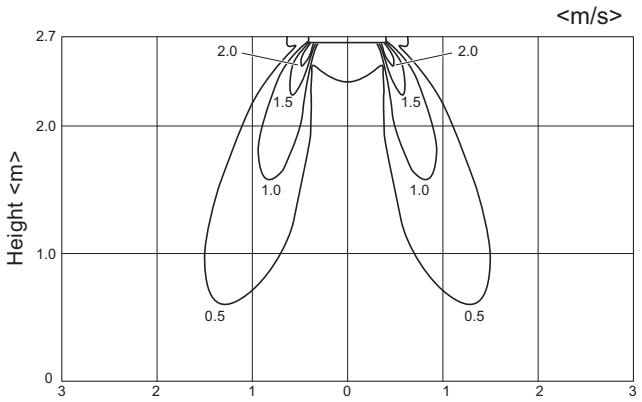
6-2. Airflow distributions

PLFY-WL32, 40VEM-E

<Cooling mode>
Flow angle 30°

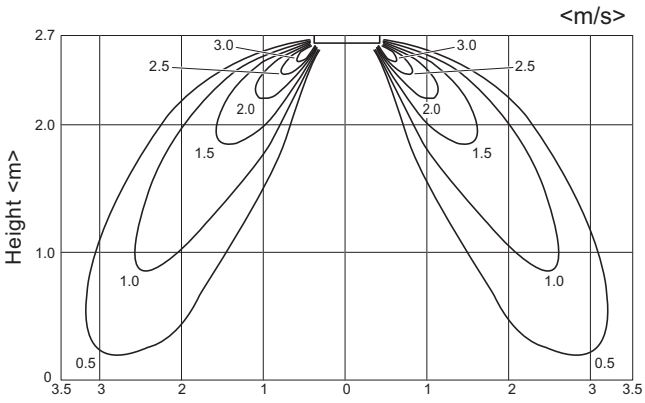


<Heating mode>
Flow angle 60°

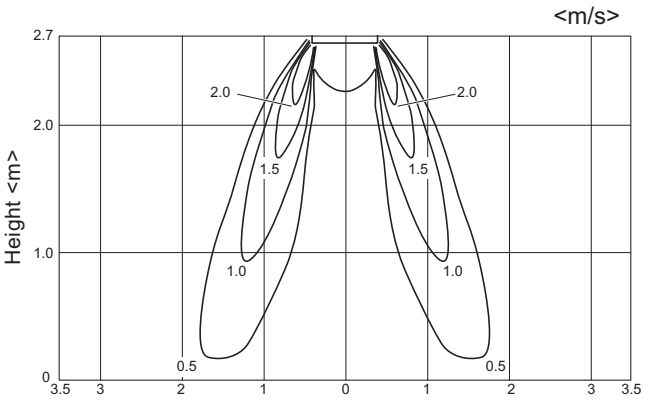


PLFY-WL50VEM-E

<Cooling mode>
Flow angle 30°



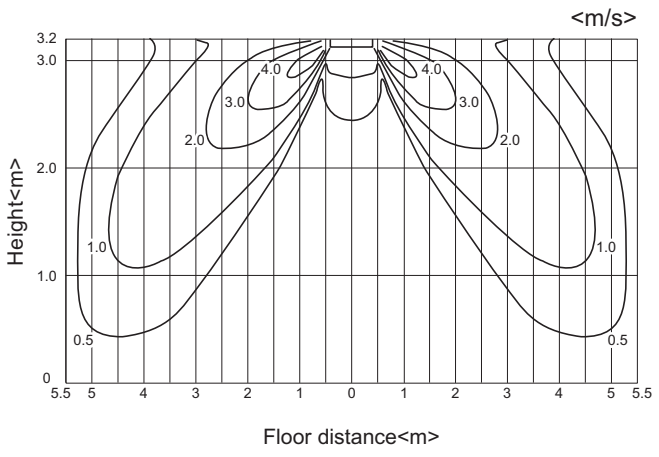
<Heating mode>
Flow angle 60°



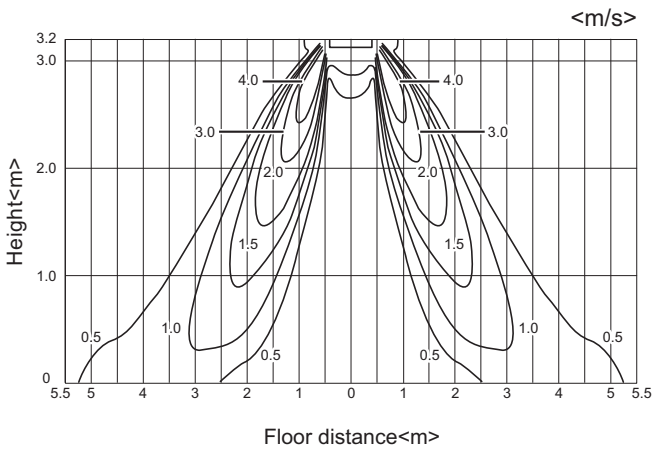
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

PLFY-WL125VEM-E

<Cooling mode>
Flow angle 30°



<Heating mode>
Flow angle 60°



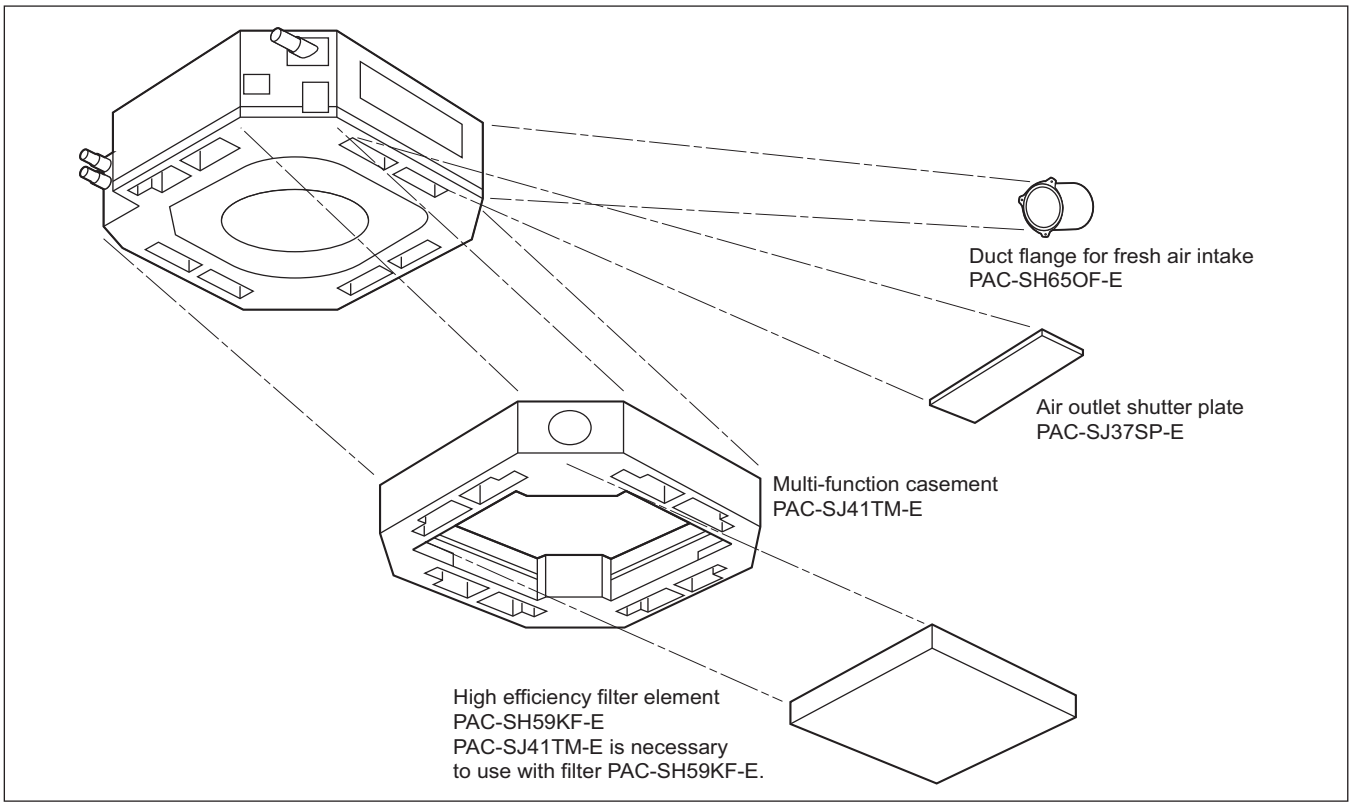
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

PLFY-WL-VEM-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PLFY-WL20VEM-E	220-240V/50Hz 220V/60Hz	Max.: 264V Min.: 198V	0.33	0.05	0.26
PLFY-WL25VEM-E			0.37	0.05	0.29
PLFY-WL32VEM-E			0.42	0.05	0.33
PLFY-WL40VEM-E			0.44	0.05	0.35
PLFY-WL50VEM-E			0.50	0.05	0.40
PLFY-WL63VEM-E			0.50	0.12	0.40
PLFY-WL80VEM-E			0.58	0.12	0.46
PLFY-WL100VEM-E			0.83	0.12	0.66
PLFY-WL125VEM-E			1.32	0.12	1.05

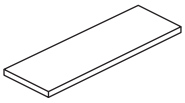
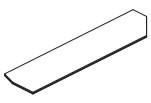
8-1. Optional parts line up for the Indoor unit

	Description	Model
PLFY-WL-VEM-E	Air outlet shutter plate	PAC-SJ37SP-E
	Multi-function casement	PAC-SJ41TM-E
	High efficiency filter element	PAC-SH59KF-E
	3D i-see Sensor corner panel	PAC-SE1ME-E
	Auto elevation and signal receiver panel	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel	PLP-6EAJE
	Wireless signal receiver	PAR-SE9FA-E
	Space panel	PAC-SJ65AS-E
	Duct flange for fresh air intake	PAC-SH65OF-E
	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E
	Plasma Quad Connect	PAC-SK51FT-E



8-2. Air outlet shutter plate

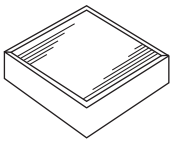
Using the air outlet shutter plate to block the air outlet to modify the air-way from 4 to 3 or 2.
With one shutter plate, 4 air-ways can be changed to 3;
With two shutter plates, 4 air-ways can be changed to 2;
Changing to 1 way is not allowed.
Material: Foamed polyethylene + foamed urethane, color: Black

Item	Shutter plate	Shutter plate	
Quantity	2	1	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-3. High efficiency filter element

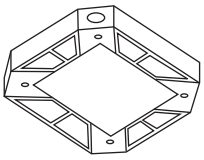
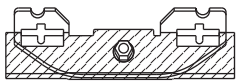
Life span: 2,500 hr (Dust concentration 0.15mg/m³); Colorimetric method 65% (JIS 11 class); No re-production.
* The actual dust situation affects the filter life span, which should be considered at the applying site.
Material: Electrostatic polyolefin fiber
High efficiency filter element PAC-SH59KF-E should be used together with the Multi-function casement PAC-SJ41TM-E. When using PAC-SH59KF-E, switching on SW21-5 of the Indoor unit address board is needed. Details should be referred to its Installation Manual.

Quantity	1	
Shape		

Detailed installation information is referred in its Installation Manual.

8-4. Multi-function casement

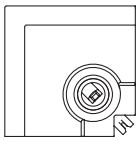
Multi-function casement is used for High efficiency filter element and/or fresh air intake from outdoor.
It should be used with High efficiency filter element PAC-SH59KF-E (Colorimetric method 65%).
Fresh air intake on the Multi-function casement is possible from any 2 or less corners among the 4 ones.
But duct and flange on the casement should be prepare locally.

Item	Multi-functional casement	Screw with washer (black)	Screw	Grille securing bracket
Quantity	1	4	8	4
Shape		M5 × 0.8 × 25 	M5 × 0.8 × 12 	With insulator 

Detailed installation information should be referred to its Installation Manual.

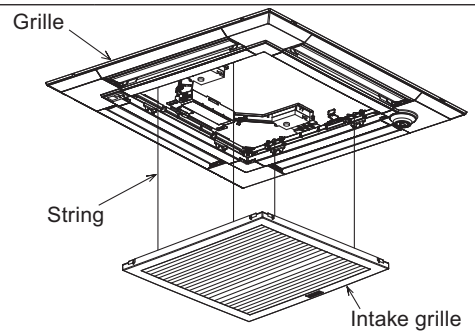
8-5. 3D i-see Sensor corner panel

3D i-see Sensor provides comfortable space as it detects the floor temperature to prevent spotty temperature.
And that enables the unit to save energy.
Attention
Make sure that there are no gaps between the unit and the grille, and the grille and ceiling.
※ It may cause dew dripping.

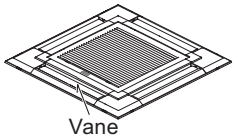
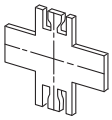
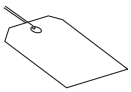
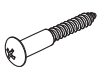
Item	3D i-see Sensor corner panel	
Quantity	1	
Shape		

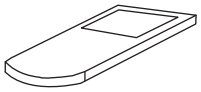
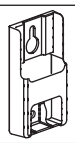
Detailed installation information should be referred to its Installation Manual.

8-6. Auto elevation panel

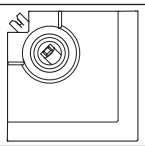


· Air intake grille can be lifted and lowered automatically by wired remote controller (MA type) or wireless remote controller (Item: Wireless remote controller for auto elevation panel).
· Lowering the air intake grille allows you to clean the filter easily.
· You can set up eight different stages of lowering distance for the air intake grille according to the set up location if desired. (Maximum: 4m)

Item	Grille	Installation gauge	Tag	Screw
Quantity	1	1	1	2
Shape	 Vane	 (Used split into four pieces)		 4 × 16

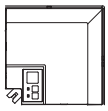
Item	Wireless remote controller for auto elevation panel	Battery	Remote controller holder
Quantity	1	1	1
Shape		 Lithium battery CR2025 3V	

Grille with 3D i-see Sensor

Item	Screw	3D i-see Sensor corner panel
Quantity	1	1
Shape	 4 × 16	

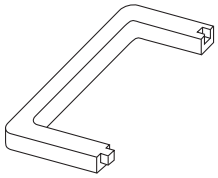
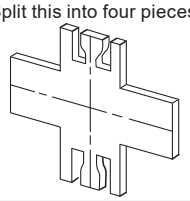
Detailed installation information should be referred to its Installation Manual.

8-7. Wireless signal receiver

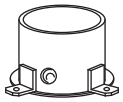
Wireless signal receiver PAR-SE9FA-E is necessary for using wireless remote controller		
Item	Wireless signal receiver	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

8-8. Space panel

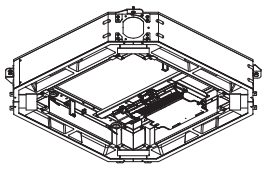
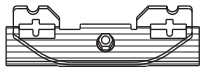
Decorative cover for the installation when the ceiling height is low.		
Item	Space panel	Gauge for installation
Quantity	2	1
Shape		(Split this into four pieces) 

8-9. Duct flange for fresh air intake

Part to attach a duct to take in fresh air from outdoors.			
Item	Duct flange	Insulator	Screws (M4 x 10)
Quantity	1	1	3
Shape			

8-10. Plasma Quad Connect

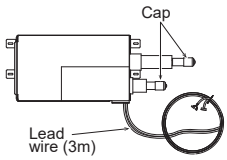
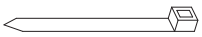
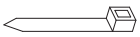
PAC-SK51FT-E connects to CN105 on the indoor unit. When using an additional optional part, connect it to CN105 of PAC-SK51FT-E.

Item	Plasma Quad Connect	Screw with washer (black)	Screw	Grille securing bracket
Quantity	1	4	8	4
Shape		M5 × 0.8 × 25 	M5 × 0.8 × 12 	With insulator 

Detailed installation information should be referred to its Installation Manual.

8-11. Valve kit

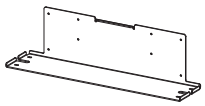
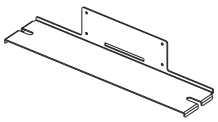
Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

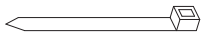
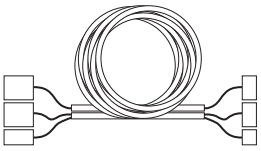
Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

8-12. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.		
Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-13. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m). Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.		
Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

PLFY-EWL-VEM-E

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Model				PLFY-EWL50VEM-E	PLFY-EWL63VEM-E	PLFY-EWL80VEM-E
Power source				1-phase 220-240 V 50Hz, 1-phase 220V 60Hz		
Cooling capacity *1			kW	5.6	7.1	9.0
(Nominal) *1			BTU/h	19,100	24,200	30,700
	Power input		kW	0.11	0.11	0.11
	Current input		A	1.05	1.05	1.05
Heating capacity *2			kW	6.3	8.0	10.0
(Nominal) *2			BTU/h	21,500	27,300	34,100
	Power input		kW	0.11	0.11	0.11
	Current input		A	0.99	0.99	0.99
External finish				Galvanized steel sheet		
External dimension H x W x D			mm	298 × 840 × 840		
			in.	11-3/4 × 33-1/16× 33-1/16		
Net weight			kg (lbs)	25(55)	25(55)	25(55)
Decoration panel	Model			**PLP-6EA**	**PLP-6EA**	**PLP-6EA**
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	40 x 950 x 950		
	H x W x D		in.	1-9/16 x 37-13/32 x 37-13/32		
	Net weight		kg (lbs)	5 (11)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	3.1	3.1	3.1
FAN	Type x Quantity			Turbo Fan × 1	Turbo Fan × 1	Turbo Fan × 1
	External static press.		Pa (mmH_2O)	0	0	0
	Motor type			DC motor		
	Motor output		kW	0.120	0.120	0.120
	Driving mechanism			Direct-driven by motor		
	Airflow rate		m^3/min	20-25-30-35	20-25-30-35	20-25-30-35
	(Low-Mid2-Mid1-High)		L/s	333-417-500-583	333-417-500-583	333-417-500-583
			cfm	706-883-1059-1236	706-883-1059-1236	706-883-1059-1236
Sound pressure level				(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
(measured in anechoic room)			dB <A>	33-37-40-46	33-37-40-46	33-37-40-46
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
	Field pipe size	Inlet	mm I.D	20	30	30
*3, *4		Outlet	mm I.D	20	30	30
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N266	RK01N266	RK01N266
	Wiring			RG79Y864	RG79Y864	RG79Y864
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Remark	Optional parts					
	Decoration panel **1			PLP-6EA	PLP-6EA	PLP-6EA
	Signal receiver panel **1			PLP-6EAL	PLP-6EAL	PLP-6EAL
	3D i-see Sensor panel **1			PLP-6EAE	PLP-6EAE	PLP-6EAE
	3D i-see Sensor and signal receiver panel **1			PLP-6EALE	PLP-6EALE	PLP-6EALE
	Auto elevation and signal receiver panel **1			PLP-6EAJ	PLP-6EAJ	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel **1			PLP-6EAJE	PLP-6EAJE	PLP-6EAJE
	With wireless remote controller and signal receiver panel **1			PLP-6EALM2	PLP-6EALM2	PLP-6EALM2
	With wireless remote controller, signal receiver and 3D i-see Sensor panel **1			PLP-6EALME2	PLP-6EALME2	PLP-6EALME2
	3D i-see Sensor corner panel			PAC-SE1ME-E	PAC-SE1ME-E	PAC-SE1ME-E
	Wireless signal receiver			PAR-SE9FA-E	PAR-SE9FA-E	PAR-SE9FA-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			PAC-SK51FT-E	PAC-SK51FT-E	PAC-SK51FT-E
				**1.PLFY-EWL-VEM-E should be used together with PLP-6EA/EAL/EAE/EALE/EAJ/EAJE/EALM2/EALME2.		
	Installation			Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual.		

Notes:

1. Nominal cooling conditions
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. Nominal heating conditions
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3. Be sure to install a valve on the water outlet.
4. Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5. Certain restrictions apply to indoor unit combinations.
   Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
   When the valve kit is installed farther away from the HBC than the distance between the HBC and the (E)WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
   The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.

*Please group units that operate on 1 branch.
*Due to continuing improvement, above specifications may be subject to change without notice.

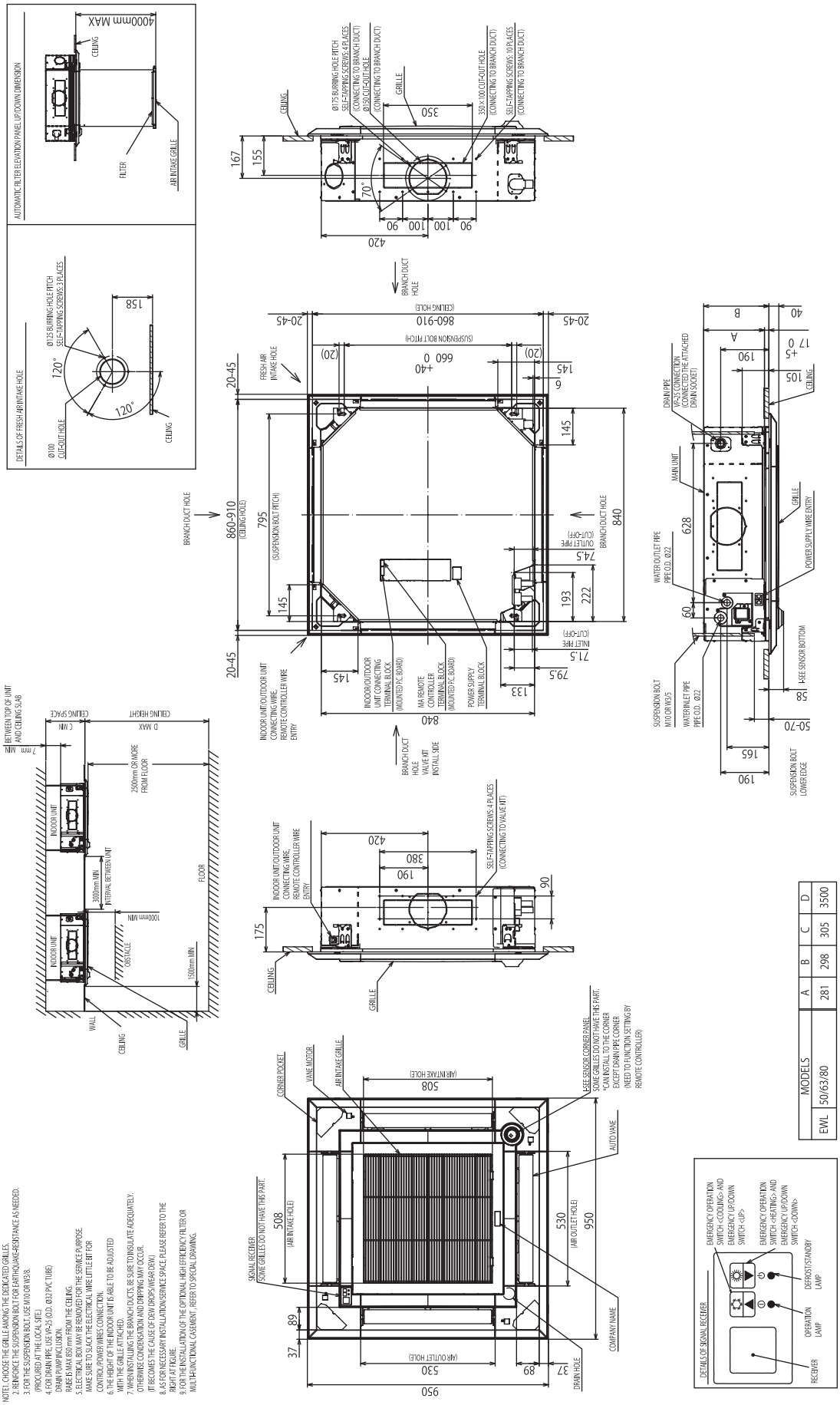
Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

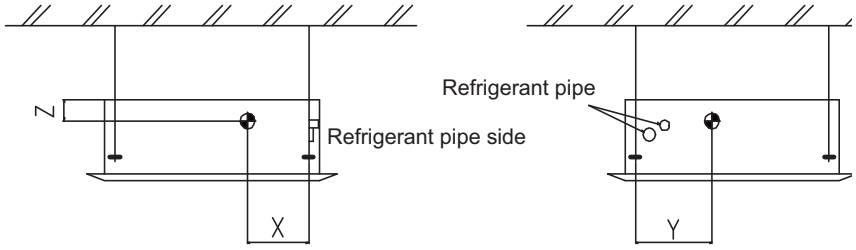
*Above specification data is subject to rounding variation.

PLFY-EWL50, 63, 80VEM-E

Unit: mm



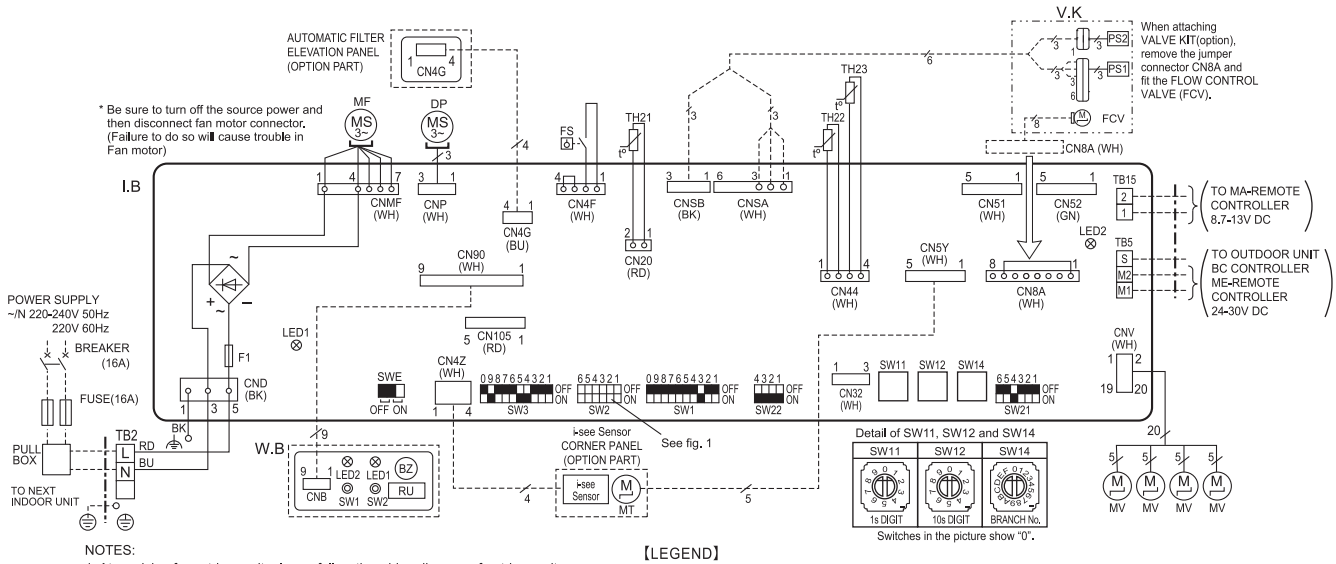
PLFY-EWL50, 63, 80VEM-E



(mm)[in]

Model name	X	Y	Z
PLFY-EWL50VEM-E	325 [12-13/16]	380 [15]	100 [3-15/16]
PLFY-EWL63VEM-E	325 [12-13/16]	380 [15]	100 [3-15/16]
PLFY-EWL80VEM-E	325 [12-13/16]	380 [15]	100 [3-15/16]

PLFY-EWL50, 63, 80VEM-E



NOTES:
1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15.
   (Remote controller wire is non-polar.)
3. In case of using ME-Remote controller, please connect to TB5.
   (Transmission line is non-polar.)
4. Symbol [S]of TB5 is the shield wire connection.
5. Symbols used in wiring diagram are,
   □□□ : terminal block, ○ ○ ○ □□□□ : connector.
6. The setting of SW2 differs in the capacity.
   For the detail, refer to the fig. 1.
7. Make sure to turn off the indoor and the outdoor units before replacing indoor controller board.
8. ■ is the switch position.

【LEGEND】

SYMBOL	NAME		SYMBOL	NAME	
I. B	INDOOR CONTROLLER BOARD		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5,4kΩ)
CN32	CONNECTOR	REMOTE SWITCH			
CN51		CENTRALLY CONTROL	TH22		PIPE TEMP. DETECTION / INLET (0°C/15kΩ, 25°C/5,4kΩ)
CN52		REMOTE INDICATION			
CN105		IT TERMINAL	TH23		PIPE TEMP. DETECTION / OUTLET (0°C/15kΩ, 25°C/5,4kΩ)
F1	FUSE (T 6,3AL 250V)				
SW1	SWITCH	MODE SELECTION	TB2	TERMINAL BLOCK	POWER SUPPLY
SW2		CAPACITY CODE	TB5		TRANSMISSION
SW3		MODE SELECTION	TB15		MA-REMOTE CONTROLLER
SW11		ADDRESS SETTING 1s DIGIT	OPTION PART		
SW12		ADDRESS SETTING 10s DIGIT	W.B		PCB FOR WIRELESS REMOTE CONTROLLER
SW14		BRANCH NO.		BZ	BUZZER
SW21		CEILING HEIGHT		LED1	LED (OPERATION INDICATION : GREEN)
		DISCHARGE OUTLET NUMBER		LED2	LED (PREPARATION FOR HEATING : ORANGE)
		OPTION SELECTOR		RU	RECEIVING UNIT
SW22		PAIR NO. SETTING		SW1	EMERGENCY OPERATION (HEAT / DOWN)
SWE		DRAIN PUMP (TEST MODE)		SW2	EMERGENCY OPERATION (COOL / UP)
DP	DRAIN PUMP		MT	i-see Sensor MOTOR	
FS	DRAIN FLOAT SWITCH		V.K	VALVE KIT	
MF	FAN MOTOR			PS1	PRESSURE SENSOR 1 (INLET)
MV	VANE MOTOR			PS2	PRESSURE SENSOR 2 (OUTLET)
				FCV	FLOW CONTROL VALVE

<fig. 1> SW2 (CAPACITY CODE)

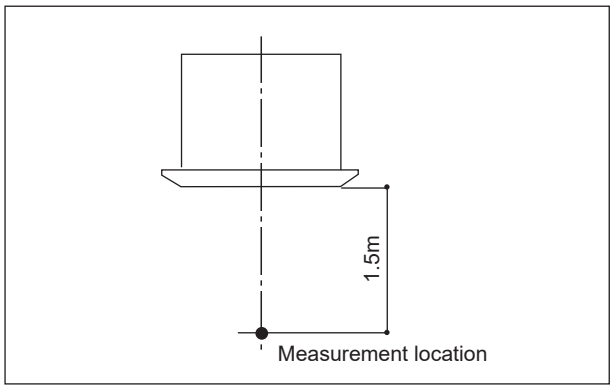
MODELS	SW2	MODELS	SW2	MODELS	SW2
EWL50	ON OFF 1 2 3 4 5 6	EWL63	ON OFF 1 2 3 4 5 6	EWL80	ON OFF 1 2 3 4 5 6

LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

5-1. Sound levels

PLFY-EWL-VEM-E



* Measured in anechoic room.

Sound level at anechoic room: Low-Mid2-Mid1-High

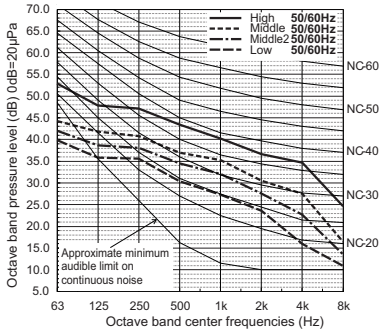
	Sound level dB (A)
PLFY-EWL50VEM-E	33-37-40-46
PLFY-EWL63VEM-E	33-37-40-46
PLFY-EWL80VEM-E	33-37-40-46

5-2. NC curves

PLFY-EWL50, 63, 80VEM-E

External Static Pressure: 0Pa [0.00in.WG]

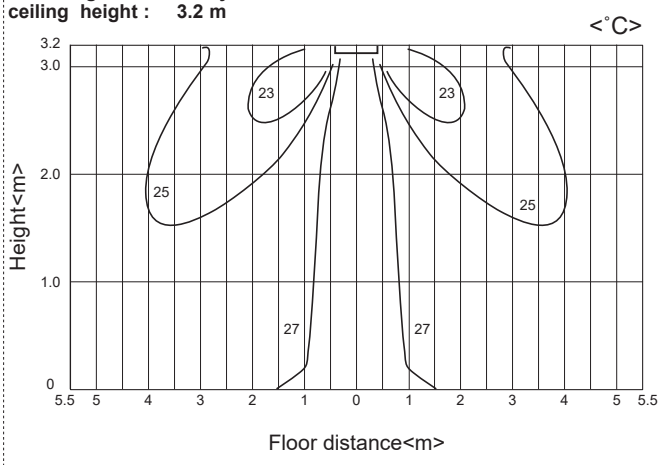
Power Source: 220-230-240V 50Hz/220V 60Hz



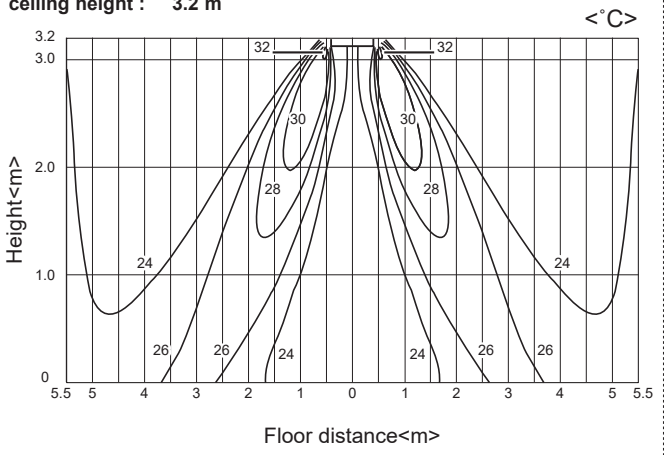
PLFY-EWL-VEM-E

6-1. Temperature distributions

• PLFY-EWL50, 63, 80VEM-E
<Cooling mode> Standard
Flow angle : 30° 4-way flow
ceiling height : 3.2 m



<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 3.2 m

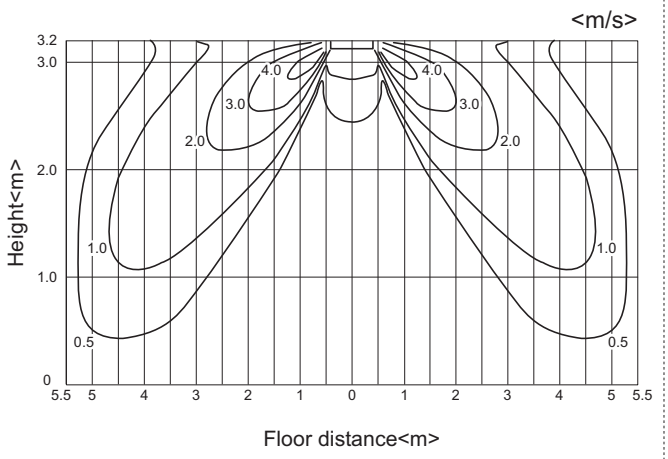


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

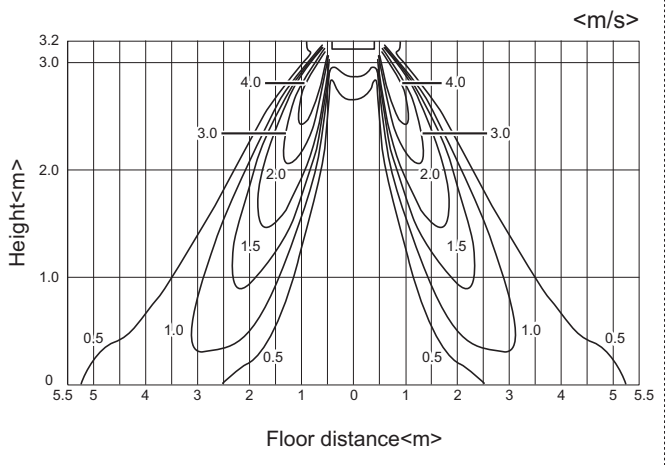
6-2. Airflow distributions

PLFY-EWL50, 63, 80VEM-E

<Cooling mode>
Flow angle 30°



<Heating mode>
Flow angle 60°



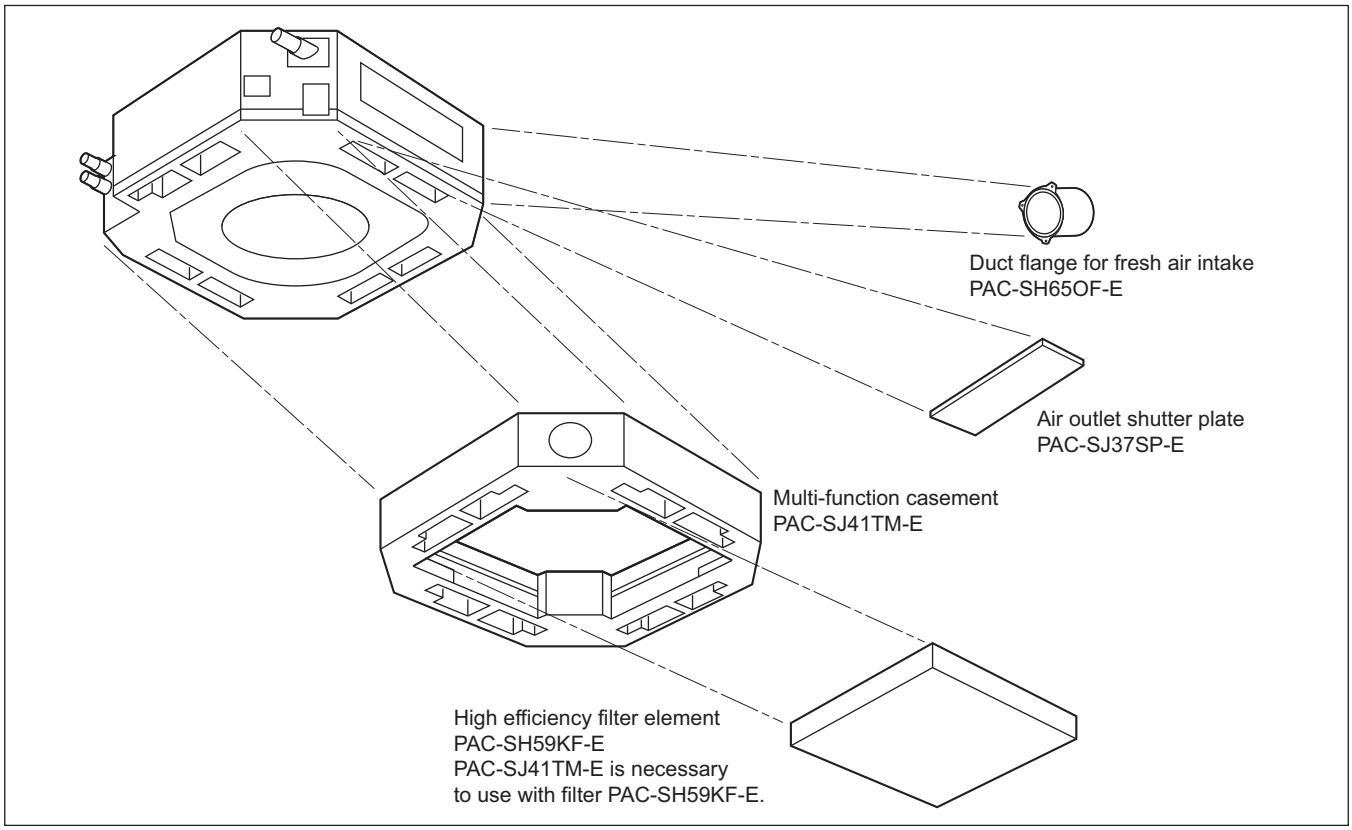
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

PLFY-EWL-VEM-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PLFY-EWL50VEM-E	220-240V/50Hz 220V/60Hz	Max.: 264V Min.: 198V	1.32	0.12	1.05
PLFY-EWL63VEM-E			1.32	0.12	1.05
PLFY-EWL80VEM-E			1.32	0.12	1.05

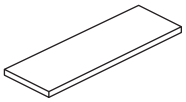
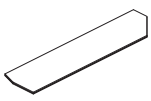
8-1. Optional parts line up for the Indoor unit

	Description	Model
PLFY-EWL-VEM-E	Air outlet shutter plate	PAC-SJ37SP-E
	Multi-function casement	PAC-SJ41TM-E
	High efficiency filter element	PAC-SH59KF-E
	3D i-see Sensor corner panel	PAC-SE1ME-E
	Auto elevation and signal receiver panel	PLP-6EAJ
	Auto elevation, 3D i-see Sensor and signal receiver panel	PLP-6EAJE
	Wireless signal receiver	PAR-SE9FA-E
	Space panel	PAC-SJ65AS-E
	Duct flange for fresh air intake	PAC-SH65OF-E
	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E
	Plasma Quad Connect	PAC-SK51FT-E



8-2. Air outlet shutter plate

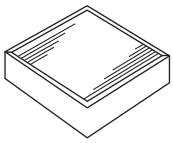
Using the air outlet shutter plate to block the air outlet to modify the air-way from 4 to 3 or 2.
With one shutter plate, 4 air-ways can be changed to 3;
With two shutter plates, 4 air-ways can be changed to 2;
Changing to 1 way is not allowed.
Material: Foamed polyethylene + foamed urethane, color: Black

Item	Shutter plate	Shutter plate	
Quantity	2	1	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-3. High efficiency filter element

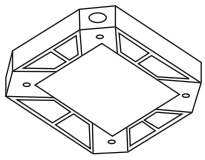
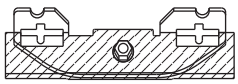
Life span: 2,500 hr (Dust concentration 0.15mg/m³); Colorimetric method 65% (JIS 11 class); No re-production.
* The actual dust situation affects the filter life span, which should be considered at the applying site.
Material: Electrostatic polyolefin fiber
High efficiency filter element PAC-SH59KF-E should be used together with the Multi-function casement PAC-SJ41TM-E. When using PAC-SH59KF-E, switching on SW21-5 of the Indoor unit address board is needed. Details should be referred to its Installation Manual.

Quantity	1	
Shape		

Detailed installation information is referred in its Installation Manual.

8-4. Multi-function casement

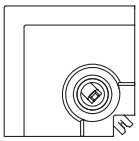
Multi-function casement is used for High efficiency filter element and/or fresh air intake from outdoor.
It should be used with High efficiency filter element PAC-SH59KF-E (Colorimetric method 65%).
Fresh air intake on the Multi-function casement is possible from any 2 or less corners among the 4 ones.
But duct and flange on the casement should be prepare locally.

Item	Multi-functional casement	Screw with washer (black)	Screw	Grille securing bracket
Quantity	1	4	8	4
Shape		M5 × 0.8 × 25 	M5 × 0.8 × 12 	With insulator 

Detailed installation information should be referred to its Installation Manual.

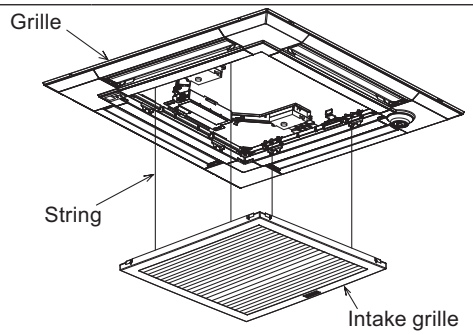
8-5. 3D i-see Sensor corner panel

3D i-see Sensor provides comfortable space as it detects the floor temperature to prevent spotty temperature.
And that enables the unit to save energy.
Attention
Make sure that there are no gaps between the unit and the grille, and the grille and ceiling.
※ It may cause dew dripping.

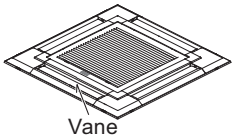
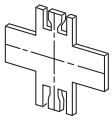
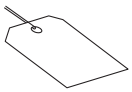
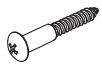
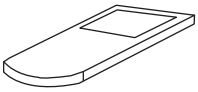
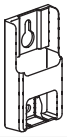
Item	3D i-see Sensor corner panel	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

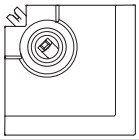
8-6. Auto elevation panel



· Air intake grille can be lifted and lowered automatically by wired remote controller (MA type) or wireless remote controller (Item: Wireless remote controller for auto elevation panel).
· Lowering the air intake grille allows you to clean the filter easily.
· You can set up eight different stages of lowering distance for the air intake grille according to the set up location if desired. (Maximum: 4m)

Item	Grille	Installation gauge	Tag	Screw
Quantity	1	1	1	2
Shape	 Vane	 (Used split into four pieces)		4 × 16 
Item	Wireless remote controller for auto elevation panel	Battery	Remote controller holder	
Quantity	1	1	1	
Shape		 Lithium battery CR2025 3V		

Grille with 3D i-see Sensor

Item	Screw	3D i-see Sensor corner panel
Quantity	1	1
Shape	4 × 16 	

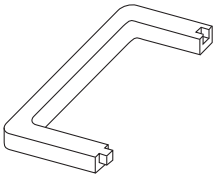
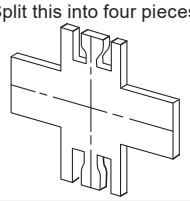
Detailed installation information should be referred to its Installation Manual.

8-7. Wireless signal receiver

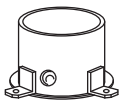
Wireless signal receiver PAR-SE9FA-E is necessary for using wireless remote controller		
Item	Wireless signal receiver	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

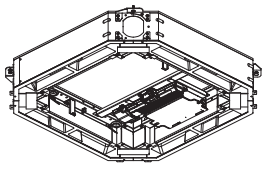
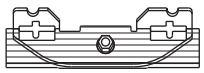
8-8. Space panel

Decorative cover for the installation when the ceiling height is low.		
Item	Space panel	Gauge for installation
Quantity	2	1
Shape		(Split this into four pieces) 

8-9. Duct flange for fresh air intake

Part to attach a duct to take in fresh air from outdoors.			
Item	Duct flange	Insulator	Screws (M4 x 10)
Quantity	1	1	3
Shape			

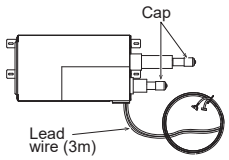
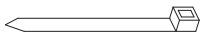
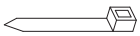
8-10. Plasma Quad Connect

PAC-SK51FT-E connects to CN105 on the indoor unit. When using an additional optional part, connect it to CN105 of PAC-SK51FT-E.				
Item	Plasma Quad Connect	Screw with washer (black)	Screw	Grille securing bracket
Quantity	1	4	8	4
Shape		M5 × 0.8 × 25 	M5 × 0.8 × 12 	With insulator 

Detailed installation information should be referred to its Installation Manual.

8-11. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

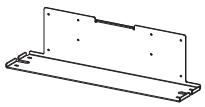
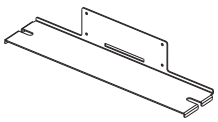
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

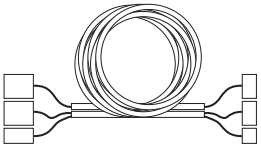
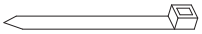
8-12. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-13. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m).
Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.

Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

PLFY-WL-VFM-E

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Model				PLFY-WL10VFM-E	PLFY-WL15VFM-E	PLFY-WL20VFM-E
Power source				1-phase 220-230-240V 50Hz 1-phase 220V 60Hz		
Cooling capacity *1			kW	1.2	1.7	2.2
(Nominal) *1			BTU/h	4,100	5,800	7,500
	Power input		kW	0.02	0.02	0.02
	Current input		A	0.23	0.24	0.26
Heating capacity *2			kW	1.4	1.9	2.5
(Nominal) *2			BTU/h	4,800	6,500	8,500
	Power input		kW	0.02	0.02	0.02
	Current input		A	0.17	0.18	0.20
External finish				Galvanized steel sheet		
External dimension H × W × D			mm	208 × 570 × 570		
			in.	8-1/4 × 22-1/2 × 22-1/2		
Net weight			kg (lbs)	13(29)	13(29)	14(31)
Decoration panel	Model			SLP-2FA(L)(E)		
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	10 × 625 × 625		
	H × W × D		in.	3/8 × 24-5/8 × 24-5/8		
	Net weight		kg (lbs)	3 (7)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	0.5	0.5	0.9
FAN	Type × Quantity			Turbo Fan × 1		
	External		Pa	0		
	static press.		mmH_2O	0		
	Motor type			DC motor		
	Motor output		kW	0.050		
	Driving mechanism			Direct-driven by motor		
	Airflow flow rate		m^3/min	6.0-6.5-7.0	6.0-7.0-8.0	6.5-7.0-8.0
	(Low-Mid-High)		L/s	100-108-117	100-117-133	108-117-133
			cfm	212-230-247	212-247-282	230-247-282
Sound pressure level (measured in anechoic room) (Low-Mid-High)			dB <A>	25-26-27	25-26-29	27-29-31
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter *3 *4	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
	Field pipe size	Inlet	mm I.D	20	20	20
		Outlet	mm I.D	20	20	20
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N261		
	Wiring			BH79N706		
	Refrigerant cycle			-		
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Optional parts	Decoration panel *5			SLP-2FA/SLP-2FAE/SLP-2FAL/SLP-2FALE/SLP-2FALM2/SPL-2FALME2		
	3D i-see Sensor corner panel			PAC-SF1ME-E		
	Wireless signal receiver			PAR-SF9FA-E		
	Valve kit *6			PAC-SK35VK-E		
		6m Lead wire		PAC-SK40LW-E		
		Attachment plate		PAC-SK39AP-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.		

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.PLFY-WL-VFM-E should be used together with Decoration panel.
6.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PLFY-WL25VFM-E	PLFY-WL32VFM-E	PLFY-WL40VFM-E
Power source				1-phase 220-230-240V 50Hz 1-phase 220V 60Hz		
Cooling capacity *1			kW	2.8	3.6	4.5
(Nominal) *1			BTU/h	9,600	12,300	15,400
	Power input		kW	0.03	0.04	0.05
	Current input		A	0.29	0.38	0.46
Heating capacity *2			kW	3.2	4.0	5.0
(Nominal) *2			BTU/h	10,900	13,600	17,100
	Power input		kW	0.03	0.04	0.05
	Current input		A	0.23	0.32	0.40
External finish				Galvanized steel sheet		
External dimension H × W × D			mm	208 × 570 × 570		
			in.	8-1/4 × 22-1/2 × 22-1/2		
Net weight			kg (lbs)	14(31)	14(31)	14 (31)
Decoration panel	Model			SLP-2FA(L)(E)		
	External finish			MUNSELL (1.0Y 9.2/0.2)		
	Dimension		mm	10 × 625 × 625		
	H × W × D		in.	3/8 × 24-5/8 × 24-5/8		
	Net weight		kg (lbs)	3 (7)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	0.9	0.9	0.9
FAN	Type × Quantity			Turbo Fan × 1		
	External		Pa	0		
	static press.		mmH_2O	0		
	Motor type			DC motor		
	Motor output		kW	0.050		
	Driving mechanism			Direct-driven by motor		
	Airflow flow rate		m^3/min	6.5-7.5-9.0	6.5-9.0-12.0	6.5-11.5-13.0
	(Low-Mid-High)		L/s	108-125-150	108-150-200	108-192-217
			cfm	230-265-318	230-318-424	230-406-459
Sound pressure level (measured in anechoic room) (Low-Mid-High)			dB <A>	27-30-34	27-33-41	27-40-43
Insulation material				PS		
Air filter				PP honeycomb		
Protection device				Fuse		
Refrigerant control device				-		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter *3 *4	Connection size	Inlet	mm O.D	22	22	22
		Outlet	mm O.D	22	22	22
	Field pipe size	Inlet	mm I.D	20	20	20
		Outlet	mm I.D	20	20	20
Field drain pipe size			mm (in.)	O.D. 32 (1-1/4)		
Drawing	External			RK01N261		
	Wiring			BH79N706		
	Refrigerant cycle			-		
Standard attachment	Document			Installation Manual, Instruction Book		
	Accessory			Insulation template, Washer, Drain socket, Tie band		
Optional parts	Decoration panel		*5	SLP-2FA/SLP-2FAE/SLP-2FAL/SLP-2FALE/SLP-2FALM2/SPL-2FALME2		
	3D i-see Sensor corner panel			PAC-SF1ME-E		
	Wireless signal receiver			PAR-SF9FA-E		
	Valve kit		*6	PAC-SK35VK-E		
		6m Lead wire		PAC-SK40LW-E		
		Attachment plate		PAC-SK39AP-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.		

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Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.PLFY-WL-VFM-E should be used together with Decoration panel.
6.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.

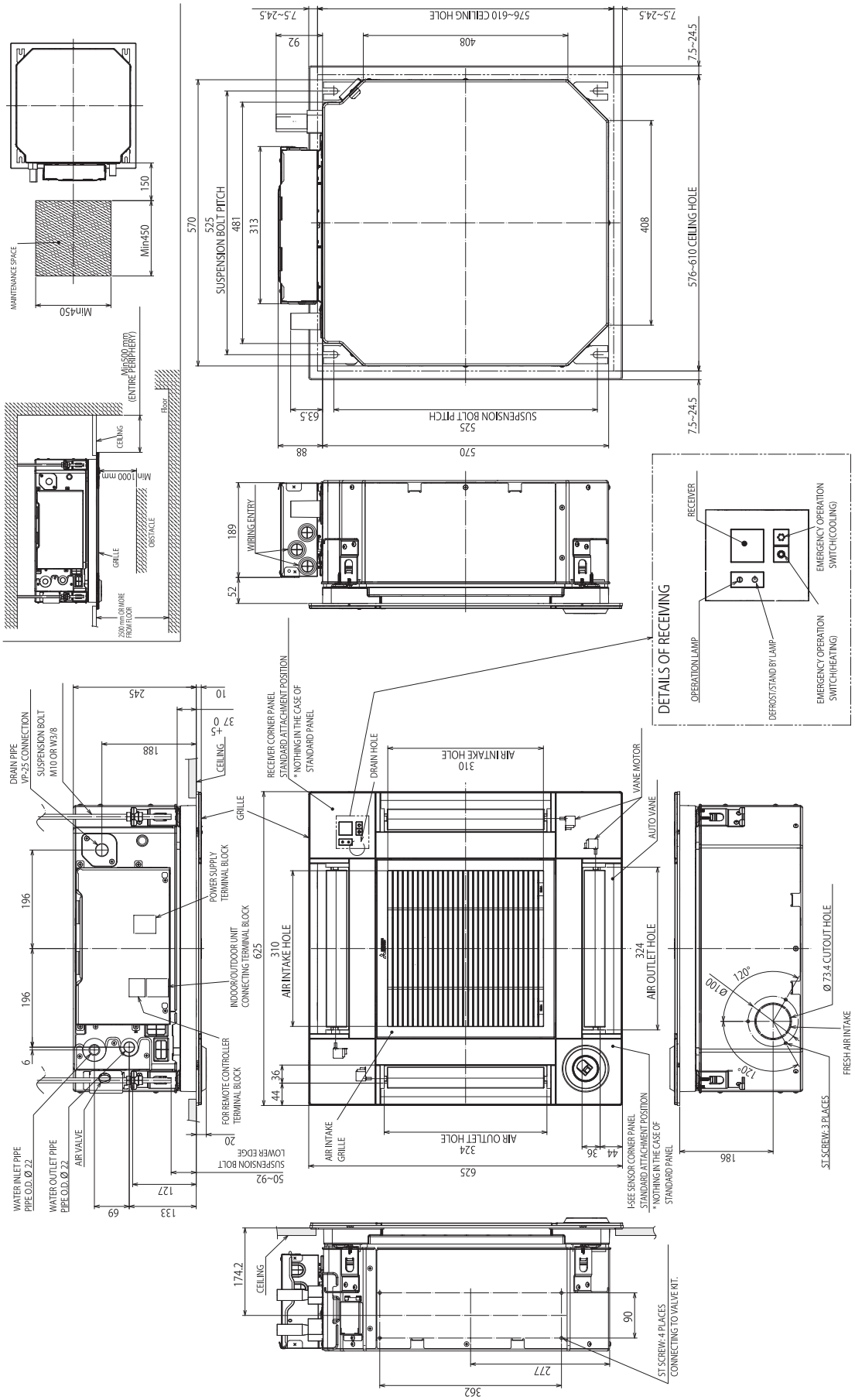
Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

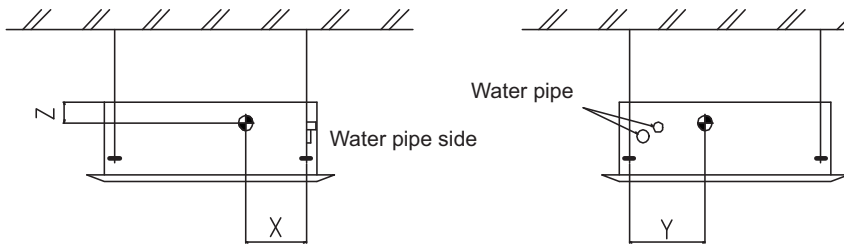
*Above specification data is subject to rounding variation.

PLFY-WL10, 15, 20, 25, 32, 40VFM-E

Unit: mm



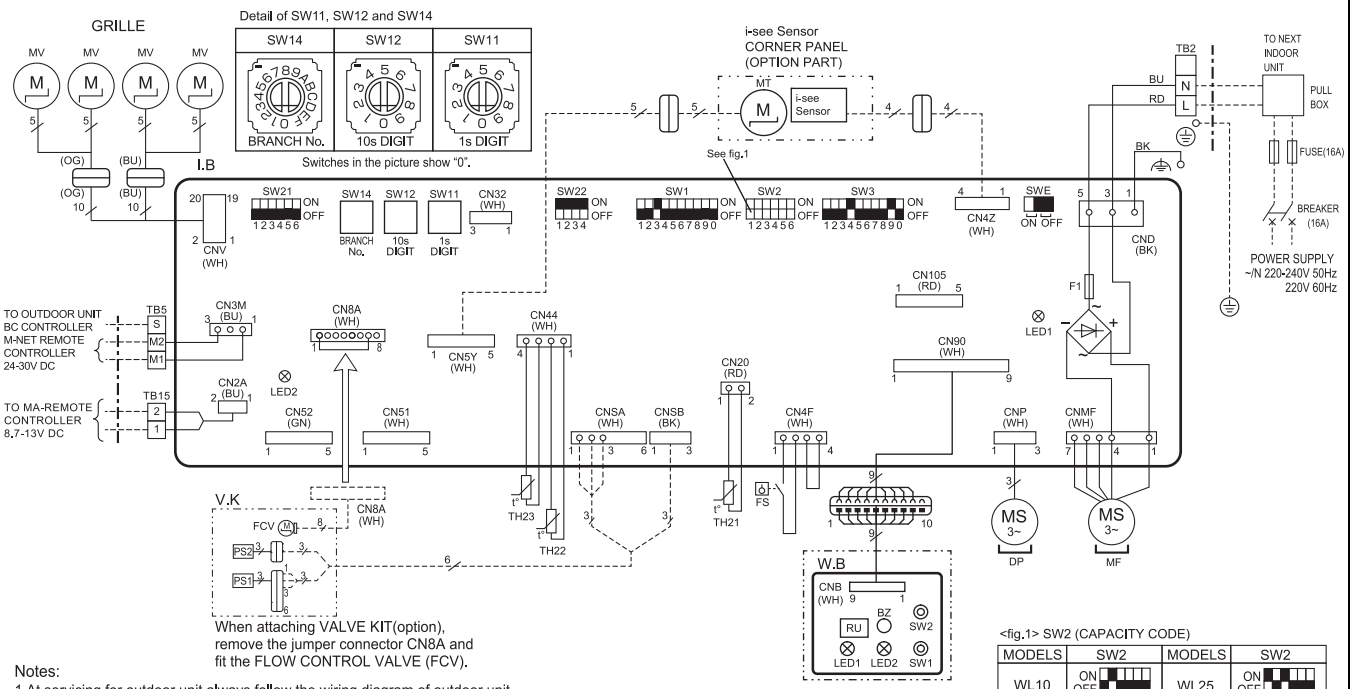
PLFY-WL10, 15, 20, 25, 32, 40VFM-E



(mm) [in]

Model name	X	Y	Z
PLFY-WL10VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WL15VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WL20VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WL25VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WL32VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]
PLFY-WL40VFM-E	200 [7-7/8]	260 [10-1/4]	85 [3-3/8]

PLFY-WL10, 15, 20, 25, 32, 40VFM-E



When attaching VALVE KIT(option), remove the jumper connector CN8A and fit the FLOW CONTROL VALVE (FCV).

<fig.1> SW2 (CAPACITY CODE)

MODELS	SW2	MODELS	SW2
WL10	ON OFF 123456	WL25	ON OFF 123456
WL15	ON OFF 123456	WL32	ON OFF 123456
WL20	ON OFF 123456	WL40	ON OFF 123456

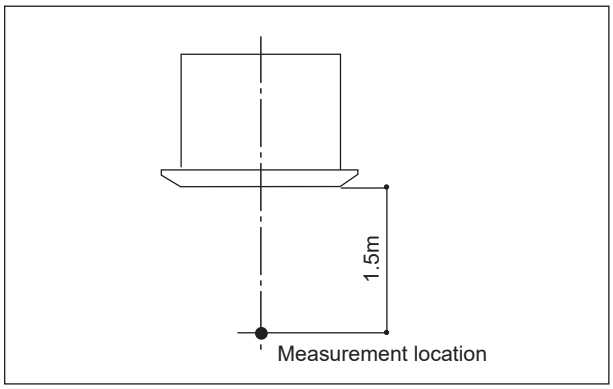
Notes:
1.At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2.In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3.In case of using ME-Remote controller, please connect to TB5. (Transmission line is non-polar.)
4.Symbol [S]of TB5 is the shield wire connection.
5.Symbols used in wiring diagram above are, □□□: terminal block, □ ○○○ : connector.
6.The setting of the SW2 differs in the capacity. For the detail, refer to the fig.1.
7.Make sure to turn off the indoor and the outdoor units before replacing indoor controller board.
8.■ is the switch position.

[LEGEND]

SYMBOL	NAME	
I.B	INDOOR CONTROLLER BOARD	
CN32	REMOTE SWITCH	
CN51	CENTRALLY CONTROL	
CN52	REMOTE INDICATION	
CN105	IT TERMINAL	
F1	FUSE(T6.3AL 250V)	
LED1	POWER SUPPLY (I.B)	
LED2	POWER SUPPLY (MA-REMOTE CONTROLLER)	
SW1	MODE SELECTION	
SW2	CAPACITY CODE	
SW3	MODE SELECTION	
SW11	ADDRESS SETTING 1s DIGIT	
SW12	ADDRESS SETTING 10s DIGIT	
SW14	BRANCH No.	
SW21	CEILING HEIGHT SELECTOR	
SW22	PAIR NO. SETTING	
SWE	DRAIN PUMP(TEST MODE)	
DP	DRAIN PUMP	
MF	FAN MOTOR	
MV	VANE MOTOR	
FS	FLOAT SWITCH	
TB2	TERMINAL BLOCK	POWER SUPPLY
TB5		TRANSMISSION
TB15		MA-REMOTE CONTROLLER
TH21	ROOM TEMP. THERMISTOR	
TH22	PIPE TEMP. THERMISTOR (INLET)	
TH23	PIPE TEMP. THERMISTOR (OUTLET)	
OPTION PART		
W.B	WIRELESS REMOTE CONTROLLER BOARD	
BZ	BUZZER	
LED1	OPERATION (GREEN)	
LED2	STAND BY (ORANGE)	
RU	RECEIVING UNIT	
SW1	EMERGENCY OPERATION(HEAT)	
SW2	EMERGENCY OPERATION(COOL)	
MT	i-see Sensor MOTOR	
V.K	VALVE KIT	
PS1	PRESSURE SENSOR 1 (INLET)	
PS2	PRESSURE SENSOR 2 (OUTLET)	
FCV	FLOW CONTROL VALVE	

5-1. Sound levels

PLFY-WL-VFM-E



* Measured in anechoic room.

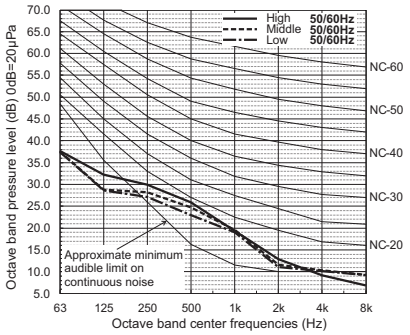
Sound level at anechoic room: Low-Mid-High

	Sound level dB (A)
PLFY-WL10VFM-E	25-26-27
PLFY-WL15VFM-E	25-26-29
PLFY-WL20VFM-E	27-29-31
PLFY-WL25VFM-E	27-30-34
PLFY-WL32VFM-E	27-33-41
PLFY-WL40VFM-E	27-40-43

5-2. NC curves

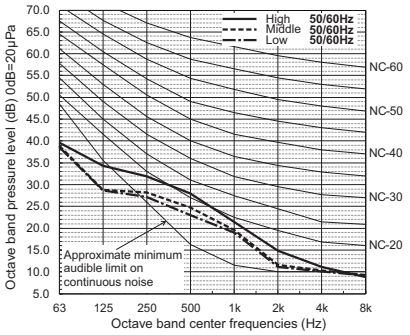
PLFY-WL10VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



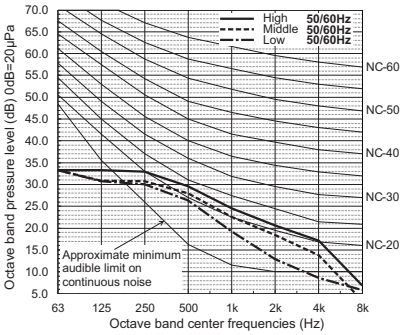
PLFY-WL15VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



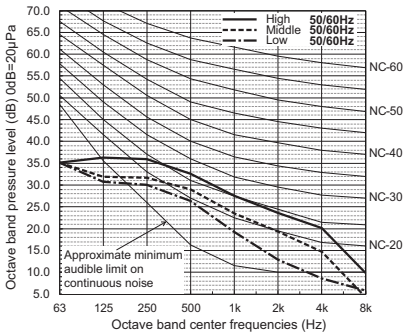
PLFY-WL20VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



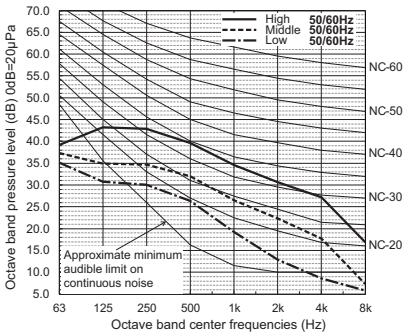
PLFY-WL25VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



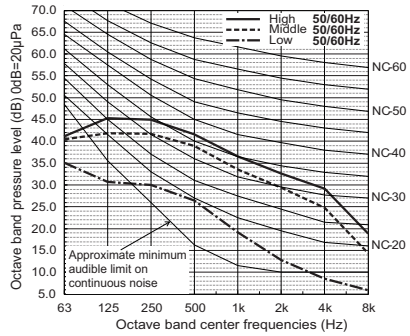
PLFY-WL32VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



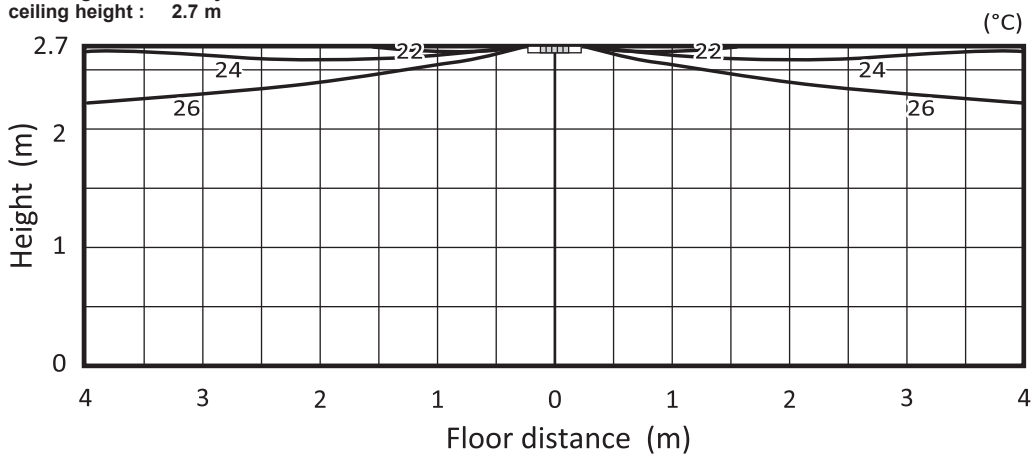
PLFY-WL40VFM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz

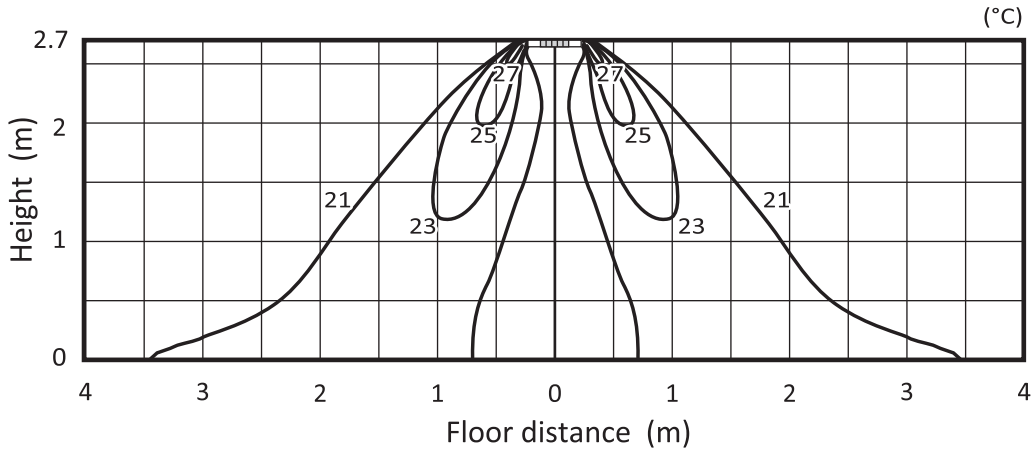


6-1. Temperature distributions

• PLFY-WL32VFM-E
<Cooling mode> Standard
Flow angle : 10° 4-way flow
ceiling height : 2.7 m



<Heating mode> Standard
Flow angle : 60° 4-way flow
ceiling height : 2.7 m

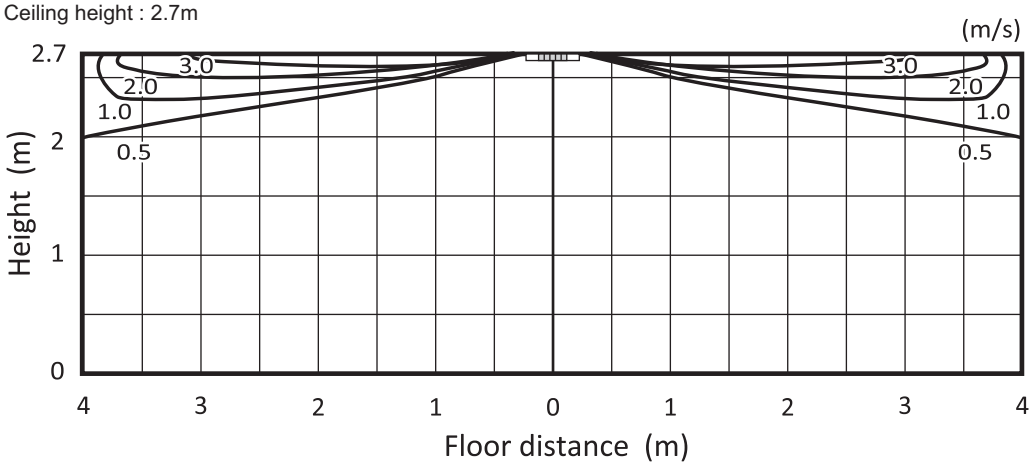


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

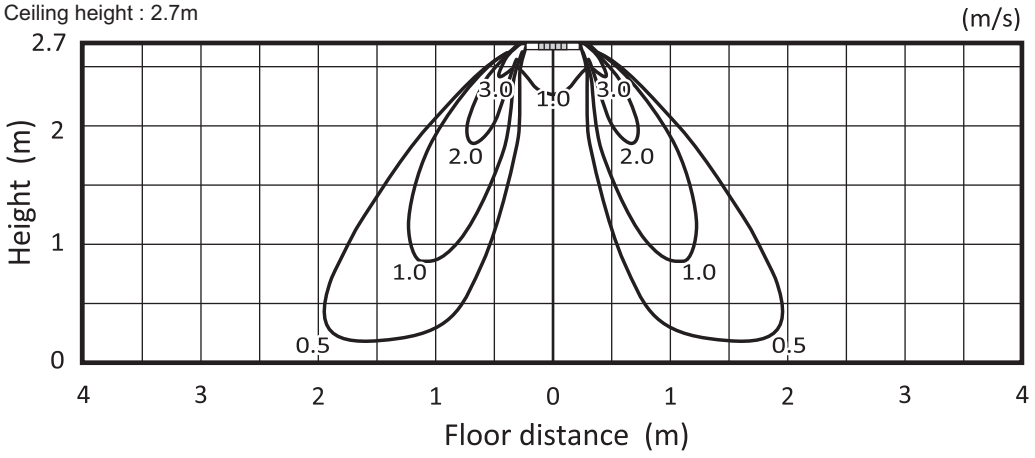
6-2. Airflow distributions

PLFY-WL32VFM-E

<Cooling mode> Standard
Flow angle : 10° 4-way flow
Ceiling height : 2.7m



<Heating mode> Standard
Flow angle : 60° 4-way flow
Ceiling height : 2.7m



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PLFY-WL-VFM-E	Power supply			IFM	
	Volts Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PLFY-WL10VFM-E	220-240V 50Hz 220V 60Hz	Max.: 264V Min.: 198V	0.29	0.05	0.23
PLFY-WL15VFM-E			0.30	0.05	0.24
PLFY-WL20VFM-E			0.33	0.05	0.26
PLFY-WL25VFM-E			0.37	0.05	0.29
PLFY-WL32VFM-E			0.48	0.05	0.38
PLFY-WL40VFM-E			0.58	0.05	0.46

8-1. Optional parts line up for the Indoor unit

	Description	Model
PLFY-WL-VFM-E	3D i-see Sensor corner panel	PAC-SF1ME-E
	Wireless signal receiver	PAR-SF9FA-E
	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E

8-2. 3D i-see Sensor corner panel

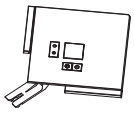
3D i-see Sensor provides comfortable space as it detects the floor temperature to prevent spotty temperature.
And that enables the unit to save energy.
Attention
Make sure that there are no gaps between the unit and the grille, and the grille and ceiling.
※ It may cause dew dripping.

Item	3D i-see Sensor corner panel	Plastic fastener	
Quantity	1	2	
Shape			

Detailed installation information should be referred to its Installation Manual.

8-3. Wireless signal receiver

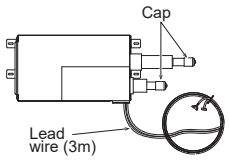
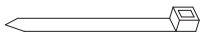
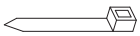
Wireless signal receiver PAR-SF9FA-E is necessary for using wireless remote controller
PAR-SF9FA-E is a corner panel with the signal receiver for wireless remote controller.

Item	Wireless signal receiver	
Quantity	1	
Shape		

Detailed installation information should be referred to its Installation Manual.

8-4. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

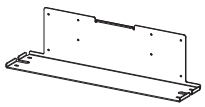
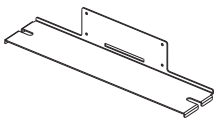
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

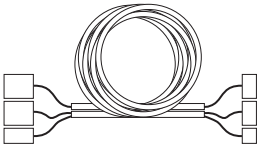
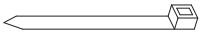
8-5. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-6. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m).
Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.

Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

PEFY-WP-VMS1-E

1. SPECIFICATIONS ..... 2 - 48
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   8-3. Plasma Quad Connect ..... 2 - 66

Model				PEFY-WP10VMS1-E	PEFY-WP15VMS1-E	PEFY-WP20VMS1-E	PEFY-WP25VMS1-E
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	1.2	1.7	2.2	2.8
(Nominal)		*1	BTU/h	4,100	5,800	7,500	9,600
	*2	Power input	kW	0.030	0.050	0.051	0.060
(220V)	*2	Current input	A	0.21	0.44	0.49	0.51
Heating capacity		*3	kW	1.4	1.9	2.5	3.2
(Nominal)		*3	BTU/h	4,800	6,500	8,500	10,900
	*2	Power input	kW	0.030	0.030	0.031	0.040
(220V)	*2	Current input	A	0.21	0.33	0.38	0.40
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700
			in.	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16
Net weight			kg (lbs)	19 (42)	19 (42)	20 (45)	20 (45)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.4	0.7	0.9	0.9
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	4.0 - 4.5 - 5.0	5.0 - 6.0 - 7.0	5.5 - 6.5 - 8.0	5.5 - 7.0 - 9.0
			L/s	67 - 75 - 83	83 - 100 - 117	92 - 108 - 133	92 - 117 - 150
			cfm	141 - 159 - 177	177 - 212 - 247	194 - 230 - 282	194 - 247 - 318
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	20.0-23.0-25.0	22.0-24.0-28.0	23.0-25.0-29.0	23.0-26.0-30.0
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB
Water piping diameter		*5, 6					
Connection size	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KD94T794	KD94T794	KD94T794	KD94T794
	Wiring			KD94T793	KD94T793	KD94T793	KD94T793
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Control Box Replace kit			PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment			PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WP32VMS1-E	PEFY-WP40VMS1-E	PEFY-WP50VMS1-E	
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	
Cooling capacity		*1	kW	3.6	4.5	5.6	
(Nominal)		*1	BTU/h	12,300	15,400	19,100	
	*2	Power input	kW	0.071	0.090	0.090	
(220V)	*2	Current input	A	0.61	0.73	0.77	
Heating capacity		*3	kW	4.0	5.0	6.3	
(Nominal)		*3	BTU/h	13,600	17,100	21,500	
	*2	Power input	kW	0.051	0.070	0.070	
(220V)	*2	Current input	A	0.50	0.62	0.66	
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	
External dimension H × W × D			mm	200 x 990 x 700	200 x 990 x 700	200 x 1,190 x 700	
			in.	7-7/8 x 39 x 27-9/16	7-7/8 x 39 x 27-9/16	7-7/8 x 46-7/8 x 27-9/16	
Net weight			kg (lbs)	25 (56)	25 (56)	27 (60)	
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	
	Water Volume		L	1.0	1.0	1.7	
FAN	Type × Quantity			Sirocco fan x 3	Sirocco fan x 3	Sirocco fan x 4	
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	
	Motor Type			DC motor	DC motor	DC motor	
	Motor output		kW	0.096	0.096	0.096	
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
			m^3/min	8.0 - 9.0 - 11.0	9.5 - 11.0 - 13.0	12.0 - 14.0 - 16.5	
			L/s	133 - 150 - 183	158 - 183 - 217	200 - 233 - 275	
			cfm	282 - 318 - 388	335 - 388 - 459	424 - 494 - 583	
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
		*2	dB <A>	28.0-30.0-33.0	30.0-32.0-35.0	30.0-33.0-36.0	
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	
Protection device				Fuse	Fuse	Fuse	
Refrigerant control device				-	-	-	
Connectable HBC				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	
Water piping diameter		*5, 6					
Connection size	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	
	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	
Field pipe size	Inlet		mm I.D.	20	20	20	
	Outlet		mm I.D.	20	20	20	
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	
Drawing	External			KD94T794	KD94T794	KD94T794	
	Wiring			KD94T793	KD94T793	KD94T793	
	Refrigerant cycle			-	-	-	
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	
Optional parts	Control Box Replace kit			PAC-KE70HS-E	PAC-KE70HS-E	PAC-KE70HS-E	
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	
	PQ attachment			PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR	
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

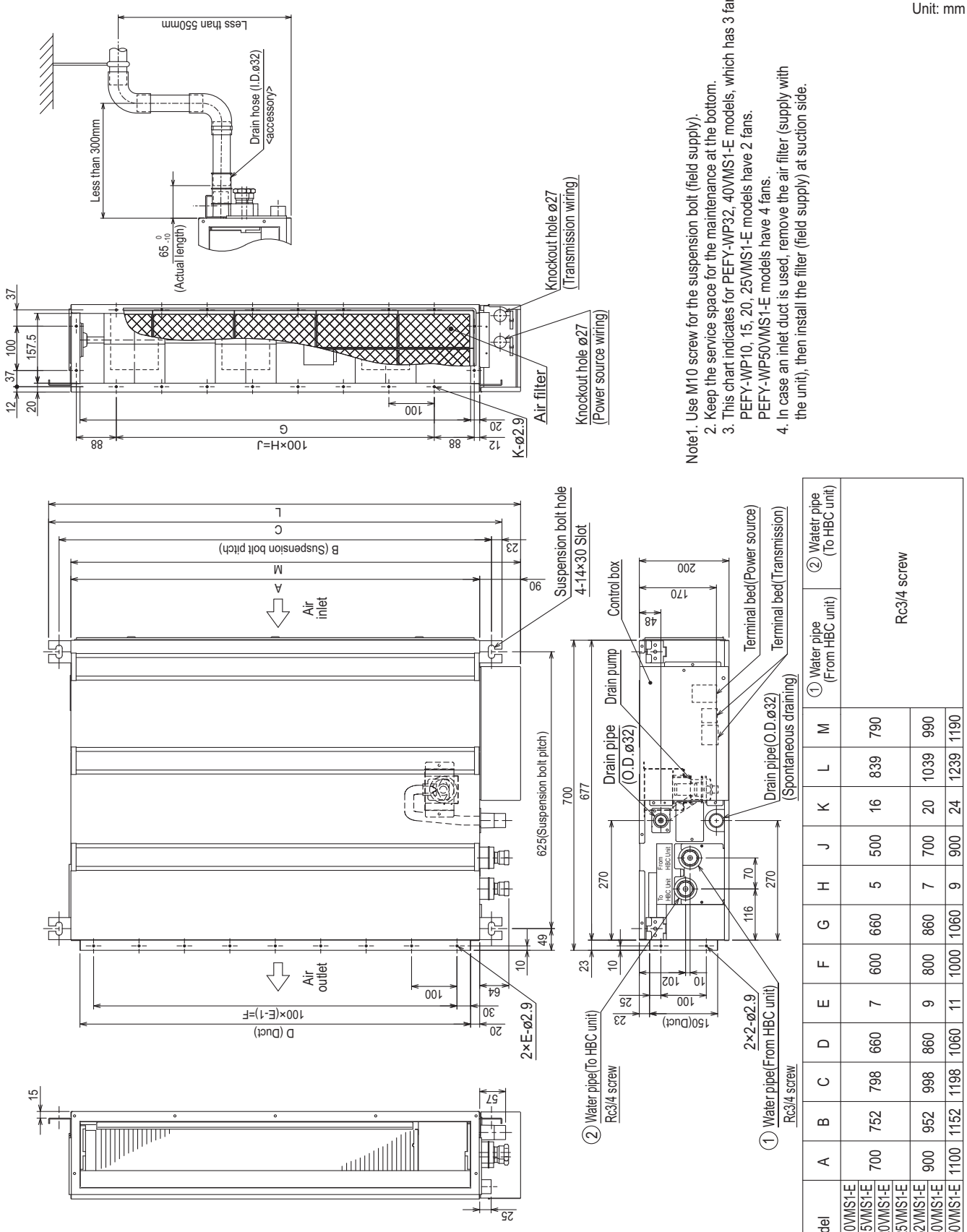
Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E

Unit: mm



Note1. Use M10 screw for the suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. This chart indicates for PEFY-WP32, 40VMS1-E models, which has 3 fans.
PEFY-WP10, 15, 20, 25VMS1-E models have 2 fans.
PEFY-WP50VMS1-E models have 4 fans.
4. In case an inlet duct is used, remove the air filter (supply with the unit), then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	H	J	K	L	M	① Water pipe (From HBC unit)	② Watetr pipe (To HBC unit)
PEFY-WP10VMS1-E	700	752	798	660	7	600	660	5	500	16	839	790	Rc3/4 screw	
PEFY-WP15VMS1-E														
PEFY-WP20VMS1-E														
PEFY-WP25VMS1-E														
PEFY-WP32VMS1-E	900	952	998	860	9	800	860	7	700	20	1039	990		
PEFY-WP40VMS1-E	1100	1152	1198	1060	11	1000	1060	9	900	24	1239	1190		
PEFY-WP50VMS1-E														

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
·Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
or
·Create access door 4 below the electric box and the unit as shown in Fig.5.

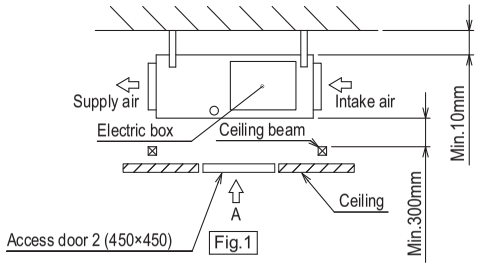


Fig.1

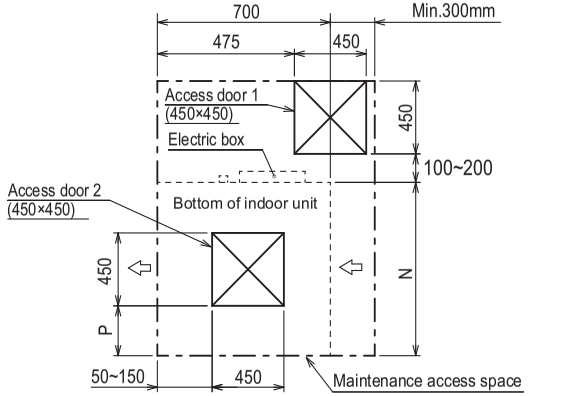


Fig.2 (Viewed from the direction of the arrow A)

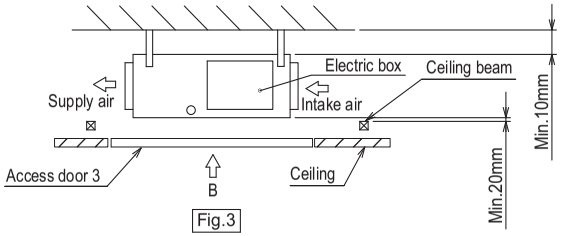


Fig.3

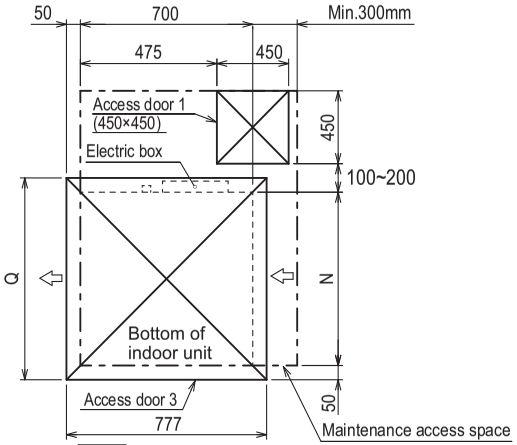


Fig.4 (Viewed from the direction of the arrow B)

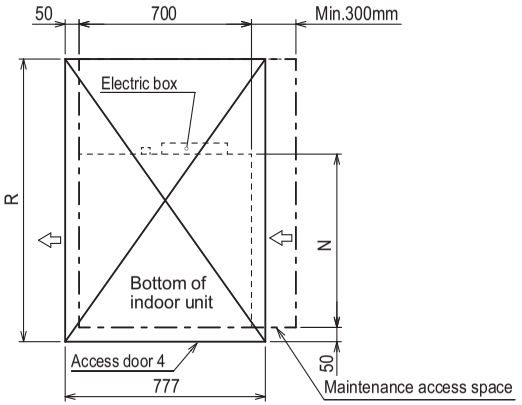
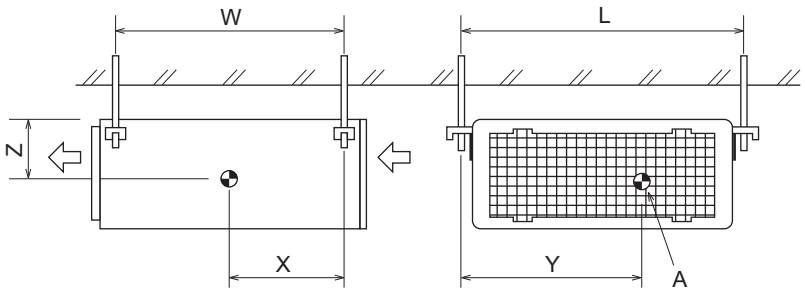


Fig.5 (Viewed from the direction of the arrow B)

Model	N	P	Q	R
PEFY-WP10VMS1-E	700	50~150	800	1300
PEFY-WP15VMS1-E				
PEFY-WP20VMS1-E				
PEFY-WP25VMS1-E				
PEFY-WP32VMS1-E	900	150~250	1000	1500
PEFY-WP40VMS1-E				
PEFY-WP50VMS1-E	1100	250~350	1200	1700

Unit: mm

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E

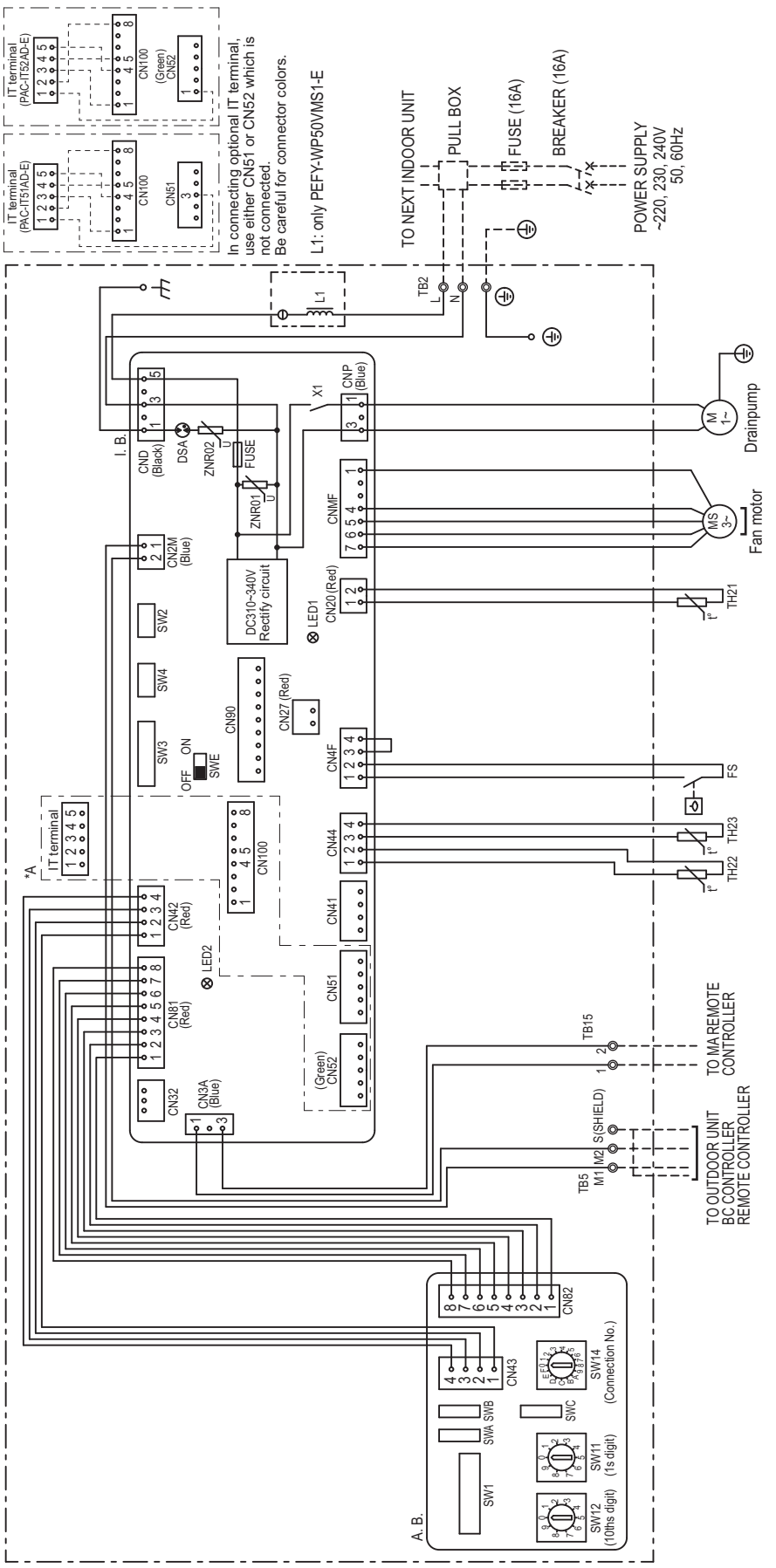


A: Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-WP10VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP15VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP20VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP25VMS1-E	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-WP32VMS1-E	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]
PEFY-WP40VMS1-E	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]
PEFY-WP50VMS1-E	625 [24-5/8]	1152 [45-3/8]	285 [11-1/4]	511 [20-1/8]	104 [4-1/8]

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E



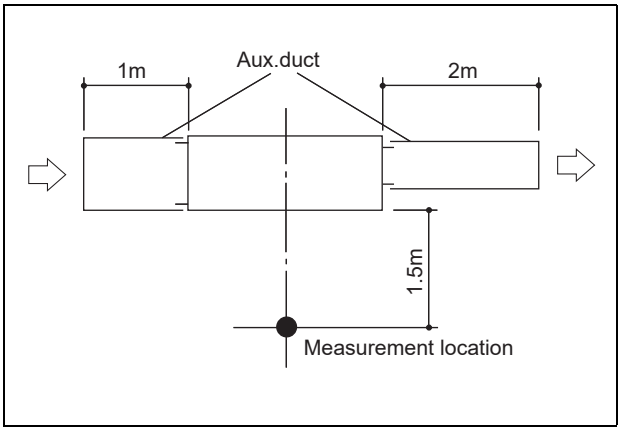
NOTE: Symbols used in wiring diagram above are,
------ (HEAVY DOTTED LINE):FIELD WIRING
----- (THIN DOTTED LINE) :OPTIONAL PARTS
⊖ : CONNECTOR
◎ : TERMINAL

SYMBOL EXPLANATION

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
I.B.	Indoor controller board	CN32	Connector (Remote switch)	SW3(I.B.)	Switch (for mode selection)
A.B.	Address board	CN41	Connector (HA terminal-A)	SW4(I.B.)	Switch (for model selection)
TB2	Power source terminal block	CN51	Connector (Centrally control)	SWE(I.B.)	Connector (emergency operation)
TB5	Transmission terminal block	CN52	Connector (Remote indication)	SW1(A.B.)	Switch (for mode selection)
TB15	Transmission terminal block	CN90	Connector (Wireless)	SW11(A.B.)	Switch (1s digit address set)
FUSE	Fuse AC250V 6.3A	CN100	Connector (IT terminal)	SW12(A.B.)	Switch (10ths digit address set)
ZNR01, 02	Varistor	FS	Float switch	SW14(A.B.)	Switch (connection No.set)
DSA	Arrester	TH21	Thermistor (inlet air temp.detection)	SWA(A.B.)	Switch (for static pressure selection)
X1	Aux. relay	TH22	Thermistor (piping temp.detection/water in)	SWB(A.B.)	Switch (for model selection)
L1	AC reactor (Power factor improvement)	TH23	Thermistor (piping temp.detection/water out)	SWC(A.B.)	Switch (for static pressure selection)
CN27	Connector (Damper)	SW2(I.B.)	Switch (for capacity code)		

5-1. Sound levels

PEFY-WP-VMS1-E



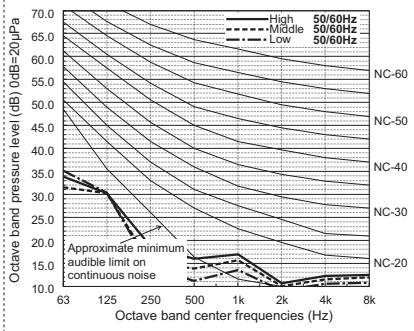
* Measured in anechoic room.

Sound level at anechoic room: Low-Mid-High

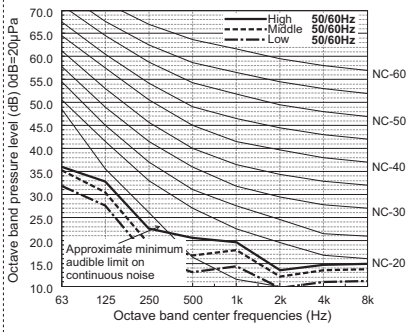
		Sound level dB (A)			
		5Pa	15Pa	35Pa	50Pa
PEFY-WP10VMS1-E	220-240V	20 - 21 - 22	20 - 23 - 25	23 - 24 - 25	23 - 25 - 27
PEFY-WP15VMS1-E	220-240V	22 - 24 - 26	22 - 24 - 28	23 - 26 - 29	23 - 27 - 30
PEFY-WP20VMS1-E	220-240V	22 - 25 - 28	23 - 25 - 29	24 - 27 - 30	25 - 28 - 32
PEFY-WP25VMS1-E	220-240V	22 - 25 - 29	23 - 26 - 30	24 - 28 - 31	25 - 29 - 33
PEFY-WP32VMS1-E	220-240V	26 - 28 - 30	28 - 30 - 33	30 - 32- 35	31 - 33 - 36
PEFY-WP40VMS1-E	220-240V	29 - 31 - 34	30 - 32 - 35	31 - 34 - 37	32 - 34 - 38
PEFY-WP50VMS1-E	220-240V	29 - 32 - 35	30 - 33 - 36	31 - 35 - 39	32 - 36 - 40

5-2. NC curves

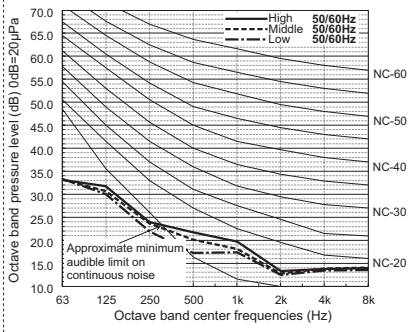
PEFY-WP10VMS1-E
External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220,230,240V, 50/60Hz



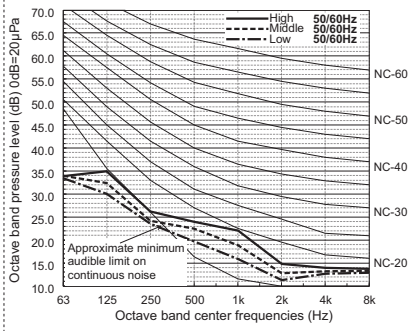
PEFY-WP10VMS1-E
External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220,230,240V, 50/60Hz



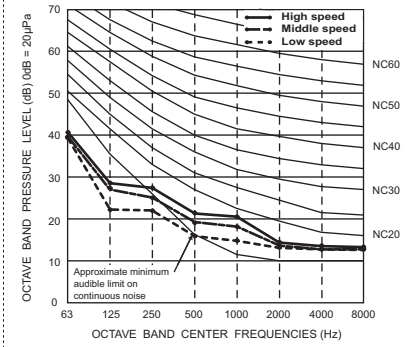
PEFY-WP10VMS1-E
External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220,230,240V, 50/60Hz



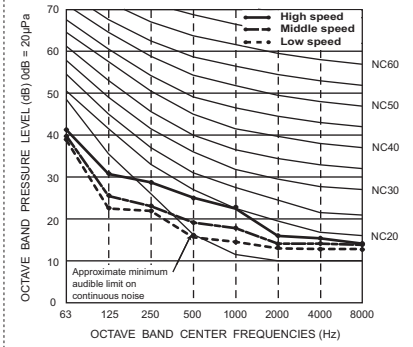
PEFY-WP10VMS1-E
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220,230,240V, 50/60Hz



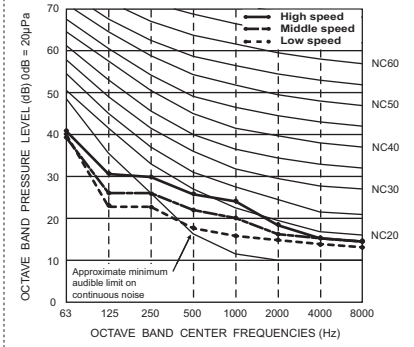
PEFY-WP15VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



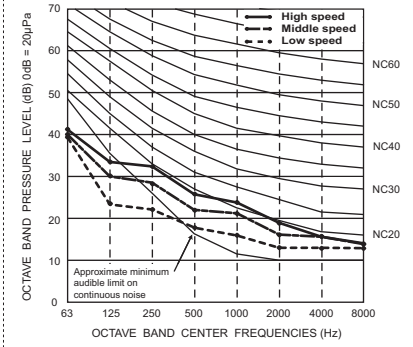
PEFY-WP15VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



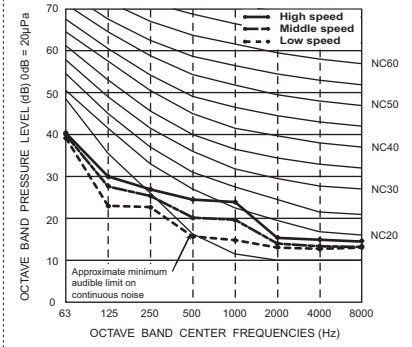
PEFY-WP15VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



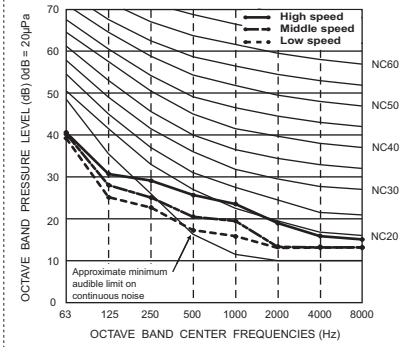
PEFY-WP15VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



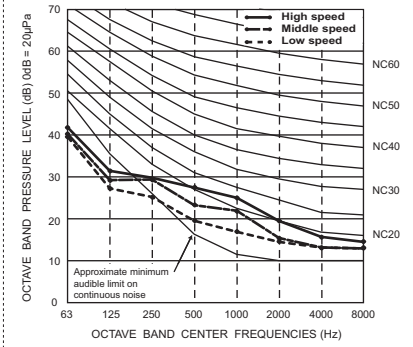
PEFY-WP20VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



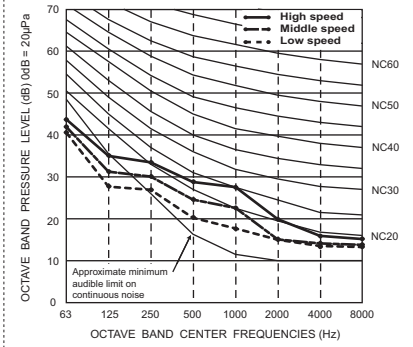
PEFY-WP20VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



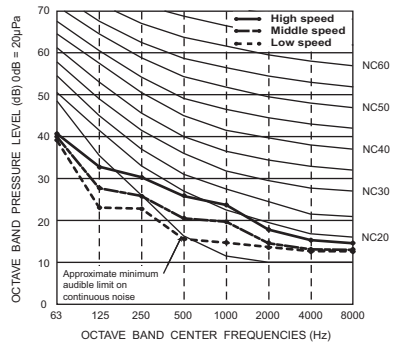
PEFY-WP20VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



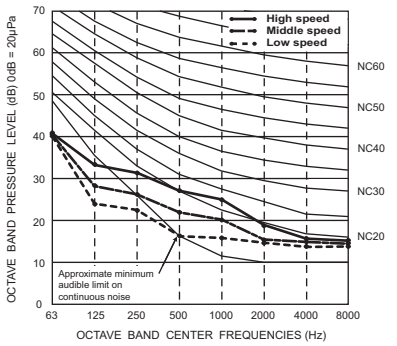
PEFY-WP20VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



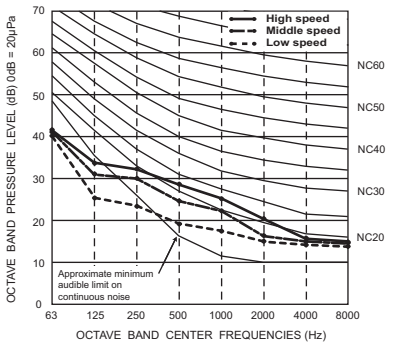
PEFY-WP25VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



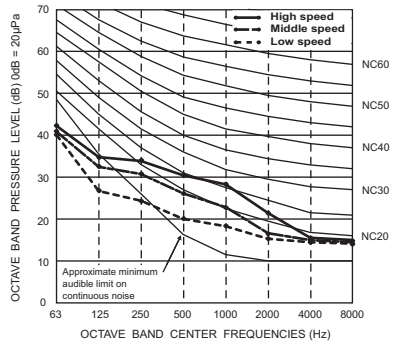
PEFY-WP25VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



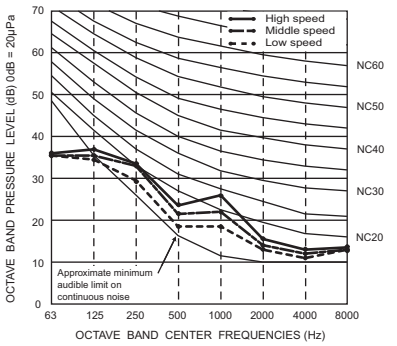
PEFY-WP25VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



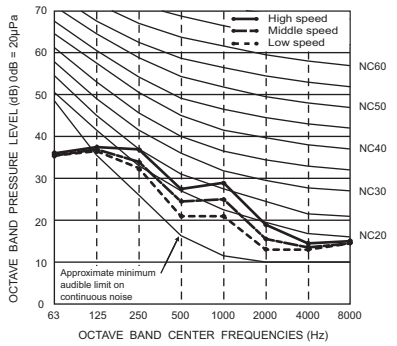
PEFY-WP25VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



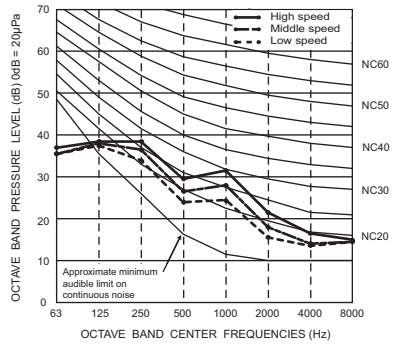
PEFY-WP32VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



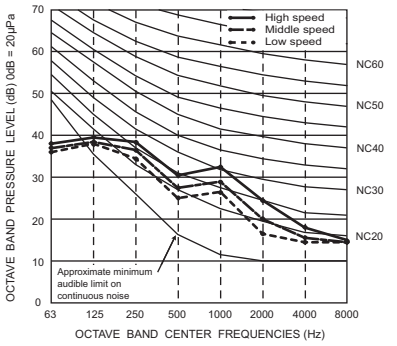
PEFY-WP32VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



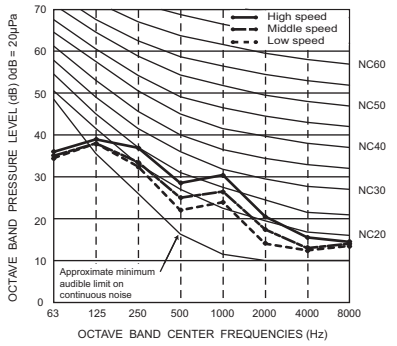
PEFY-WP32VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



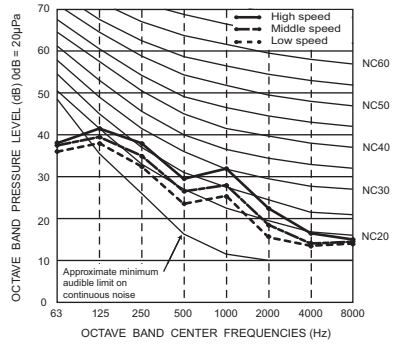
PEFY-WP32VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



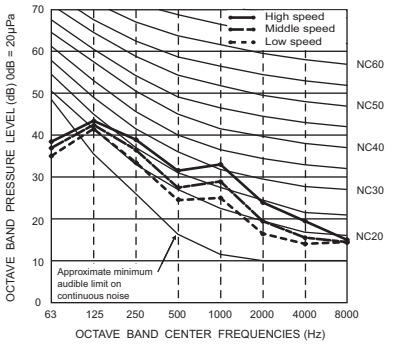
PEFY-WP40VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



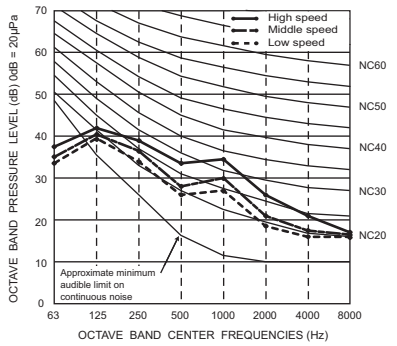
PEFY-WP40VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



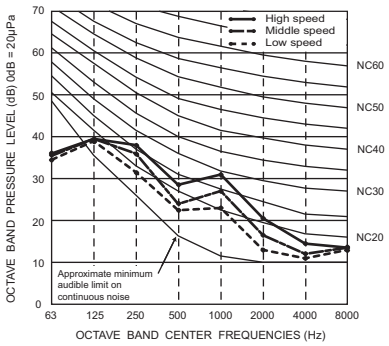
PEFY-WP40VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



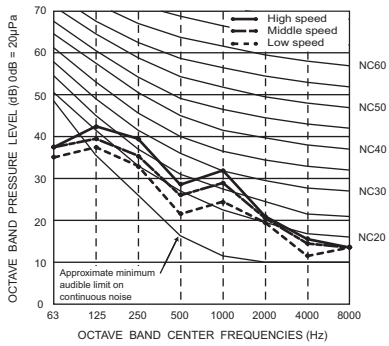
PEFY-WP40VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



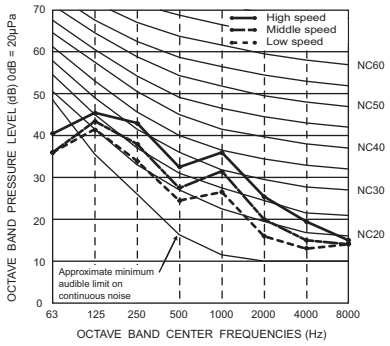
PEFY-WP50VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz



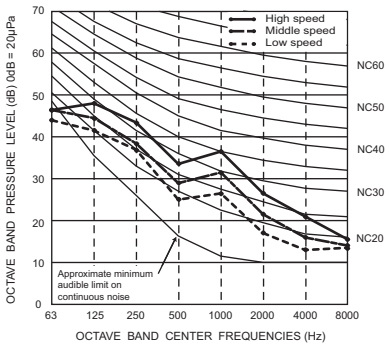
PEFY-WP50VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz



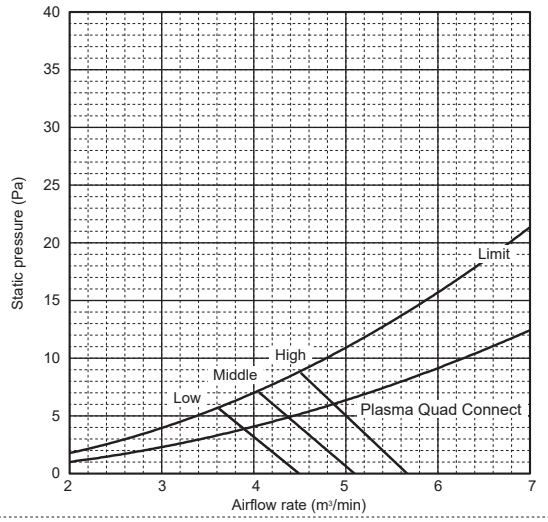
PEFY-WP50VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz



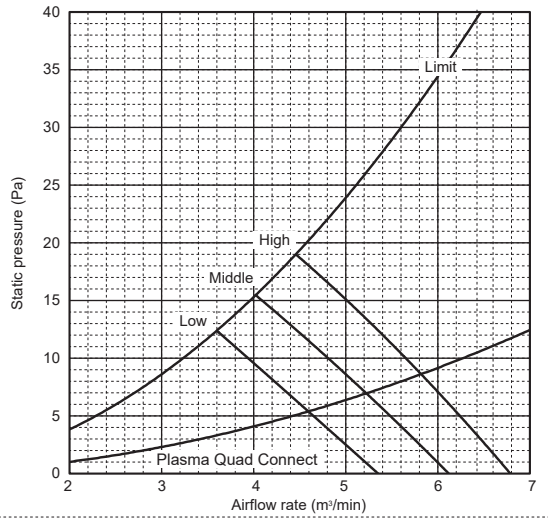
PEFY-WP50VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz



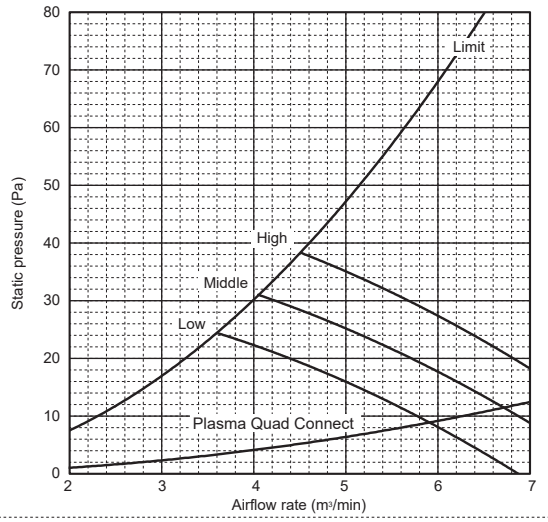
PEFY-WP10VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



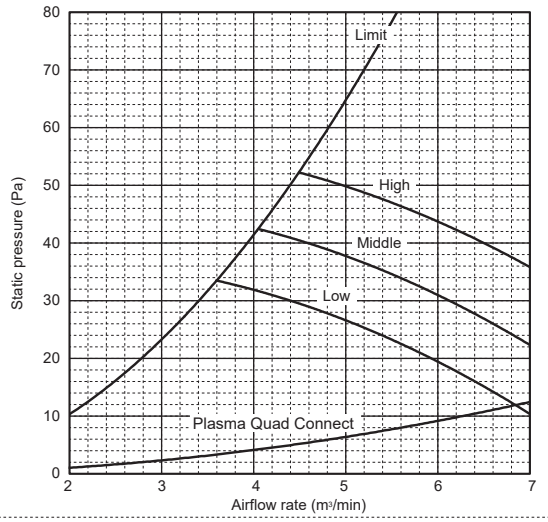
PEFY-WP10VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



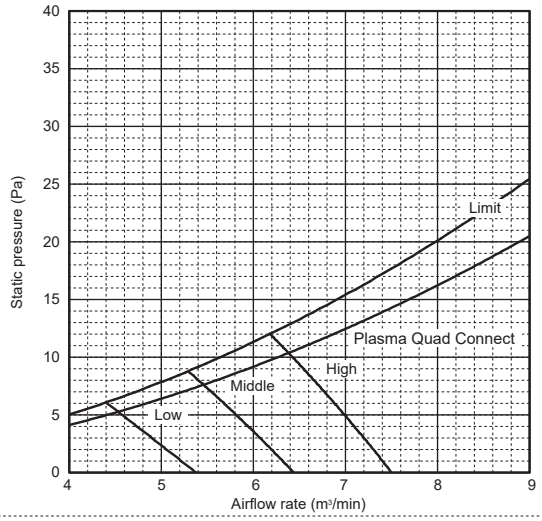
PEFY-WP10VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



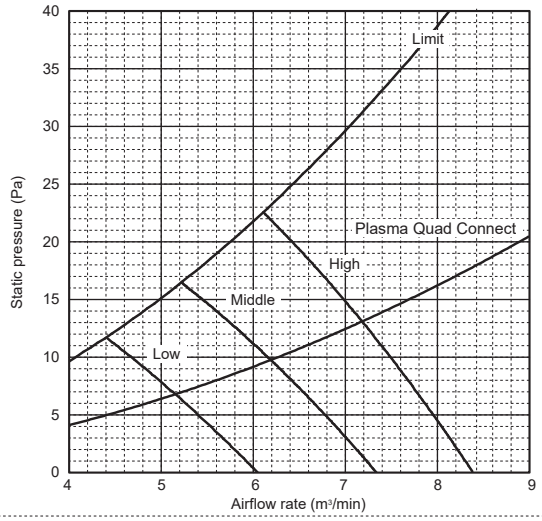
PEFY-WP10VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



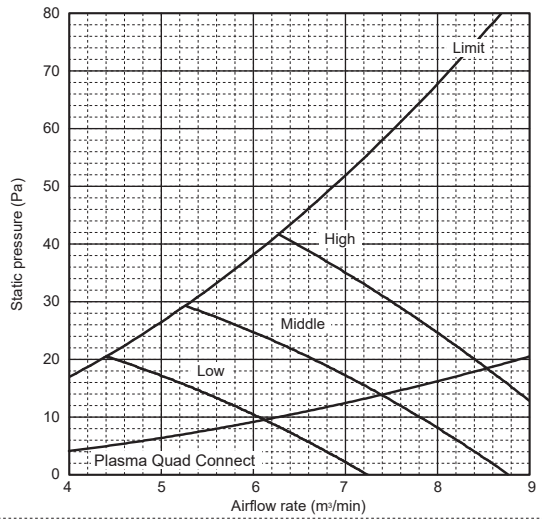
PEFY-WP15VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



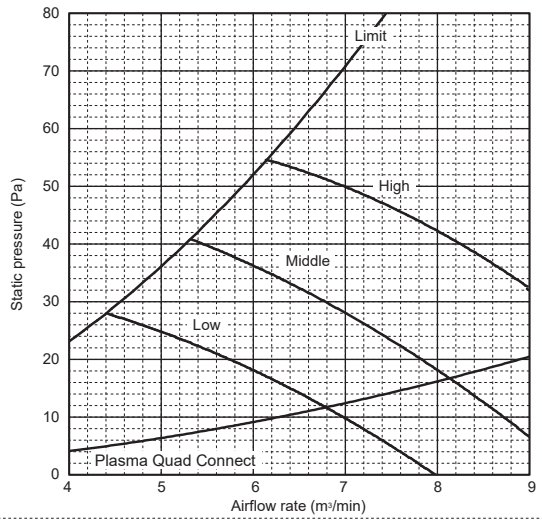
PEFY-WP15VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



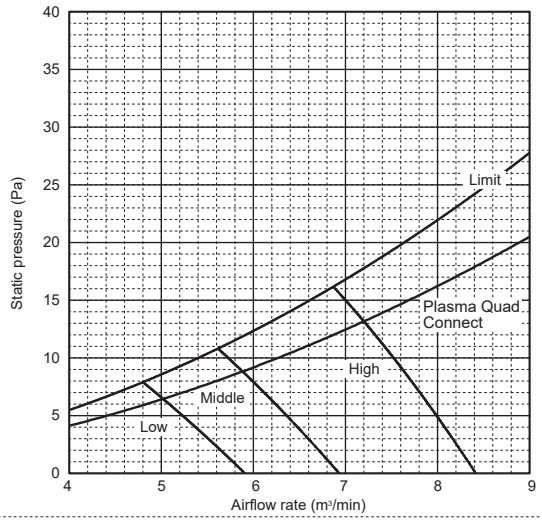
PEFY-WP15VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



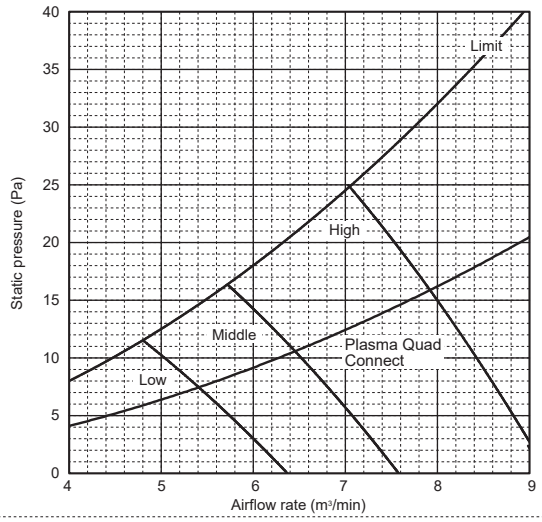
PEFY-WP15VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



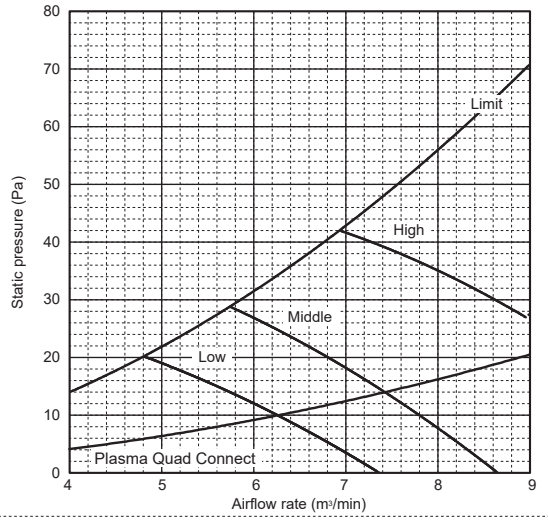
PEFY-WP20VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



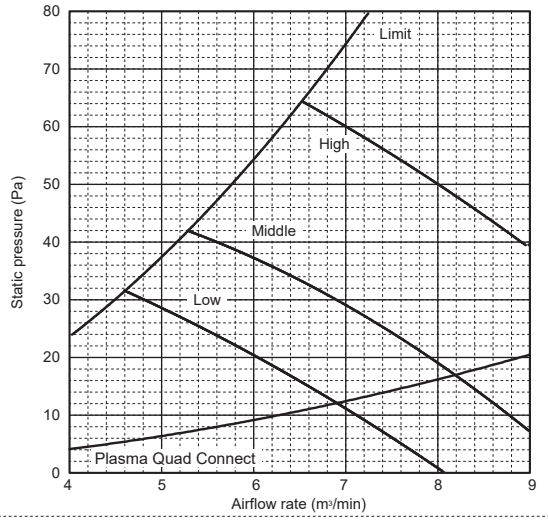
PEFY-WP20VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



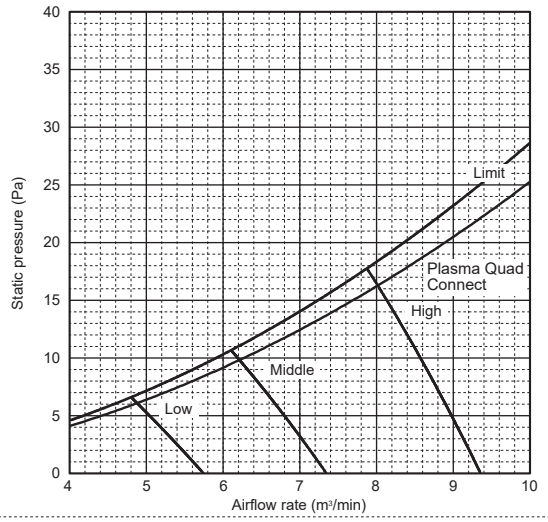
PEFY-WP20VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



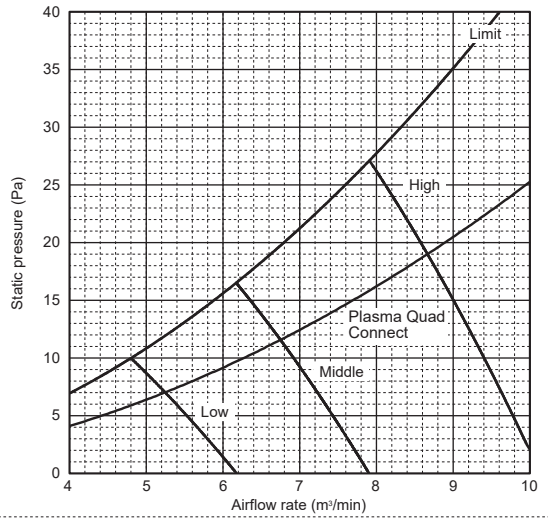
PEFY-WP20VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



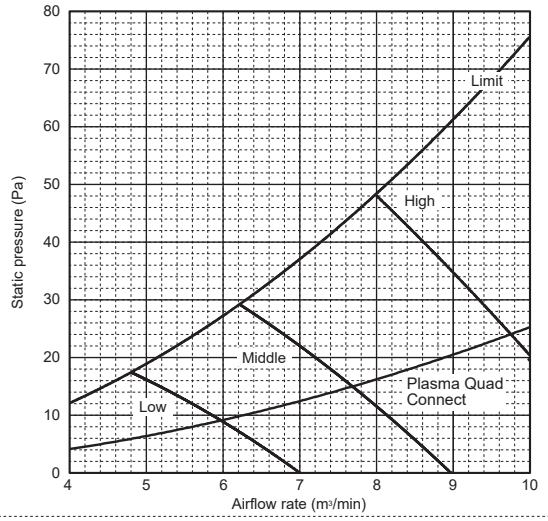
PEFY-WP25VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



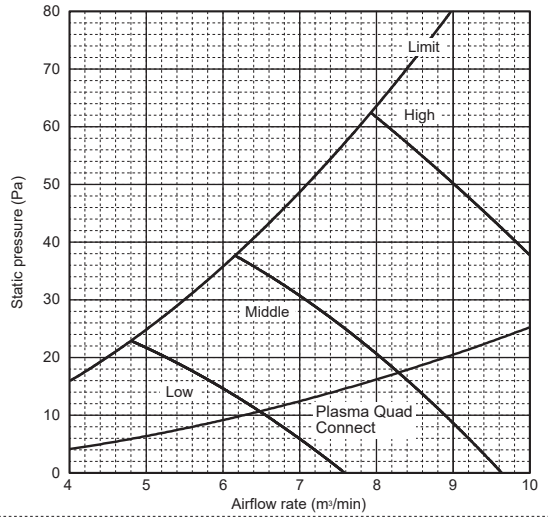
PEFY-WP25VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



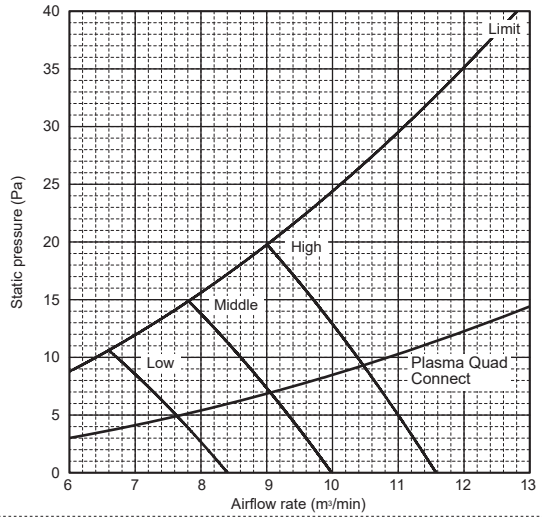
PEFY-WP25VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



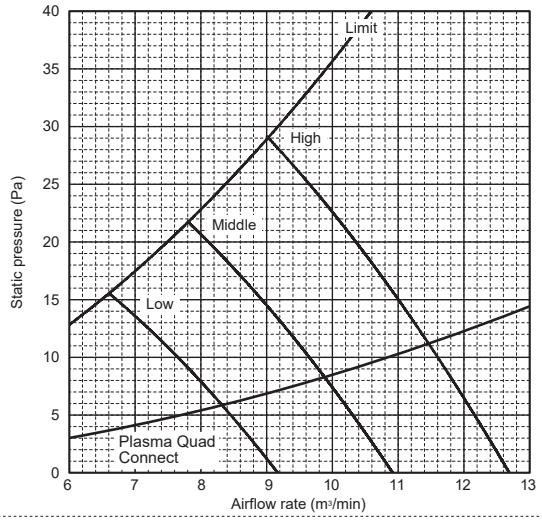
PEFY-WP25VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



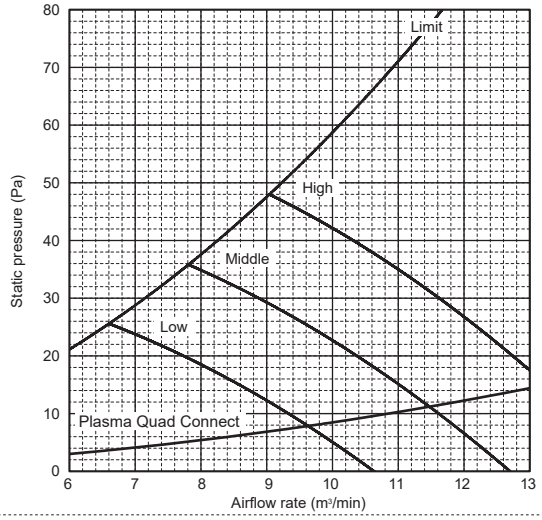
PEFY-WP32VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



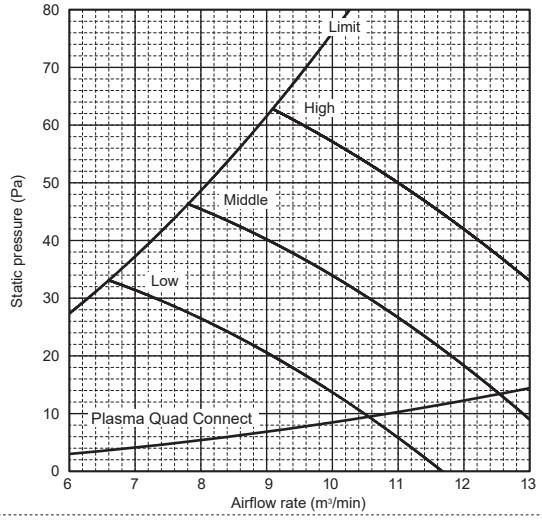
PEFY-WP32VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



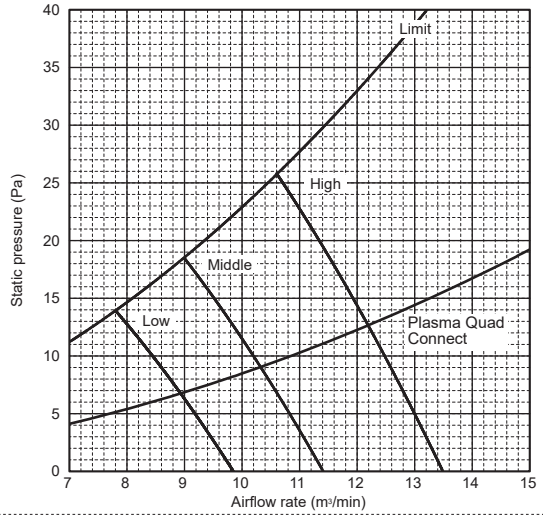
PEFY-WP32VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



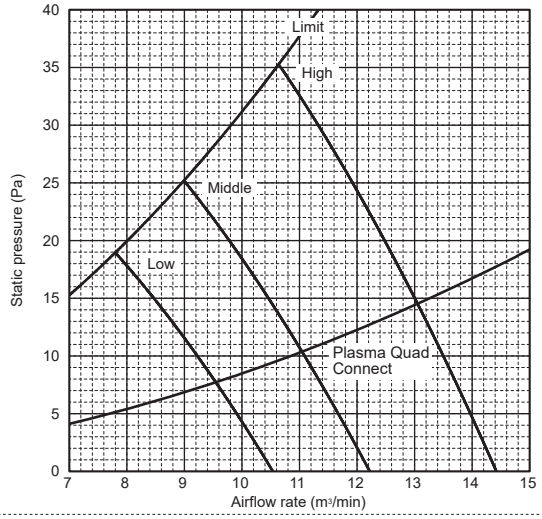
PEFY-WP32VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



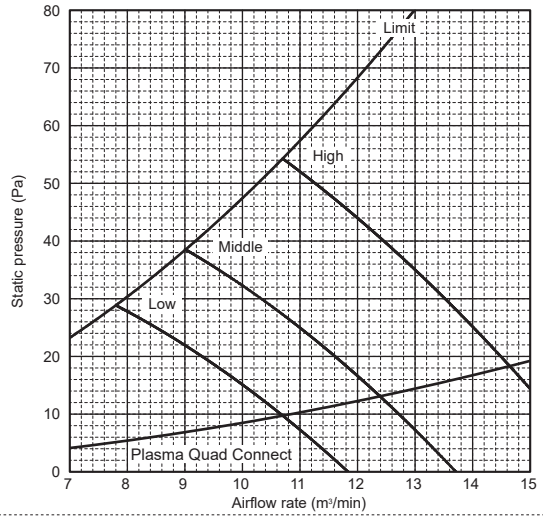
PEFY-WP40VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



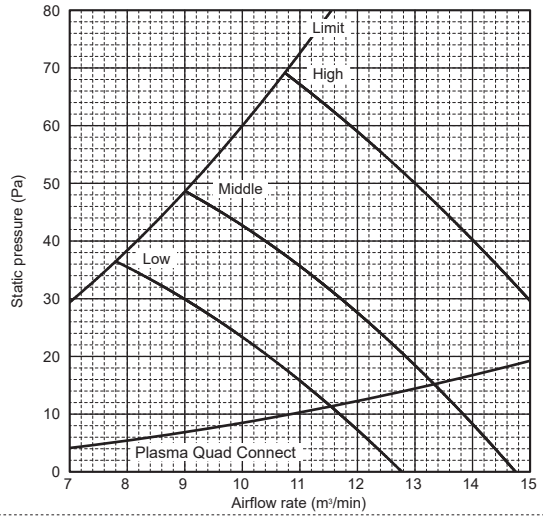
PEFY-WP40VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



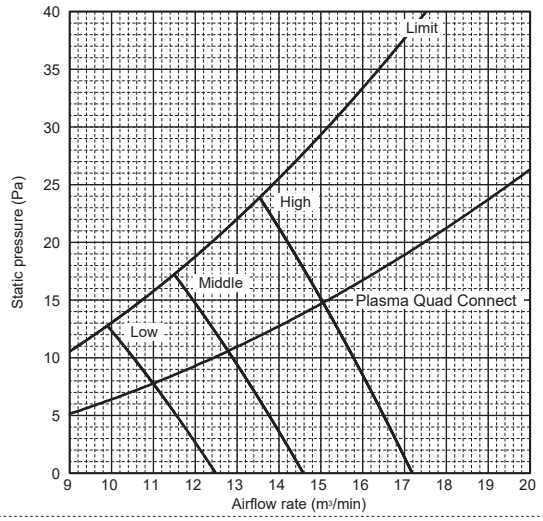
PEFY-WP40VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



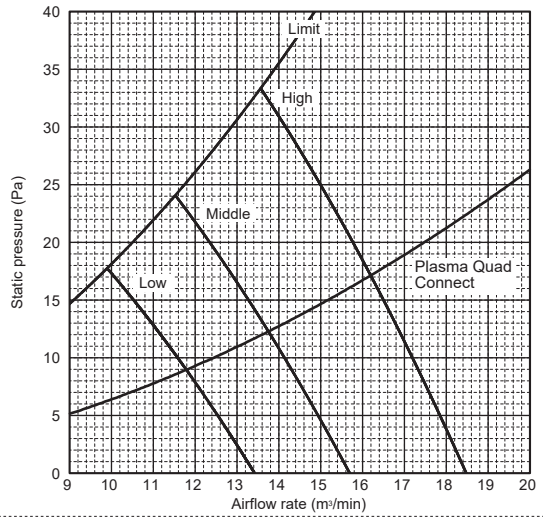
PEFY-WP40VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



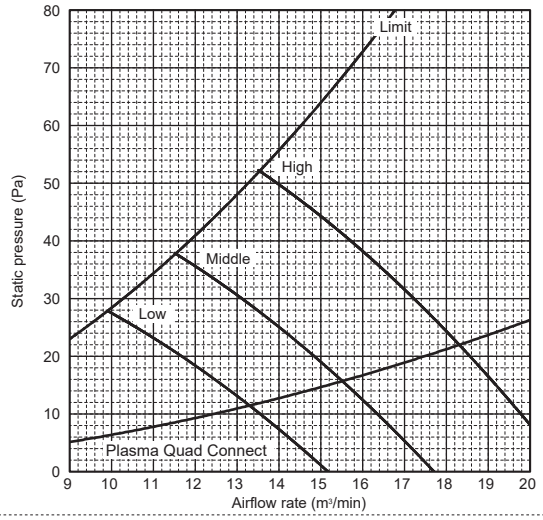
PEFY-WP50VMS1-E
External static pressure : 5Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



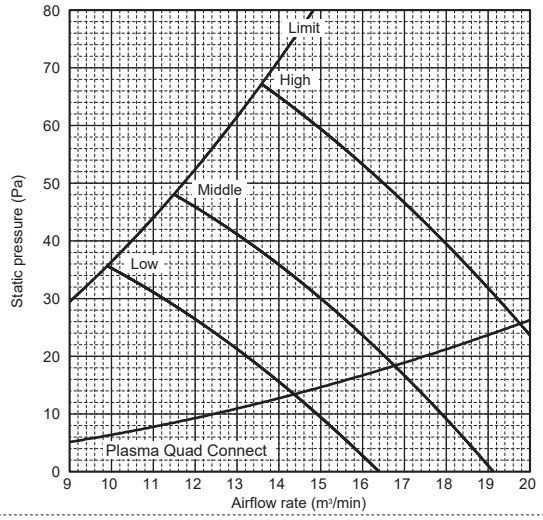
PEFY-WP50VMS1-E
External static pressure : 15Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



PEFY-WP50VMS1-E
External static pressure : 35Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



PEFY-WP50VMS1-E
External static pressure : 50Pa
Power source : 220,230,240V, 50/60Hz
Suction : Back inlet



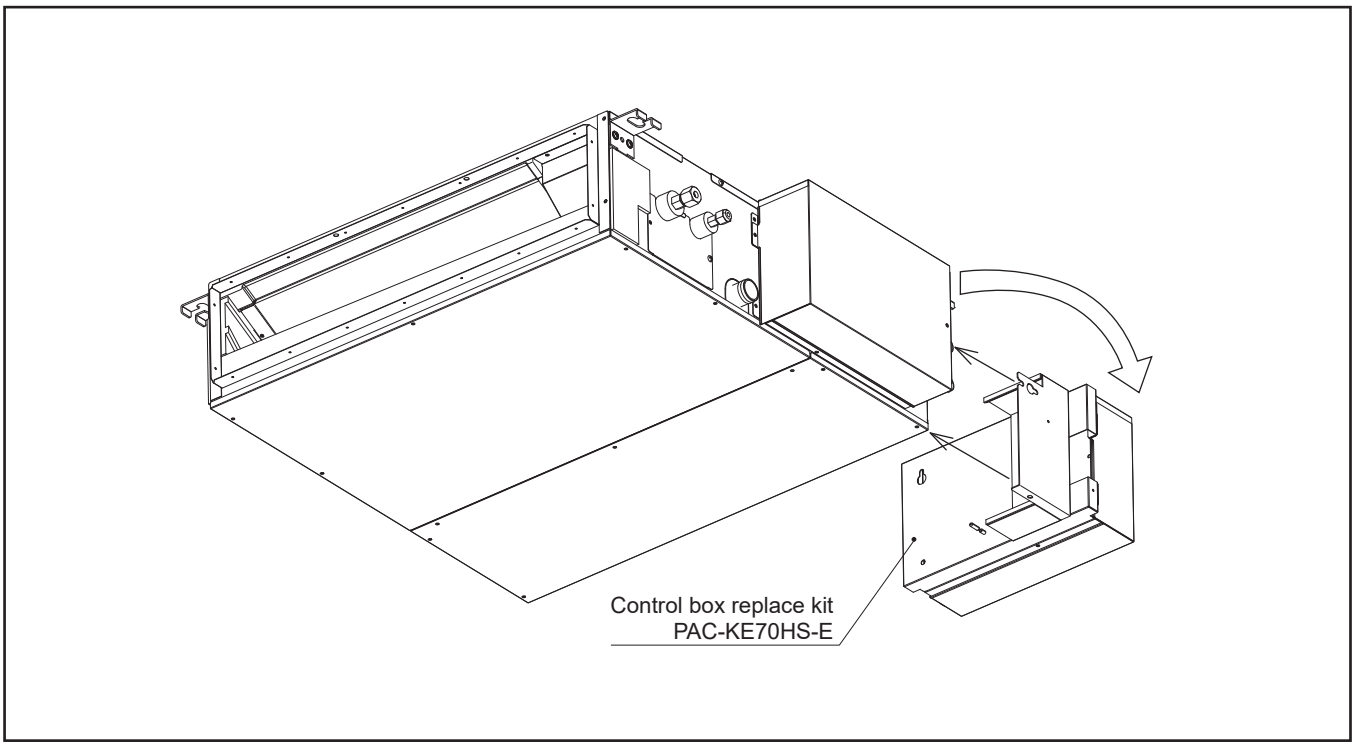
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-WP-VMS1-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PEFY-WP10VMS1-E	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.40/0.40	0.096	0.32/0.32
PEFY-WP15VMS1-E			0.63/0.63	0.096	0.50/0.50
PEFY-WP20VMS1-E			0.70/0.70	0.096	0.56/0.56
PEFY-WP25VMS1-E			0.75/0.75	0.096	0.60/0.60
PEFY-WP32VMS1-E			0.83/0.82	0.096	0.66/0.65
PEFY-WP40VMS1-E			1.02/1.00	0.096	0.81/0.80
PEFY-WP50VMS1-E			1.08/1.07	0.096	0.86/0.85

8-1. Optional parts line up for the Indoor unit

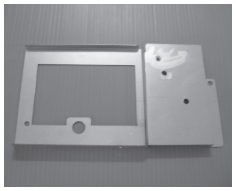
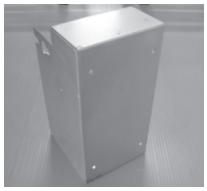
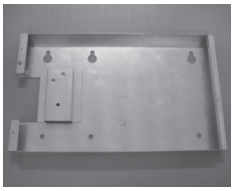
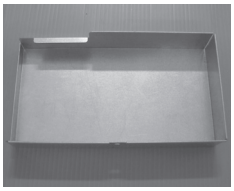
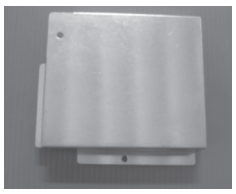
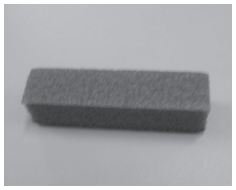
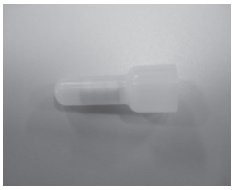
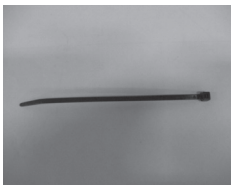
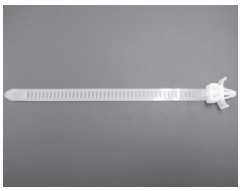
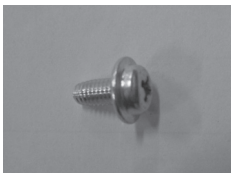
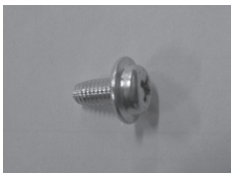
	Control box replace kit	Plasma Quad Connect	PQ attachment
PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E	PAC-KE70HS-E	MAC-100FT-E	PAC-HA11PAR

PEFY-WP-VMS1-E



8-2. Control box replace kit

PAC-KE70HS-E

Parts	①PLATE A	② PLATE B	③ PLATE C	④ COVER A
Q'ty	1	1	1	1
Shape				
Parts	⑤COVER B	⑥ LEAD WIRE MOTOR	⑦ LEAD WIRE LEV	⑧LEAD WIRE THM A
Q'ty	1	1	1	1
Shape		 White 7-pin connector	 White 6-pin connector	 White 4-pin connector
Parts	⑨ LEAD WIRE THM B	⑩ LEAD WIRE EARTH	⑪ LEAD WIRE PUMP	⑫ LEAD WIRE FS
Q'ty	1	1	1	1
Shape	 Red 2-pin connector	 Ring terminal on both ends	 Blue 3-pin connector	 White 4-pin connector
Parts	⑬ INSULATOR	⑭ Connecting terminals	⑮ BAND	⑯ CLAMP
Q'ty	3	4	6	4
Shape				
Parts	⑰ SCREW 1	⑱ SCREW 2	⑲ SCREW 3	⑳ FERRITE CORE
Q'ty	2	4	5	1
Shape	 4X10	 4X10 with a washer	 5X10 with a washer	

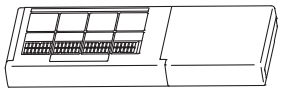
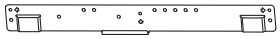
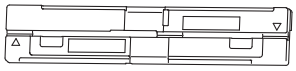
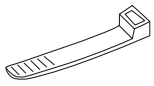
When installing the control box replace kit on the air inlet on the unit, ⑫LEAD WIRE FS is not used.

8-3. Plasma Quad Connect

Static pressure loss is referred to 6 “FAN CHARACTERISTICS CURVES”. Plasma Quad Connect (MAC-100FT-E) should be used together with PQ attachment (PAC-HA11PAR).

* Attaching the Plasma Quad Connect increases the pressure loss. In a certain capacity range where the airflow may not reach the rated airflow level with the factory default external static pressure setting, adjust the external static pressure setting as necessary. For the adjustment procedure, see the Installation Manual for the indoor unit.

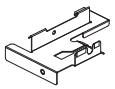
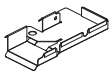
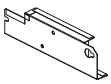
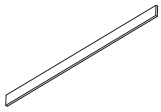
Plasma Quad Connect (MAC-100FT-E)

Item	Plasma Quad Connect (with connecting cable)	Installation plate	Fixing screw for Plasma Quad Connect and Installation plate 4 × 25 mm
Quantity	1	1	5
Shape			
Item	Spacer Note: The spacer is used as packaging material.	Mounting cord clamp	Cable tie
Quantity	1	1	1
Shape			

Item	Screw for Mounting cord clamp 4 × 16 (Use when joining room air conditioner parts)
Quantity	1
Shape	

Detailed installation information should be referred to its Installation Manual.

PQ attachment (PAC-HA11PAR)

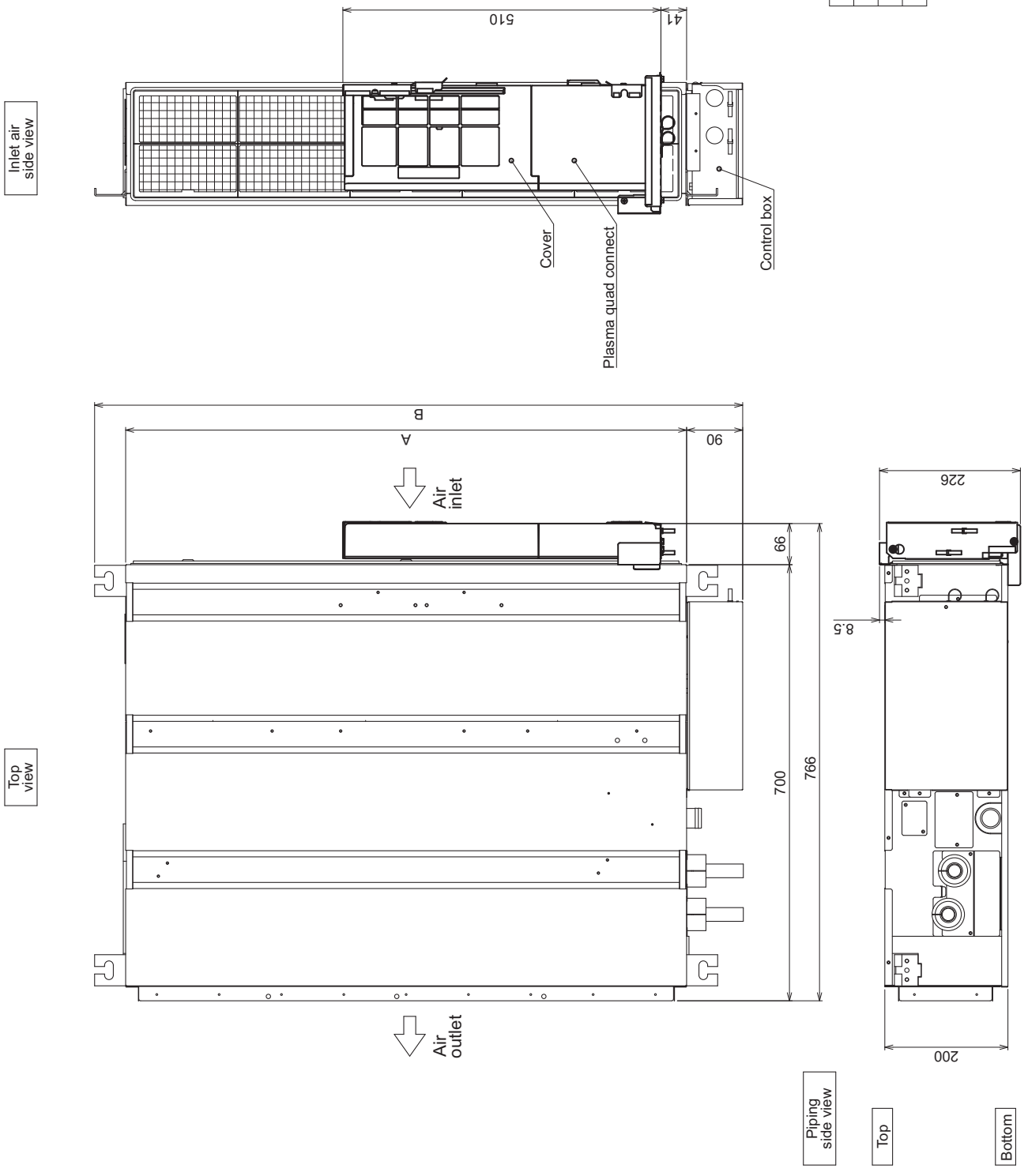
Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	Screw (5 × 10)	RUBBER PLATE
Quantity	1	1	1	1	3	2	2
Shape							

Detailed installation information should be referred to its Installation Manual.

PEFY-WP10, 15, 20, 25, 32, 40, 50VMS1-E
with PQ attachment and Plasma Quad Connect

Unit: mm

WIDE A	B
700	839
900	1039
1100	1239



Model	WIDE A	B
PEFY-WP10,15,20,25VMS1-E	700	839
PEFY-WP32,40VMS1-E	900	1039
PEFY-WP50VMS1-E	1100	1239

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP10,15, 20, 25, 32, 40, 50VMS1-E
with PQ attachment and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
• Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
• Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
• Create access door 4 below the control box and the unit as shown in Fig.5.
(3) For maintenance if there is more than 170mm from the top surface, the cover can be pulled out without removing the PQ attachment. (Fig.1, Fig.3)

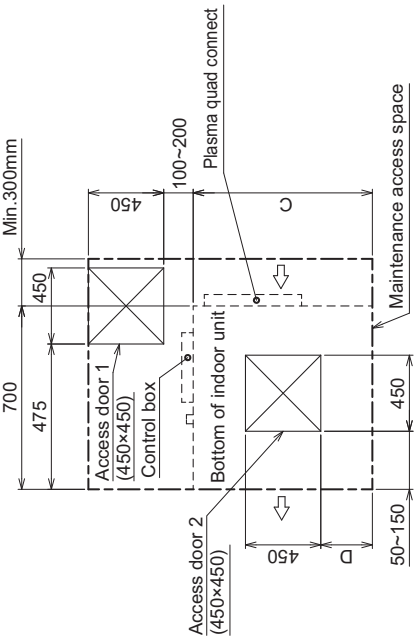


Fig.2 (Viewed from the direction of the arrow A)

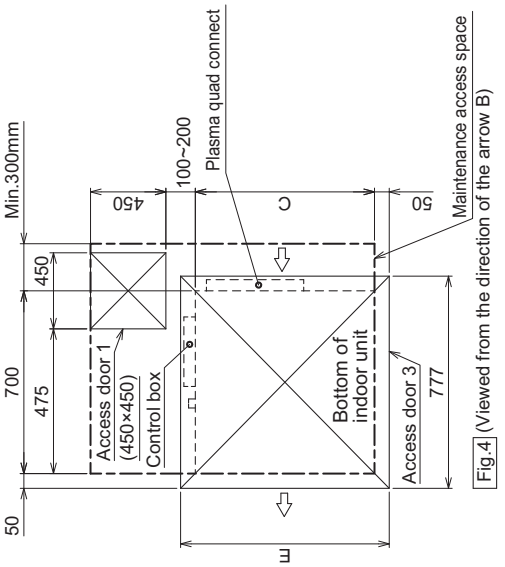


Fig.4 (Viewed from the direction of the arrow B)

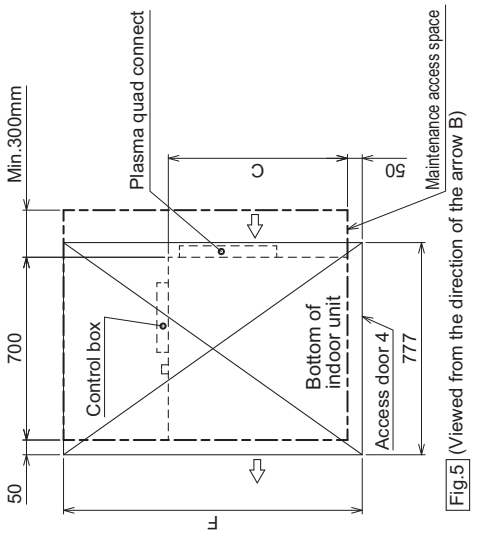


Fig.5 (Viewed from the direction of the arrow B)

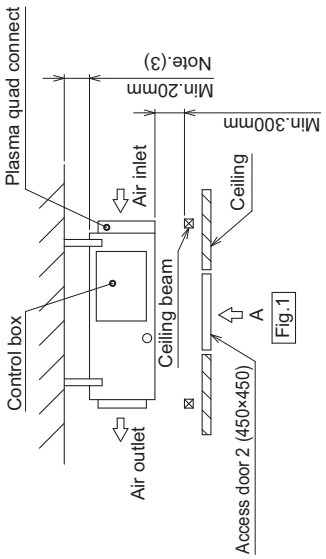


Fig.1

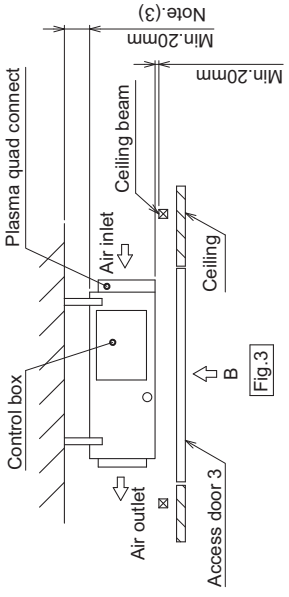


Fig.3

WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500
1100	250~350	1200	1700

Model	WIDE C	D	E	F
PEFY-WP10,15,20,25VMS1-E	700	50~150	800	1300
PEFY-WP32,40VMS1-E	900	150~250	1000	1500
PEFY-WP50VMS1-E	1100	250~350	1200	1700

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP-VMS1-E

PEFY-W-VMS-A

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Model				PEFY-W10VMS-A	PEFY-W15VMS-A	PEFY-W20VMS-A	PEFY-W25VMS-A
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	1.2	1.7	2.2	2.8
(Nominal)		*1	BTU/h	4,100	5,800	7,500	9,600
	*2	Power input	kW	0.020	0.025	0.030	0.035
(220V)	*2	Current input	A	0.16	0.24	0.26	0.30
Heating capacity		*3	kW	1.4	1.9	2.5	3.2
(Nominal)		*3	BTU/h	4,800	6,500	8,500	10,900
	*2	Power input	kW	0.020	0.025	0.030	0.035
(220V)	*2	Current input	A	0.16	0.24	0.26	0.30
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700	200 x 790 x 700
			in.	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 31-1/8 x 27-9/16
Net weight			kg (lbs)	19 (42)	19 (42)	19 (42)	19 (42)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.7	0.7	0.9	0.9
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	4.0 - 4.5 - 5.0	5.0 - 5.5 - 7.0	5.5 - 6.5 - 7.5	5.5 - 6.5 - 8.5
			L/s	67 - 75 - 83	83 - 92 - 117	92 - 108 - 125	92 - 108 - 142
			cfm	141 - 159 - 177	177 - 194 - 247	194 - 230 - 265	194 - 230 - 300
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	20.0-22.0-23.0	22.0-24.0-25.0	23.0-24.0-26.0	23.0-24.0-28.0
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R872, KL94R873	KL94R872, KL94R873	KL94R872, KL94R873	KL94R872, KL94R873
	Wiring			KL94R874	KL94R874	KL94R874	KL94R874
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Drain pump kit			PAC-KE08DM-E	PAC-KE08DM-E	PAC-KE08DM-E	PAC-KE08DM-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment			PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch of HBC.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W32VMS-A	PEFY-W40VMS-A	PEFY-W50VMS-A	
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	
Cooling capacity		*1	kW	3.6	4.5	5.6	
(Nominal)		*1	BTU/h	12,300	15,400	19,100	
	*2	Power input	kW	0.040	0.045	0.070	
(220V)	*2	Current input	A	0.37	0.39	0.55	
Heating capacity		*3	kW	4.0	5.0	6.3	
(Nominal)		*3	BTU/h	13,600	17,100	21,500	
	*2	Power input	kW	0.040	0.045	0.070	
(220V)	*2	Current input	A	0.37	0.39	0.55	
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	
External dimension H × W × D			mm	200 x 790 x 700	200 x 990 x 700	200 x 990 x 700	
			in.	7-7/8 x 31-1/8 x 27-9/16	7-7/8 x 39 x 27-9/16	7-7/8 x 39 x 27-9/16	
Net weight			kg (lbs)	19.5 (45)	23.5 (53)	23.5 (53)	
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	
	Water Volume		L	1.0	1.0	1.0	
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 3	Sirocco fan x 3	
*4	External static press.		Pa	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	<5> - 15 - <35> - <50>	
			mmH_2O	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	<0.5> - 1.5 - <3.6> - <5.1>	
	Motor Type			DC motor	DC motor	DC motor	
	Motor output		kW	0.096	0.096	0.096	
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
			m^3/min	5.5 - 6.5 - 9.0	8.0 - 9.5 - 11.0	9.5 - 12.0 - 14.5	
			L/s	92 - 108 - 150	133 - 158 - 183	158 - 200 - 242	
			cfm	194 - 230 - 318	282 - 335 - 388	335 - 424 - 512	
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
		*2	dB <A>	24.0-25.0-31.0	24.0-25.0-28.0	25.0-29.0-33.0	
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	
Protection device				Fuse	Fuse	Fuse	
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	
	Outlet		mm O.D.	22	22	22	
Field pipe size	Inlet		mm I.D.	20	20	20	
	Outlet		mm I.D.	20	20	20	
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	
Drawing	External			KL94R872, KL94R873	KL94R872, KL94R873	KL94R872, KL94R873	
	Wiring			KL94R874	KL94R874	KL94R874	
	Refrigerant cycle			-	-	-	
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	
Optional parts	Drain pump kit			PAC-KE08DM-E	PAC-KE08DM-E	PAC-KE08DM-E	
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	
	PQ attachment			PAC-HA11PAR	PAC-HA11PAR	PAC-HA11PAR	
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch of HBC.

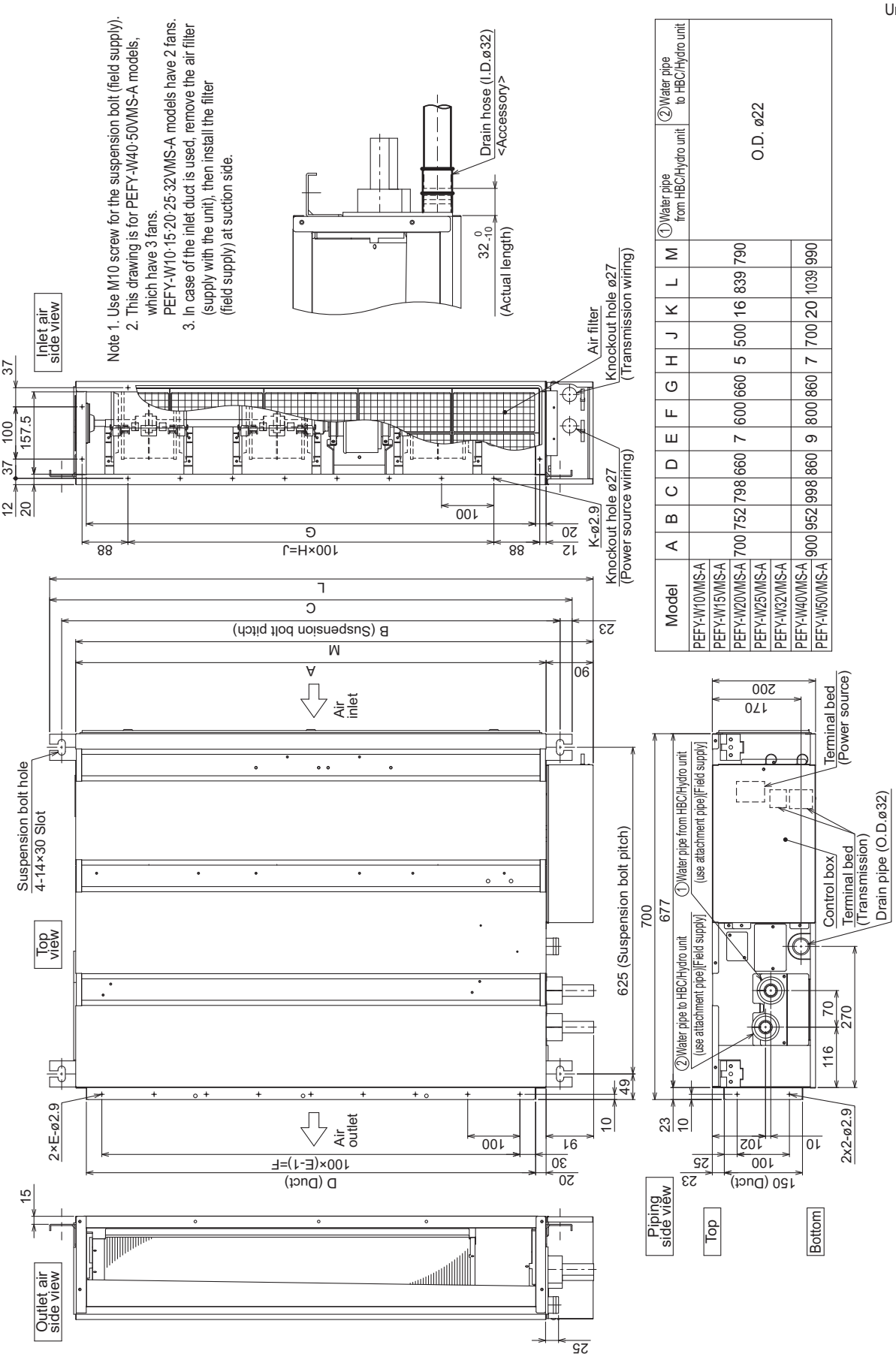
Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A

Unit: mm



Model	A	B	C	D	E	F	G	H	J	K	L	M	①Water pipe from HBC/Hydro unit	②Water pipe to HBC/Hydro unit
PEFY-W10VMS-A													O.D. ø22	
PEFY-W15VMS-A														
PEFY-W20VMS-A	700	752	798	660	7	600	660	5	500	16	839	790		
PEFY-W25VMS-A														
PEFY-W32VMS-A														
PEFY-W40VMS-A	900	952	998	860	9	800	860	7	700	20	1039	990		
PEFY-W50VMS-A														

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.

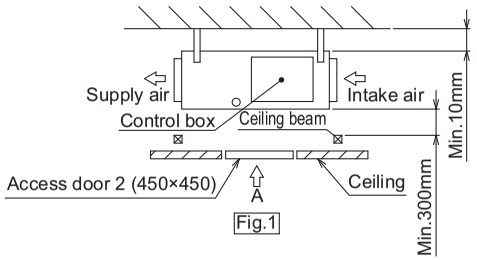


Fig.1

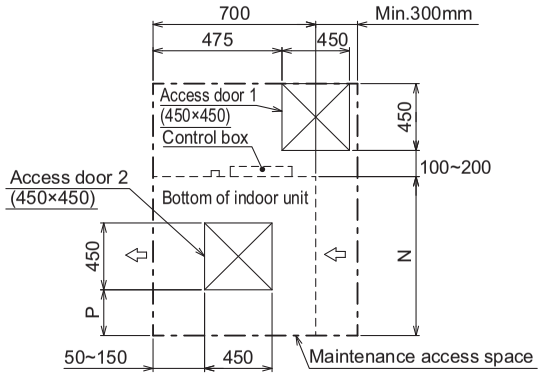


Fig.2 (Viewed from the direction of the arrow A)

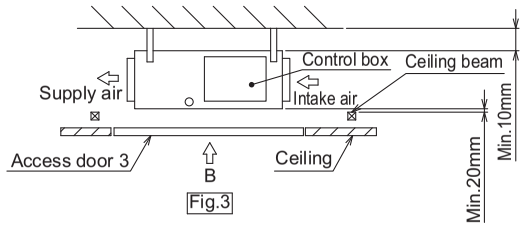


Fig.3

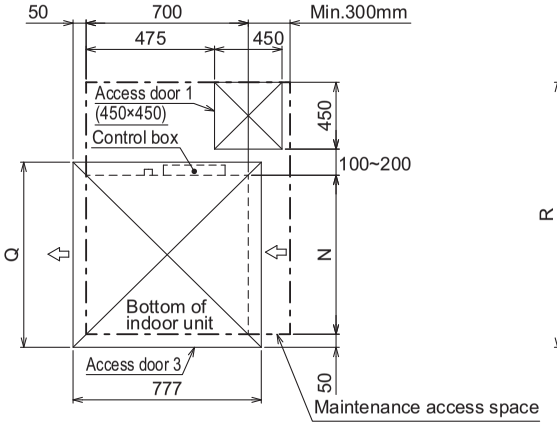


Fig.4 (Viewed from the direction of the arrow B)

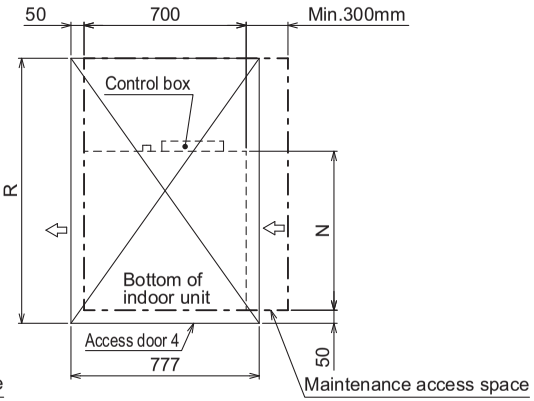


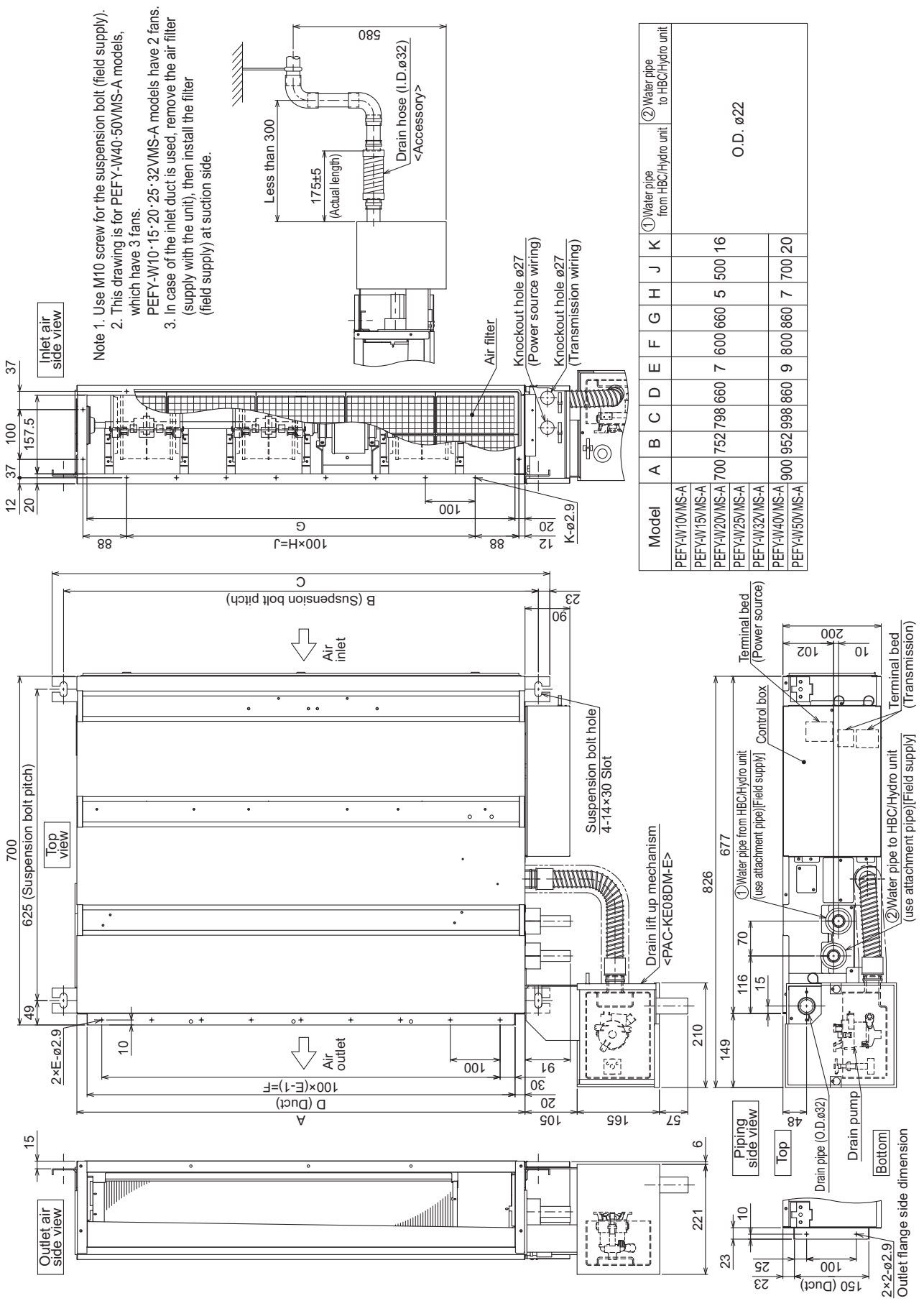
Fig.5 (Viewed from the direction of the arrow B)

Model	N	P	Q	R
PEFY-W10VMS-A	700	50~150	800	1300
PEFY-W15VMS-A				
PEFY-W20VMS-A				
PEFY-W25VMS-A				
PEFY-W32VMS-A				
PEFY-W40VMS-A	900	150~250	1000	1500
PEFY-W50VMS-A				

Unit: mm

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A Drain lift up mechanism built-in specification

Unit: mm



Model	A	B	C	D	E	F	G	H	J	K	
PEFY-W10VMS-A											①Water pipe from HBC/Hydro unit: O.D. ø22
PEFY-W15VMS-A											②Water pipe to HBC/Hydro unit: O.D. ø22
PEFY-W20VMS-A	700	752	798	660	7	600	660	5	500	16	
PEFY-W25VMS-A											
PEFY-W32VMS-A											
PEFY-W40VMS-A	900	952	998	860	9	800	860	7	700	20	
PEFY-W50VMS-A											

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A Drain lift up mechanism built-in specification

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.

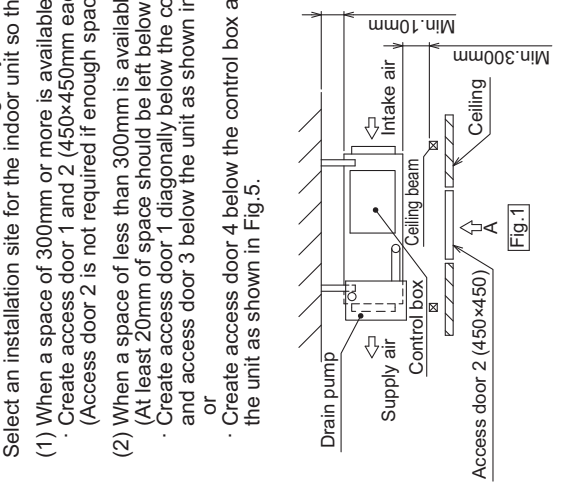


Fig.1

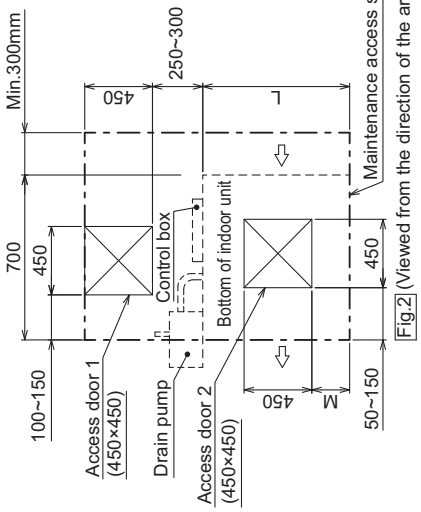


Fig.2 (Viewed from the direction of the arrow A)

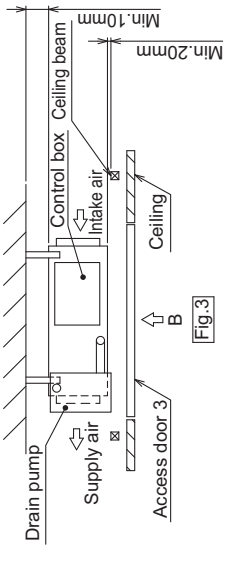


Fig.3

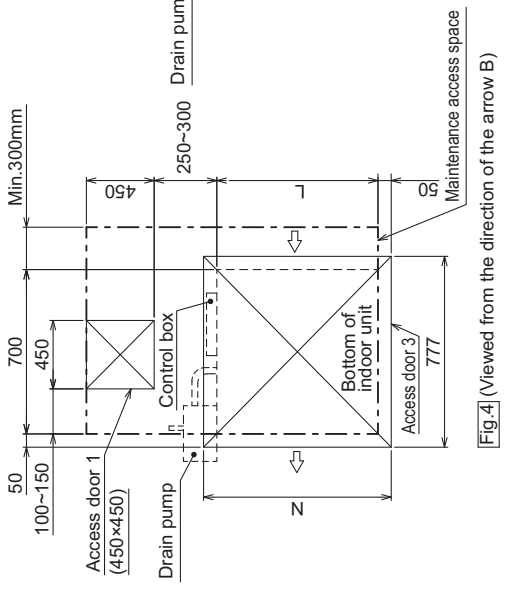


Fig.4 (Viewed from the direction of the arrow B)

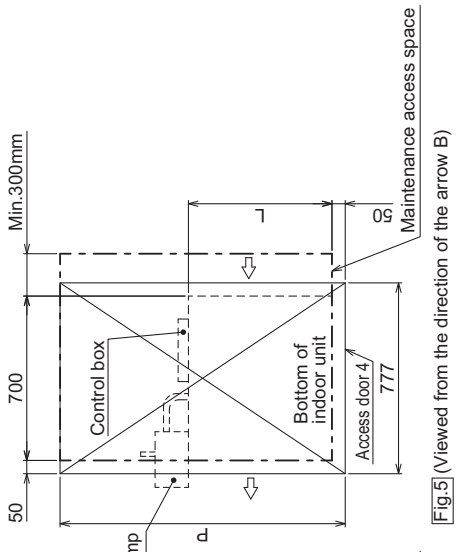
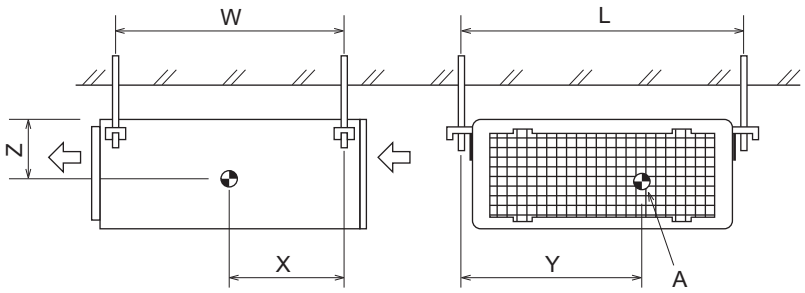


Fig.5 (Viewed from the direction of the arrow B)

Model	L	M	N	P
PEFY-W10VMS-A	700	50~150	800	1300
PEFY-W15VMS-A				
PEFY-W20VMS-A				
PEFY-W25VMS-A				
PEFY-W32VMS-A				
PEFY-W40VMS-A	900	150~250	1000	1500
PEFY-W50VMS-A				

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A

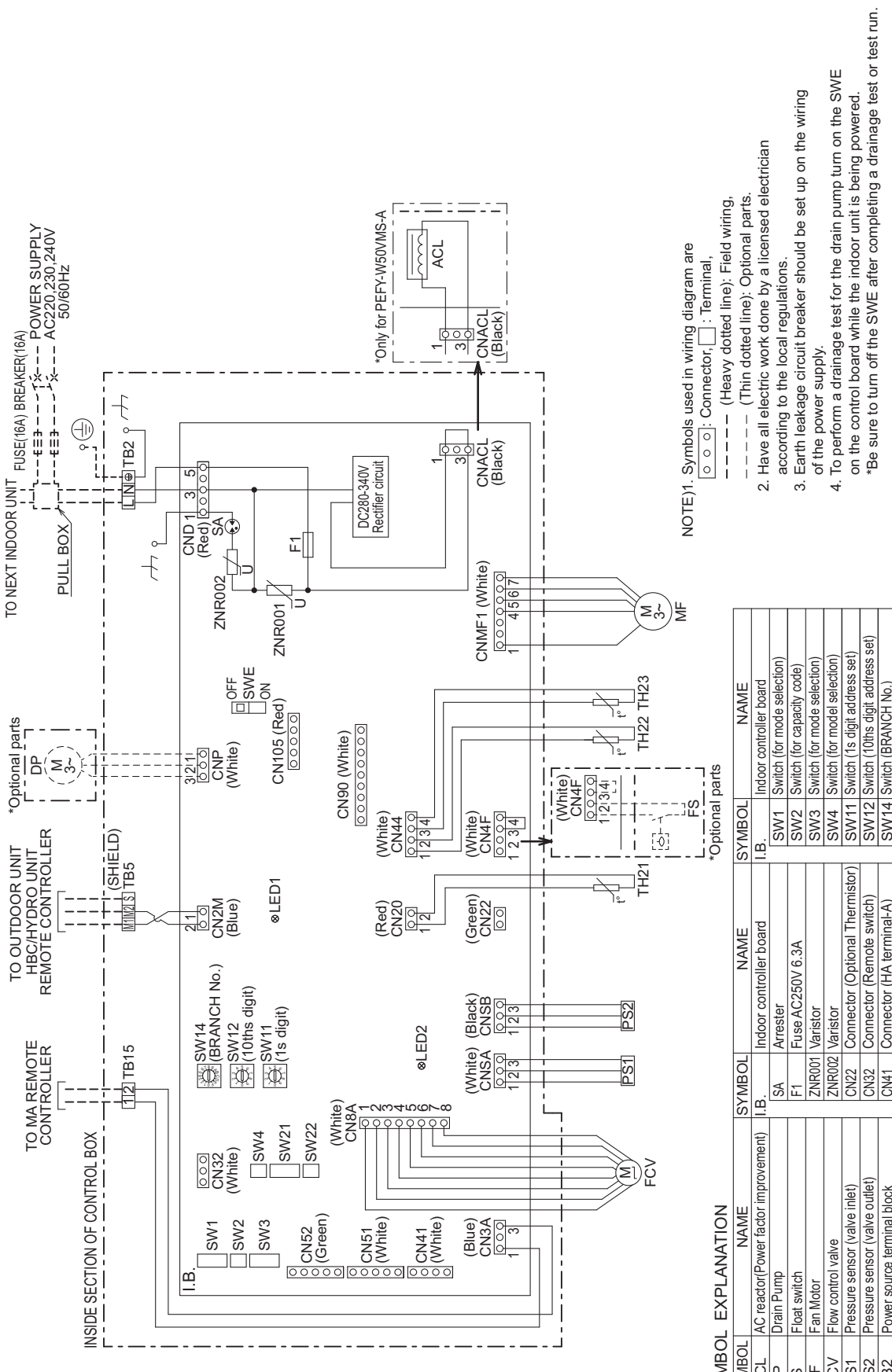


A: Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-W10VMS-A	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-W15VMS-A	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-W20VMS-A	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-W25VMS-A	625 [24-5/8]	752 [29-5/8]	263 [10-3/8]	338 [13-5/16]	105 [4-5/32]
PEFY-W32VMS-A	625 [24-5/8]	752 [29-5/8]	275 [10-27/32]	340 [13-13/32]	104 [4-1/8]
PEFY-W40VMS-A	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]
PEFY-W50VMS-A	625 [24-5/8]	952 [37-1/2]	280 [11-1/32]	422 [16-5/8]	104 [4-1/8]

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A



NOTE)1. Symbols used in wiring diagram are
□□□: Connector, □: Terminal,
——— (Heavy dotted line): Field wiring,
– – – – (Thin dotted line): Optional parts.
2. Have all electric work done by a licensed electrician according to the local regulations.
3. Earth leakage circuit breaker should be set up on the wiring of the power supply.
4. To perform a drainage test for the drain pump turn on the SWE on the control board while the indoor unit is being powered.
*Be sure to turn off the SWE after completing a drainage test or test run.

SYMBOL EXPLANATION

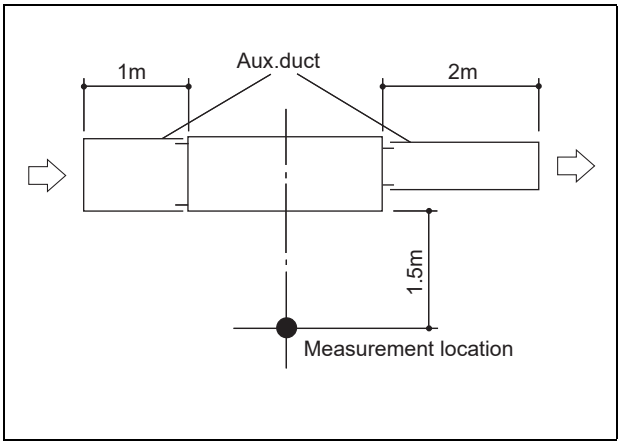
SYMBOL	NAME
ACL	AC reactor(Power factor improvement)
DP	Drain Pump
FS	Float switch
MF	Fan Motor
FCV	Flow control valve
PS1	Pressure sensor (valve inlet)
PS2	Pressure sensor (valve outlet)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp. detection)
TH22	Thermistor (piping temp.detection/inlet water)
TH23	Thermistor (piping temp.detection/outlet water)

SYMBOL	NAME
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001	Varistor
ZNR002	Varistor
CN22	Connector (Optional Thermistor)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)

SYMBOL	NAME
I.B.	Indoor controller board
SW1	Switch (for mode selection)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for static pressure selection)
SW22	Switch (Wireless pair No.)
SWE	Connector (emergency operation)
LED1	LED (Power supply)
LED2	LED (Remote controller supply)

5-1. Sound levels

PEFY-W-VMS-A



* Measured in anechoic room.

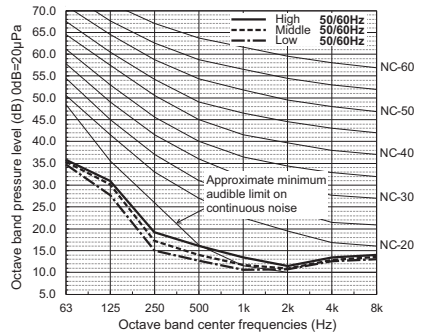
Sound level at anechoic room: Low-Mid-High

		Sound level dB (A)			
		5Pa	15Pa	35Pa	50Pa
PEFY-W10VMS-A	220-240V	20-21-22	20-22-23	23-24-25	23-24-26
PEFY-W15VMS-A	220-240V	22-24-25	22-24-25	23-24-27	23-24-29
PEFY-W20VMS-A	220-240V	22-24-25	23-24-26	23-26-28	23-28-30
PEFY-W25VMS-A	220-240V	22-24-26	23-24-28	24-25-31	24-27-33
PEFY-W32VMS-A	220-240V	23-25-30	24-25-31	24-28-32	24-26-33
PEFY-W40VMS-A	220-240V	24-25-27	24-25-28	24-27-32	25-28-32
PEFY-W50VMS-A	220-240V	24-28-32	25-29-33	26-31-35	27-32-37

5-2. NC curves

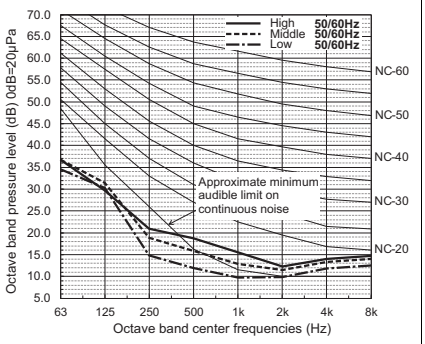
PEFY-W10VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



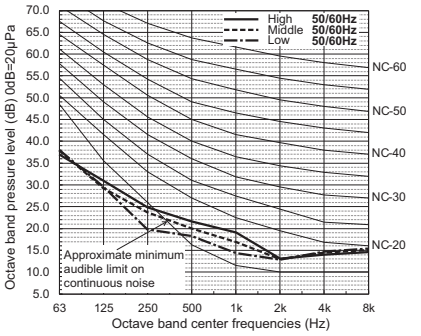
PEFY-W10VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



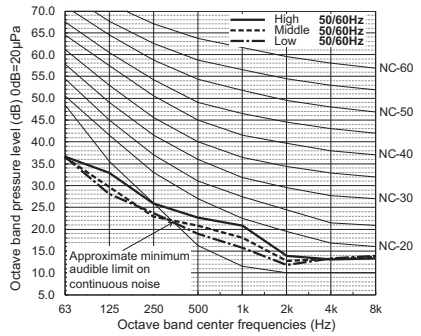
PEFY-W10VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



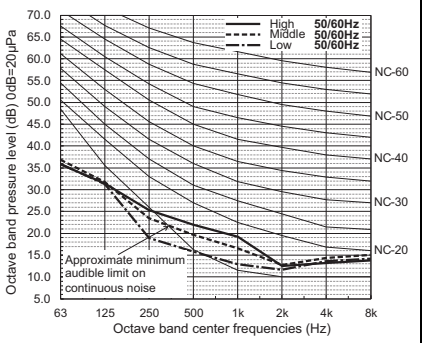
PEFY-W10VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



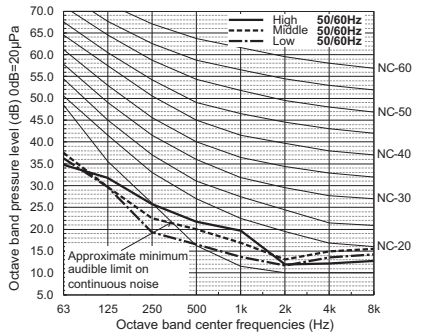
PEFY-W15VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



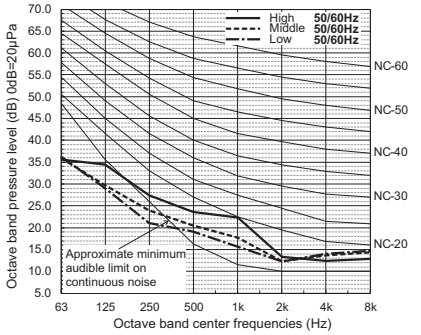
PEFY-W15VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



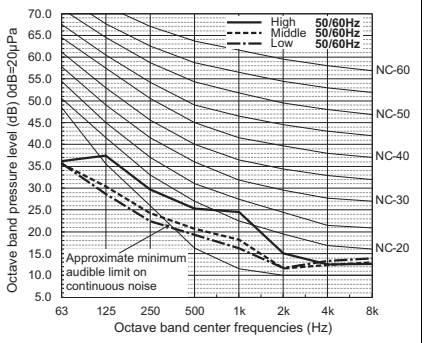
PEFY-W15VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



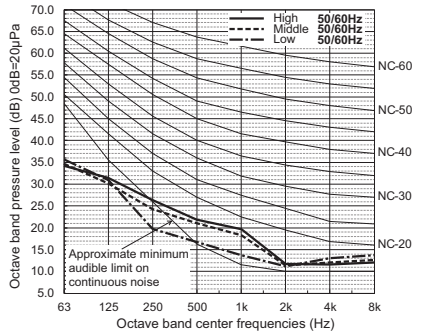
PEFY-W15VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



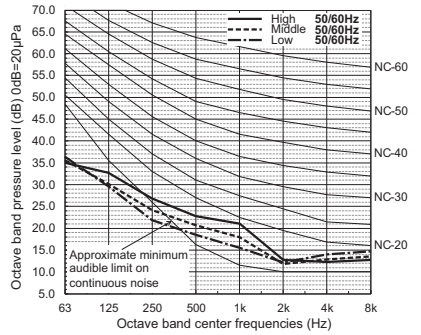
PEFY-W20VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



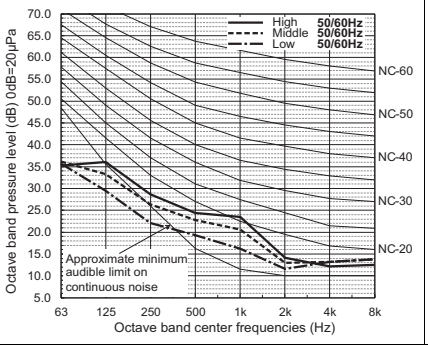
PEFY-W20VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



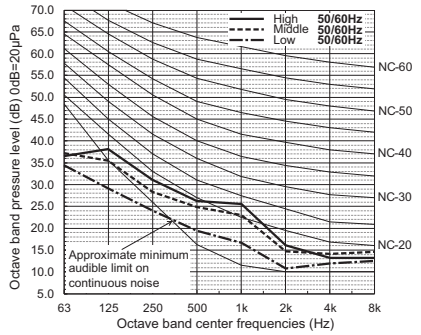
PEFY-W20VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



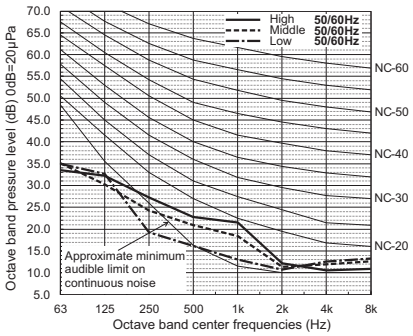
PEFY-W20VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



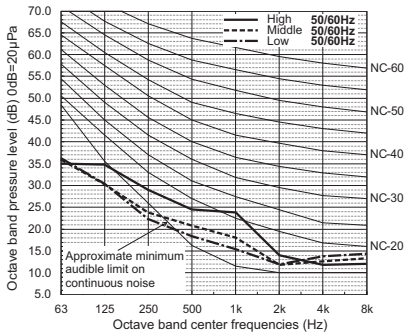
PEFY-W25VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



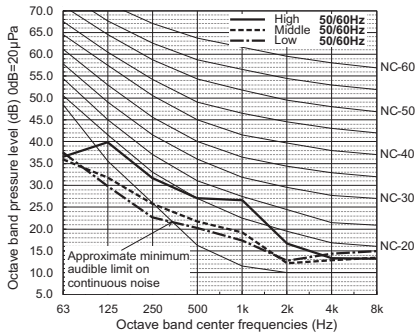
PEFY-W25VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



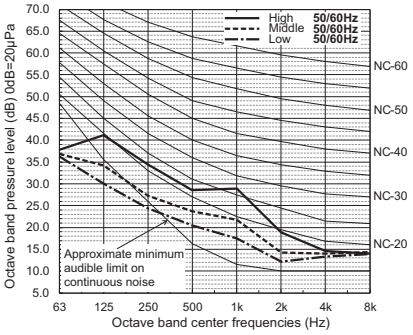
PEFY-W25VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



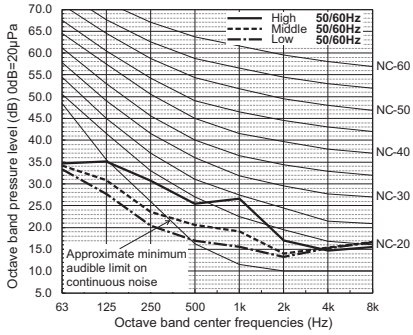
PEFY-W25VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



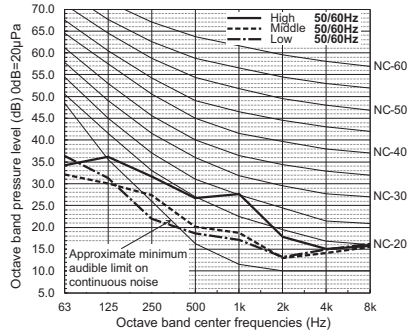
PEFY-W32VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



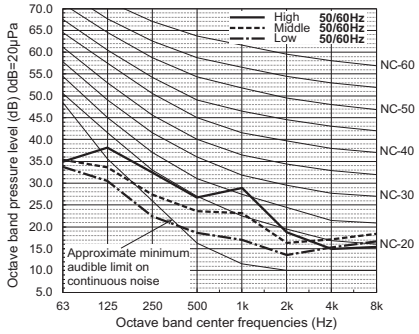
PEFY-W32VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



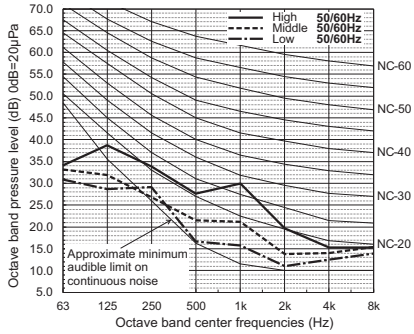
PEFY-W32VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



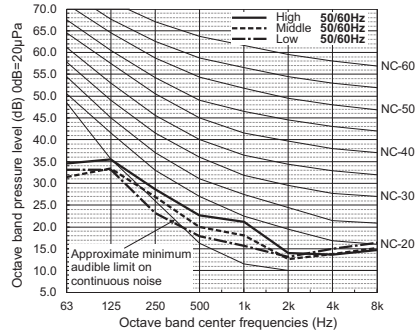
PEFY-W32VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



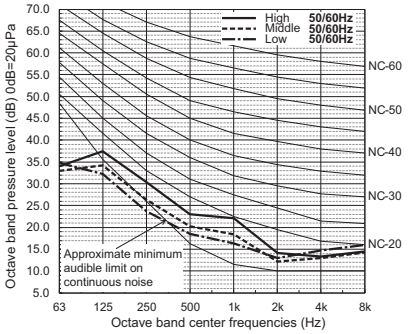
PEFY-W40VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



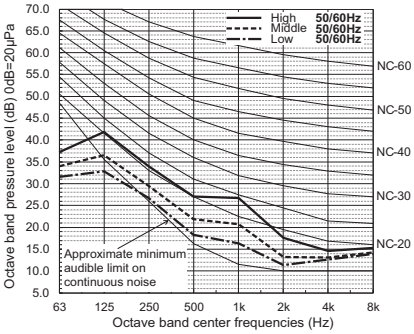
PEFY-W40VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



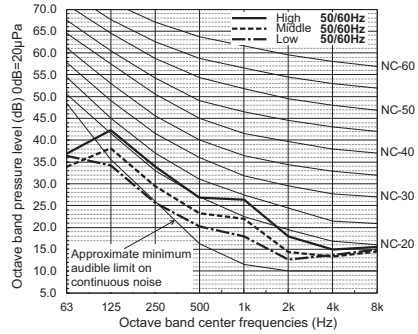
PEFY-W40VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



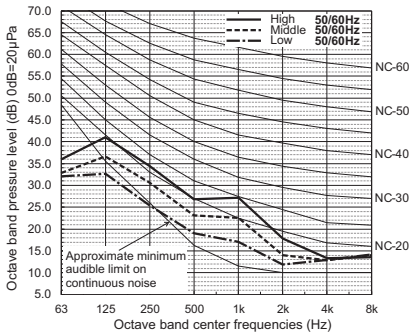
PEFY-W40VMS-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



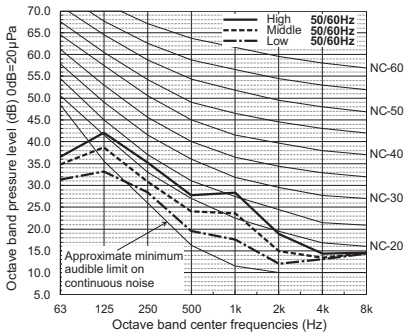
PEFY-W50VMS-A

External Static Pressure: 5Pa [0.02in.WG]
Power Source: 220-240V



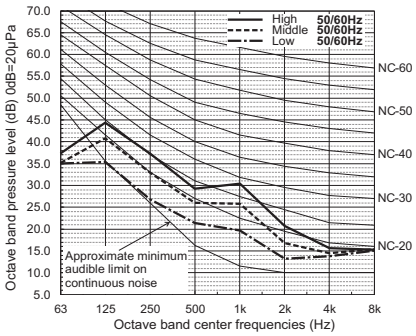
PEFY-W50VMS-A

External Static Pressure: 15Pa [0.06in.WG]
Power Source: 220-240V



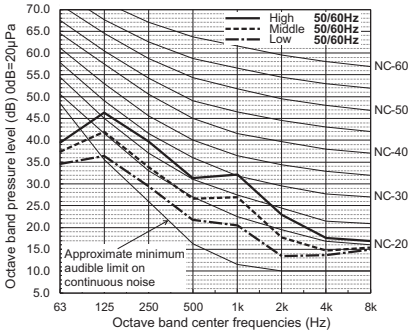
PEFY-W50VMS-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V

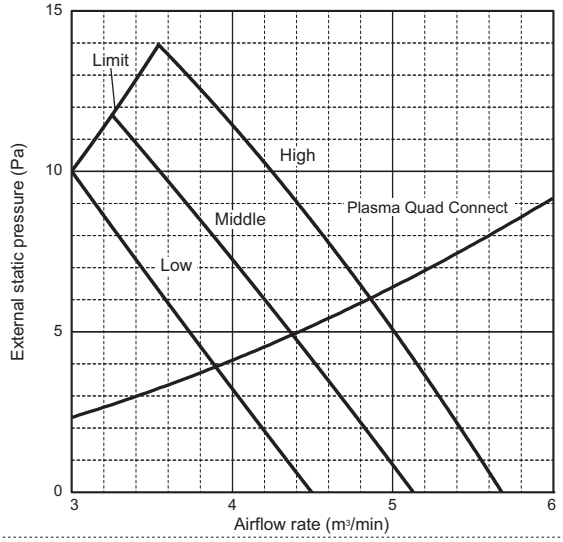


PEFY-W50VMS-A

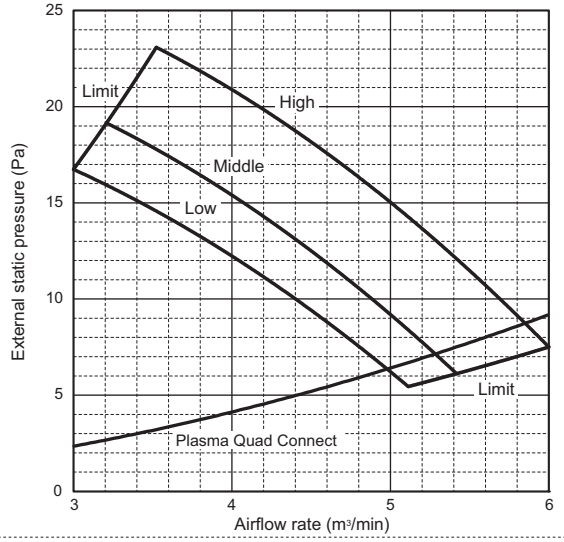
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



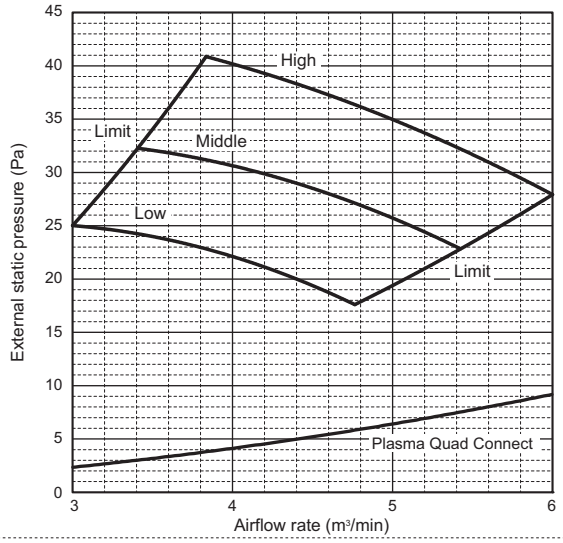
PEFY-W10VMS-A
External static pressure : 5Pa
Power source : 220-240V



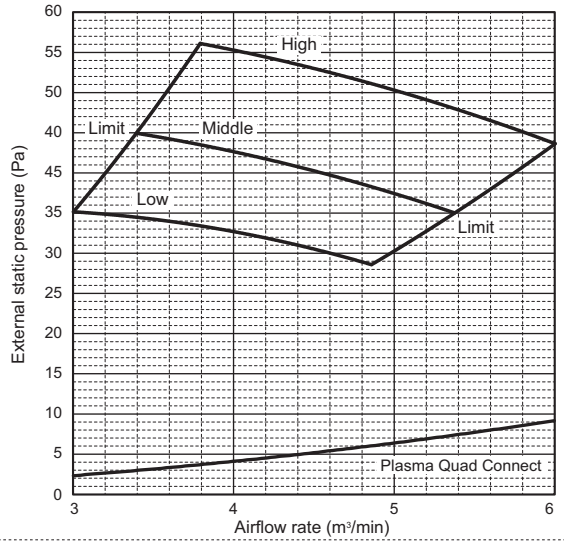
PEFY-W10VMS-A
External static pressure : 15Pa
Power source : 220-240V



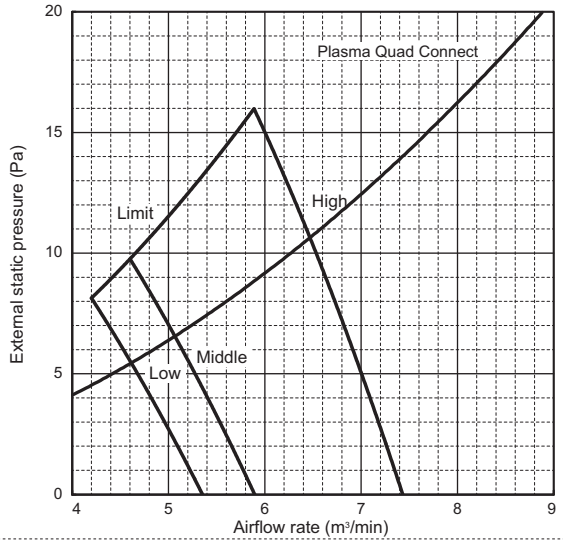
PEFY-W10VMS-A
External static pressure : 35Pa
Power source : 220-240V



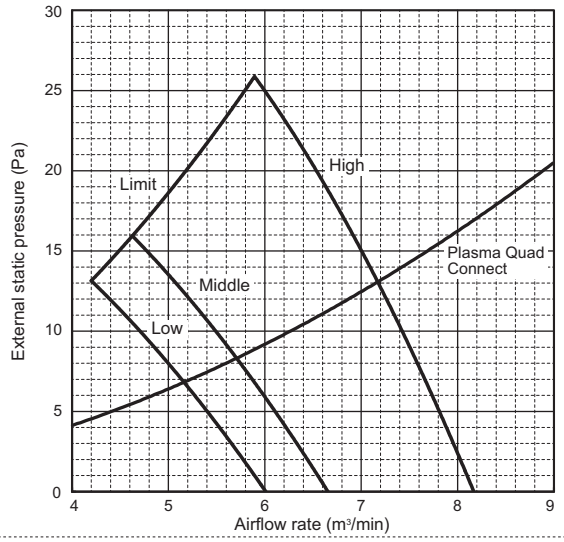
PEFY-W10VMS-A
External static pressure : 50Pa
Power source : 220-240V



PEFY-W15VMS-A
External static pressure : 5Pa
Power source : 220-240V

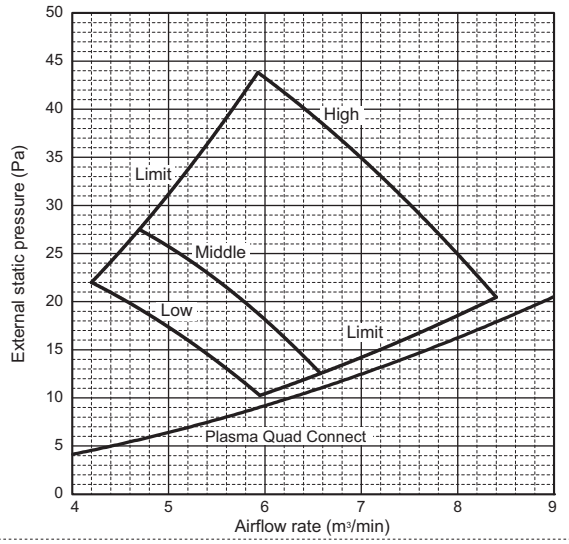


PEFY-W15VMS-A
External static pressure : 15Pa
Power source : 220-240V

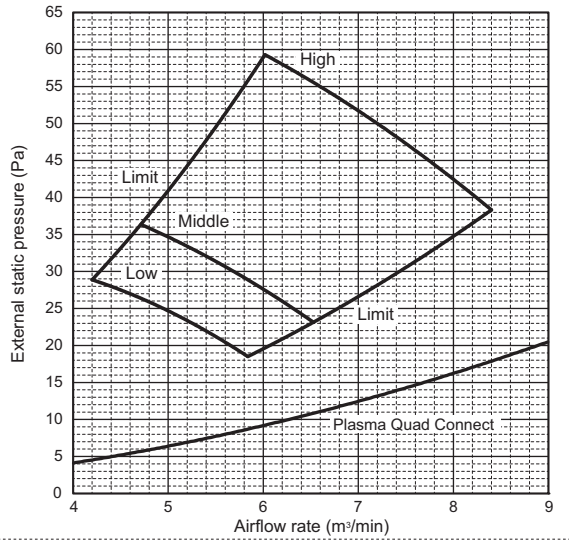


PEFY-W-VMS-A

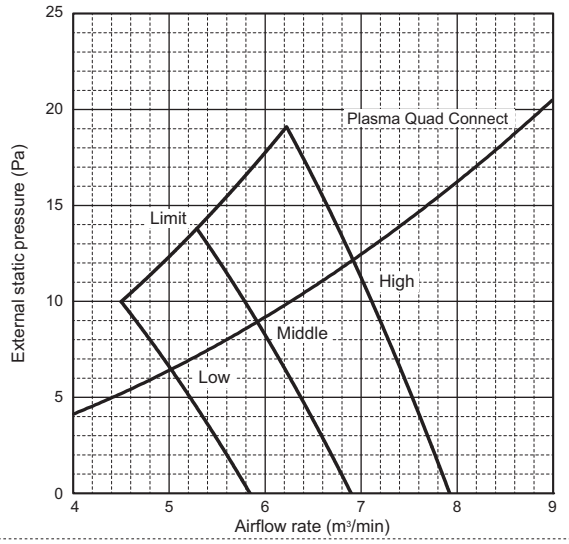
PEFY-W15VMS-A
External static pressure : 35Pa
Power source : 220-240V



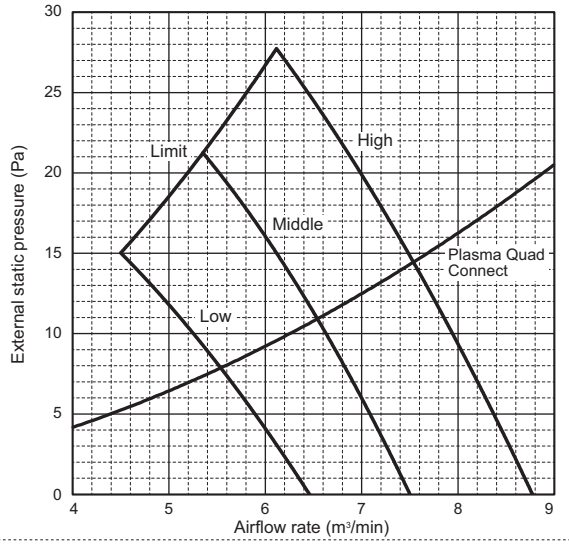
PEFY-W15VMS-A
External static pressure : 50Pa
Power source : 220-240V



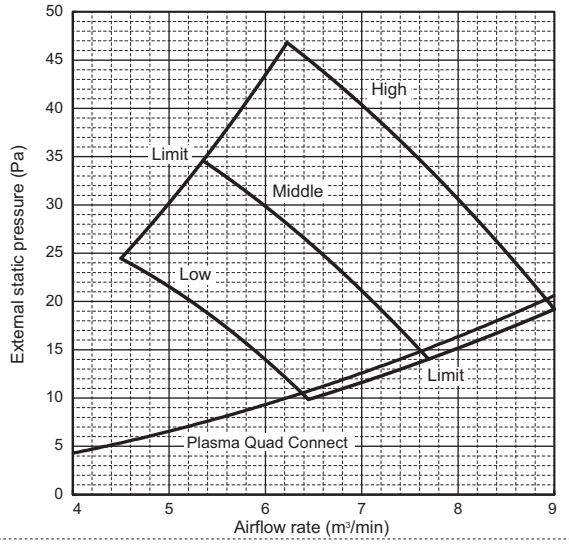
PEFY-W20VMS-A
External static pressure : 5Pa
Power source : 220-240V



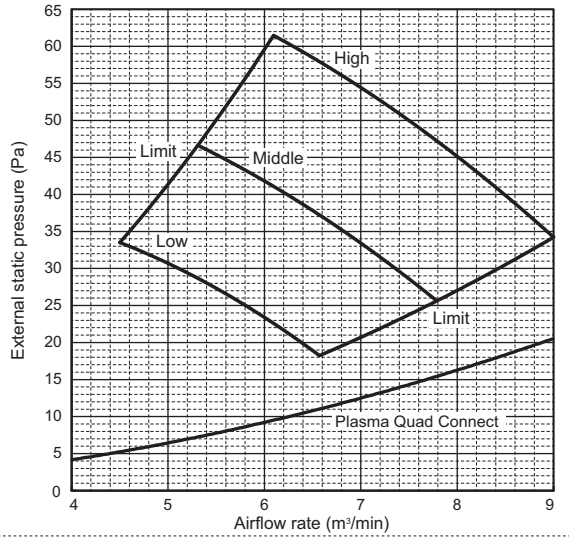
PEFY-W20VMS-A
External static pressure : 15Pa
Power source : 220-240V



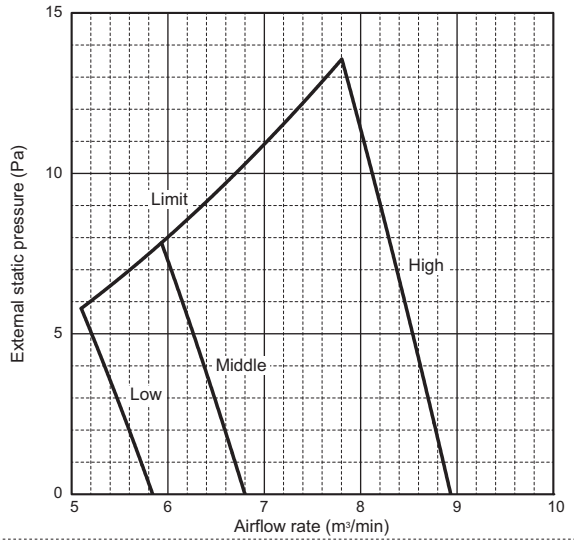
PEFY-W20VMS-A
External static pressure : 35Pa
Power source : 220-240V



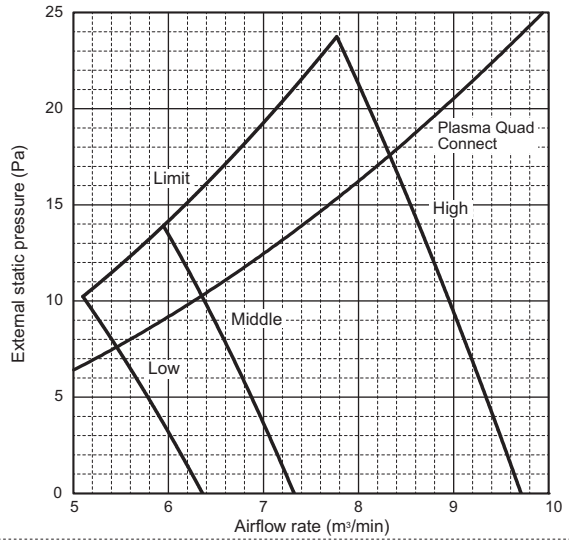
PEFY-W20VMS-A
External static pressure : 50Pa
Power source : 220-240V



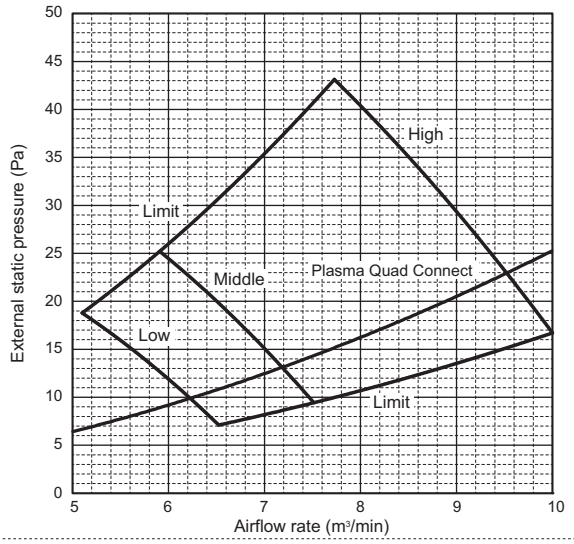
PEFY-W25VMS-A
External static pressure : 5Pa
Power source : 220-240V



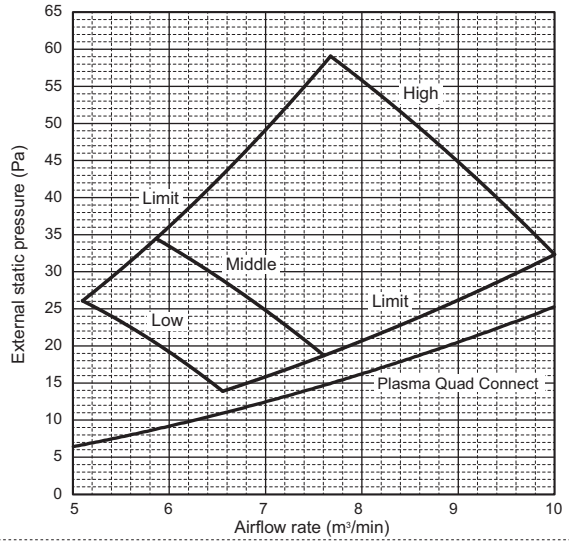
PEFY-W25VMS-A
External static pressure : 15Pa
Power source : 220-240V



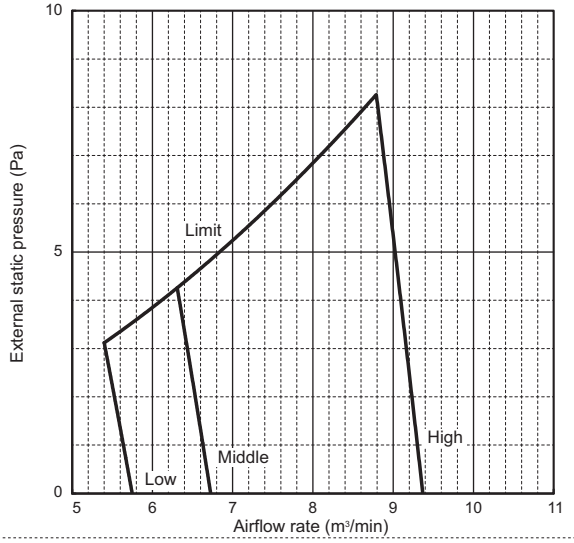
PEFY-W25VMS-A
External static pressure : 35Pa
Power source : 220-240V



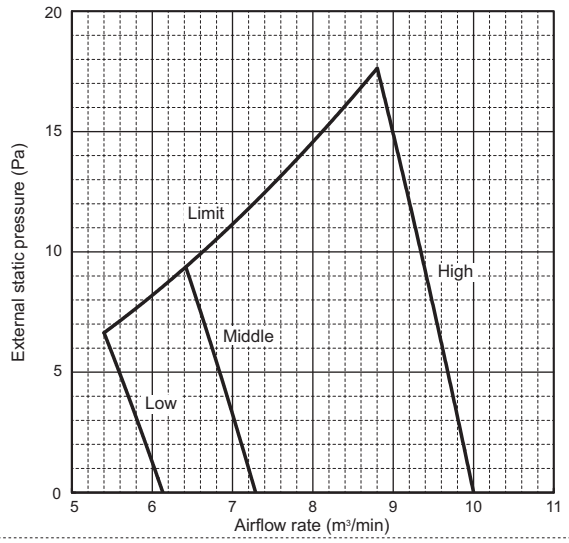
PEFY-W25VMS-A
External static pressure : 50Pa
Power source : 220-240V



PEFY-W32VMS-A
External static pressure : 5Pa
Power source : 220-240V

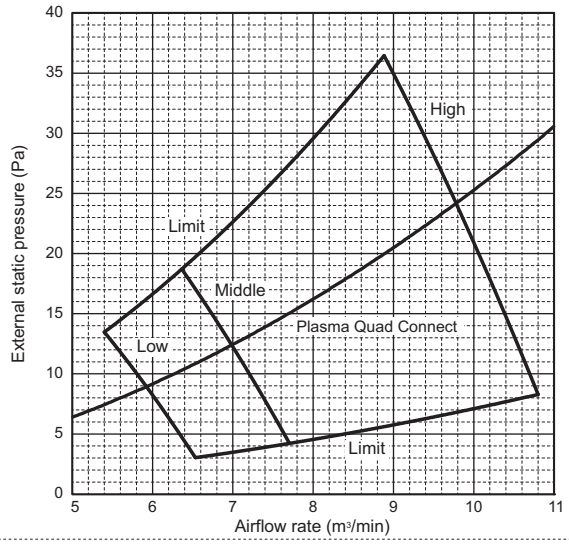


PEFY-W32VMS-A
External static pressure : 15Pa
Power source : 220-240V

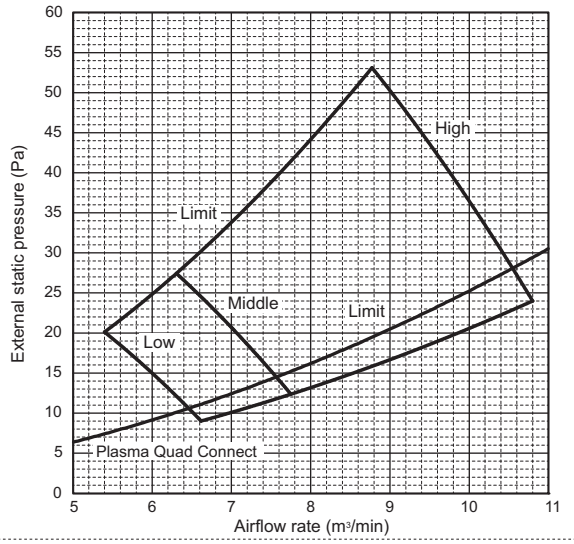


*When attaching a Plasma Quad Connect, set the external static pressure to 15 Pa or higher.

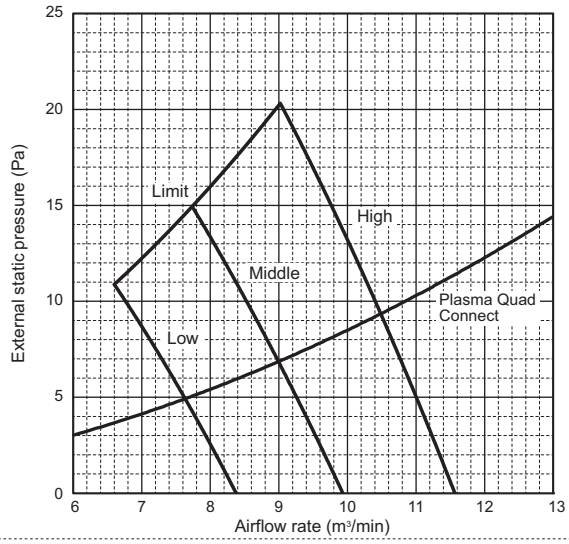
PEFY-W32VMS-A
External static pressure : 35Pa
Power source : 220-240V



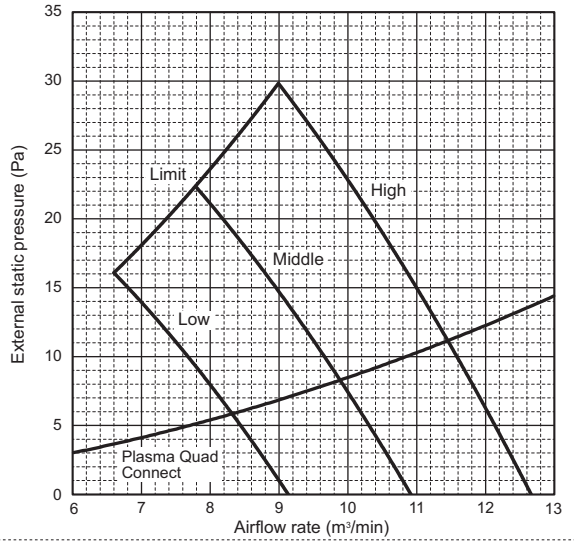
PEFY-W32VMS-A
External static pressure : 50Pa
Power source : 220-240V



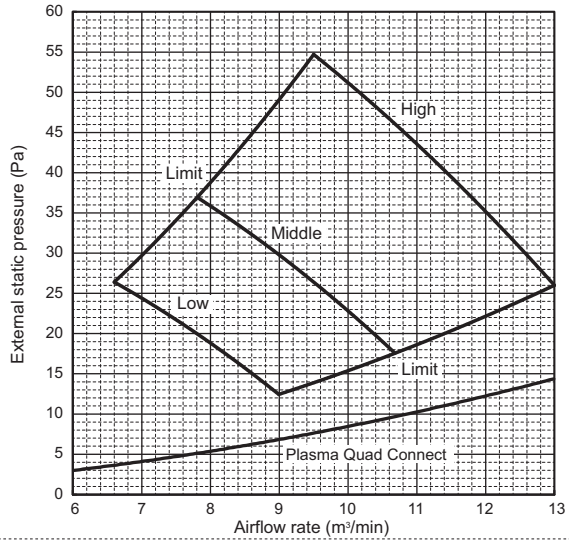
PEFY-W40VMS-A
External static pressure : 5Pa
Power source : 220-240V



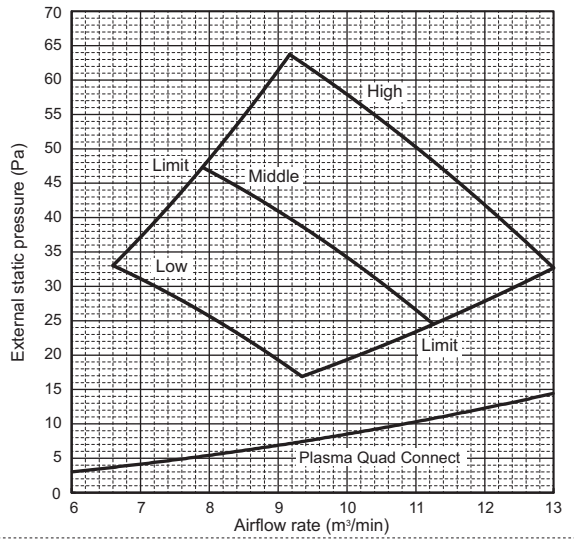
PEFY-W40VMS-A
External static pressure : 15Pa
Power source : 220-240V



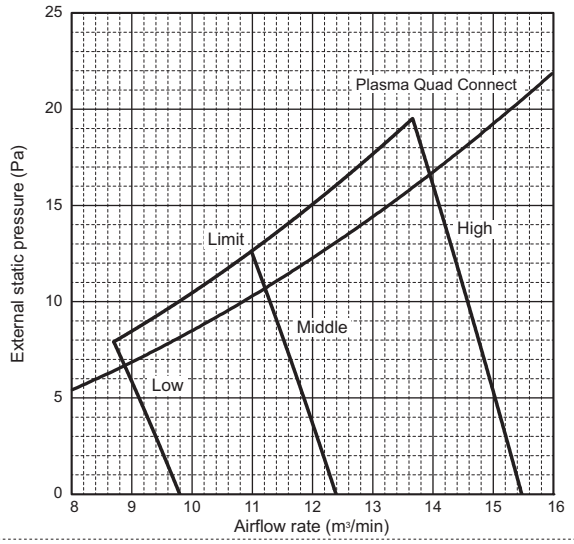
PEFY-W40VMS-A
External static pressure : 35Pa
Power source : 220-240V



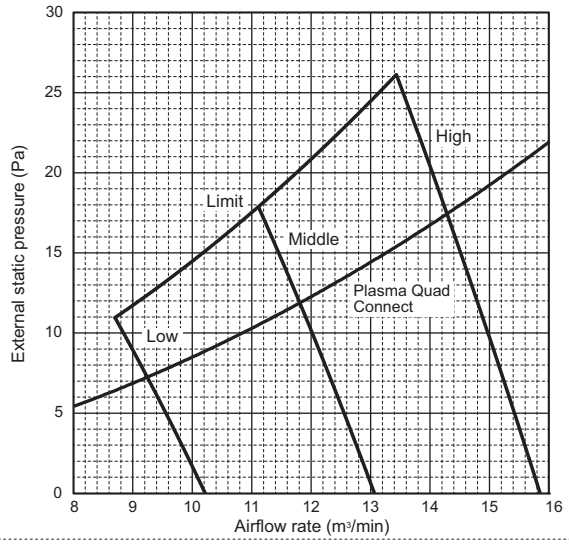
PEFY-W40VMS-A
External static pressure : 50Pa
Power source : 220-240V



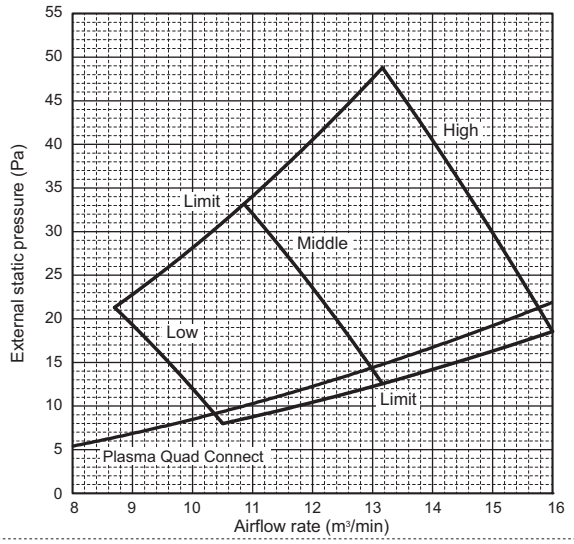
PEFY-W50VMS-A
External static pressure : 5Pa
Power source : 220-240V



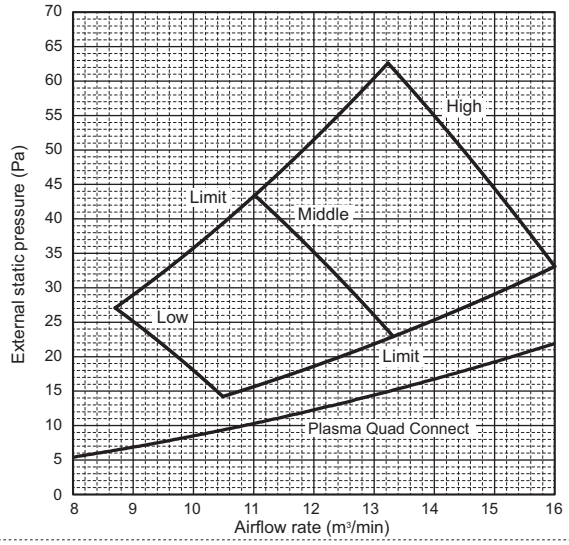
PEFY-W50VMS-A
External static pressure : 15Pa
Power source : 220-240V



PEFY-W50VMS-A
External static pressure : 35Pa
Power source : 220-240V



PEFY-W50VMS-A
External static pressure : 50Pa
Power source : 220-240V



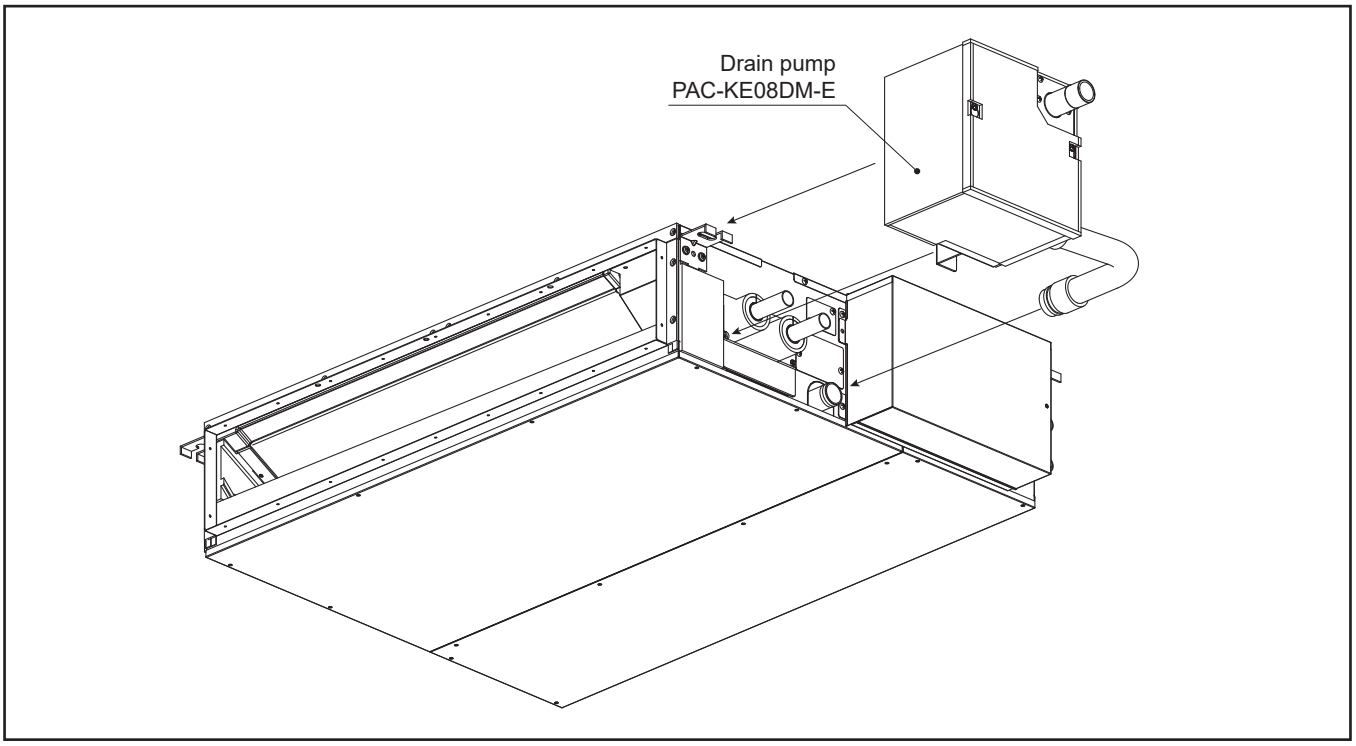
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-W-VMS-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PEFY-W10VMS-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.55/0.55	0.096	0.44/0.44
PEFY-W15VMS-A			0.68/0.68	0.096	0.54/0.54
PEFY-W20VMS-A			0.69/0.69	0.096	0.56/0.56
PEFY-W25VMS-A			0.78/0.78	0.096	0.62/0.62
PEFY-W32VMS-A			0.88/0.88	0.096	0.70/0.70
PEFY-W40VMS-A			0.88/0.88	0.096	0.70/0.70
PEFY-W50VMS-A			0.98/0.98	0.096	0.78/0.78

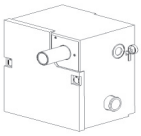
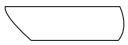
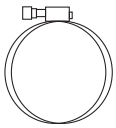
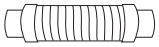
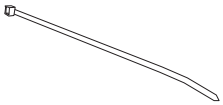
8-1. Optional parts line up for the Indoor unit

	Drain pump	Plasma Quad Connect	PQ attachment
PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A	PAC-KE08DM-E	MAC-100FT-E	PAC-HA11PAR

PEFY-W-VMS-A



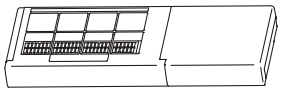
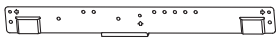
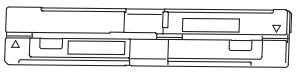
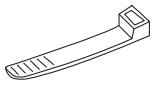
8-2. Drain pump

PAC-KE08DM-E					
Item	① Drain pump	② Attachment	③ Drain hose 1	④ Pipe cover 1	⑤ Pipe cover 2
Quantity	1	1	1	1	1
Shape			(385mm) 	(255mm) 	(200mm) 
Item	⑥ Hose band	⑦ Screw	⑧ Clamp	⑨ Drain hose 2	⑩ Pipe cover 3
Quantity	1	3	3	1	1
Shape				(175mm) 	
Item	⑪ Band 2				
Quantity	6				
Shape	(380mm) 				

8-3. Plasma Quad Connect

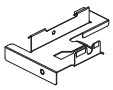
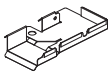
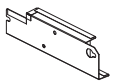
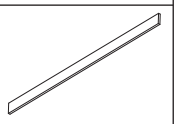
Static pressure loss is referred to 6 “FAN CHARACTERISTICS CURVES”. Plasma Quad Connect (MAC-100FT-E) should be used together with PQ attachment (PAC-HA11PAR).
* Attaching the Plasma Quad Connect increases the pressure loss. In a certain capacity range where the airflow may not reach the rated airflow level with the factory default external static pressure setting, adjust the external static pressure setting as necessary. For the adjustment procedure, see the Installation Manual for the indoor unit.

Plasma Quad Connect (MAC-100FT-E)

Item	Plasma Quad Connect (with connecting cable)	Installation plate	Fixing screw for Plasma Quad Connect and Installation plate 4 × 25 mm
Quantity	1	1	5
Shape			
Item	Spacer Note: The spacer is used as packaging material.	Mounting cord clamp	Cable tie
Quantity	1	1	1
Shape			
Item	Screw for Mounting cord clamp 4 × 16 (Use when joining room air conditioner parts)		
Quantity	1		
Shape			

Detailed installation information should be referred to its Installation Manual.

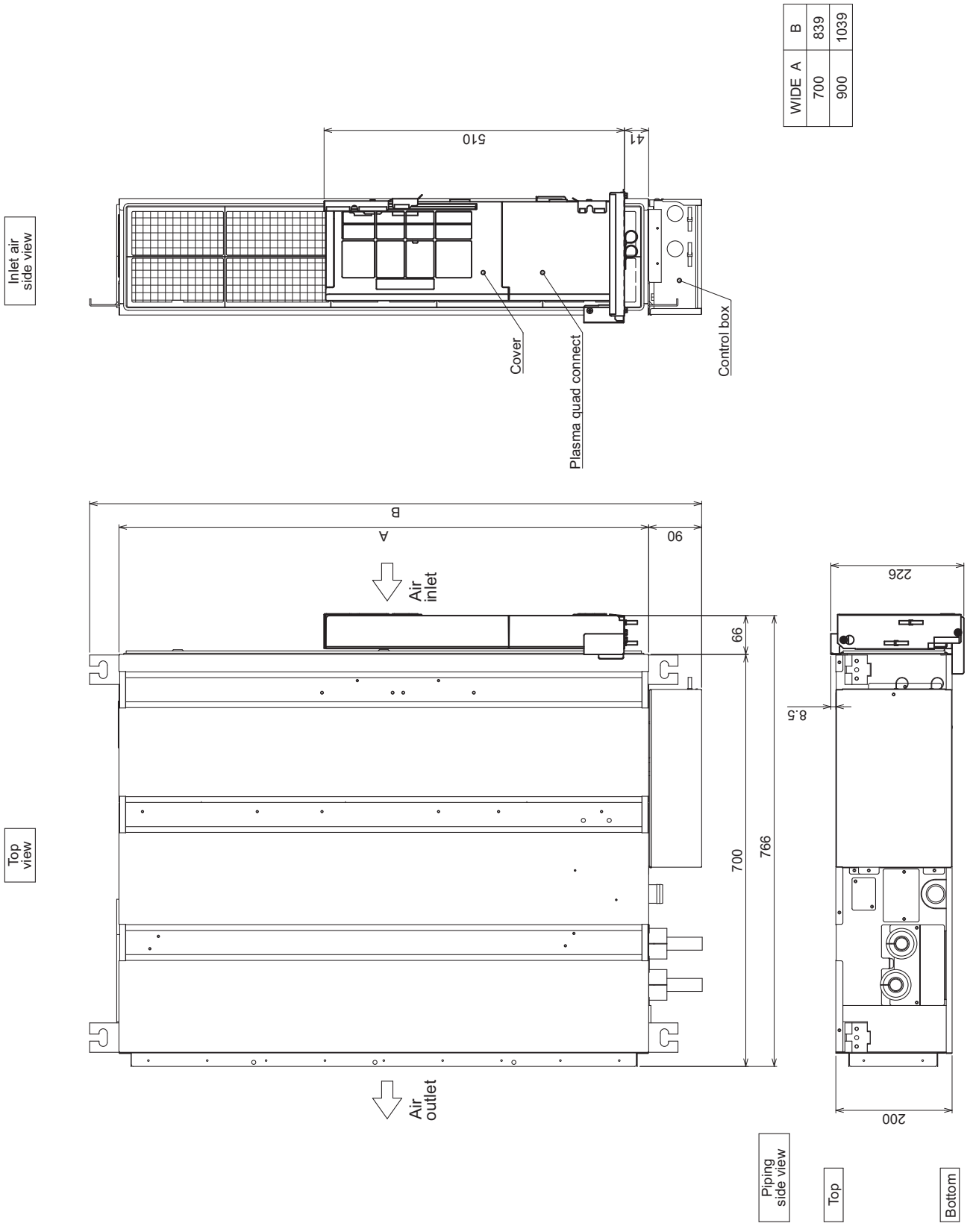
PQ attachment (PAC-HA11PAR)

Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	Screw (5 × 10)	RUBBER PLATE
Quantity	1	1	1	1	3	2	2
Shape							

Detailed installation information should be referred to its Installation Manual.

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A
with PQ attachment and Plasma Quad Connect

Unit: mm



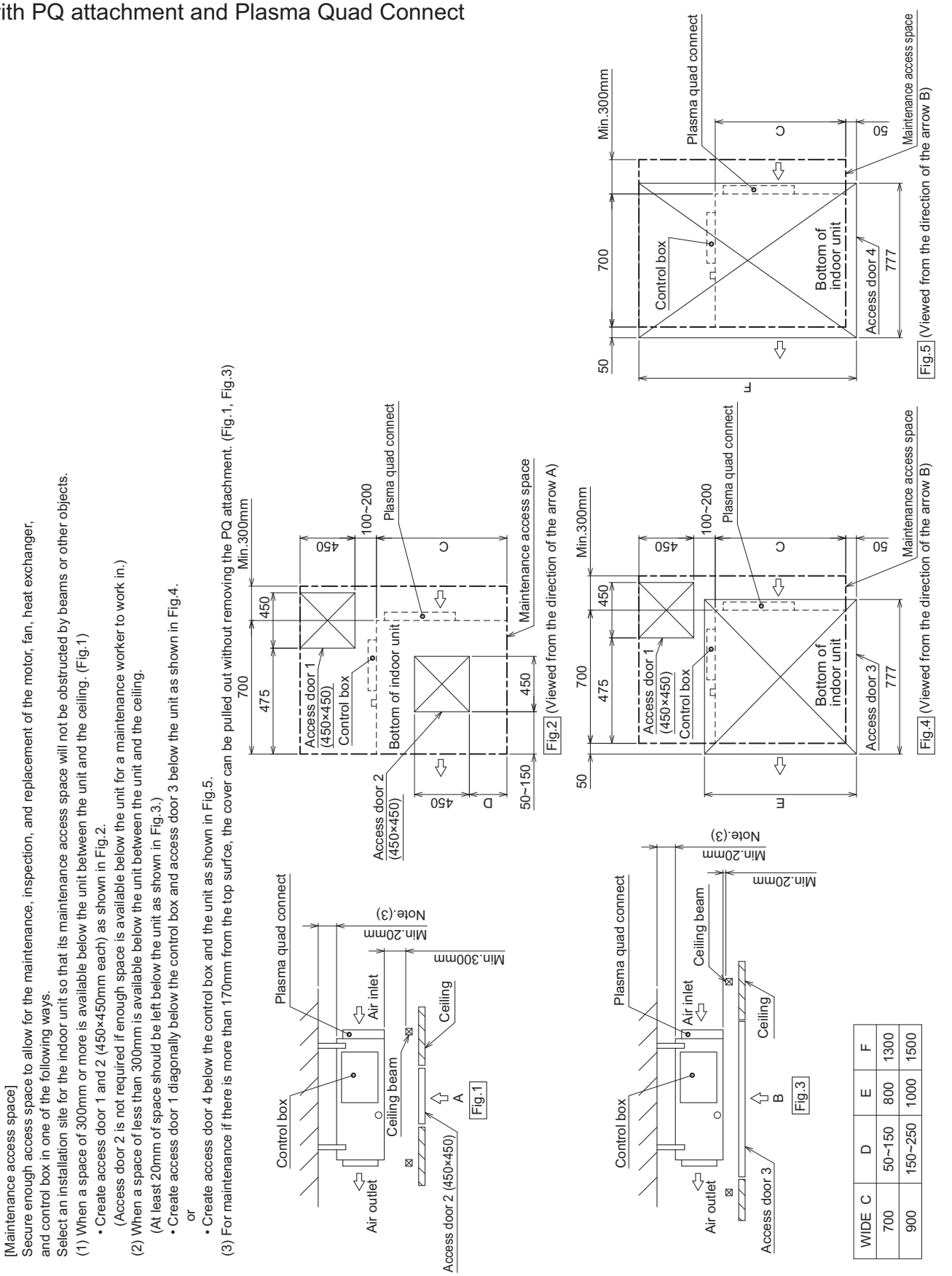
Model	WIDE A	B
PEFY-W10,15,20,25,32VMS-A	700	839
PEFY-W40,50VMS-A	900	1039

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W10, 15, 20, 25, 32, 40, 50VMS-A
with PQ attachment and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
• Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
• Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
• Create access door 4 below the control box and the unit as shown in Fig.5.
(3) For maintenance if there is more than 170mm from the top surfce, the cover can be pulled out without removing the PQ attachment. (Fig.1, Fig.3)



WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500

Model	WIDE C	D	E	F
PEFY-W10,15,20,25,32VMS-A	700	50~150	800	1300
PEFY-W40,50VMS-A	900	150~250	1000	1500

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP-VMA-E

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Model				PEFY-WP20VMA-E	PEFY-WP25VMA-E	PEFY-WP32VMA-E	PEFY-WP40VMA-E
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2	Power input	kW	0.070	0.090	0.110	0.140
(220V)	*2	Current input	A	0.55	0.64	0.74	1.15
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2	Power input	kW	0.050	0.070	0.090	0.120
(220V)	*2	Current input	A	0.44	0.53	0.63	1.04
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 700 x 732	250 x 900 x 732	250 x 900 x 732	250 x 1,100 x 732
			in.	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8
Net weight			kg (lbs)	21 (47)	26 (58)	26 (58)	31 (69)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.7	1.0	1.0	1.8
FAN	Type × Quantity			Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2
*4	External static press.		Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>
			mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.085	0.085	0.085	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	7.5 - 9.0 - 10.5	10.0 - 12.0 - 14.0	12.0 - 14.5 - 17.0	14.5 - 18.0 - 21.0
			L/s	125 - 150 - 175	167 - 200 - 233	200 - 242 - 283	242 - 300 - 350
			cfm	265 - 318 - 371	353 - 424 - 494	424 - 512 - 600	512 - 636 - 742
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	23.0-26.0-29.0	23.0-27.0-30.0	25.0-29.0-32.0	26.0-29.0-34.0
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB
Water piping diameter		*5, 6					
Connection size	Inlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
	Outlet		in.	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw	Rc 3/4 screw
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KD94L918	KD94L918	KD94L918	KD94L918
	Wiring			KD94L919	KD94L919	KD94L919	KD94L919
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE91TB-E	PAC-KE92TB-E	PAC-KE92TB-E	PAC-KE93TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE91PTB-E	PAC-KE92PTB-E	PAC-KE92PTB-E	PAC-KE93PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WP50VMA-E	PEFY-WP63VMA-E	PEFY-WP71VMA-E	PEFY-WP80VMA-E
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	5.6	7.1	8.0	9.0
(Nominal)		*1	BTU/h	19,100	24,200	27,300	30,700
	*2	Power input	kW	0.140	0.140	0.240	0.240
(220V)	*2	Current input	A	1.15	1.15	1.47	1.47
Heating capacity		*3	kW	6.3	8.0	9.0	10.0
(Nominal)		*3	BTU/h	21,500	27,300	30,700	34,100
	*2	Power input	kW	0.120	0.120	0.220	0.220
(220V)	*2	Current input	A	1.04	1.04	1.36	1.36
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,400 x 732	250 x 1,400 x 732
			in.	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8
Net weight			kg (lbs)	31 (69)	31 (69)	40 (89)	40 (89)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	1.8	2.0	2.6	2.6
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>
			mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.121	0.121	0.244	0.244
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	23.0 - 28.0 - 33.0	23.0 - 28.0 - 33.0
			L/s	242 - 300 - 350	242 - 300 - 350	383 - 467 - 550	383 - 467 - 550
			cfm	512 - 636 - 742	512 - 636 - 742	812 - 989 - 1,165	812 - 989 - 1,165
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	26.0-29.0-34.0	26.0-29.0-34.0	28.0-33.0-37.0	28.0-33.0-37.0
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB
Water piping diameter		*5, 6					
Connection size	Inlet		in.	Rc 3/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw
	Outlet		in.	Rc 3/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw	Rc 1-1/4 screw
Field pipe size	Inlet		mm I.D.	20	30	30	30
	Outlet		mm I.D.	20	30	30	30
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KD94L918	KL94G001	KL94G001	KL94G001
	Wiring			KD94L919	KD94L919	KD94L919	KD94L919
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE94TB-E	PAC-KE94TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE94PTB-E	PAC-KE94PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WP100VMA-E	PEFY-WP125VMA-E		
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz		
Cooling capacity		*1	kW	11.2	14.0		
(Nominal)		*1	BTU/h	38,200	47,800		
	*2	Power input	kW	0.240	0.360		
(220V)	*2	Current input	A	1.47	2.21		
Heating capacity		*3	kW	12.5	16.0		
(Nominal)		*3	BTU/h	42,700	54,600		
	*2	Power input	kW	0.220	0.340		
(220V)	*2	Current input	A	1.36	2.10		
External finish				Galvanized steel plate	Galvanized steel plate		
External dimension H × W × D			mm	250 x 1,400 x 732	250 x 1,600 x 732		
			in.	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 63 x 28-7/8		
Net weight			kg (lbs)	40 (89)	42 (93)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	2.6	3.0		
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2		
*4	External static press.		Pa	<35> - 50 - <70> - <100> - <150>	<35> - 50 - <70> - <100> - <150>		
			mmH_2O	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>	<3.6> - 5.1 - <7.1> - <10.2> - <15.3>		
	Motor Type			DC motor	DC motor		
	Motor output		kW	0.244	0.244		
	Driving mechanism			Direct-driven by motor	Direct-driven by motor		
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)		
			m^3/min	23.0 - 28.0 - 33.0	29.5 - 35.5 - 42.0		
			L/s	383 - 467 - 550	492 - 592 - 700		
			cfm	812 - 989 - 1,165	1,042 - 1,254 - 1,483		
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)		
		*2	dB <A>	28.0-33.0-37.0	32.0-36.0-40.0		
Insulation material				EPS, Polyethylene foam, Urethane foam	EPS, Polyethylene foam, Urethane foam		
Air filter				PP honeycomb fabric.	PP honeycomb fabric.		
Protection device				Fuse	Fuse		
Refrigerant control device				-	-		
Connectable HBC				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB		
Water piping diameter		*5, 6					
Connection size	Inlet		in.	Rc 1-1/4 screw	Rc 1-1/4 screw		
	Outlet		in.	Rc 1-1/4 screw	Rc 1-1/4 screw		
Field pipe size	Inlet		mm I.D.	30	30		
	Outlet		mm I.D.	30	30		
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)		
Drawing	External			KL94G001	KL94G001		
	Wiring			KD94L919	KD94L919		
	Refrigerant cycle			-	-		
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book		
	Accessory			Insulation pipe for water pipe, Washer, Drain hose, Tie band	Insulation pipe for water pipe, Washer, Drain hose, Tie band		
Optional parts	Filter box			PAC-KE94TB-E	PAC-KE95TB-E		
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E		
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR		
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU		
	PQ box			PAC-KE94PTB-E	PAC-KE95PTB-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

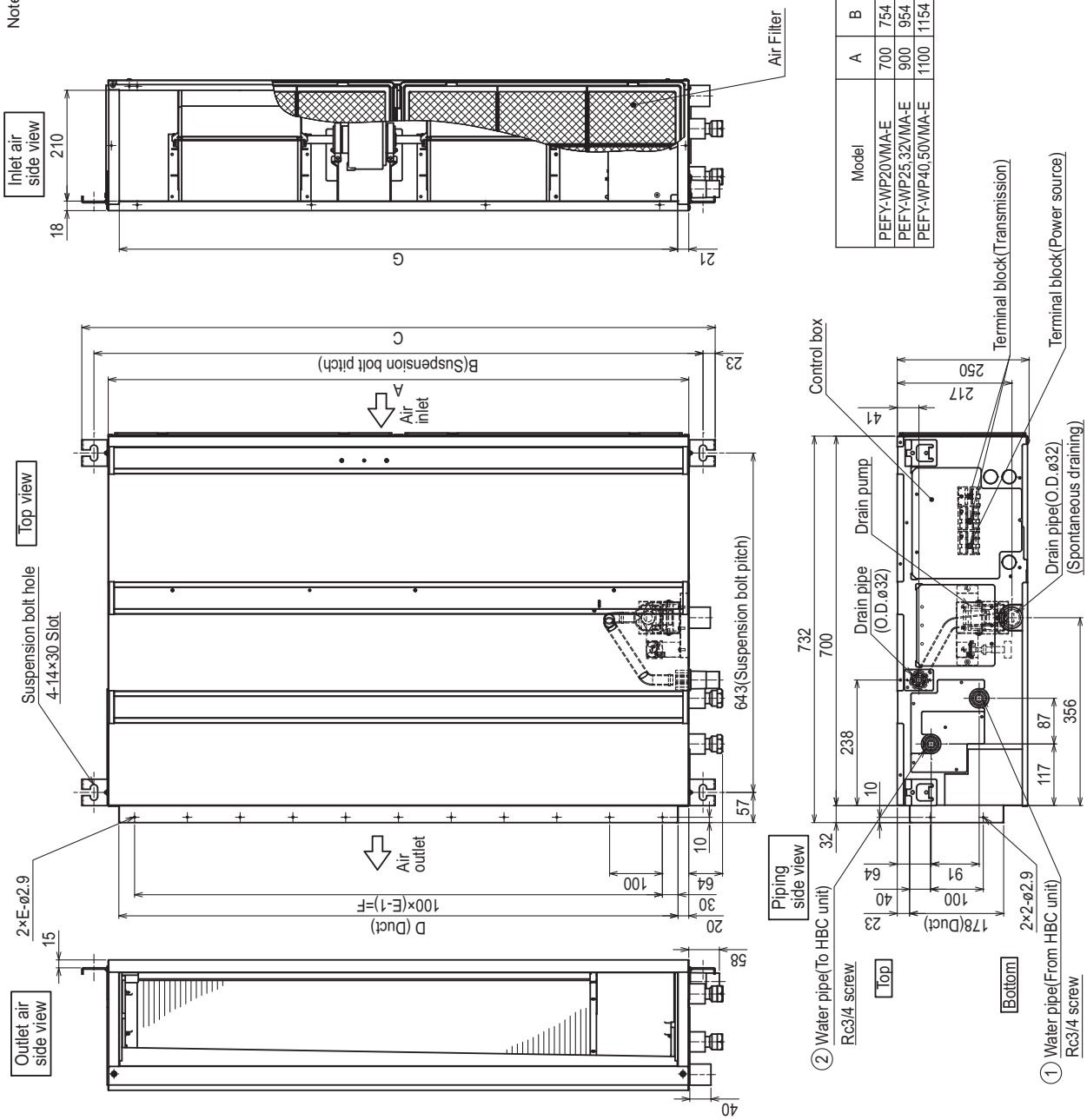
*Above specification data is subject to rounding variation.

PEFY-WP20, 25, 32, 40, 50VMA-E

Unit: mm

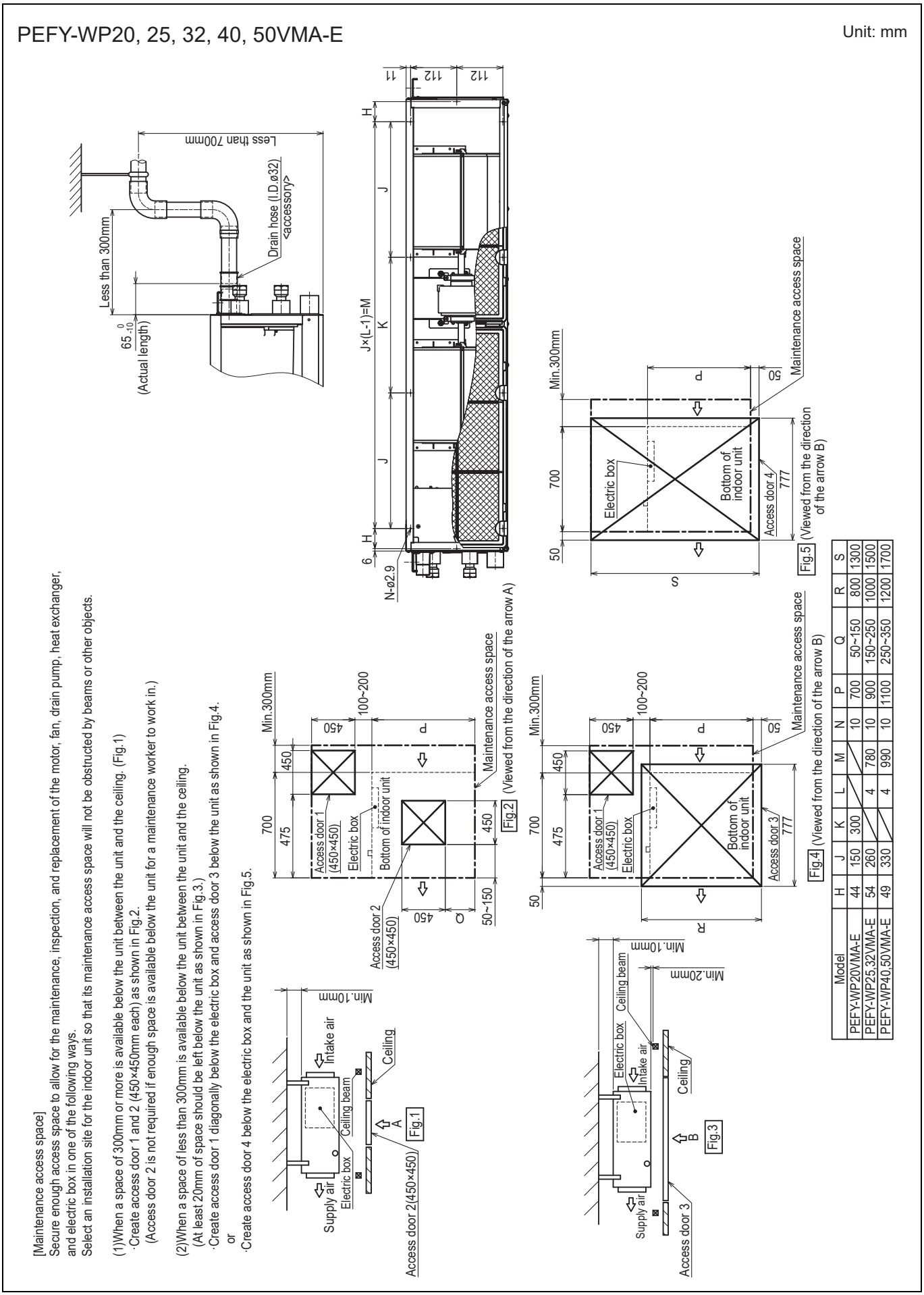
Note 1.Use M10 screw for the Suspension bolt (field supply).
2.Keep the service space for the maintenance at the bottom.
3.This chart indicates for PEFY-WP40·50VMA-E models, which have 2 fans.PEFY-WP20·25·32VMA-E models have 1 fan.
4.In case of the inlet duct is used,remove the air filter (supply with the unit),then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	① Water pipe (From HBC unit)	② Water pipe (To HBC unit)
PEFY-WP20VMA-E	700	754	800	660	7	600	658	Rc3/4 screw	
PEFY-WP25,32VMA-E	900	954	1000	860	9	800	858		
PEFY-WP40,50VMA-E	1100	1154	1200	1060	11	1000	1058		



PEFY-WP20, 25, 32, 40, 50VMA-E

Unit: mm



[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1)When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
·Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2)When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
or
·Create access door 4 below the electric box and the unit as shown in Fig.5.

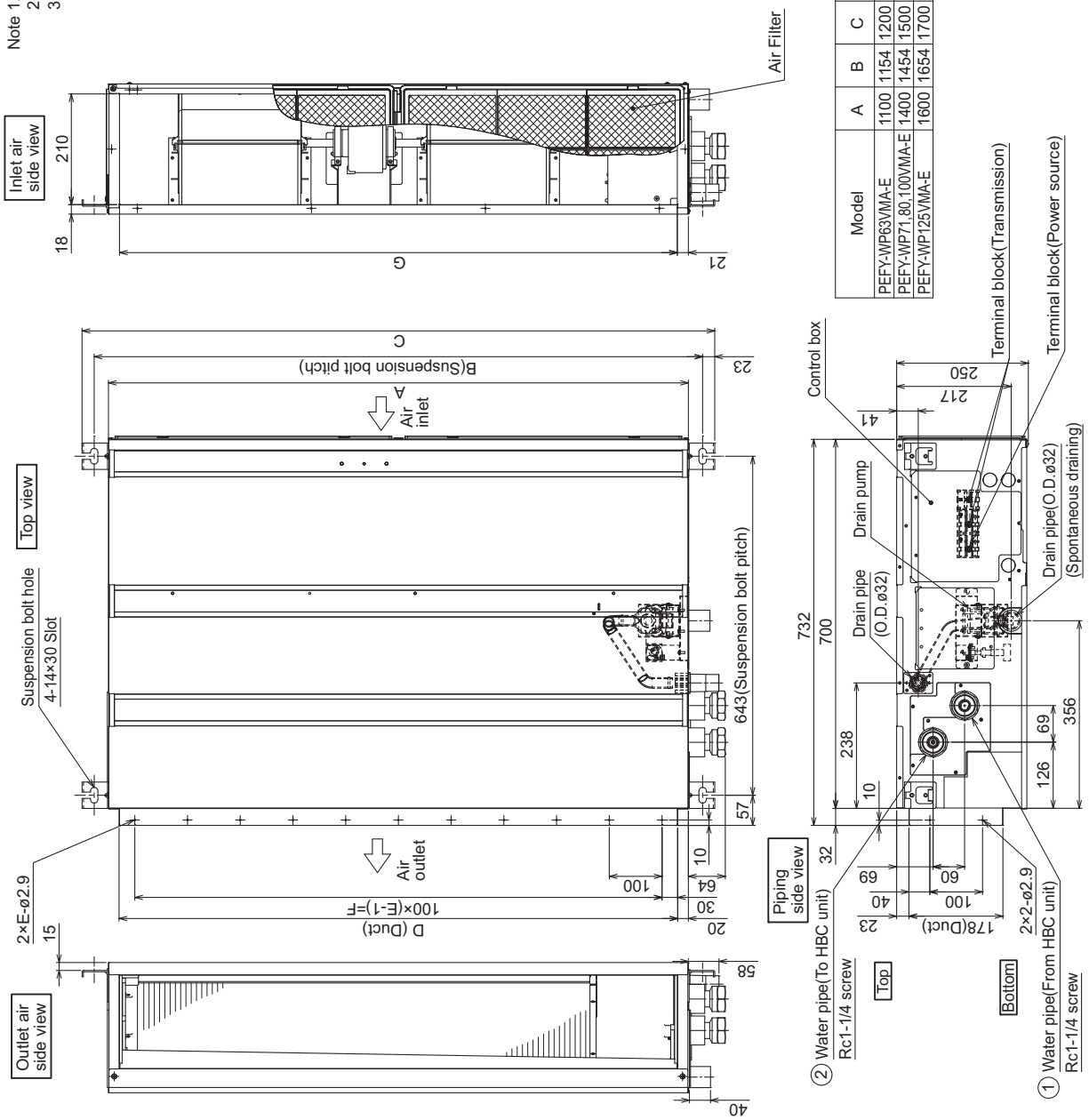
Model	H	J	K	L	M	N	P	Q	R	S
PEFY-WP20VMA-E	44	150	300			10	700	50~150	800	1300
PEFY-WP25,32VMA-E	54	260		4	780	10	900	150~250	1000	1500
PEFY-WP40,50VMA-E	49	330		4	990	10	1100	250~350	1200	1700

PEFY-WP63, 71, 80, 100, 125VMA-E

Unit: mm

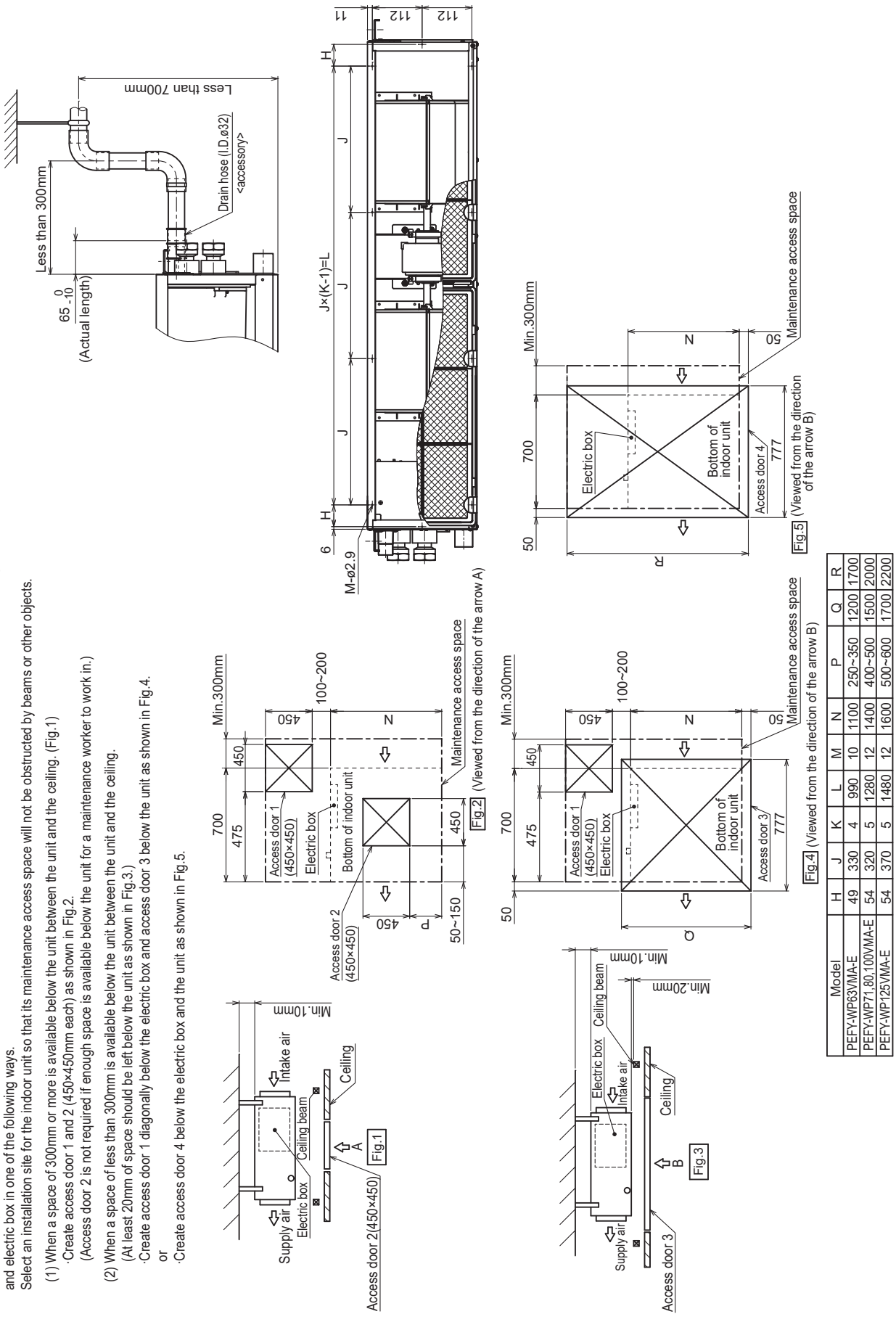
Note 1. Use an M10 screw for the Suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. In case of the inlet duct is used,remove the air filter (supply with the unit),then install the filter (field supply) at suction side.

Model	A	B	C	D	E	F	G	① Water pipe (From HBC unit)	② Water pipe (To HBC unit)
PEFY-WP63VMA-E	1100	1154	1200	1060	11	1000	1058	Rc1-1/4 screw	
PEFY-WP71,80,100VMA-E	1400	1454	1500	1360	14	1300	1358		
PEFY-WP125VMA-E	1600	1654	1700	1560	16	1500	1558		



PEFY-WP63, 71, 80, 100, 125VMA-E

Unit: mm



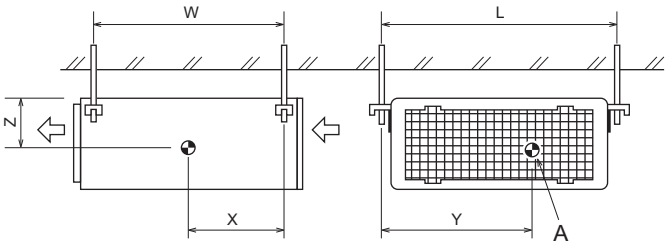
Model	H	J	K	L	M	N	P	Q	R
PEFY-WP63VMA-E	49	330	4	990	10	1100	250~350	1200	1700
PEFY-WP71,80,100VMA-E	54	320	5	1280	12	1400	400~500	1500	2000
PEFY-WP125VMA-E	54	370	5	1480	12	1600	500~600	1700	2200

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and electric box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
- ·Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
  (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
  (At least 20mm of space should be left below the unit as shown in Fig.3.)
- ·Create access door 1 diagonally below the electric box and access door 3 below the unit as shown in Fig.4.
  or
- ·Create access door 4 below the electric box and the unit as shown in Fig.5.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E

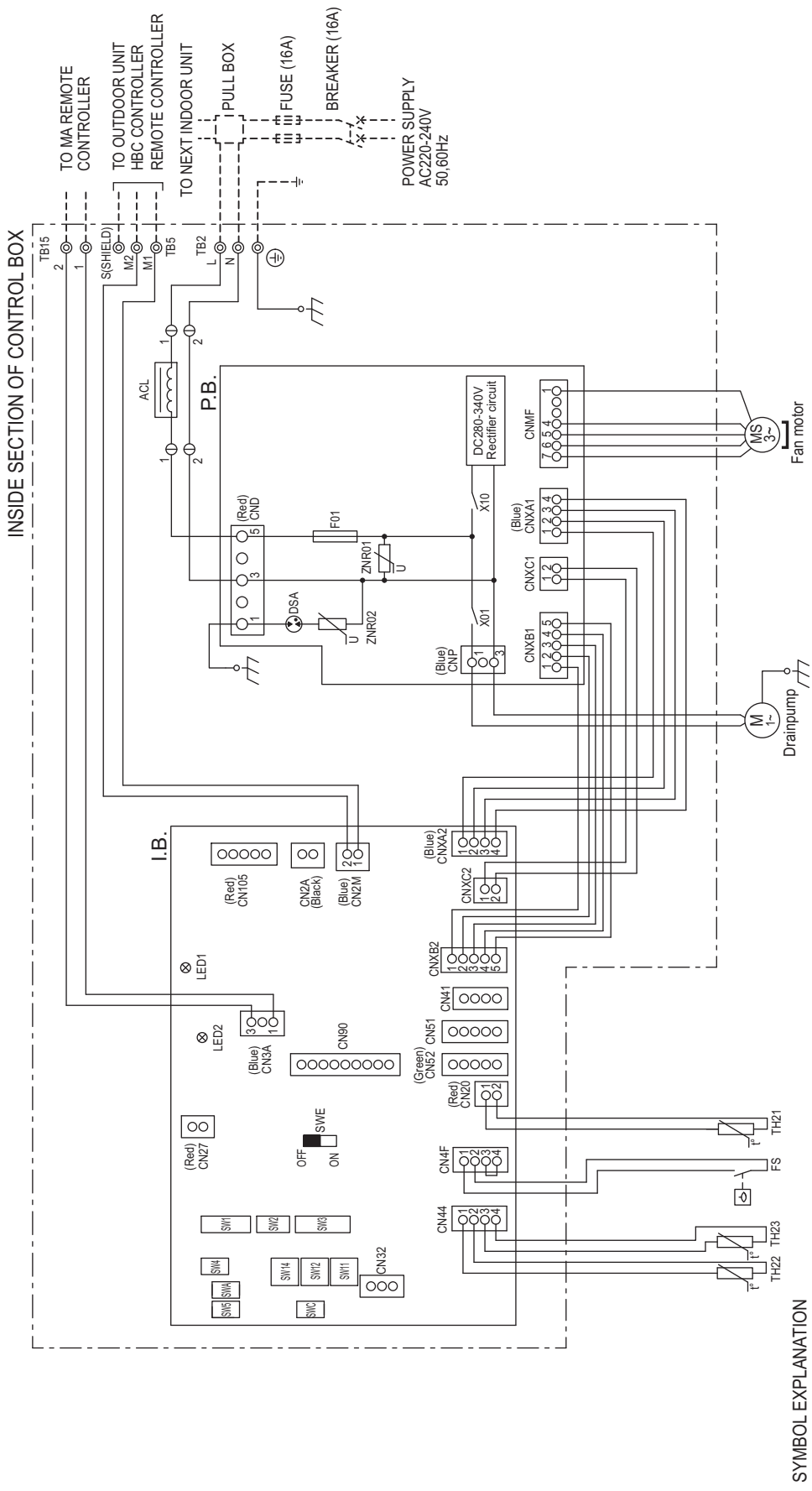


A : Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-WP20VMA-E	643 [25 - 6/16]	754 [29 - 11/16]	330 [13]	300 [11 -13/16]	130 [5 -2/16]
PEFY-WP25VMA-E	643 [25 - 6/16]	954 [37 - 9/16]	340 [13 - 7/16]	375 [14 -13/16]	130 [5 -2/16]
PEFY-WP32VMA-E	643 [25 - 6/16]	954 [37 - 9/16]	340 [13 - 7/16]	375 [14 -13/16]	130 [5 -2/16]
PEFY-WP40VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP50VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP63VMA-E	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-WP71VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP80VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP100VMA-E	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-WP125VMA-E	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E



NOTE:Symbols used in wiring diagram above are,
⏀ :Connector
◎ :Terminal
----- (Heavy dotted line):Field wiring

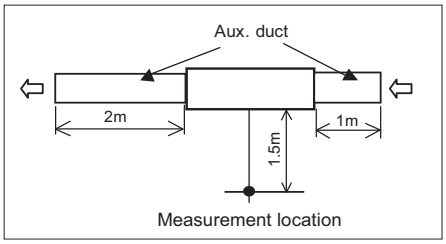
SYMBOL EXPLANATION

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
I.B.	Indoor controller board	CN41	Connector (HA terminal-A)	SW4(I.B.)	Switch (for model selection)
P.B.	Power supply board	CN51	Connector (Centrally control)	SW5(I.B.)	Switch (for mode selection)
TB2	Power source terminal block	CN52	Connector (Remote indication)	SW11(I.B.)	Switch (1s digit address set)
TB5	Transmission terminal block	CN90	Connector (Wireless)	SW12(I.B.)	Switch (10ths digit address set)
TB15	Transmission terminal block	CN105	Connector (IT terminal)	SW14(I.B.)	Switch (BRANCH No.)
F01	Fuse AC250V 6.3A	CN2A	Connector (0-10V Analog input)	SWA(I.B.)	Switch (for static pressure selection)
ZNR01,02	Varistor	FS	Float switch	SWC(I.B.)	Switch (for static pressure selection)
DSA	Arrester	TH21	Thermistor (inlet air temp.detection)	SWE(I.B.)	Connector (emergency operation)
X01	Aux. relay	TH22	Thermistor (piping temp.detection/water in)	LED1	LED(Power supply)
X10	Aux. relay	TH23	Thermistor (piping temp.detection/water out)	LED2	LED(Remote controller supply)
ACL	AC reactor(Power factor improvement)	SW1(I.B.)	Switch (for mode selection)		
CN27	Connector (Damper)	SW2(I.B.)	Switch (for capacity code)		
CN32	Connector (Remote switch)	SW3(I.B.)	Switch (for mode selection)		

5-1. Sound levels

5-1-1. Sound levels (Measured condition: With 1m air inlet duct and 2m air outlet duct)

PEFY-WP-VMA-E



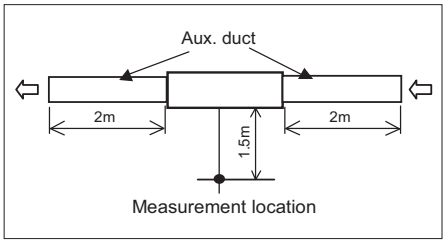
* Measured in anechoic room.

Sound level at anechoic room : Low-Mid-High

Model	Sound level dB(A)				
	35Pa	50Pa	70Pa	100Pa	150Pa
PEFY-WP20VMA-E	28-30-34	28-30-34	29-32-36	29-33-37	31-35-40
PEFY-WP25VMA-E	28-30-34	28-30-34	29-32-36	29-33-37	32-36-40
PEFY-WP32VMA-E	28-31-35	28-32-35	29-33-37	30-34-38	32-37-41
PEFY-WP40VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP50VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP63VMA-E	30-33-37	30-34-38	31-36-39	33-37-41	36-41-44
PEFY-WP71VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP80VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP100VMA-E	31-36-40	32-37-41	33-38-42	35-39-43	37-42-45
PEFY-WP125VMA-E	36-41-45	36-41-45	38-42-46	39-43-47	40-45-48

5-1-2. Sound levels (Measured condition: With 2m air inlet duct and 2m air outlet duct)

PEFY-WP-VMA-E



* Measured in anechoic room.

Sound level at anechoic room : Low-Mid-High

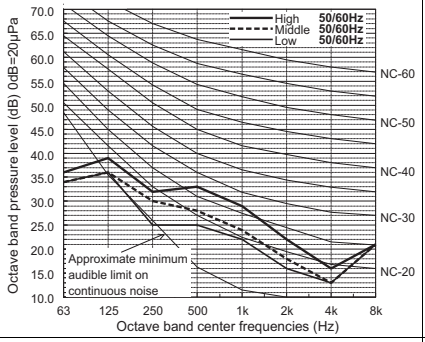
Model	Sound level dB(A)				
	35Pa	50Pa	70Pa	100Pa	150Pa
PEFY-WP20VMA-E	23-25-28	23-26-29	24-27-30	25-28-32	28-32-36
PEFY-WP25VMA-E	23-26-29	23-27-30	24-28-31	26-29-33	29-33-37
PEFY-WP32VMA-E	24-28-31	25-29-32	26-30-33	27-31-34	29-34-38
PEFY-WP40VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP50VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP63VMA-E	26-29-33	26-29-34	26-30-35	29-33-37	32-37-41
PEFY-WP71VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP80VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP100VMA-E	28-32-36	28-33-37	30-35-39	31-36-40	33-38-43
PEFY-WP125VMA-E	31-35-40	33-37-42	34-38-43	35-38-44	37-41-45

5-2. NC curves

5-2-1. NC curves (Sound level measured condition: With 1m air inlet duct and 2m air outlet duct)

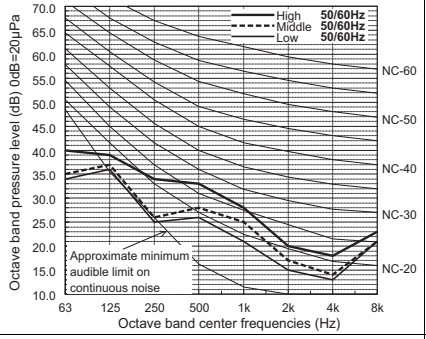
PEFY-WP20VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



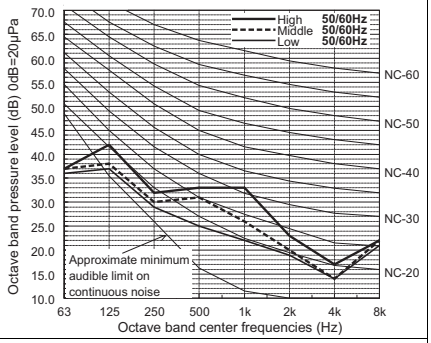
PEFY-WP20VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



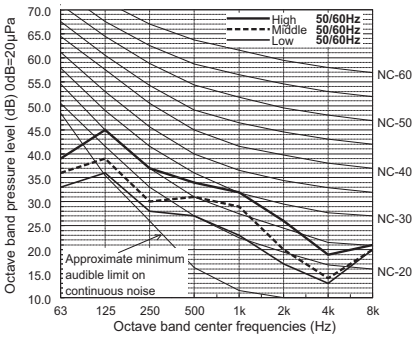
PEFY-WP20VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



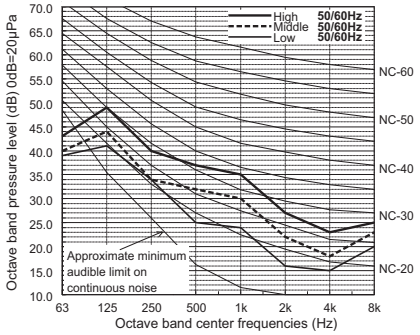
PEFY-WP20VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



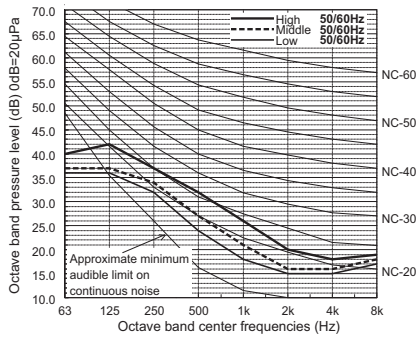
PEFY-WP20VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



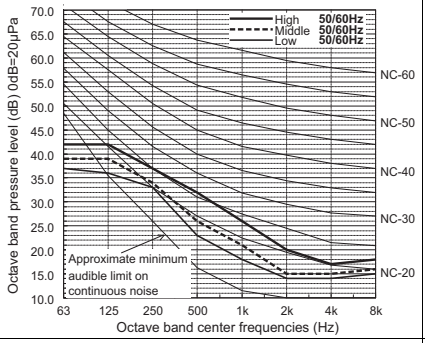
PEFY-WP25VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



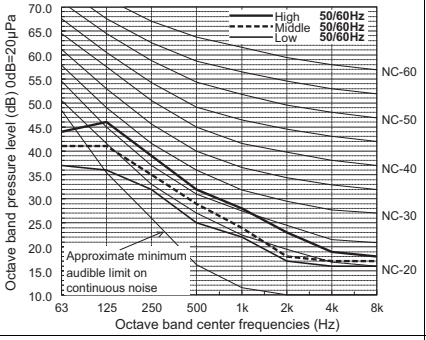
PEFY-WP25VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



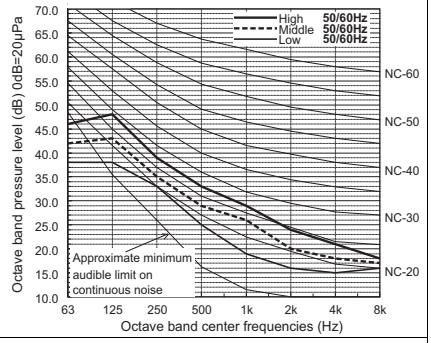
PEFY-WP25VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



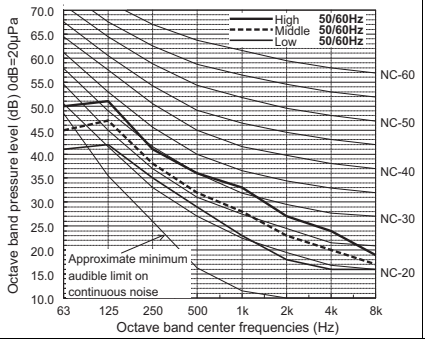
PEFY-WP25VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



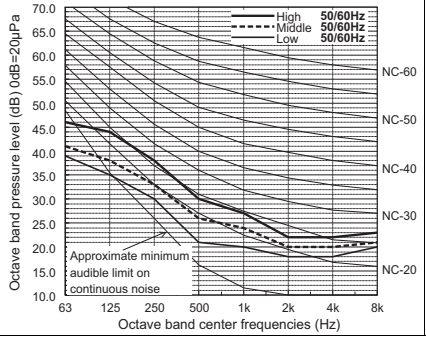
PEFY-WP25VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



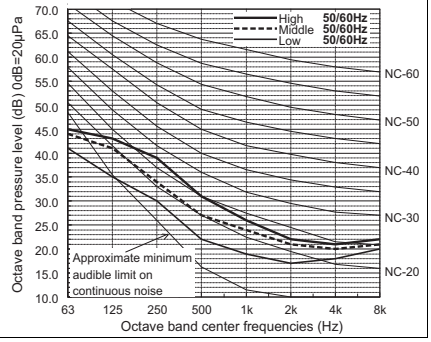
PEFY-WP32VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



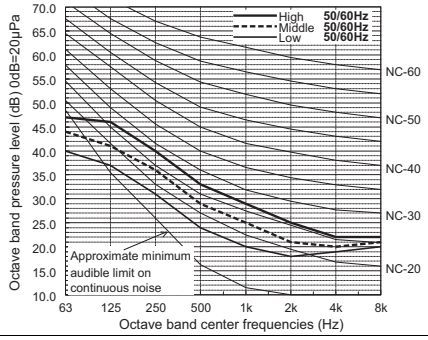
PEFY-WP32VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



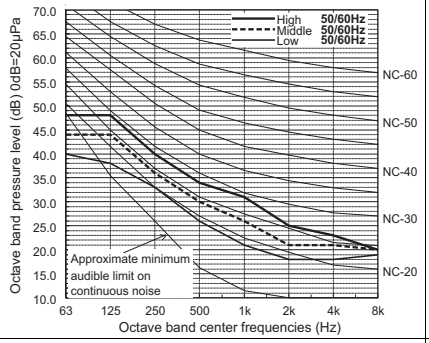
PEFY-WP32VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



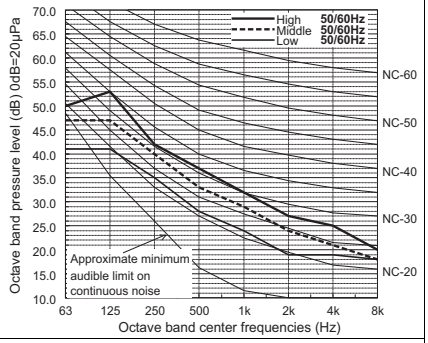
PEFY-WP32VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



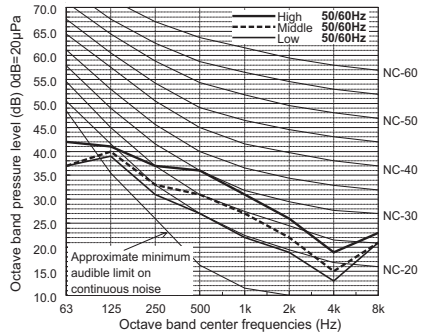
PEFY-WP32VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



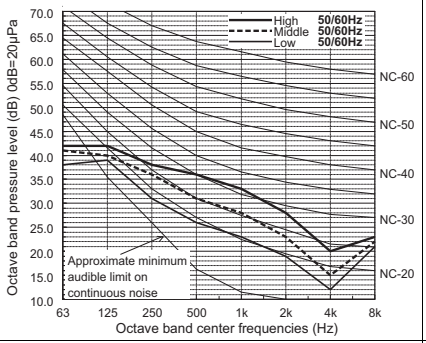
PEFY-WP40,50,63VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



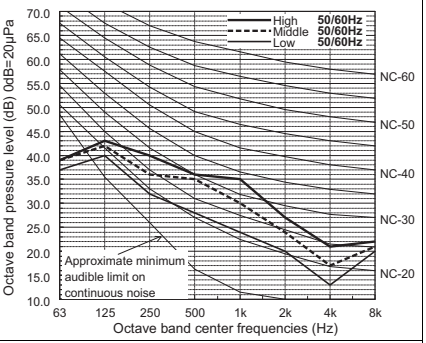
PEFY-WP40,50,63VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



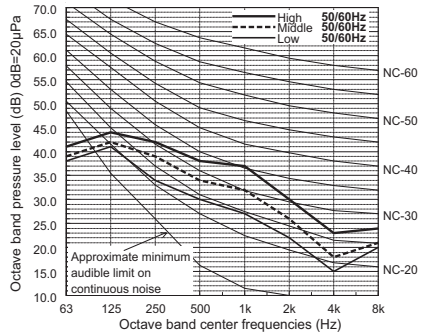
PEFY-WP40,50,63VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



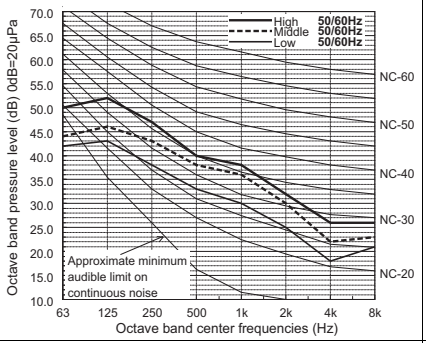
PEFY-WP40,50,63VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



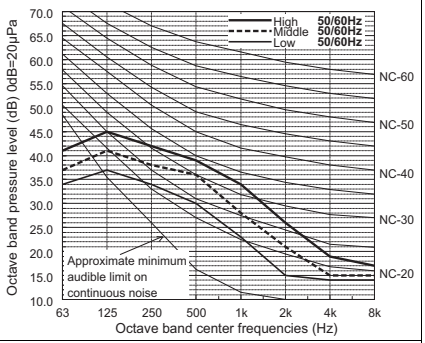
PEFY-WP40,50,63VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



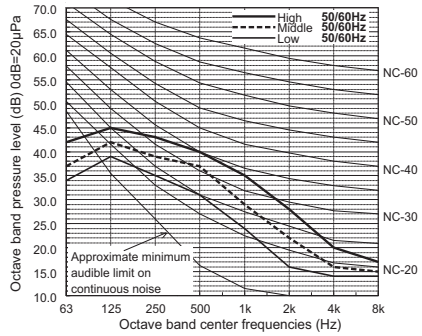
PEFY-WP71,80,100VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



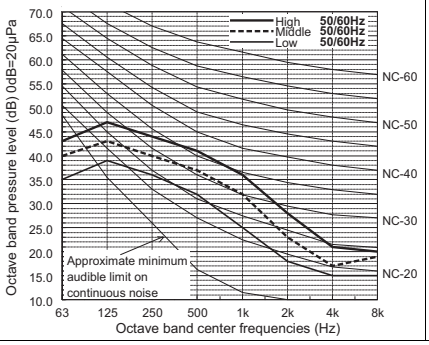
PEFY-WP71,80,100VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



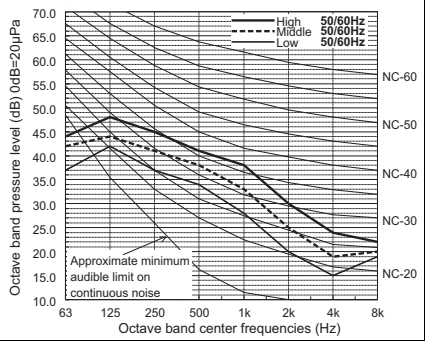
PEFY-WP71,80,100VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



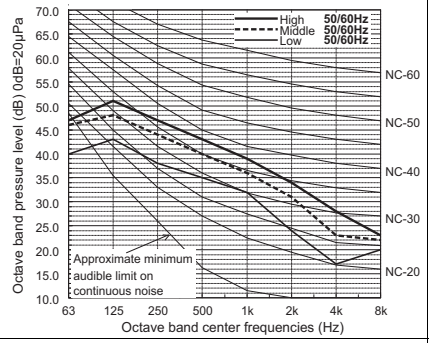
PEFY-WP71,80,100VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



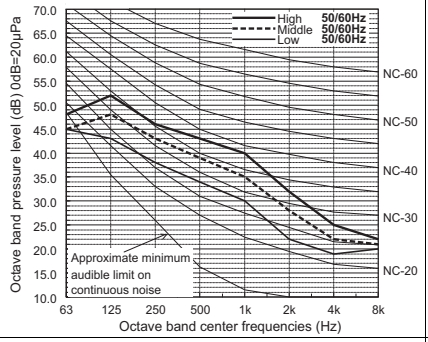
PEFY-WP71,80,100VMA-E

External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



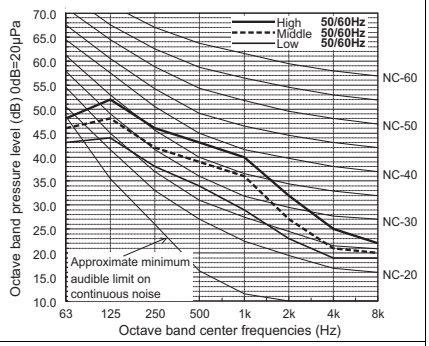
PEFY-WP125VMA-E

External Static Pressure: 35Pa
Power Source: 220-240V(50/60Hz)



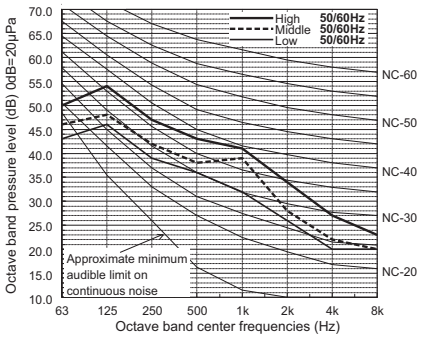
PEFY-WP125VMA-E

External Static Pressure: 50Pa
Power Source: 220-240V(50/60Hz)



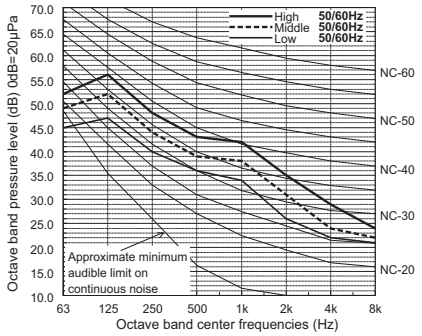
PEFY-WP125VMA-E

External Static Pressure: 70Pa
Power Source: 220-240V(50/60Hz)



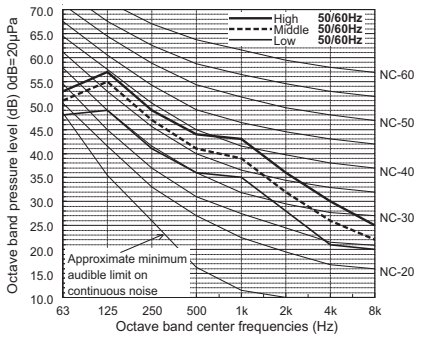
PEFY-WP125VMA-E

External Static Pressure: 100Pa
Power Source: 220-240V(50/60Hz)



PEFY-WP125VMA-E

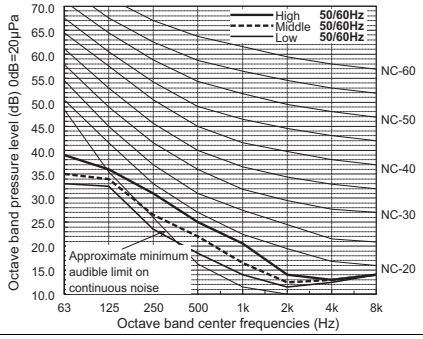
External Static Pressure: 150Pa
Power Source: 220-240V(50/60Hz)



5-2-2. NC curves (Sound level measured condition: With 2m air inlet duct and 2m air outlet duct)

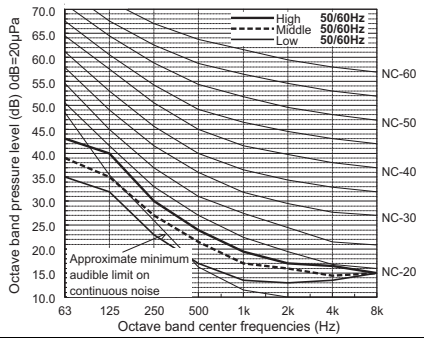
PEFY-WP20VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



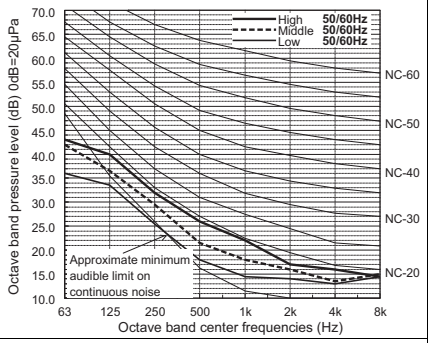
PEFY-WP20VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



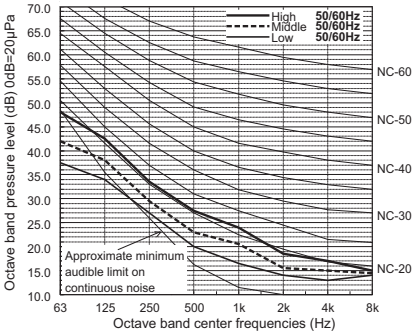
PEFY-WP20VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



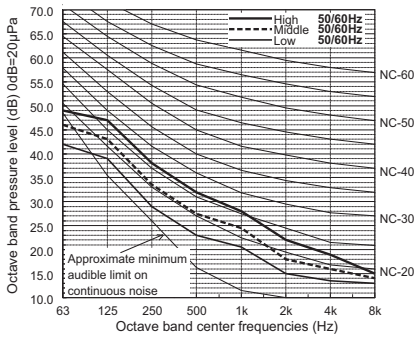
PEFY-WP20VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



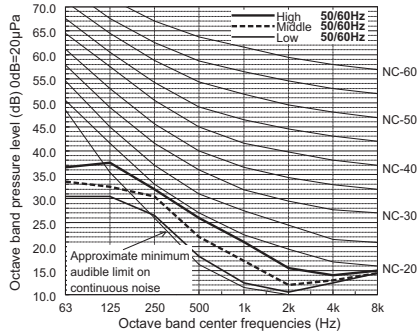
PEFY-WP20VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



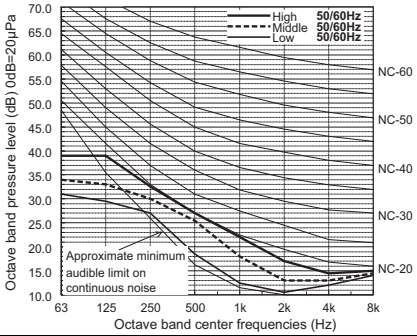
PEFY-WP25VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



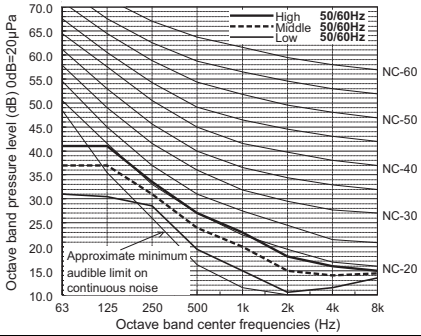
PEFY-WP25VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



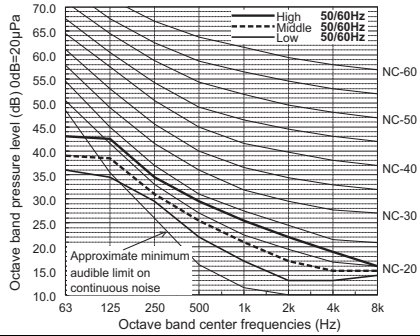
PEFY-WP25VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



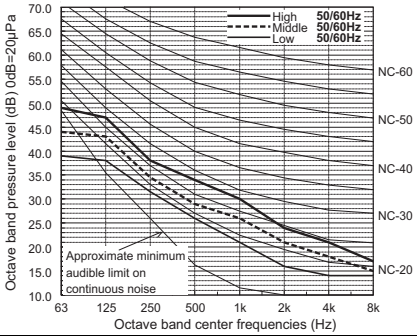
PEFY-WP25VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



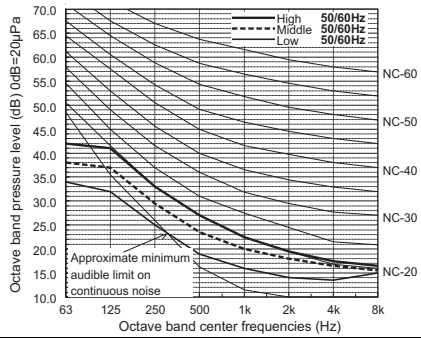
PEFY-WP25VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



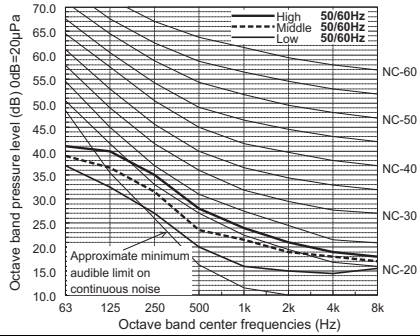
PEFY-WP32VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



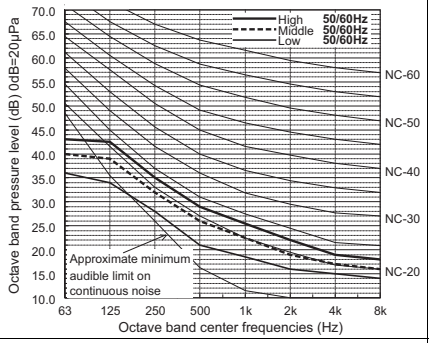
PEFY-WP32VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



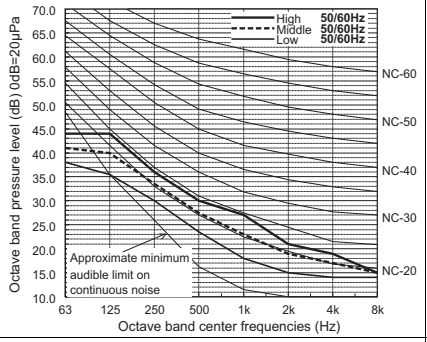
PEFY-WP32VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



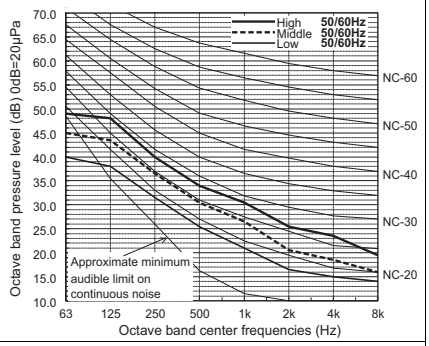
PEFY-WP32VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



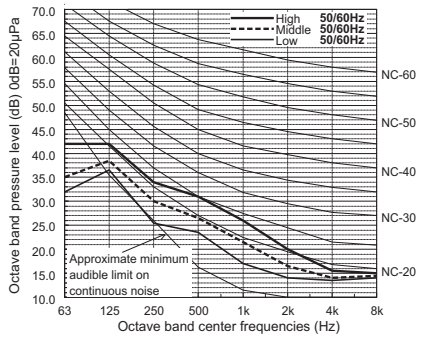
PEFY-WP32VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



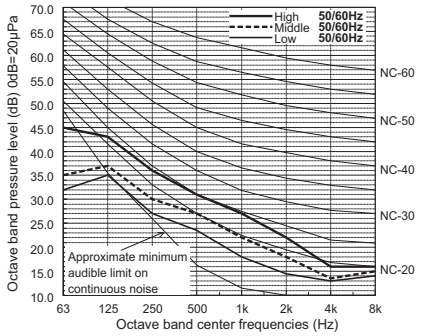
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



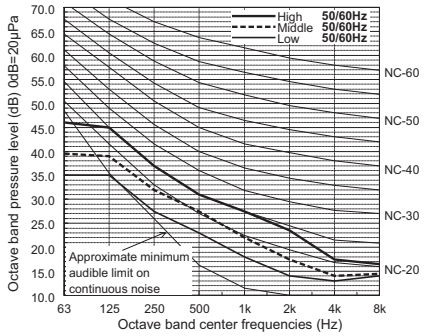
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



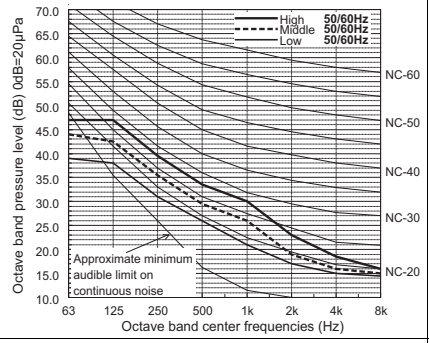
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



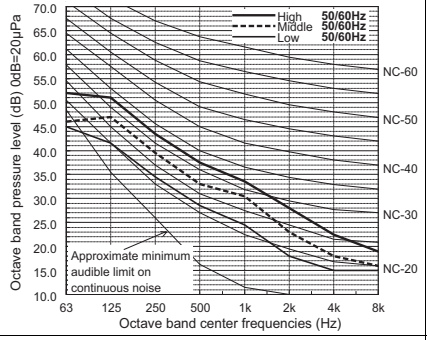
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



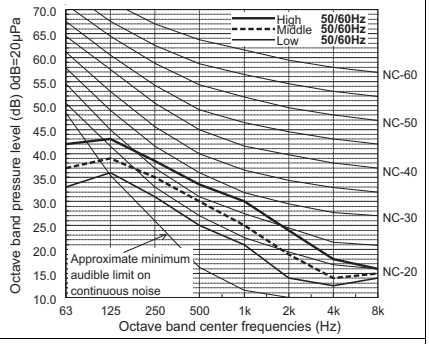
PEFY-WP40, 50, 63VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



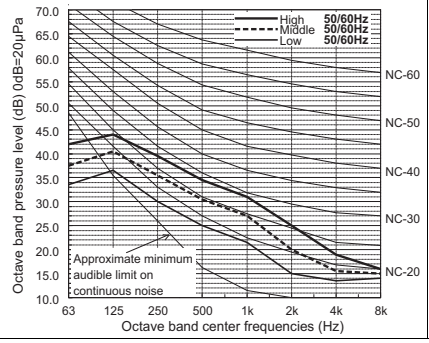
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



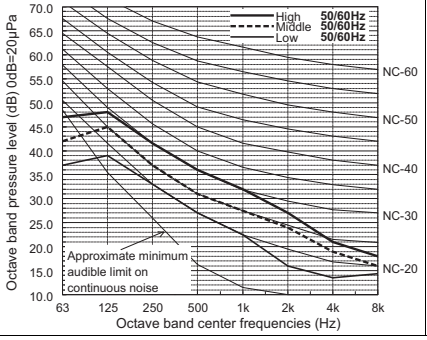
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



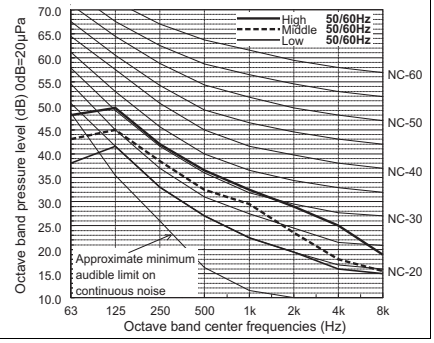
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



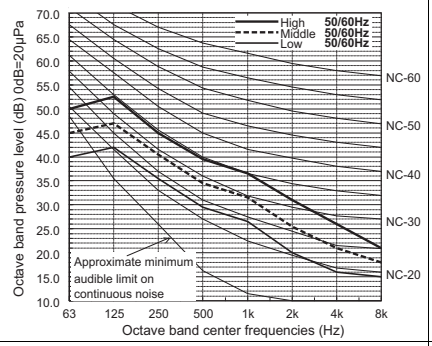
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)



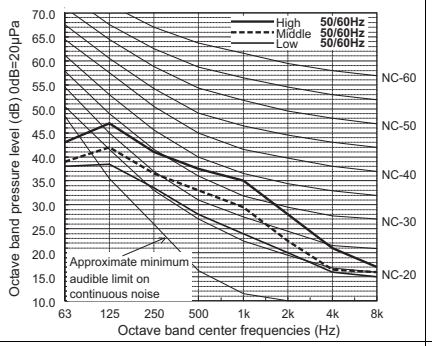
PEFY-WP71, 80, 100VMA-E

External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



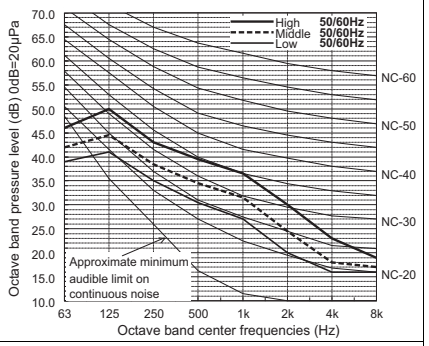
PEFY-WP125VMA-E

External Static Pressure: 35Pa
Power Source: 220-230-240V(50/60Hz)



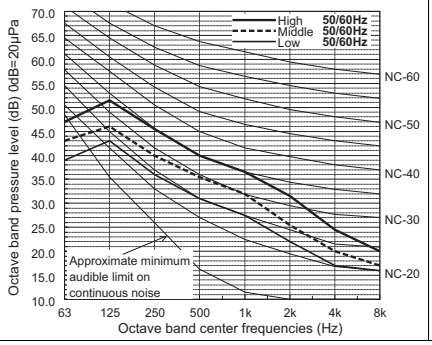
PEFY-WP125VMA-E

External Static Pressure: 50Pa
Power Source: 220-230-240V(50/60Hz)



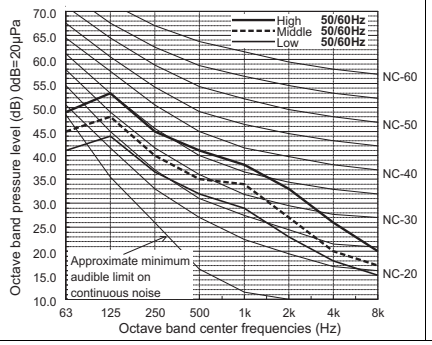
PEFY-WP125VMA-E

External Static Pressure: 70Pa
Power Source: 220-230-240V(50/60Hz)



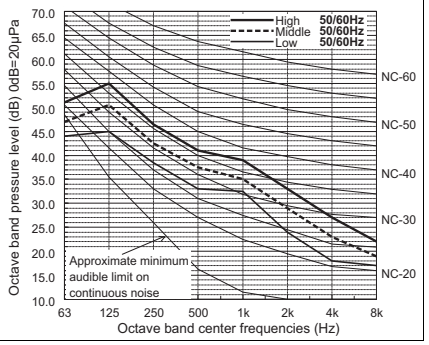
PEFY-WP125VMA-E

External Static Pressure: 100Pa
Power Source: 220-230-240V(50/60Hz)

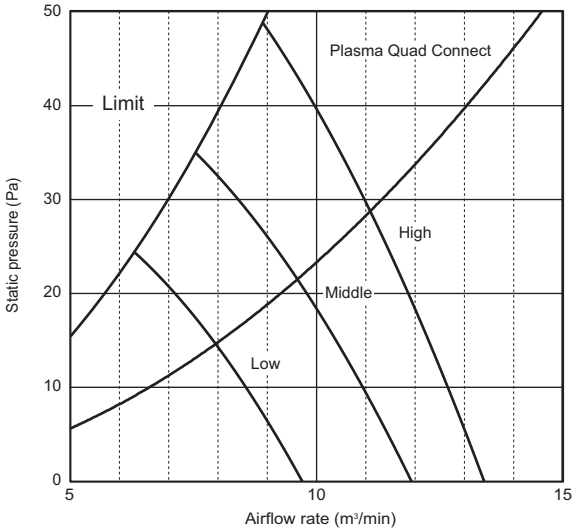


PEFY-WP125VMA-E

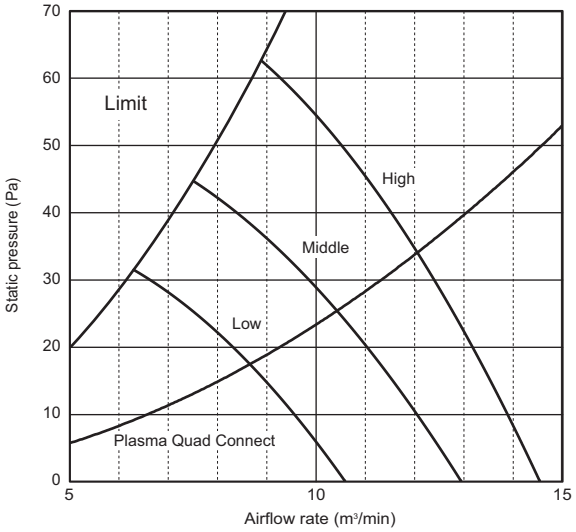
External Static Pressure: 150Pa
Power Source: 220-230-240V(50/60Hz)



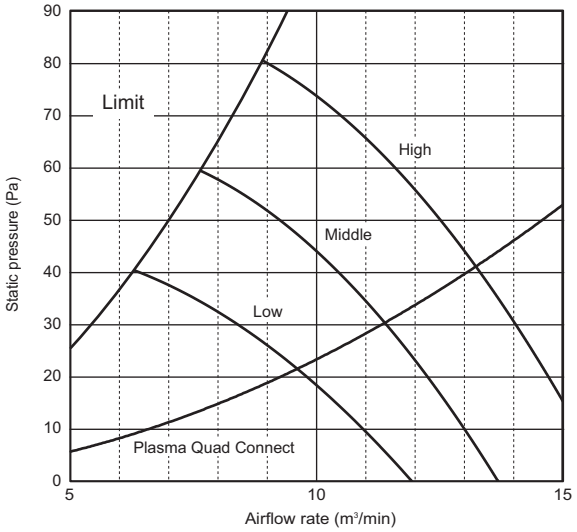
PEFY-WP20VMA-E
External static pressure : 35Pa
Power source : 220-240V



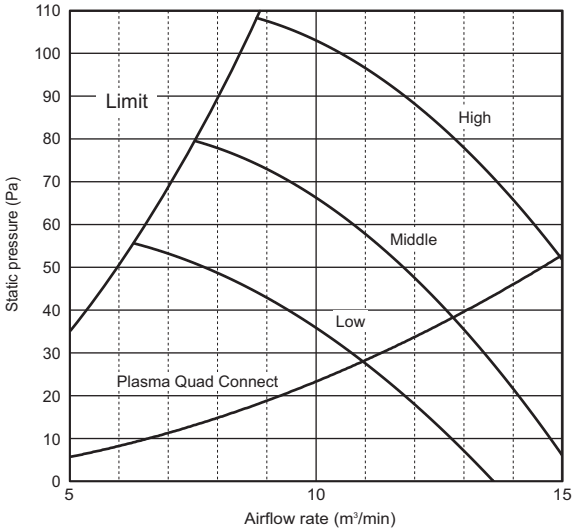
PEFY-WP20VMA-E
External static pressure : 50Pa
Power source : 220-240V



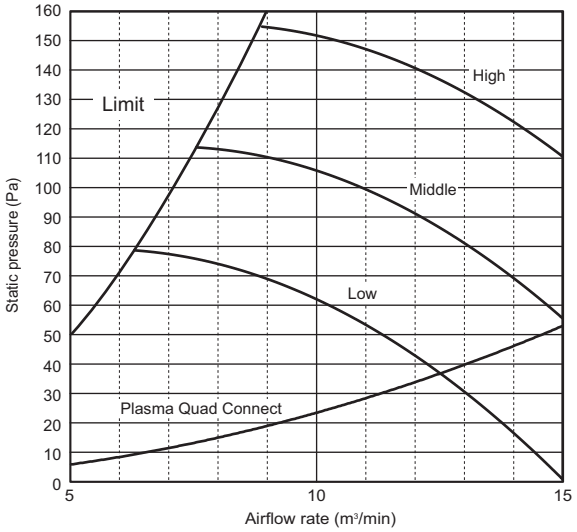
PEFY-WP20VMA-E
External static pressure : 70Pa
Power source : 220-240V



PEFY-WP20VMA-E
External static pressure : 100Pa
Power source : 220-240V

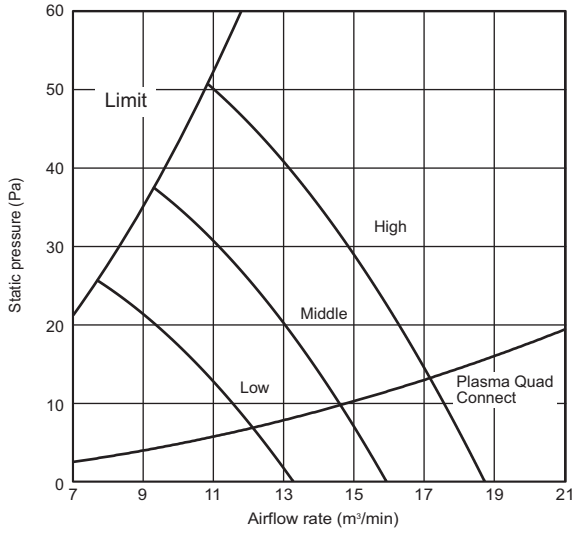


PEFY-WP20VMA-E
External static pressure : 150Pa
Power source : 220-240V

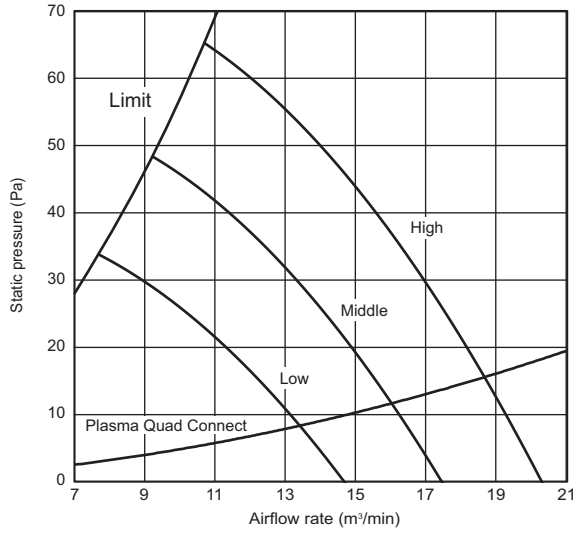


PEFY-WP-VMA-E

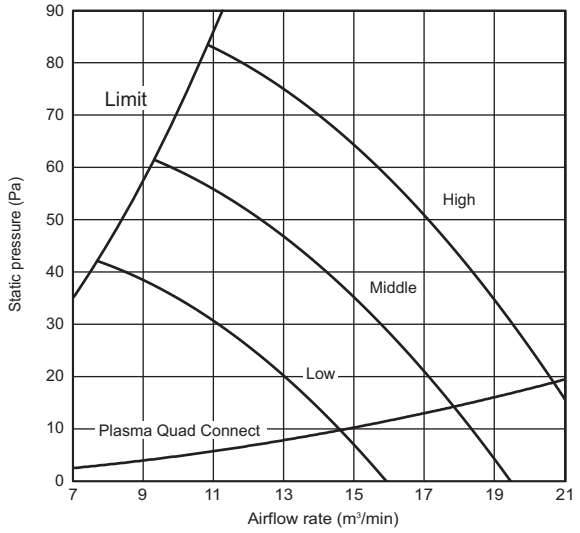
PEFY-WP25VMA-E
External static pressure : 35Pa
Power source : 220-240V



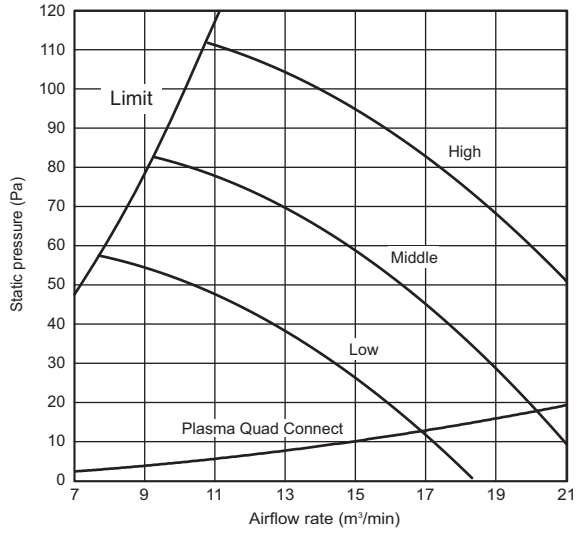
PEFY-WP25VMA-E
External static pressure : 50Pa
Power source : 220-240V



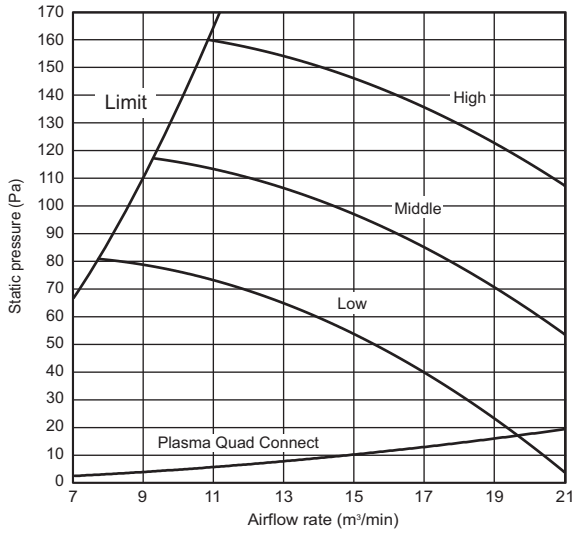
PEFY-WP25VMA-E
External static pressure : 70Pa
Power source : 220-240V



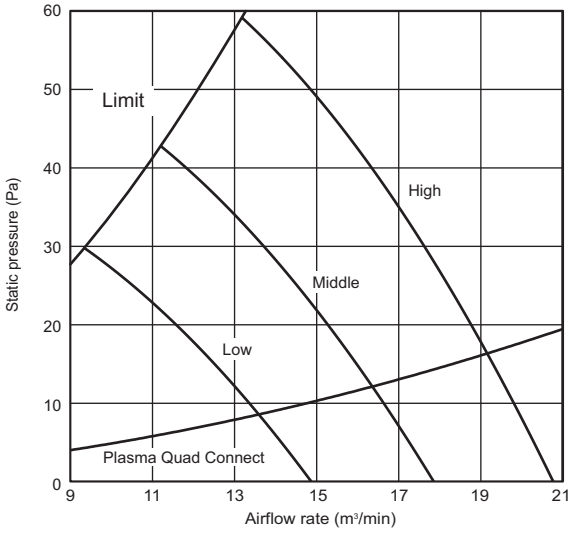
PEFY-WP25VMA-E
External static pressure : 100Pa
Power source : 220-240V



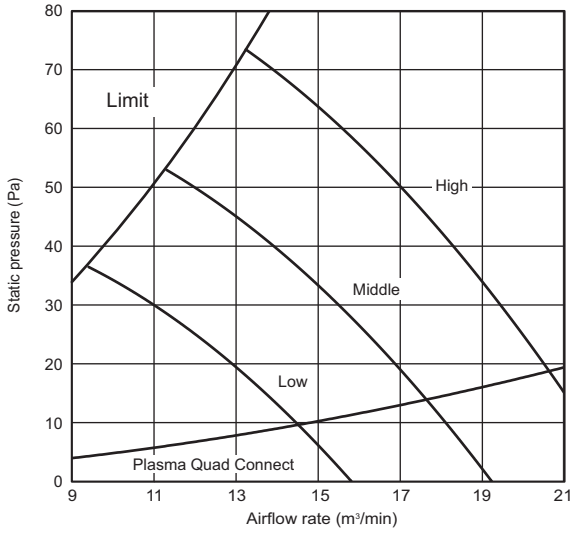
PEFY-WP25VMA-E
External static pressure : 150Pa
Power source : 220-240V



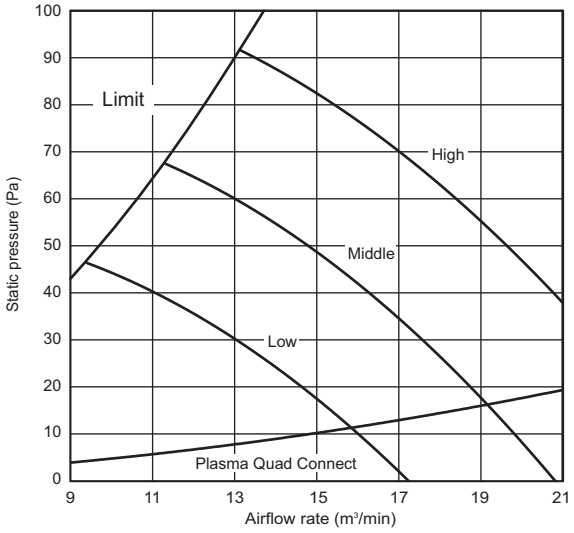
PEFY-WP32VMA-E
External static pressure : 35Pa
Power source : 220-240V



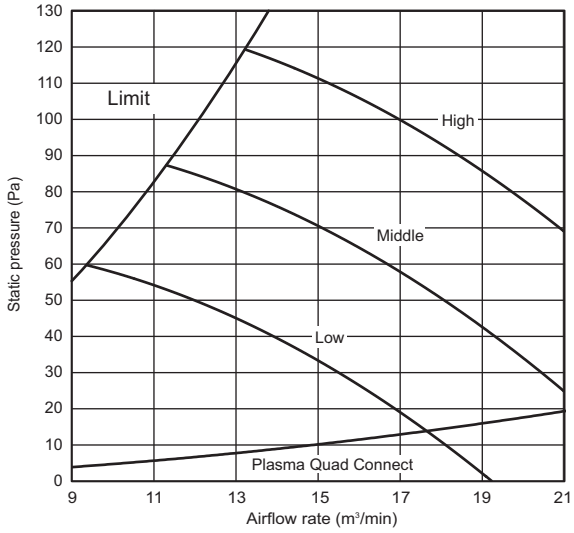
PEFY-WP32VMA-E
External static pressure : 50Pa
Power source : 220-240V



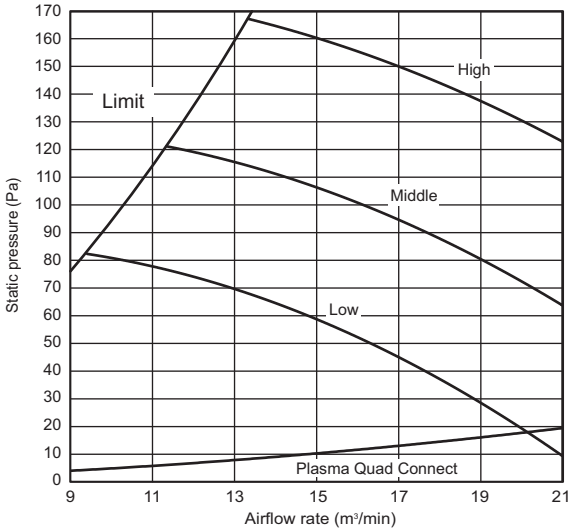
PEFY-WP32VMA-E
External static pressure : 70Pa
Power source : 220-240V



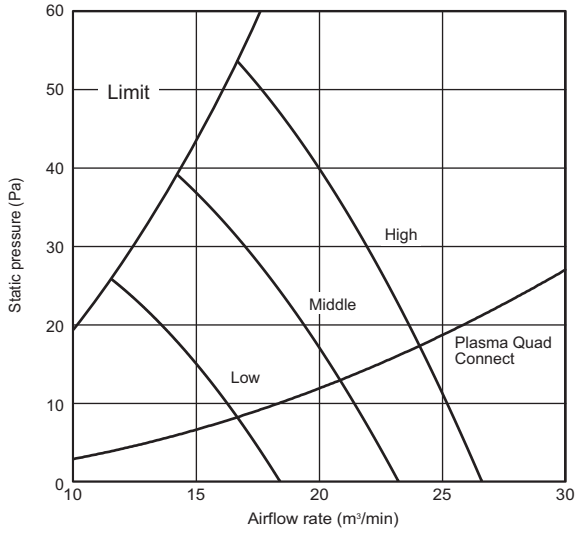
PEFY-WP32VMA-E
External static pressure : 100Pa
Power source : 220-240V



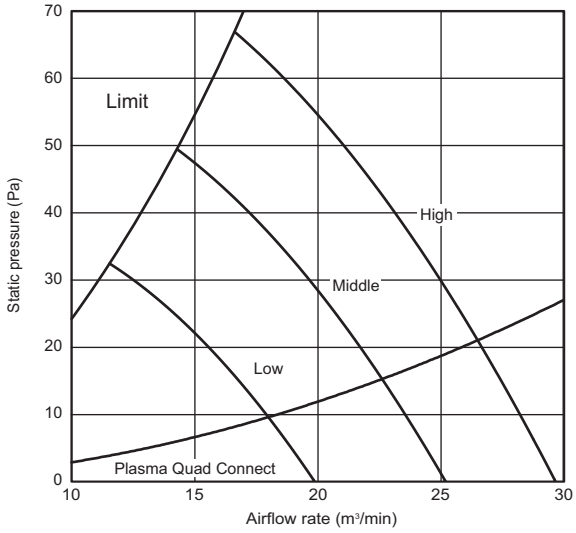
PEFY-WP32VMA-E
External static pressure : 150Pa
Power source : 220-240V



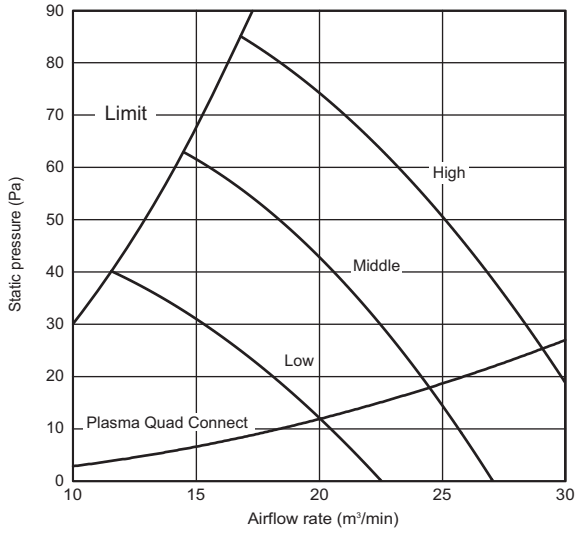
PEFY-WP40, 50, 63VMA-E
External static pressure : 35Pa
Power source : 220-240V



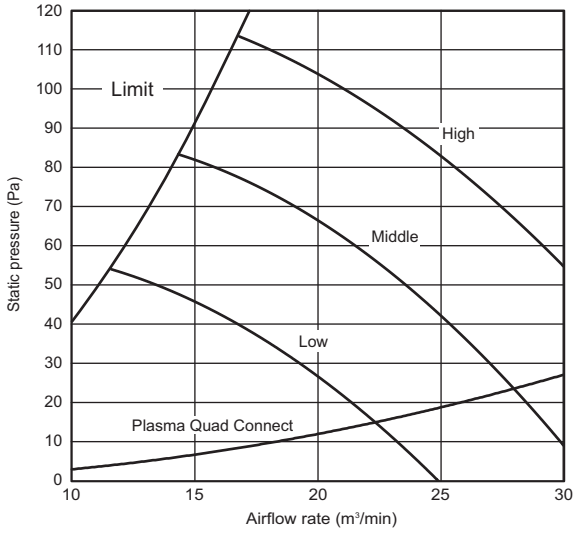
PEFY-WP40, 50, 63VMA-E
External static pressure : 50Pa
Power source : 220-240V



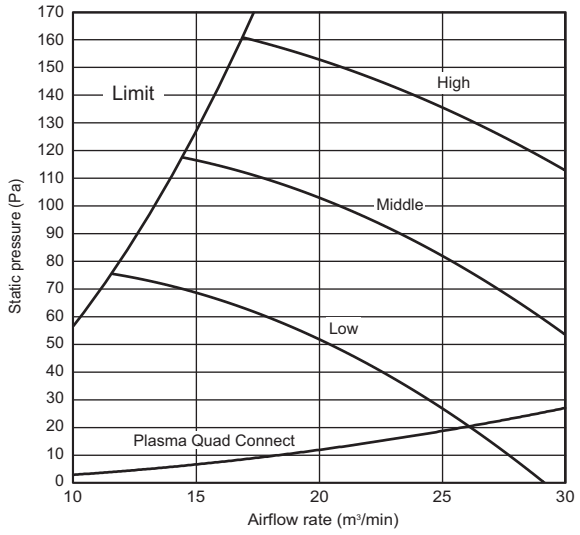
PEFY-WP40, 50, 63VMA-E
External static pressure : 70Pa
Power source : 220-240V



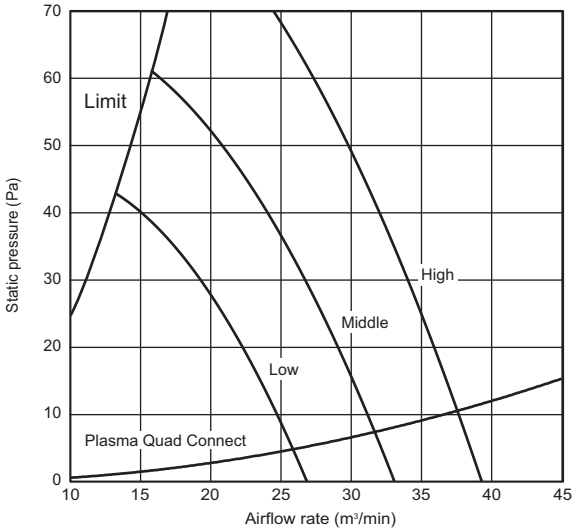
PEFY-WP40, 50, 63VMA-E
External static pressure : 100Pa
Power source : 220-240V



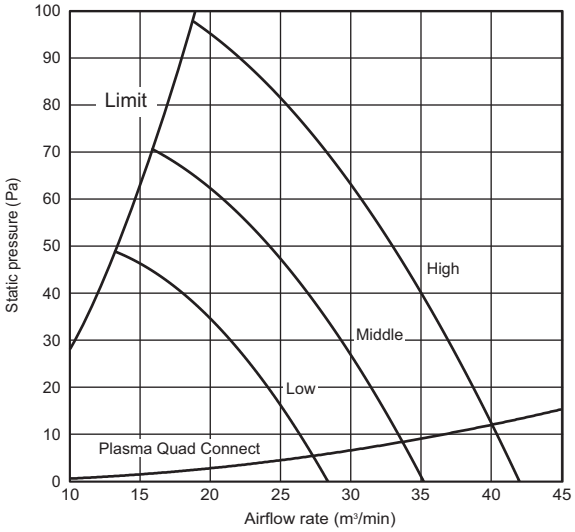
PEFY-WP40, 50, 63VMA-E
External static pressure : 150Pa
Power source : 220-240V



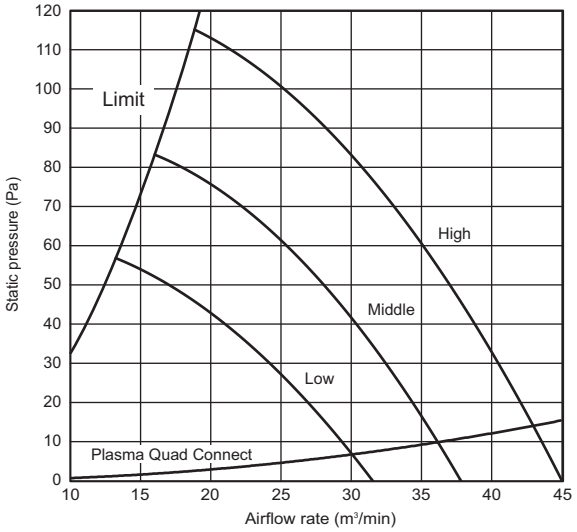
PEFY-WP71, 80, 100VMA-E
External static pressure : 35Pa
Power source : 220-240V



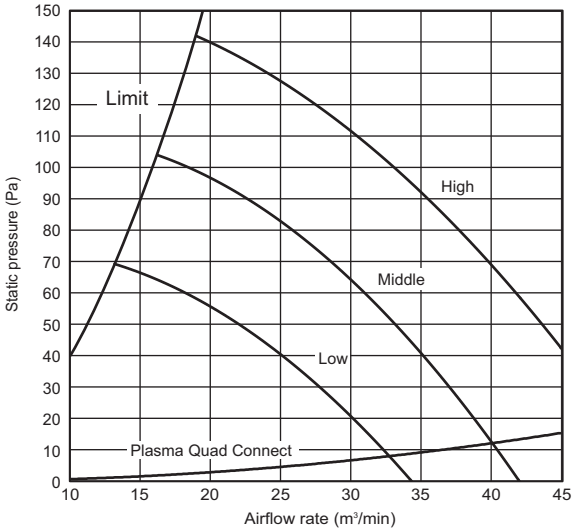
PEFY-WP71, 80, 100VMA-E
External static pressure : 50Pa
Power source : 220-240V



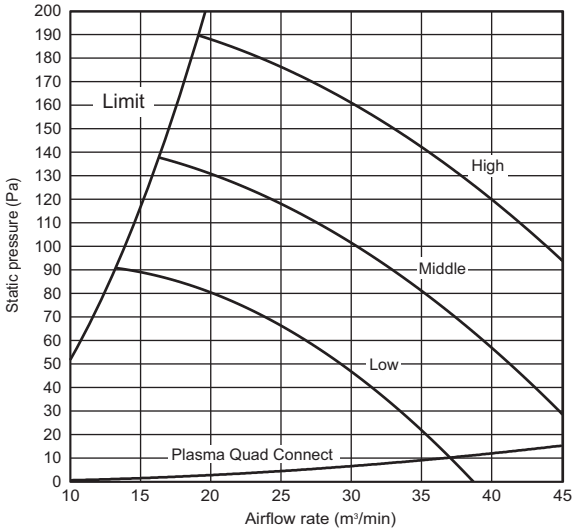
PEFY-WP71, 80, 100VMA-E
External static pressure : 70Pa
Power source : 220-240V



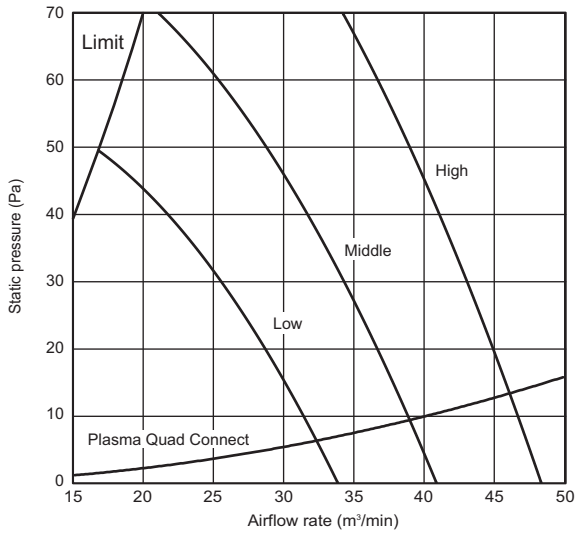
PEFY-WP71, 80, 100VMA-E
External static pressure : 100Pa
Power source : 220-240V



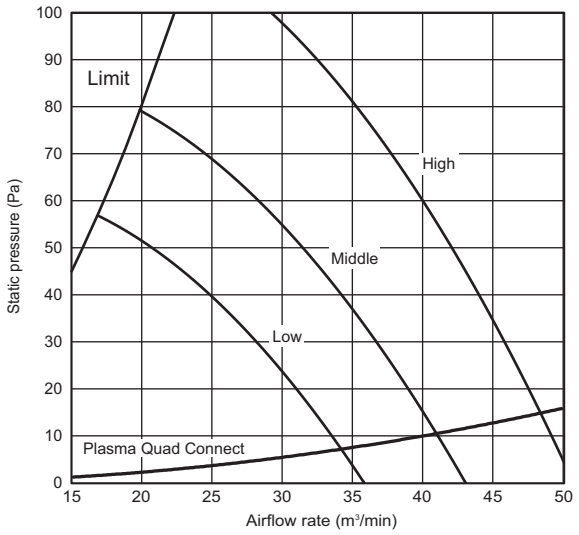
PEFY-WP71, 80, 100VMA-E
External static pressure : 150Pa
Power source : 220-240V



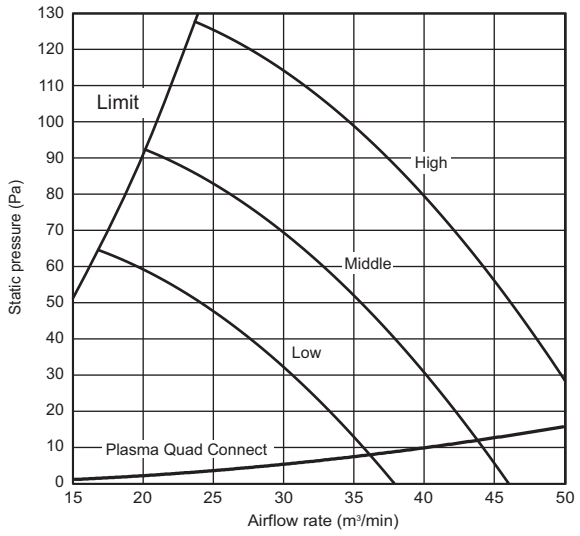
PEFY-WP125VMA-E
External static pressure : 35Pa
Power source : 220-240V



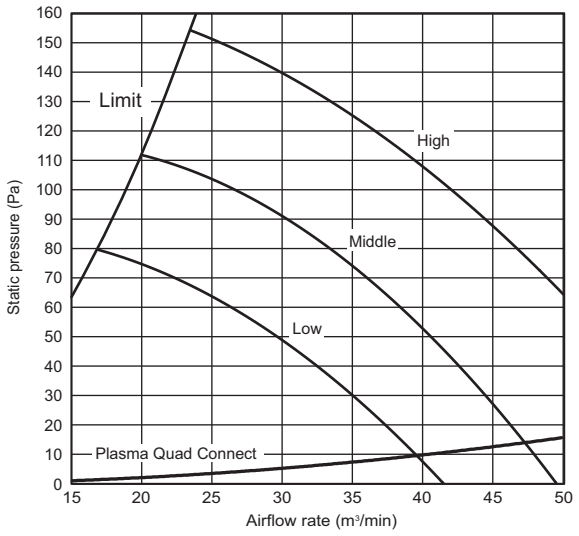
PEFY-WP125VMA-E
External static pressure : 50Pa
Power source : 220-240V



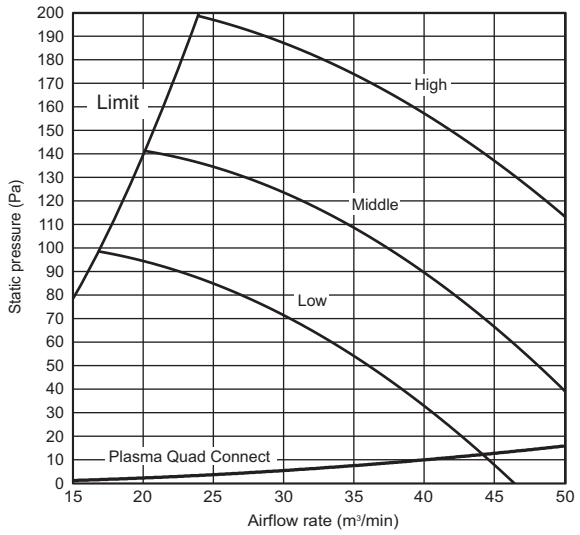
PEFY-WP125VMA-E
External static pressure : 70Pa
Power source : 220-240V



PEFY-WP125VMA-E
External static pressure : 100Pa
Power source : 220-240V



PEFY-WP125VMA-E
External static pressure : 150Pa
Power source : 220-240V



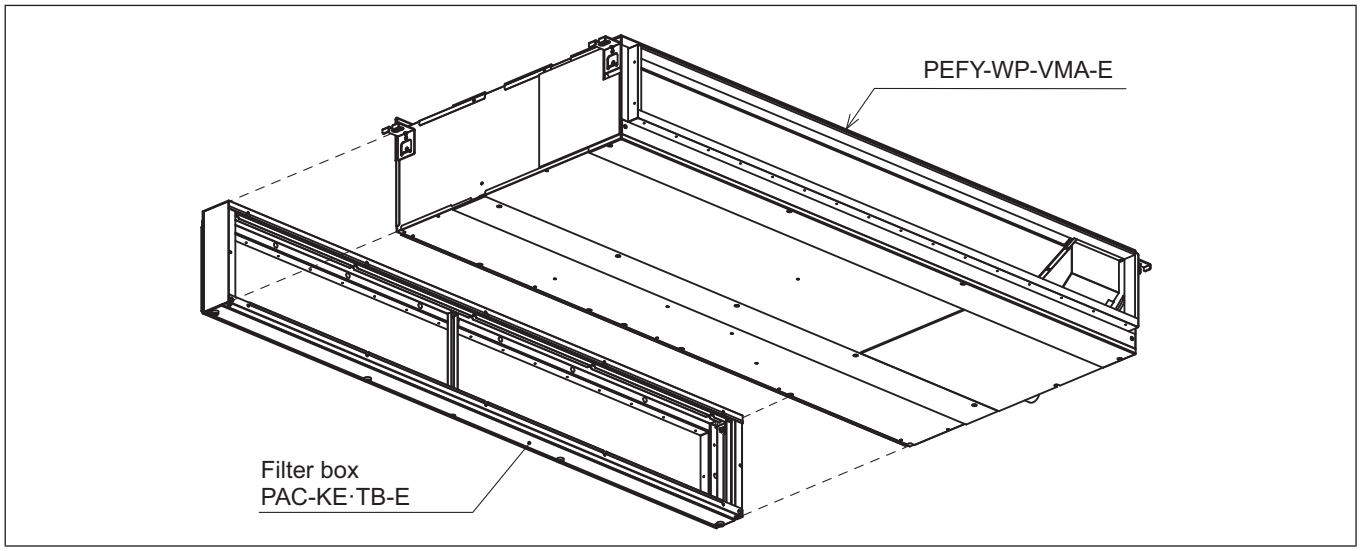
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-WP-VMA-E	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PEFY-WP20VMA-E	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	1.18	0.085	0.95
PEFY-WP25VMA-E			1.43	0.085	1.14
PEFY-WP32VMA-E			1.54	0.085	1.23
PEFY-WP40VMA-E			2.47	0.121	1.98
PEFY-WP50VMA-E			2.47	0.121	1.98
PEFY-WP63VMA-E			2.47	0.121	1.98
PEFY-WP71VMA-E			3.30	0.244	2.64
PEFY-WP80VMA-E			3.30	0.244	2.64
PEFY-WP100VMA-E			3.30	0.244	2.64
PEFY-WP125VMA-E			3.29	0.244	2.63

8-1. Optional parts line up for the Indoor unit

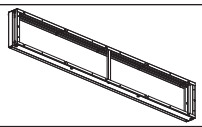
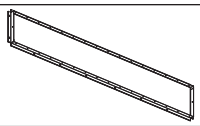
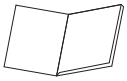
	Filter box	Plasma Quad Connect	PQ attachment (Rear inlet)	PQ attachment (Bottom inlet)	PQ box
PEFY-WP20VMA-E	PAC-KE91TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE91PTB-E
PEFY-WP25, 32VMA-E	PAC-KE92TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE92PTB-E
PEFY-WP40, 50, 63VMA-E	PAC-KE93TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE93PTB-E
PEFY-WP71, 80, 100VMA-E	PAC-KE94TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE94PTB-E
PEFY-WP125VMA-E	PAC-KE95TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE95PTB-E

● **PEFY-WP-VMA-E**



8-2. Filter box

PAC-KE-TB-E

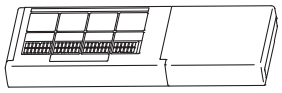
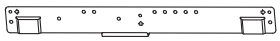
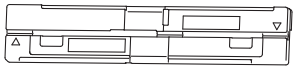
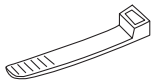
Item	1 Screw	2 Filter box	3 FLANGE	4 Installation manual	
Quantity	PAC-KE91TB-E: 20 PAC-KE92, 93TB-E: 24 PAC-KE94, 95TB-E: 30	1	1	1	
Shape					

Detailed installation information should be referred to its Installation Manual.

8-3. Plasma Quad Connect

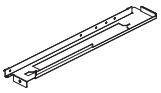
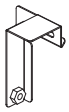
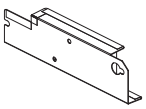
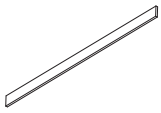
Static pressure loss is referred to 6 “FAN CHARACTERISTICS CURVES”.
Plasma Quad Connect (MAC-100FT-E) should be used together with PQ box or PQ attachment (PAC-HA31PAR or PAC-HA31PAU).
*Attaching the Plasma Quad Connect increases the pressure loss. Adjust the external static pressure setting as necessary. For the adjustment procedure, see the Installation Manual for the indoor unit.

Plasma Quad Connect (MAC-100FT-E)

Item	Plasma Quad Connect (with connecting cable)	Installation plate	Fixing screw for Plasma Quad Connect and Installation plate 4 × 25 mm
Quantity	1	1	5
Shape			
Item	Spacer Note: The spacer is used as packaging material.	Mounting cord clamp	Cable tie
Quantity	1	1	1
Shape			
Item	Screw for Mounting cord clamp 4 × 16 (Use when joining room air conditioner parts)		
Quantity	1		
Shape			

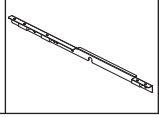
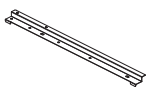
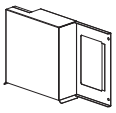
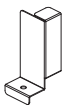
Detailed installation information should be referred to its Installation Manual.

PQ attachment (Rear inlet) (PAC-HA31PAR)

Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	Screw (5 × 10)	RUBBER PLATE
Quantity	1	–	1	1	3	2	2
Shape							

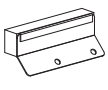
Detailed installation information should be referred to its Installation Manual.

PQ attachment (Bottom inlet) (PAC-HA31PAU)

Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	CABLE STRAP	WIRE SADDLE	RUBBER PLATE
Quantity	1	1	1	1	9	1	1	2
Shape								

Detailed installation information should be referred to its Installation Manual.

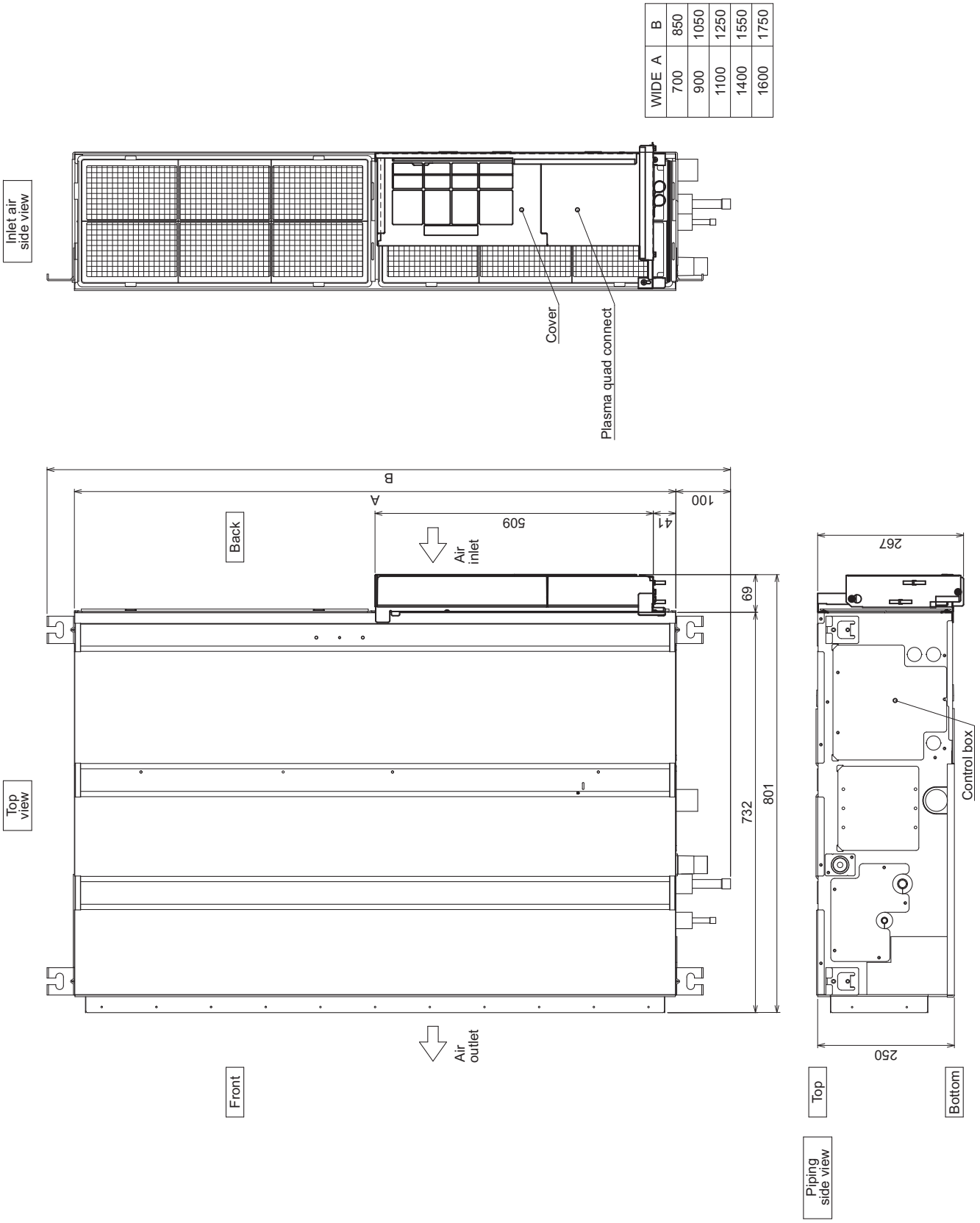
PQ box (PAC-KE91, 92, 93, 94, 95PTB-E)

Item	Screw (4 × 10)	CABLE STRAP	SUCTION FLANGE	WIRING COVER	RUBBER PLATE
Quantity	22 (PAC-KE91PTB-E) 26 (PAC-KE92, 93PTB-E) 32 (PAC-KE94, 95PTB-E)	2	1	1	2
Shape					

Detailed installation information should be referred to its Installation Manual.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ attachment (Rear inlet) and Plasma Quad Connect

Unit: mm



Model	WIDE A	B
PEFY-WP20VMA-E	700	850
PEFY-WP25,32VMA-E	900	1050
PEFY-WP40,50,63VMA-E	1100	1250

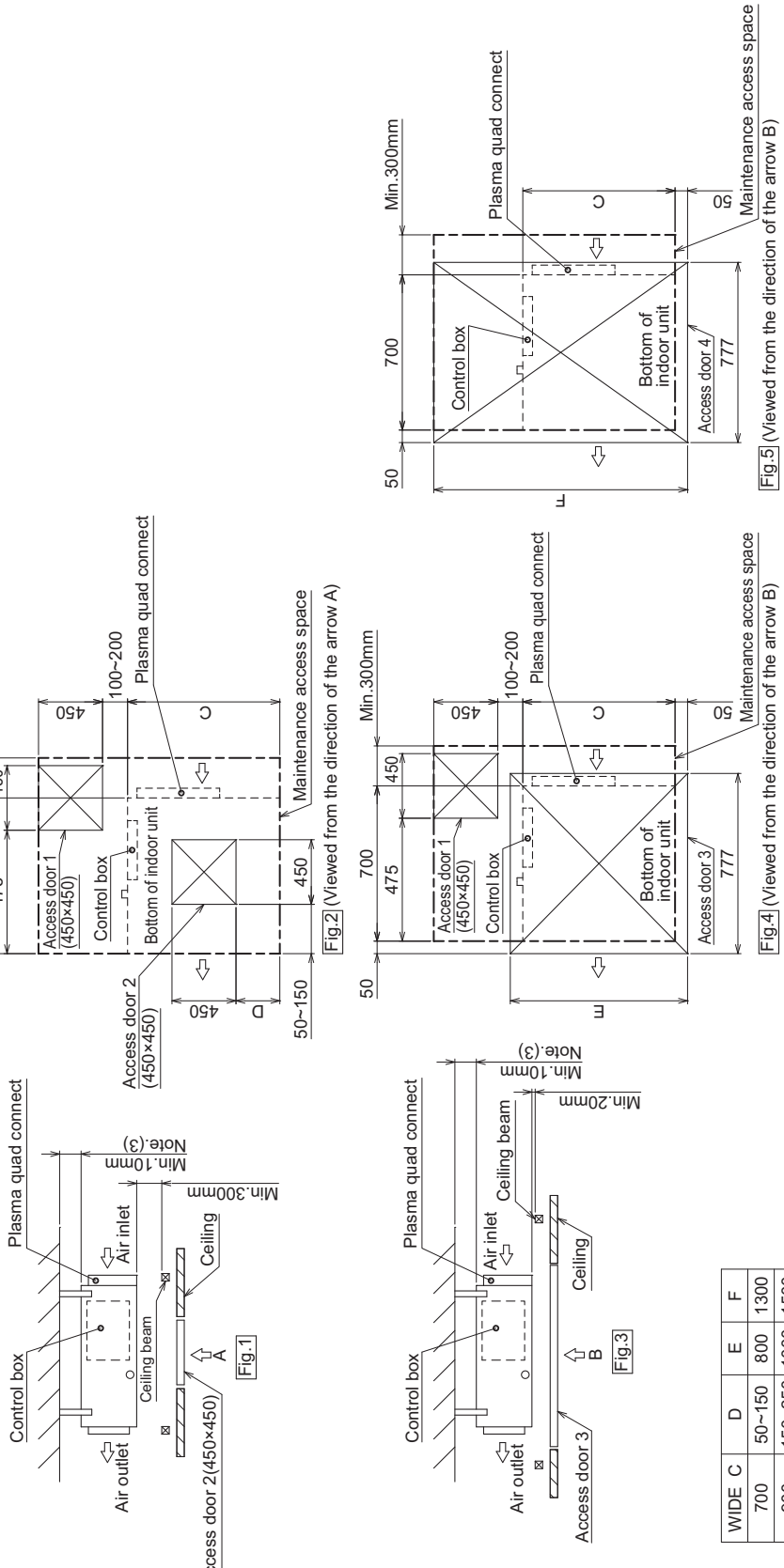
Model	WIDE A	B
PEFY-WP71,80,100VMA-E	1400	1550
PEFY-WP125VMA-E	1600	1750

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ attachment (Rear inlet) and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
• Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
• Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
• Create access door 4 below the control box and the unit as shown in Fig.5.
(3) For maintenance if there is more than 170mm from the top surfce, the cover can be pulled out without removing the PQ attachment. (Fig.1, Fig.3)



WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500
1100	250~350	1200	1700
1400	400~500	1500	2000
1600	500~600	1700	2200

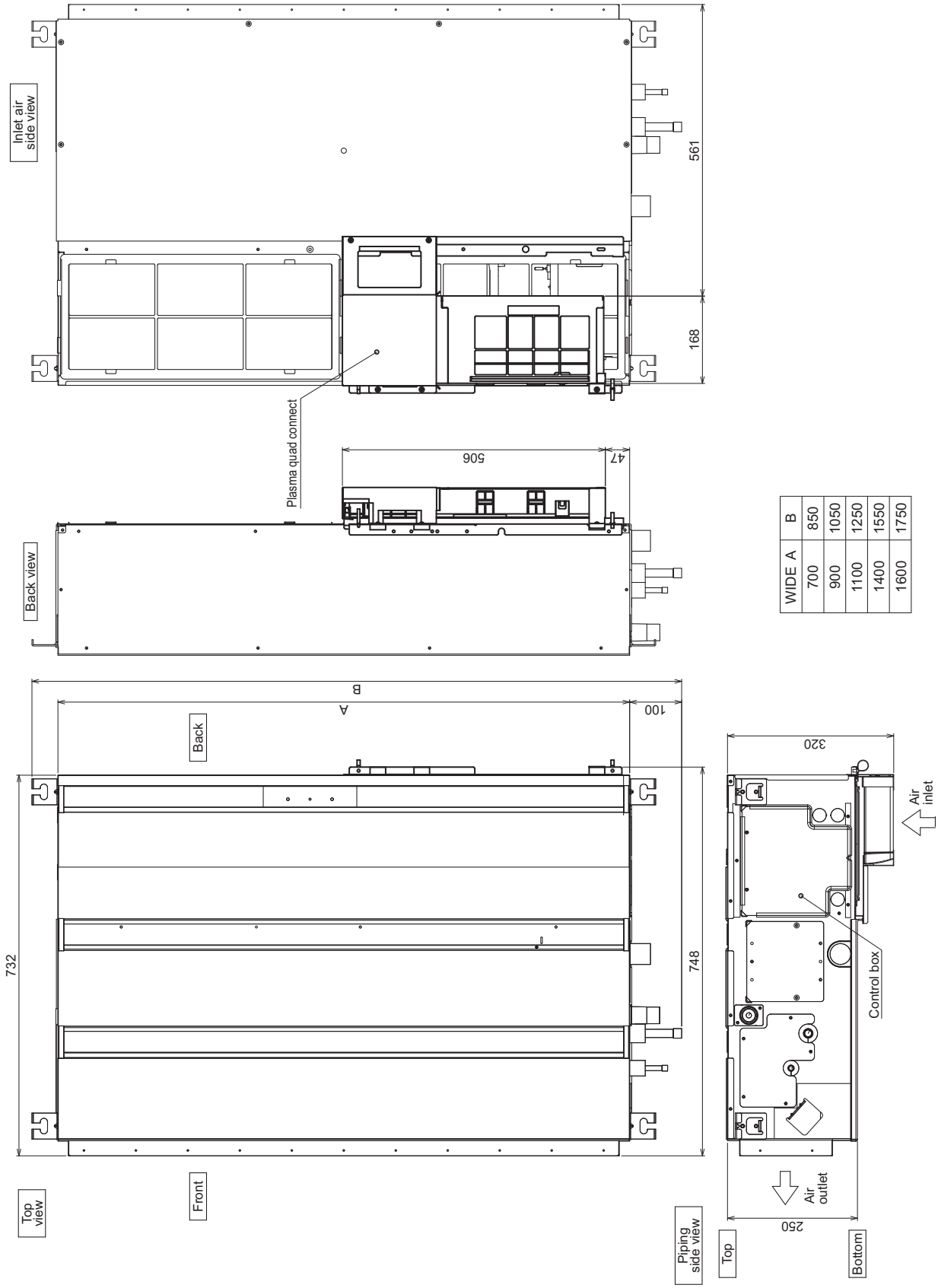
Model	WIDE C	D	E	F
PEFY-WP20VMA-E	700	50~150	800	1300
PEFY-WP25,32VMA-E	900	150~250	1000	1500
PEFY-WP40,50,63VMA-E	1100	250~350	1200	1700

Model	WIDE C	D	E	F
PEFY-WP71,80,100VMA-E	1400	400~500	1500	2000
PEFY-WP125VMA-E	1600	500~600	1700	2200

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ attachment (Bottom inlet) and Plasma Quad Connect

Unit: mm



WIDE A	B
700	850
900	1050
1100	1250
1400	1550
1600	1750

Model	WIDE A	B
PEFY-WP20VMA-E	700	850
PEFY-WP25,32VMA-E	900	1050
PEFY-WP40,50,63VMA-E	1100	1250

Model	WIDE A	B
PEFY-WP71,80,100VMA-E	1400	1550
PEFY-WP125VMA-E	1600	1750

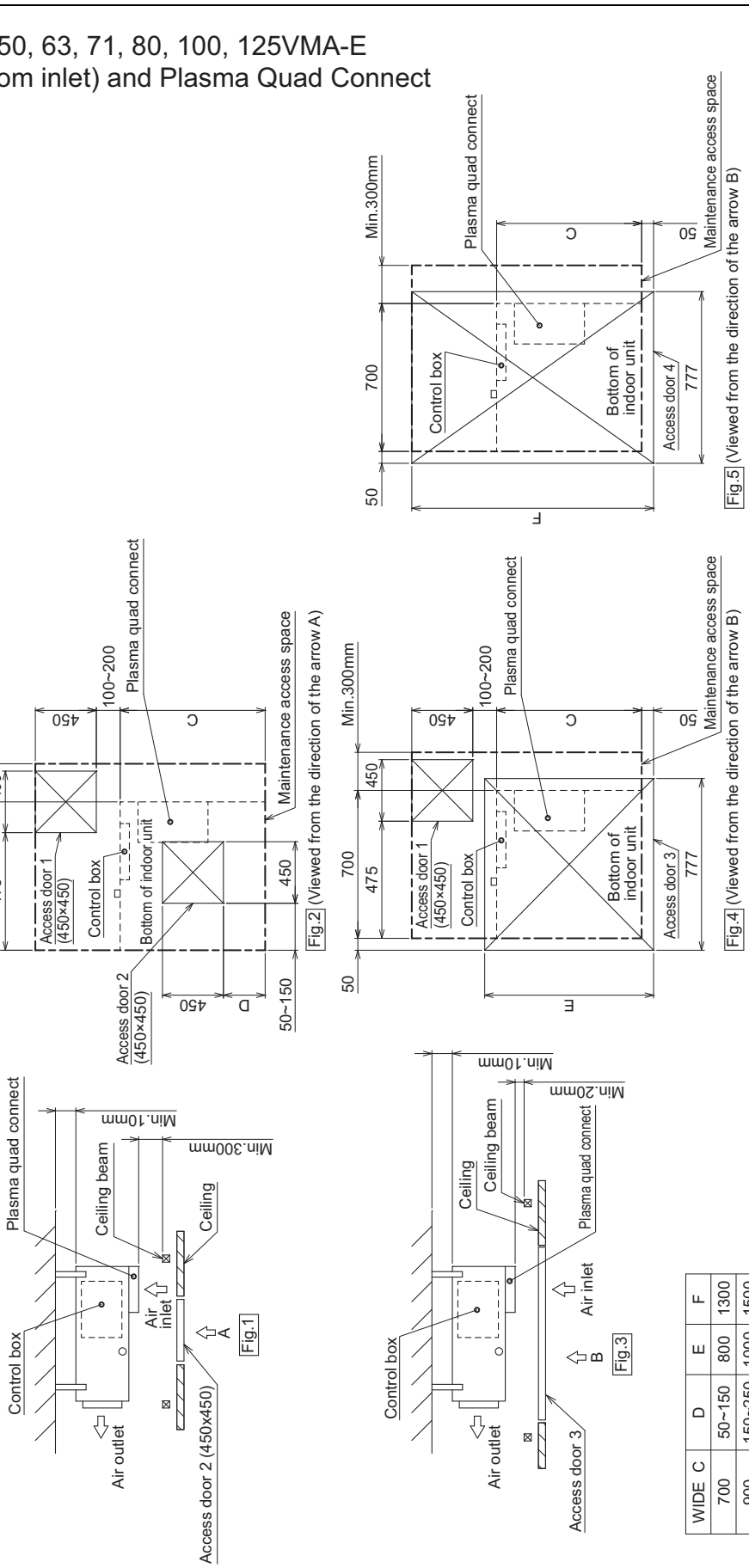
The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ attachment (Bottom inlet) and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
- Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
  (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
- Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
  or
- Create access door 4 below the control box and the unit as shown in Fig.5.



WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500
1100	250~350	1200	1700
1400	400~500	1500	2000
1600	500~600	1700	2200

Model	WIDE C	D	E	F
PEFY-WP20VMA-E	700	50~150	800	1300
PEFY-WP25,32VMA-E	900	150~250	1000	1500
PEFY-WP40,50,63VMA-E	1100	250~350	1200	1700

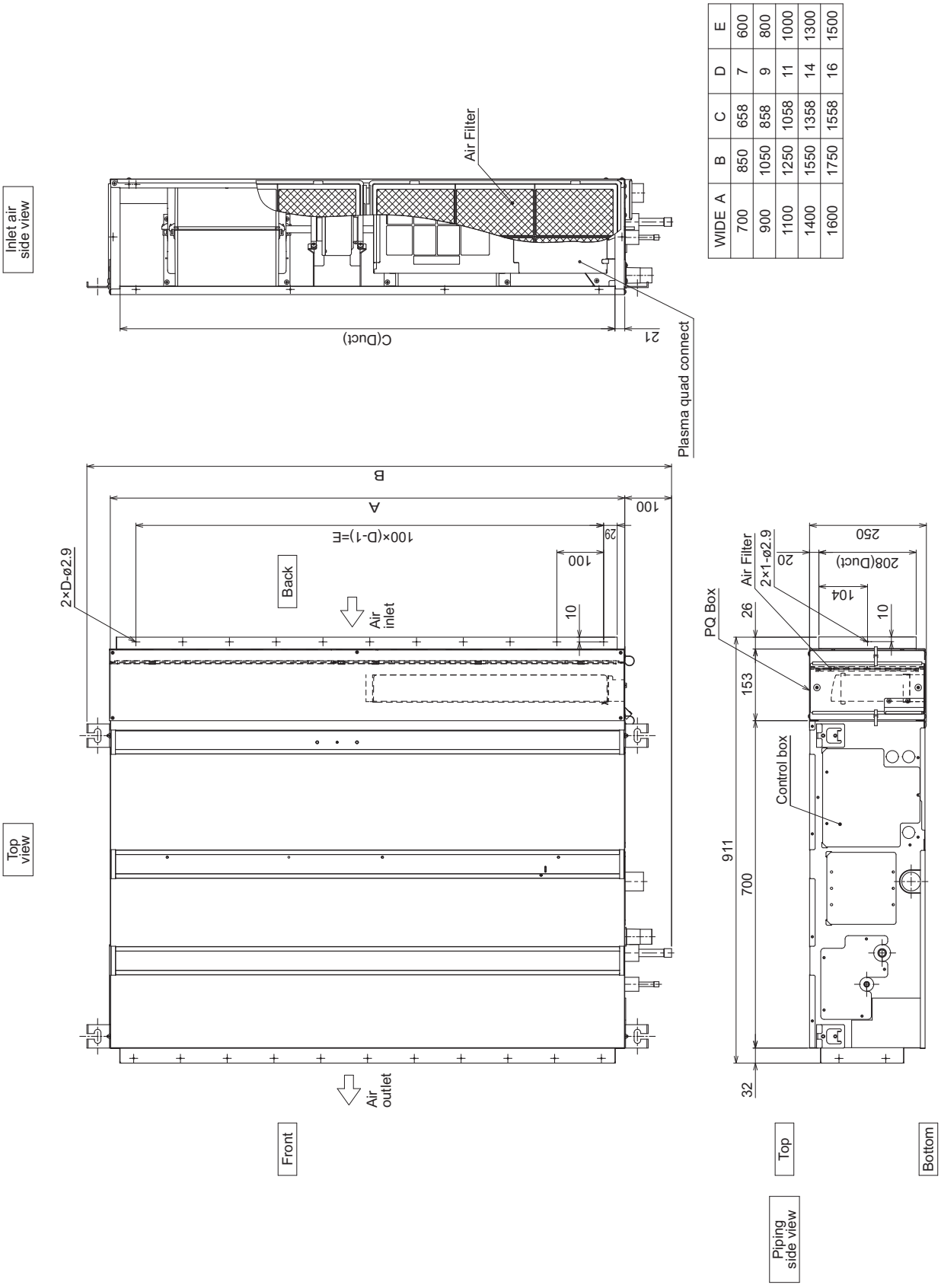
Model	WIDE C	D	E	F
PEFY-WP71,80,100VMA-E	1400	400~500	1500	2000
PEFY-WP125VMA-E	1600	500~600	1700	2200

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ box and Plasma Quad Connect

Unit: mm

WIDE A	B	C	D	E
700	850	658	7	600
900	1050	858	9	800
1100	1250	1058	11	1000
1400	1550	1358	14	1300
1600	1750	1558	16	1500



Model	WIDE A	B	C	D	E
PEFY-WP20VMA-E	700	850	658	7	600
PEFY-WP25,32VMA-E	900	1050	858	9	800
PEFY-WP40,50,63VMA-E	1100	1250	1058	11	1000

Model	WIDE A	B	C	D	E
PEFY-WP71,80,100VMA-E	1400	1550	1358	14	1300
PEFY-WP125VMA-E	1600	1750	1558	16	1500

The drawing above is a sample image of the optional parts being installed on a unit.

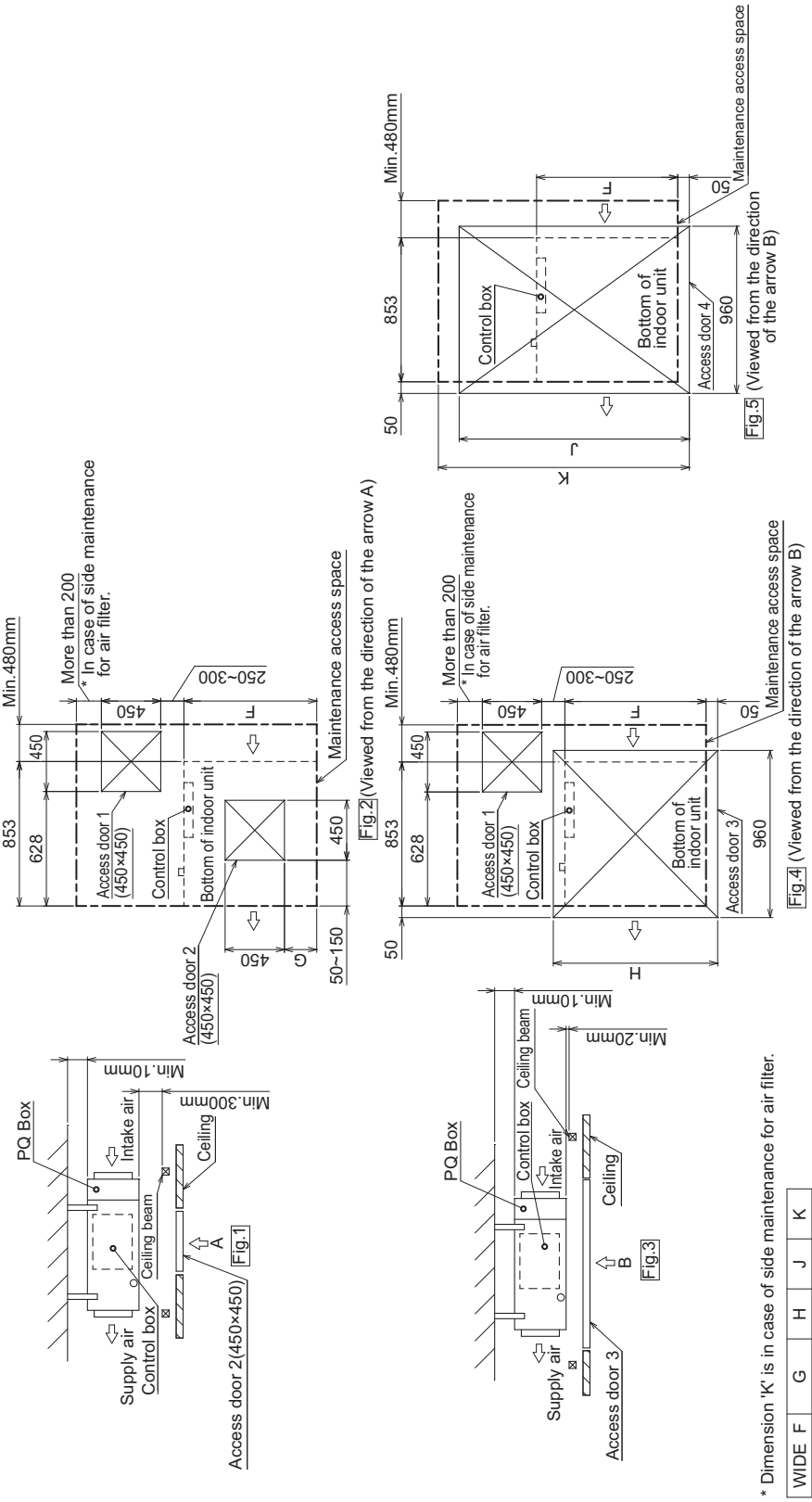
PEFY-WP20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-E
with PQ box and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
- Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
  (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
- Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
  or
- Create access door 4 below the control box and the unit as shown in Fig.5.



* Dimension 'K' is in case of side maintenance for air filter.

WIDE F	G	H	J	K
700	50~150	800	1300	1450
900	150~250	1000	1500	1850
1100	250~350	1200	1700	
1400	400~500	1500	2000	2150
1600	500~600	1700	2200	2550

Model	WIDE F	G	H	J	K
PEFY-WP20VMA-E	700	50~150	800	1300	1450
PEFY-WP25,32VMA-E	900	150~250	1000	1500	1850
PEFY-WP40,50,63VMA-E	1100	250~350	1200	1700	-

Model	WIDE F	G	H	J	K
PEFY-WP71,80,100VMA-E	1400	400~500	1500	2000	2150
PEFY-WP125VMA-E	1600	500~600	1700	2200	2550

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W-VMA(L)-A

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Model				PEFY-W20VMA-A	PEFY-W25VMA-A	PEFY-W32VMA-A	PEFY-W40VMA-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2 Power input		kW	0.032	0.032	0.044	0.047
	*2 Current input		A	0.26-0.25-0.24	0.26-0.25-0.24	0.36-0.34-0.33	0.39-0.37-0.36
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2 Power input		kW	0.030	0.030	0.042	0.045
	*2 Current input		A	0.26-0.25-0.24	0.26-0.25-0.24	0.36-0.34-0.33	0.39-0.37-0.36
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 700 x 732	250 x 700 x 732	250 x 700 x 732	250 x 900 x 732
			in.	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8
Net weight			kg (lbs)	22 (49)	22 (49)	22 (49)	26 (58)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.7	0.7	0.7	1.0
FAN	Type × Quantity			Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2
*4	External static press.		Pa	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>
			mmH_2O	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.085	0.085	0.085	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	6.0 - 7.5 - 8.5	6.0 - 7.5 - 8.5	7.5 - 9.0 - 10.5	10.0 - 12.0 - 14.0
			L/s	100 - 125 - 142	100 - 125 - 142	125 - 150 - 175	167 - 200 - 233
			cfm	212 - 265 - 300	212 - 265 - 300	265 - 318 - 371	353 - 424 - 494
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	21.0-25.0-27.0	21.0-25.0-27.0	23.0-27.0-30.0	23.0-28.0-31.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R777	KL94R777	KL94R777	KL94R777
	Wiring			KL94R847	KL94R847	KL94R847	KL94R847
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE91TB-E	PAC-KE91TB-E	PAC-KE91TB-E	PAC-KE92TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE91PTB-E	PAC-KE91PTB-E	PAC-KE91PTB-E	PAC-KE92PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W50VMA-A	PEFY-W63VMA-A	PEFY-W71VMA-A	PEFY-W80VMA-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	5.6	7.1	8.0	9.0
(Nominal)		*1	BTU/h	19,100	24,200	27,300	30,700
	*2 Power input		kW	0.093	0.093	0.093	0.093
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
Heating capacity		*3	kW	6.3	8.0	9.0	10.0
(Nominal)		*3	BTU/h	21,500	27,300	30,700	34,100
	*2 Power input		kW	0.091	0.091	0.091	0.091
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732
			in.	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8
Net weight			kg (lbs)	30 (67)	30 (67)	30 (67)	30 (67)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	2.0	2.0	2.0	2.0
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>
			mmH_2O	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.121	0.121	0.121	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0
			L/s	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350
			cfm	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	30	30	30
	Outlet		mm I.D.	20	30	30	30
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R777	KL94R777	KL94R777	KL94R777
	Wiring			KL94R847	KL94R847	KL94R847	KL94R847
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W100VMA-A	PEFY-W125VMA-A		
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz		
Cooling capacity		*1	kW	11.2	14.0		
(Nominal)		*1	BTU/h	38,200	47,800		
	*2 Power input		kW	0.142	0.199		
	*2 Current input		A	1.01-0.97-0.93	1.29-1.23-1.18		
Heating capacity		*3	kW	12.5	16.0		
(Nominal)		*3	BTU/h	42,700	54,600		
	*2 Power input		kW	0.140	0.197		
	*2 Current input		A	1.01-0.97-0.93	1.29-1.23-1.18		
External finish				Galvanized steel plate	Galvanized steel plate		
External dimension H × W × D			mm	250 x 1,400 x 732	250 x 1,400 x 732		
			in.	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8		
Net weight			kg (lbs)	37 (82)	38 (84)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	2.6	3.2		
FAN	Type × Quantity			Sirocco fan x 3	Sirocco fan x 3		
*4	External static press.		Pa	40 - <50> - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>		
			mmH_2O	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>		
	Motor Type			DC motor	DC motor		
	Motor output		kW	0.300	0.300		
	Driving mechanism			Direct-driven by motor	Direct-driven by motor		
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)		
			m^3/min	23.0 - 28.0 - 32.0	28.0 - 34.0 - 37.0		
			L/s	383 - 467 - 533	467 - 567 - 617		
			cfm	812 - 989 - 1,130	989 - 1,201 - 1,306		
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)		
		*2	dB <A>	30.0-35.0-38.0	34.0-38.0-40.0		
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam		
Air filter				PP honeycomb fabric.	PP honeycomb fabric.		
Protection device				Fuse	Fuse		
Refrigerant control device				Flow control valve	Flow control valve		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22		
	Outlet		mm O.D.	22	22		
Field pipe size	Inlet		mm I.D.	30	30		
	Outlet		mm I.D.	30	30		
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)		
Drawing	External			KL94R777	KL94R777		
	Wiring			KL94R847	KL94R847		
	Refrigerant cycle			-	-		
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book		
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band		
Optional parts	Filter box			PAC-KE94TB-E	PAC-KE94TB-E		
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E		
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR		
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU		
	PQ box			PAC-KE94PTB-E	PAC-KE94PTB-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W20VMAL-A	PEFY-W25VMAL-A	PEFY-W32VMAL-A	PEFY-W40VMAL-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2	Power input	kW	0.030	0.030	0.042	0.045
	*2	Current input	A	0.26-0.25-0.24	0.26-0.25-0.24	0.36-0.34-0.33	0.39-0.37-0.36
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2	Power input	kW	0.030	0.030	0.042	0.045
	*2	Current input	A	0.26-0.25-0.24	0.26-0.25-0.24	0.36-0.34-0.33	0.39-0.37-0.36
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 700 x 732	250 x 700 x 732	250 x 700 x 732	250 x 900 x 732
			in.	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 27-9/16 x 28-7/8	9-7/8 x 35-7/16 x 28-7/8
Net weight			kg (lbs)	21 (47)	21 (47)	21 (47)	25 (56)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.7	0.7	0.7	1.0
FAN	Type × Quantity			Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2
*4	External static press.		Pa	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>	35 - <50> - <70> - <100> - <150>
			mmH_2O	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>	3.6 - <5.1> - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.085	0.085	0.085	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	6.0 - 7.5 - 8.5	6.0 - 7.5 - 8.5	7.5 - 9.0 - 10.5	10.0 - 12.0 - 14.0
			L/s	100 - 125 - 142	100 - 125 - 142	125 - 150 - 175	167 - 200 - 233
			cfm	212 - 265 - 300	212 - 265 - 300	265 - 318 - 371	353 - 424 - 494
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	21.0-25.0-27.0	21.0-25.0-27.0	23.0-27.0-30.0	23.0-28.0-31.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R778	KL94R778	KL94R778	KL94R778
	Wiring			KL94R847	KL94R847	KL94R847	KL94R847
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE91TB-E	PAC-KE91TB-E	PAC-KE91TB-E	PAC-KE92TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE91PTB-E	PAC-KE91PTB-E	PAC-KE91PTB-E	PAC-KE92PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the rated external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W50VMAL-A	PEFY-W63VMAL-A	PEFY-W71VMAL-A	PEFY-W80VMAL-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	5.6	7.1	8.0	9.0
(Nominal)		*1	BTU/h	19,100	24,200	27,300	30,700
	*2 Power input		kW	0.091	0.091	0.091	0.091
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
Heating capacity		*3	kW	6.3	8.0	9.0	10.0
(Nominal)		*3	BTU/h	21,500	27,300	30,700	34,100
	*2 Power input		kW	0.091	0.091	0.091	0.091
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732
			in.	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8
Net weight			kg (lbs)	29 (64)	29 (64)	29 (64)	29 (64)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	2.0	2.0	2.0	2.0
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>
			mmH_2O	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.121	0.121	0.121	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0
			L/s	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350
			cfm	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	30	30	30
	Outlet		mm I.D.	20	30	30	30
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R778	KL94R778	KL94R778	KL94R778
	Wiring			KL94R847	KL94R847	KL94R847	KL94R847
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W100VMAL-A	PEFY-W125VMAL-A		
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz		
Cooling capacity		*1	kW	11.2	14.0		
(Nominal)		*1	BTU/h	38,200	47,800		
	*2	Power input	kW	0.140	0.197		
	*2	Current input	A	1.01-0.97-0.93	1.29-1.23-1.18		
Heating capacity		*3	kW	12.5	16.0		
(Nominal)		*3	BTU/h	42,700	54,600		
	*2	Power input	kW	0.140	0.197		
	*2	Current input	A	1.01-0.97-0.93	1.29-1.23-1.18		
External finish				Galvanized steel plate	Galvanized steel plate		
External dimension H × W × D			mm	250 x 1,400 x 732	250 x 1,400 x 732		
			in.	9-7/8 x 55-1/8 x 28-7/8	9-7/8 x 55-1/8 x 28-7/8		
Net weight			kg (lbs)	36 (80)	37 (82)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	2.6	3.2		
FAN	Type × Quantity			Sirocco fan x 3	Sirocco fan x 3		
*4	External static press.		Pa	40 - <50> - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>		
			mmH_2O	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>		
	Motor Type			DC motor	DC motor		
	Motor output		kW	0.300	0.300		
	Driving mechanism			Direct-driven by motor	Direct-driven by motor		
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)		
			m^3/min	23.0 - 28.0 - 32.0	28.0 - 34.0 - 37.0		
			L/s	383 - 467 - 533	467 - 567 - 617		
			cfm	812 - 989 - 1,130	989 - 1,201 - 1,306		
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)		
		*2	dB <A>	30.0-35.0-38.0	34.0-38.0-40.0		
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam		
Air filter				PP honeycomb fabric.	PP honeycomb fabric.		
Protection device				Fuse	Fuse		
Refrigerant control device				Flow control valve	Flow control valve		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22		
	Outlet		mm O.D.	22	22		
Field pipe size	Inlet		mm I.D.	30	30		
	Outlet		mm I.D.	30	30		
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)		
Drawing	External			KL94R778	KL94R778		
	Wiring			KL94R847	KL94R847		
	Refrigerant cycle			-	-		
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book		
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band		
Optional parts	Filter box			PAC-KE94TB-E	PAC-KE94TB-E		
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E		
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR		
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU		
	PQ box			PAC-KE94PTB-E	PAC-KE94PTB-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

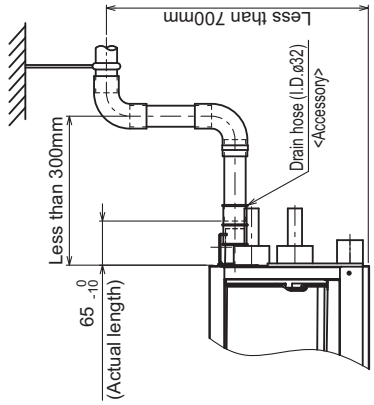
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

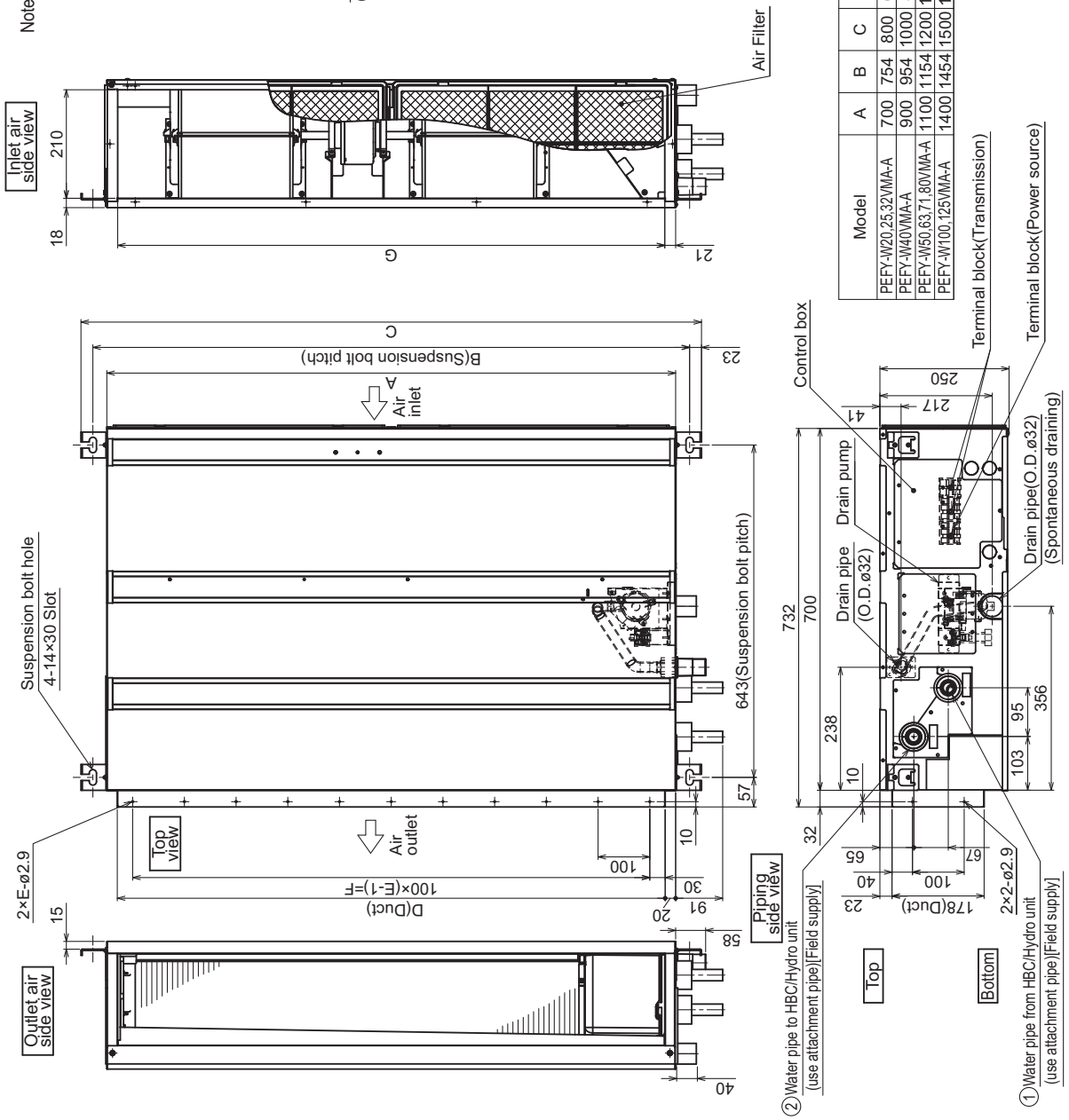
PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-A

Unit: mm

Note 1. Use M10 screw for the Suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. This chart indicates for PEFY-W50·63·71·80VMA-A models, which have 2 fans.PEFY-W20·25·32VMA-A models have 1 fan. PEFY-W40VMA-A model has 2 fans.
PEFY-W100·125VMA-A models have 3 fans.
4. In case of the inlet duct is used, remove the air filter (supply withthe unit), then install the filter (field supply) at suction side.



Model	A	B	C	D	E	F	G	① Water pipe from HBC/Hydro unit	② Water pipe to HBC/Hydro unit
PEFY-W20,25,32VMA-A	700	754	800	660	7	600	658	O.D. ø22	
PEFY-W40VMA-A	900	954	1000	860	9	800	858		
PEFY-W50,63,71,80VMA-A	1100	1154	1200	1060	11	1000	1058		
PEFY-W100,125VMA-A	1400	1454	1500	1360	14	1300	1358		

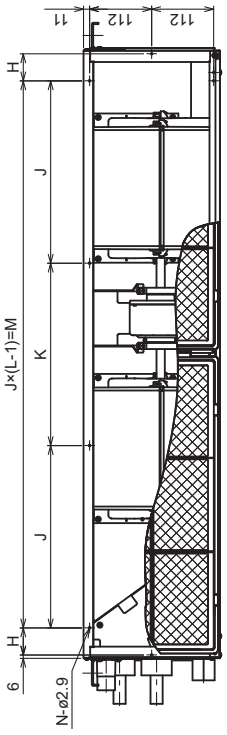


PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-A

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.



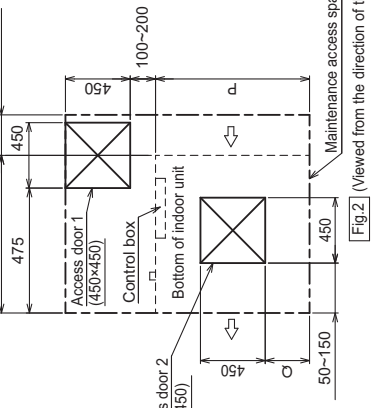


Fig.2 (Viewed from the direction of the arrow A)

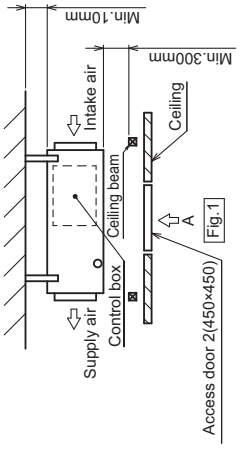


Fig.1

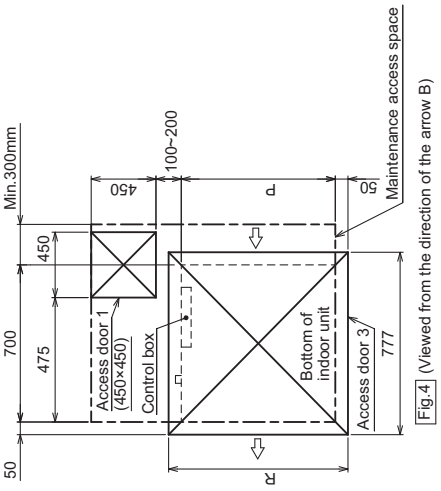


Fig.4 (Viewed from the direction of the arrow B)

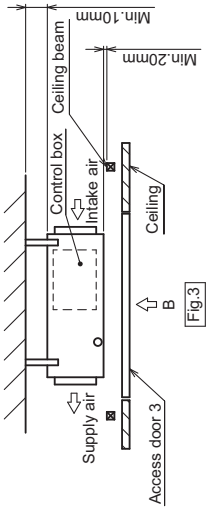


Fig.3

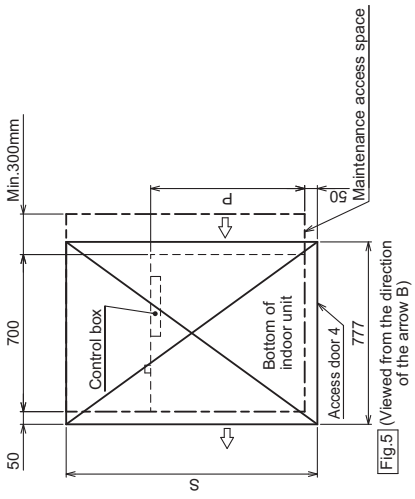
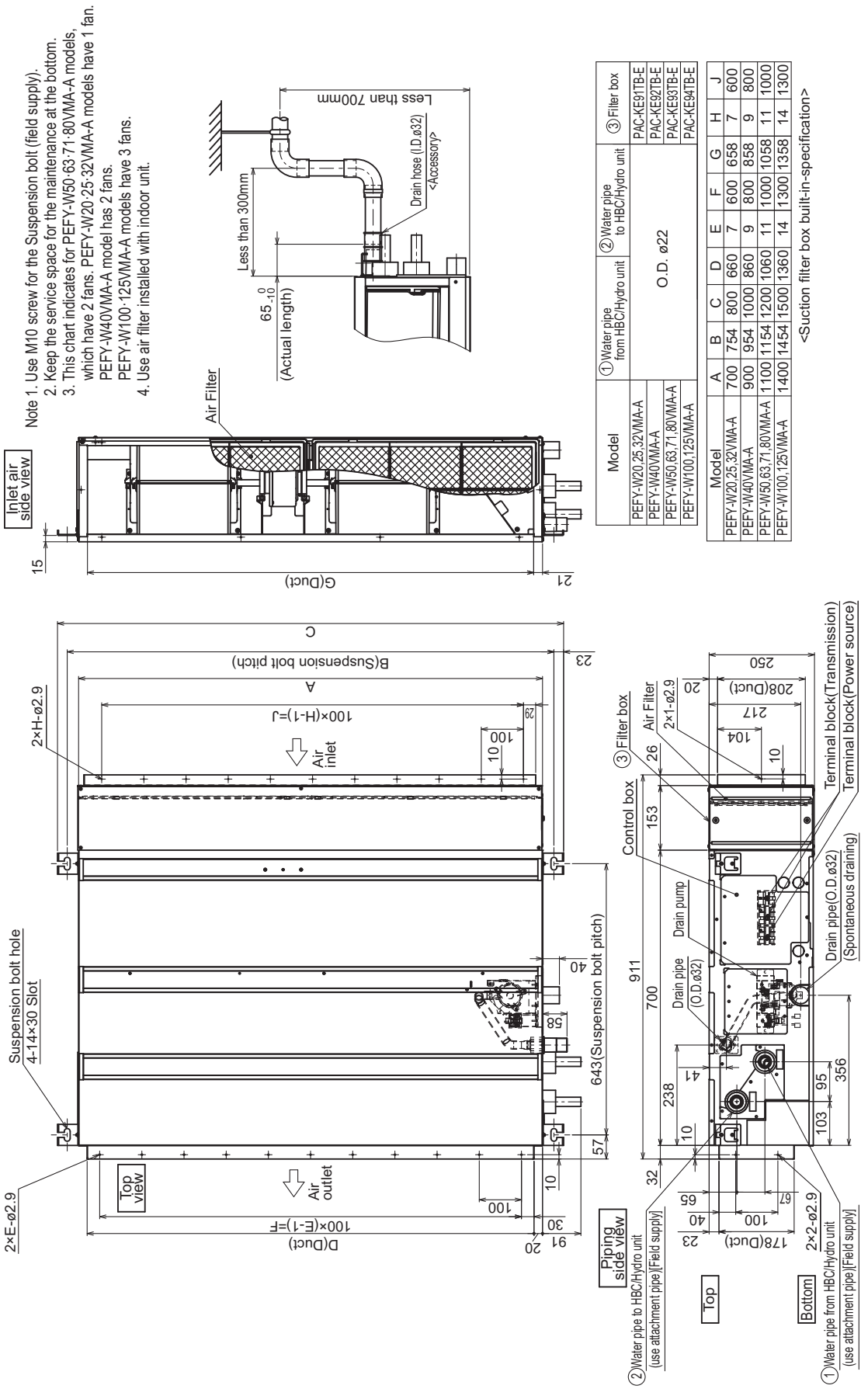


Fig.5 (Viewed from the direction of the arrow B)

Model	H	J	K	L	M	N	P	Q	R	S
PEFY-W20,25,32VMA-A	44	150	300			10	700	50~150	800	1300
PEFY-W40VMA-A	54	260		4	780	10	900	150~250	1000	1500
PEFY-W50,63,71,80VMA-A	49	330		4	990	10	1100	250~350	1200	1700
PEFY-W100,125VMA-A	54	320		5	1280	12	1400	400~500	1500	2000

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-A Suction filter box built-in-specification

Unit: mm



PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA-A Suction filter box built-in-specification

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.

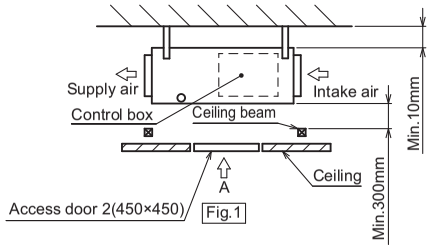


Fig.1

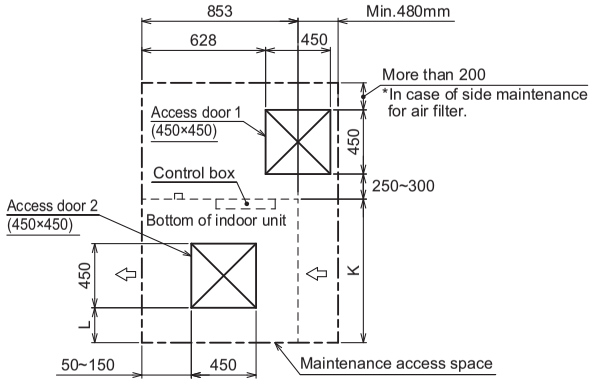


Fig.2 (Viewed from the direction of the arrow A)

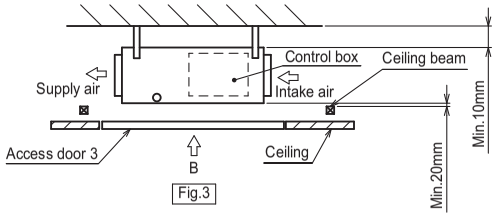


Fig.3

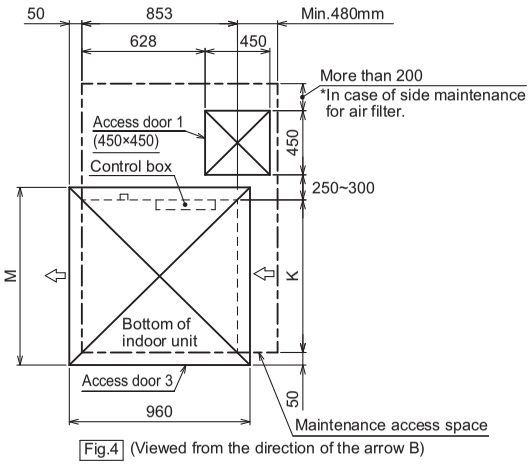


Fig.4 (Viewed from the direction of the arrow B)

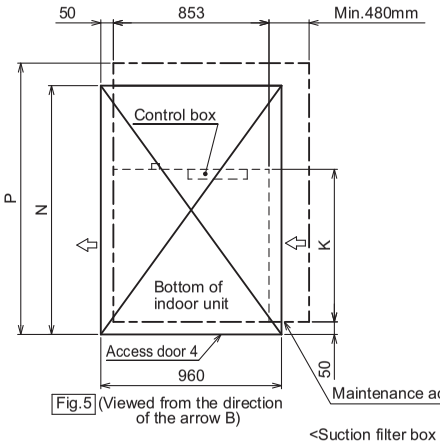


Fig.5 (Viewed from the direction of the arrow B)

<Suction filter box built-in-specification>

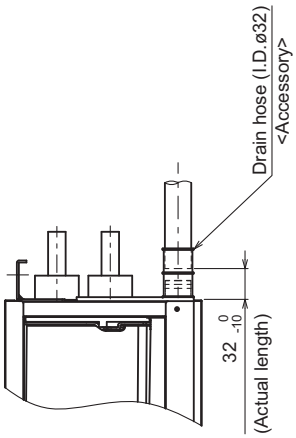
*Dimension 'P' is in case of side maintenance for air filter.

Model	K	L	M	N	P*
PEFY-W20,25,32VMA-A	700	50~150	800	1300	1450
PEFY-W40VMA-A	900	150~250	1000	1500	1850
PEFY-W50,63,71,80VMA-A	1100	250~350	1200	1700	
PEFY-W100,125VMA-A	1400	400~500	1500	2000	2150

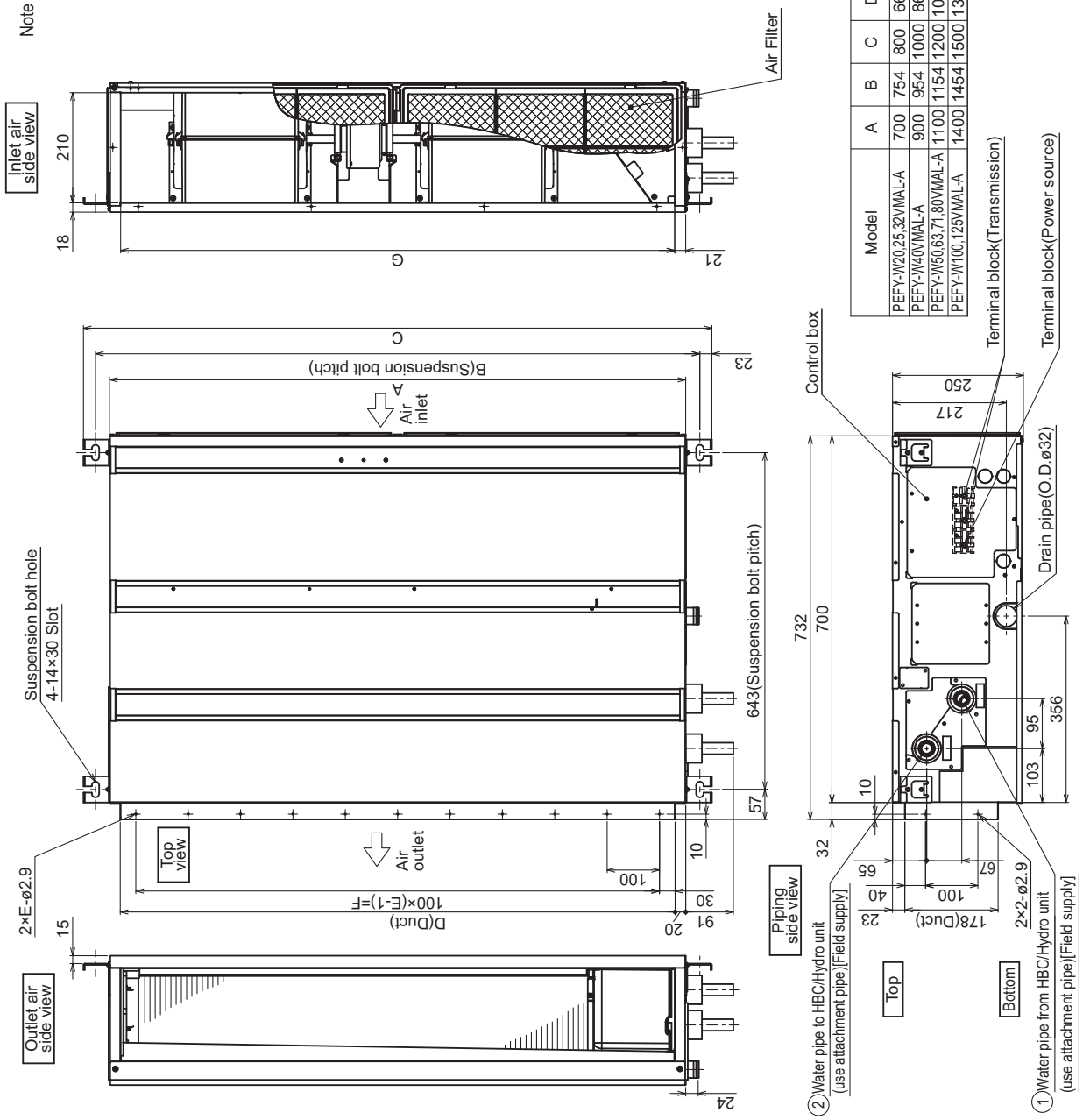
PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMAL-A

Unit: mm

Note 1. Use M10 screw for the Suspension bolt (field supply).
2. Keep the service space for the maintenance at the bottom.
3. This chart indicates for PEFY-W50·63·71·80VMAL-A models, which have 2 fans.PEFY-W20·25·32VMAL-A models have 1 fan.
PEFY-W40VMAL-A model has 2 fans.
PEFY-W100·125VMAL-A models have 3 fans.
4. In case of the inlet duct is used, remove the air filter (supply withthe unit), then install the filter (field supply) at suction side.



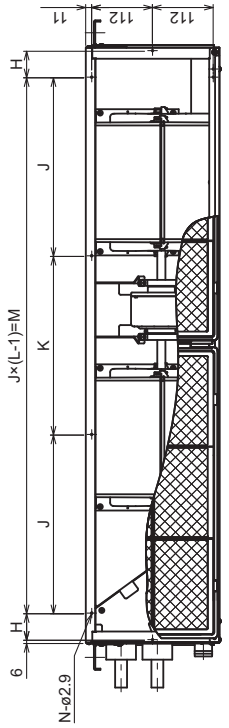
Model	A	B	C	D	E	F	G	① Water pipe from HBC/Hydro unit	② Water pipe to HBC/Hydro unit
PEFY-W20,25,32VMAL-A	700	754	800	660	7	600	658	O.D. ø22	
PEFY-W40VMAL-A	900	954	1000	860	9	800	858		
PEFY-W50,63,71,80VMAL-A	1100	1154	1200	1060	11	1000	1058		
PEFY-W100,125VMAL-A	1400	1454	1500	1360	14	1300	1358		



PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMAL-A

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.



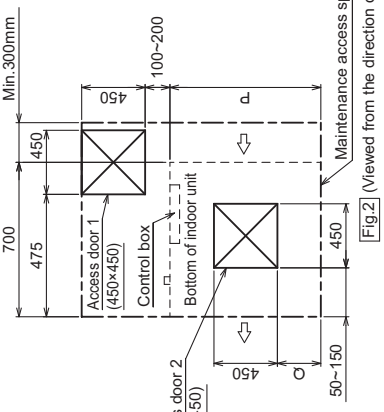


Fig.2 (Viewed from the direction of the arrow A)

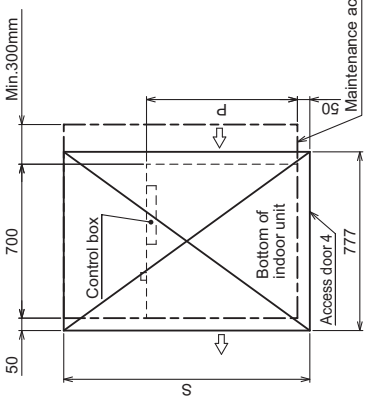


Fig.5 (Viewed from the direction of the arrow B)

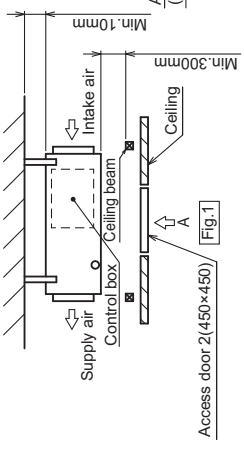


Fig.1

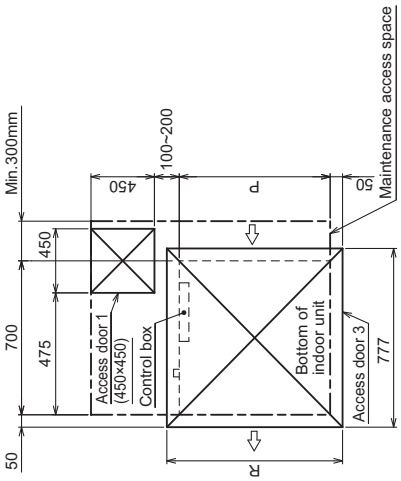


Fig.4 (Viewed from the direction of the arrow B)

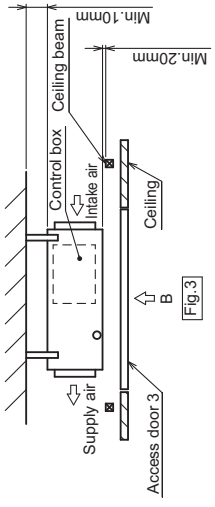
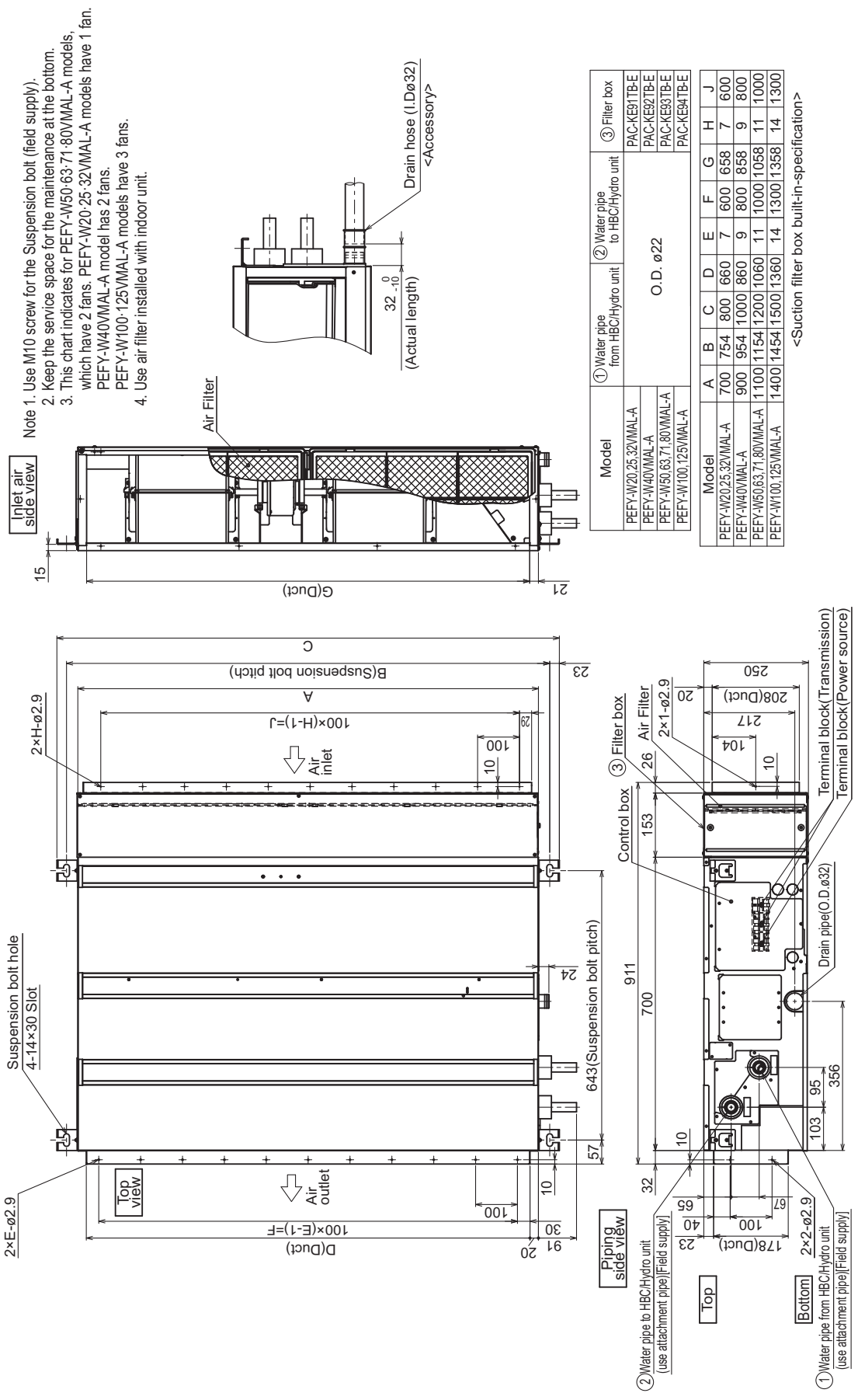


Fig.3

Model	H	J	K	L	M	N	P	Q	R	S
PEFY-W20,25,32VMAL-A	44	150	300			10	700	50~150	800	1300
PEFY-W40VMAL-A	54	260			4	780	10	900	150~250	1000	1500
PEFY-W50,63,71,80VMAL-A	49	330			4	990	10	1100	250~350	1200	1700
PEFY-W100,125VMAL-A	54	320			5	1280	12	1400	400~500	1500	2000

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMAL-A Suction filter box built-in-specification

Unit: mm



Model	①Water pipe from HBC/Hydro unit	②Water pipe to HBC/Hydro unit	③Filter box
PEFY-W20,25,32VMAL-A	O.D. ø22		PAC-KE91TB-E
PEFY-W40VMAL-A			PAC-KE92TB-E
PEFY-W50,63,71,80VMAL-A			PAC-KE93TB-E
PEFY-W100,125VMAL-A			PAC-KE94TB-E

<Suction filter box built-in-specification>

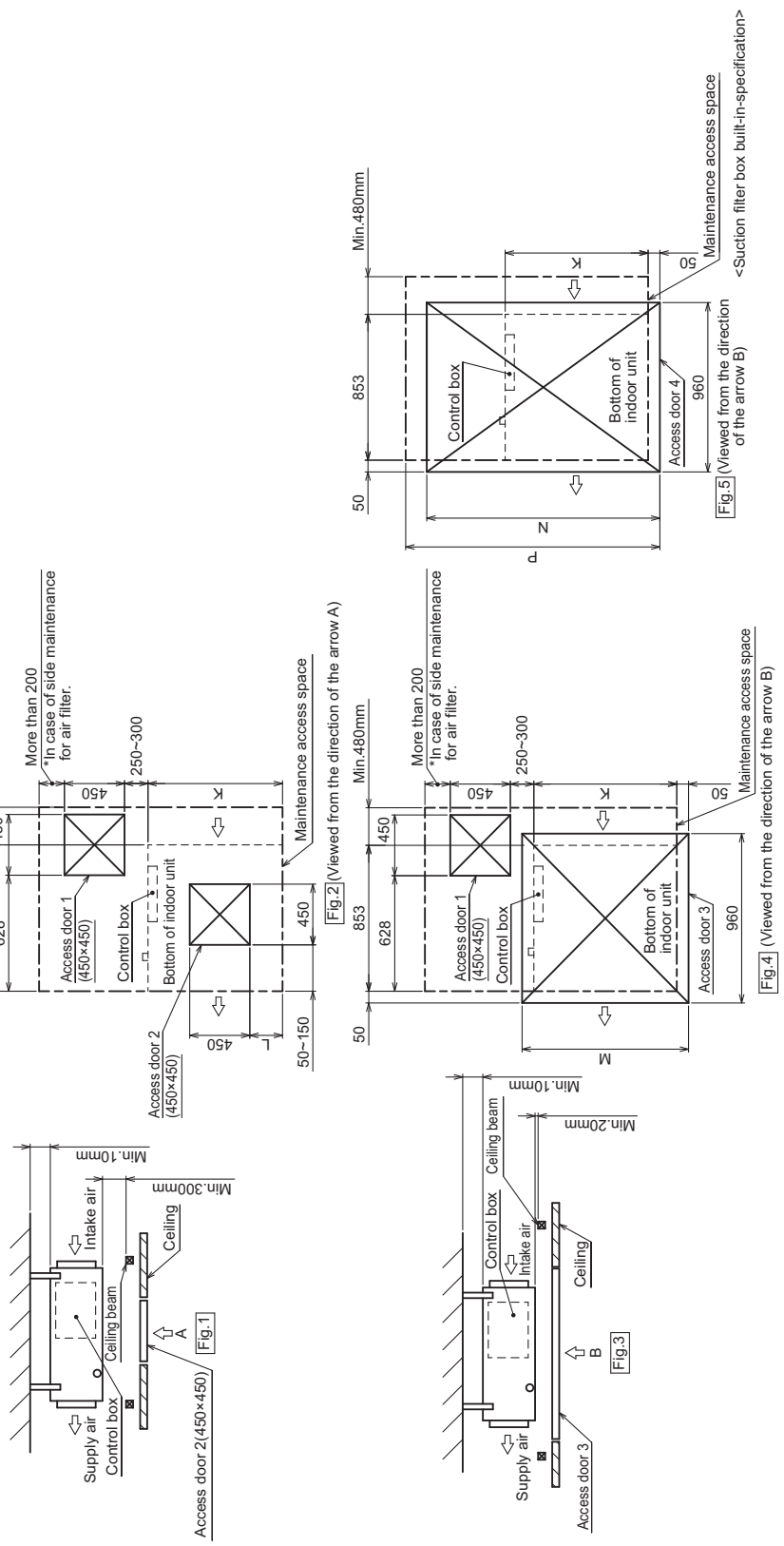
Model	A	B	C	D	E	F	G	H	J
PEFY-W20,25,32VMAL-A	700	754	800	660	7	600	658	7	600
PEFY-W40VMAL-A	900	954	1000	860	9	800	858	9	800
PEFY-W50,63,71,80VMAL-A	1100	1154	1200	1060	11	1000	1058	11	1000
PEFY-W100,125VMAL-A	1400	1454	1500	1360	14	1300	1358	14	1300

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMAL-A Suction filter box built-in-specification

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

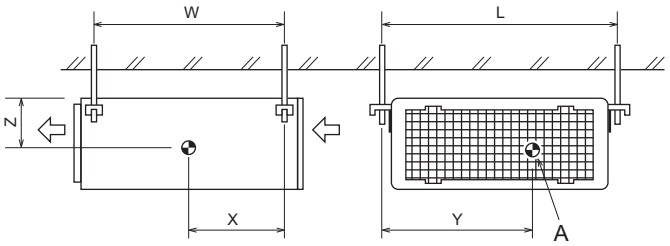
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.



*Dimension 'P' is in case of side maintenance for air filter.

Model	K	L	M	N	P*
PEFY-W20,25,32VMAL-A	700	50~150	800	1300	1450
PEFY-W40VMAL-A	900	150~250	1000	1500	1850
PEFY-W50,63,71,80VMAL-A	1100	250~350	1200	1700	
PEFY-W100,125VMAL-A	1400	400~500	1500	2000	2150

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A

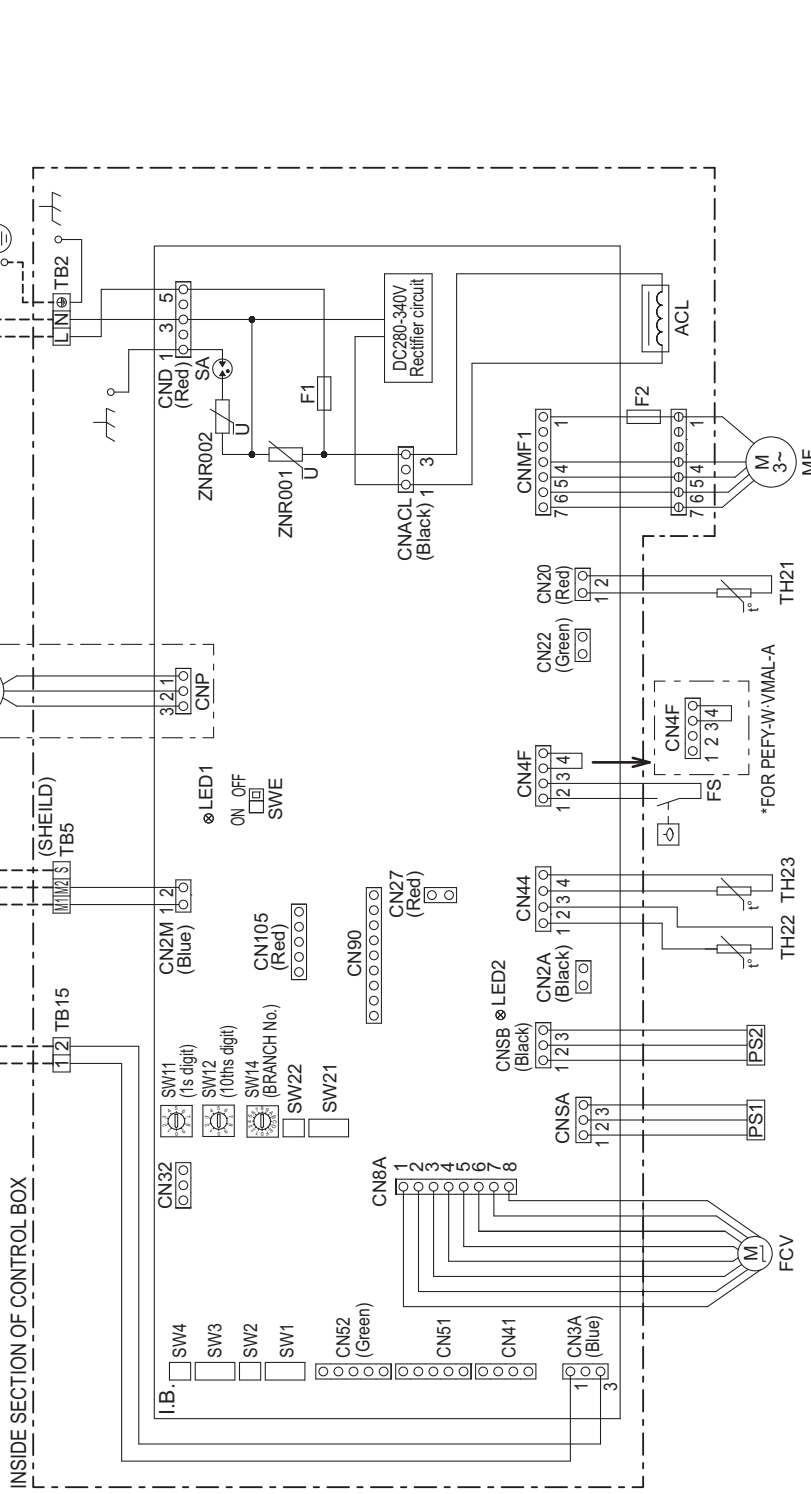


A: Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-W20VMA(L)-A	643 [25 - 6/16]	754 [29 - 11/16]	330 [13]	300 [11 -13/16]	130 [5 -2/16]
PEFY-W25VMA(L)-A	643 [25 - 6/16]	754 [29 - 11/16]	330 [13]	300 [11 -13/16]	130 [5 -2/16]
PEFY-W32VMA(L)-A	643 [25 - 6/16]	754 [29 - 11/16]	330 [13]	300 [11 -13/16]	130 [5 -2/16]
PEFY-W40VMA(L)-A	643 [25 - 6/16]	954 [37 - 9/16]	340 [13 - 7/16]	375 [14 -13/16]	130 [5 -2/16]
PEFY-W50VMA(L)-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W63VMA(L)-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W71VMA(L)-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W80VMA(L)-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W100VMA(L)-A	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]
PEFY-W125VMA(L)-A	643 [25 - 6/16]	1454 [57 - 4/16]	330 [13]	675 [26 -10/16]	130 [5 -2/16]

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A



NOTE)1.Symbols used in wiring diagram are
○ ○ ○: Connector, □: Terminal,
- - - - - - - (Heavy dotted line): Field wiring,
2.Have all electric work done by a licensed electrician according to the local regulations.
3.Earth leakage circuit breaker should be set up on the wiring of the power supply.
4.To perform a drainage test for the drain pump turn on the SWE on the control board while the indoor unit is being powered.
*Be sure to turn off the SWE after completing a drainage test or test run.

SYMBOL EXPLANATION

SYMBOL	NAME
ACL	AC reactor(Power factor improvement)
DP	Drain Pump
F2	Fuse DC400V 3A
FS	Float switch
MF	Fan Motor
FCV	Flow control valve
PS1	Pressure sensor (valve inlet)
PS2	Pressure sensor (valve outlet)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp. detection)
TH22	Thermistor (piping temp.detection/inlet water)
TH23	Thermistor (piping temp.detection/outlet water)

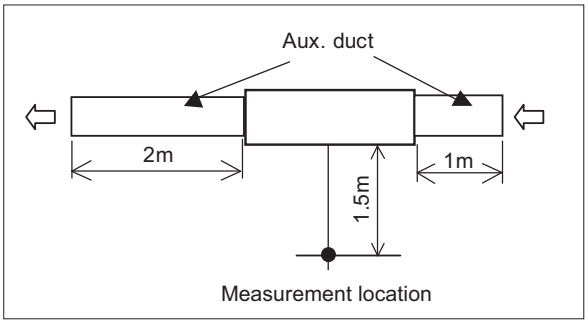
SYMBOL	NAME
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001,002	Varistor
CN2A	Connector (0-10V Analog input)
CN22	Connector (Optional Thermistor)
CN27	Connector (Damper)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)

SYMBOL	NAME
I.B.	Indoor controller board
SW1	Switch (for mode selection)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for static pressure selection)
SW22	Switch (Wireless pair No.)
SWE	Connector (emergency operation)
LED1	LED(Power supply)
LED2	LED(Remote controller supply)

5-1. Sound levels

5-1-1. Sound levels (Measured condition: With 1m air inlet duct and 2m air outlet duct)

PEFY-W-VMA(L)-A



* Measured in anechoic room.

Sound level at anechoic room: Low-Mid-High

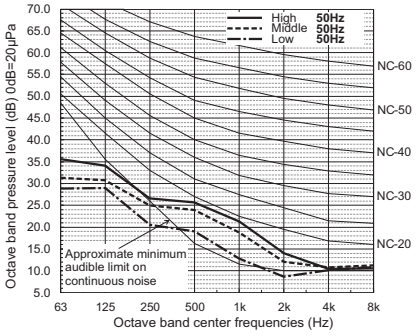
Model	Sound level dB(A)					
	35Pa	40Pa	50Pa	70Pa	100Pa	150Pa
PEFY-W20, 25VMA(L)-A	21-25-27	-	23-26-29	22-27-30	24-30-33	28-34-38
PEFY-W32VMA(L)-A	23-27-30	-	24-28-33	25-30-34	27-32-35	31-35-39
PEFY-W40VMA(L)-A	23-28-31	-	24-31-33	27-31-35	29-33-37	32-37-41
PEFY-W50, 63, 71, 80VMA(L)-A	-	26-31-35	29-32-36	29-34-38	30-36-40	33-39-43
PEFY-W100VMA(L)-A	-	30-35-38	31-36-39	33-38-41	35-40-43	37-43-46
PEFY-W125VMA(L)-A	-	33-37-39	34-38-40	34-39-41	35-40-42	38-43-45

5-2. NC curves

5-2-1. NC curves (Sound level measured condition: With 1m air inlet duct and 2m air outlet duct)

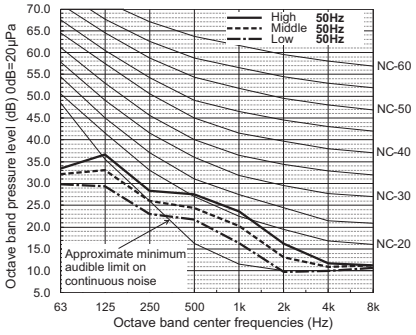
PEFY-W20,25VMA(L)-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



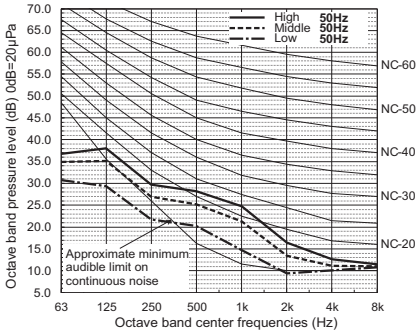
PEFY-W20,25VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



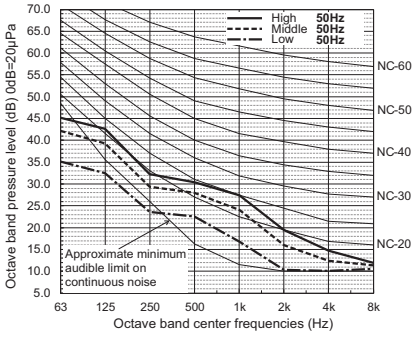
PEFY-W20,25VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



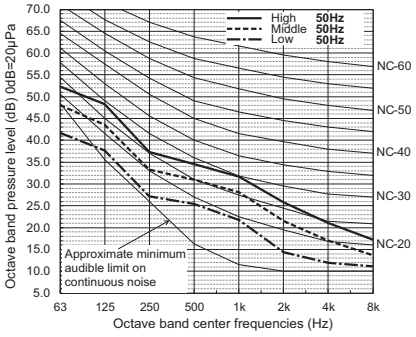
PEFY-W20,25VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



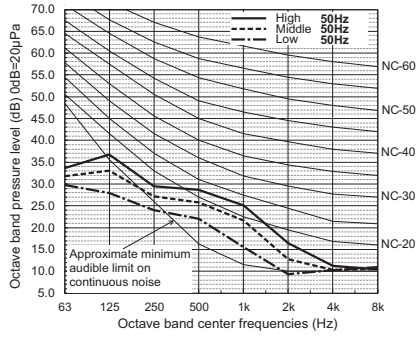
PEFY-W20,25VMA(L)-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



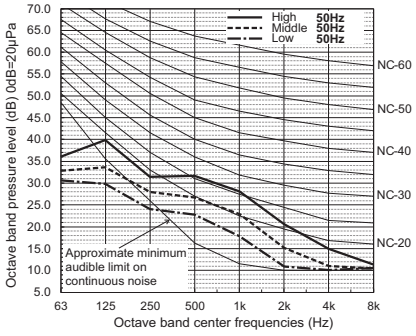
PEFY-W32VMA(L)-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



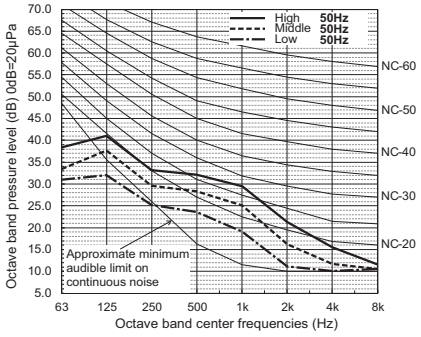
PEFY-W32VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



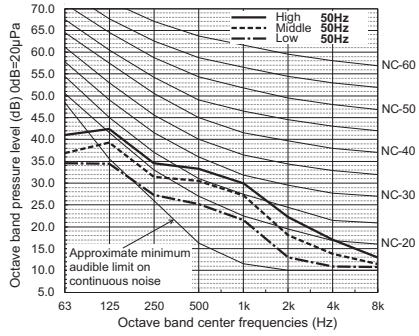
PEFY-W32VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



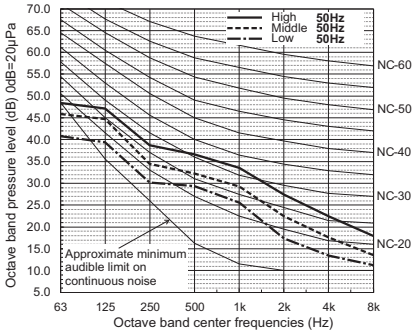
PEFY-W32VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



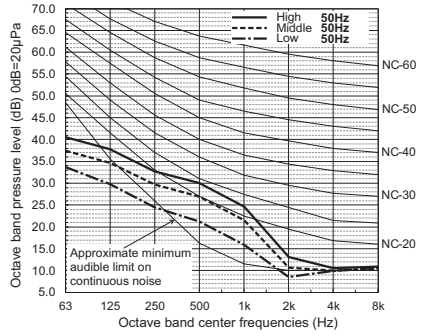
PEFY-W32VMA(L)-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



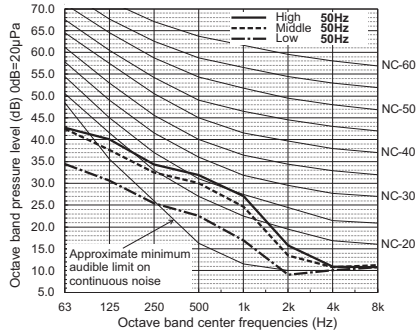
PEFY-W40VMA(L)-A

External Static Pressure: 35Pa [0.14in.WG]
Power Source: 220-240V



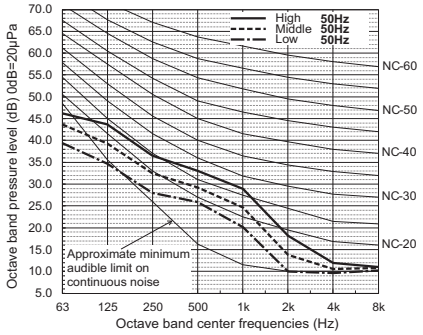
PEFY-W40VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



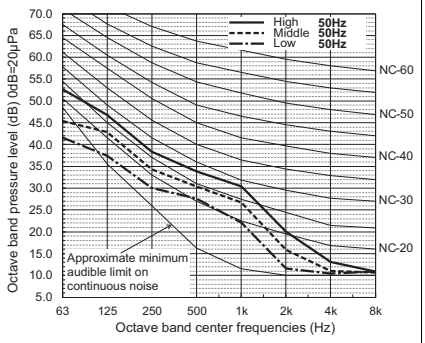
PEFY-W40VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



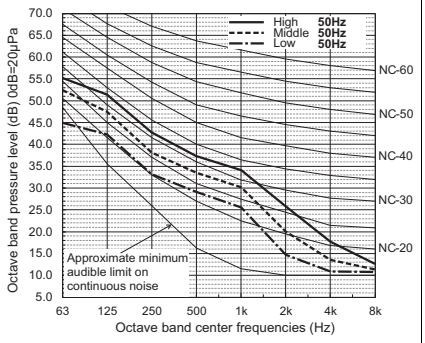
PEFY-W40VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



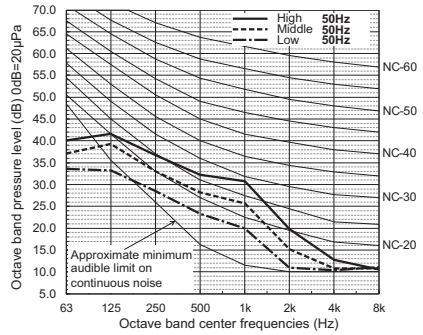
PEFY-W40VMA(L)-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



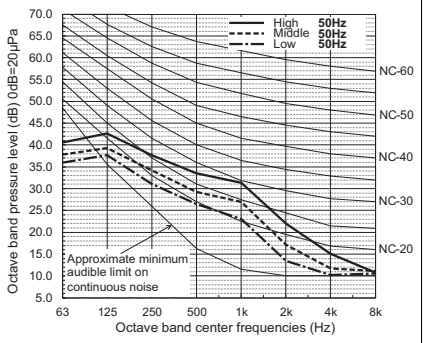
PEFY-W50,63,71,80VMA(L)-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



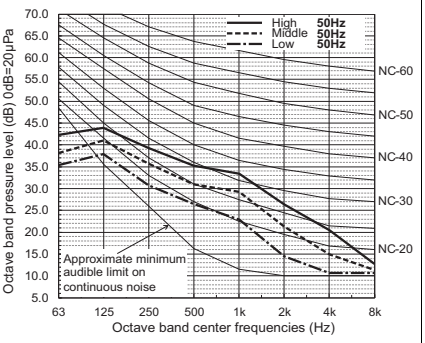
PEFY-W50,63,71,80VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



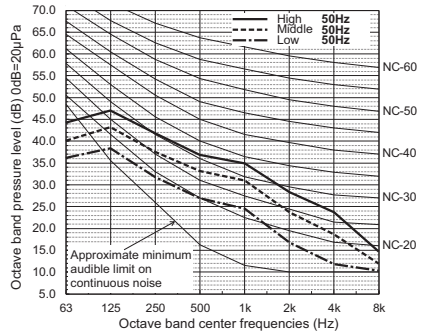
PEFY-W50,63,71,80VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



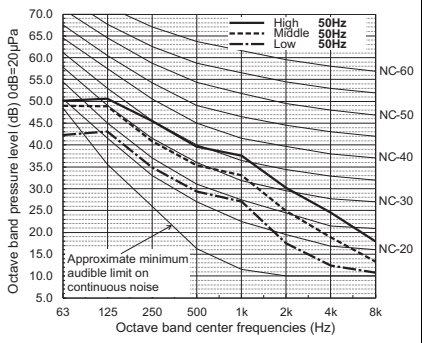
PEFY-W50,63,71,80VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



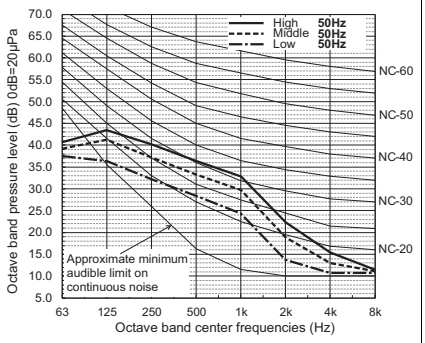
PEFY-W50,63,71,80VMA(L)-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



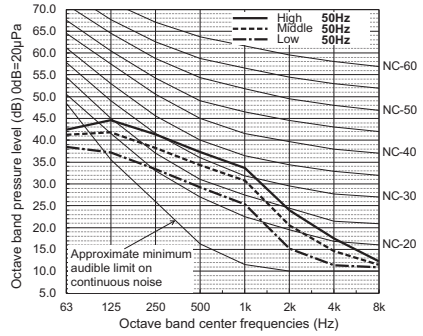
PEFY-W100VMA(L)-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



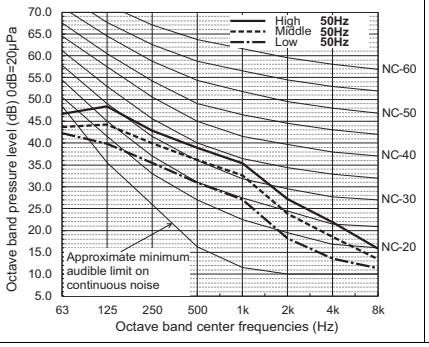
PEFY-W100VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



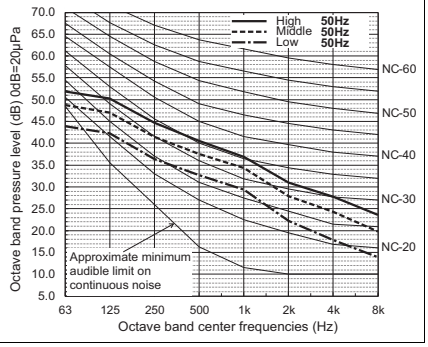
PEFY-W100VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



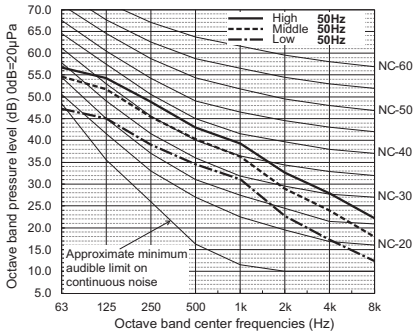
PEFY-W100VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



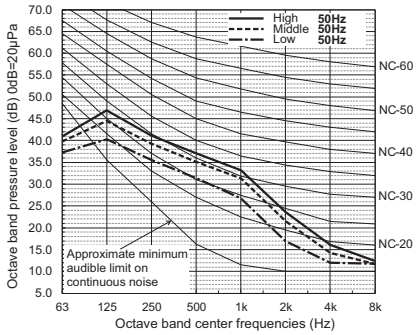
PEFY-W100VMA(L)-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



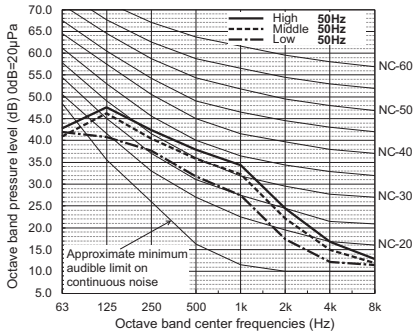
PEFY-W125VMA(L)-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



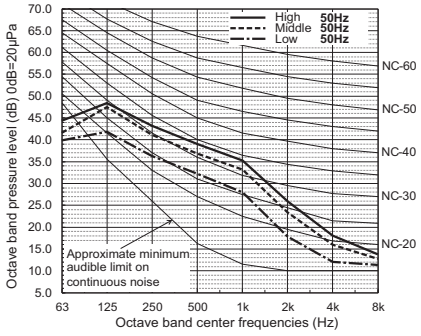
PEFY-W125VMA(L)-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



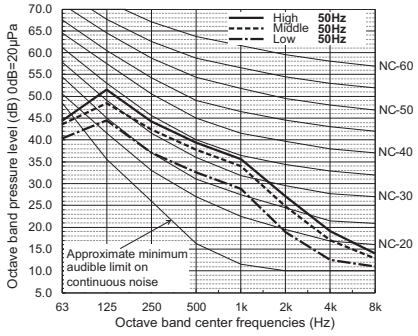
PEFY-W125VMA(L)-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



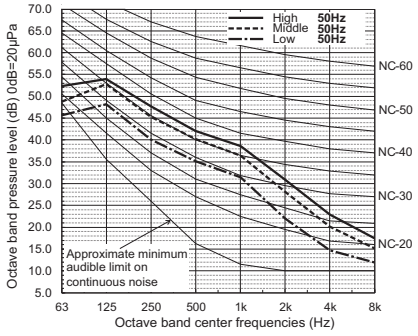
PEFY-W125VMA(L)-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V

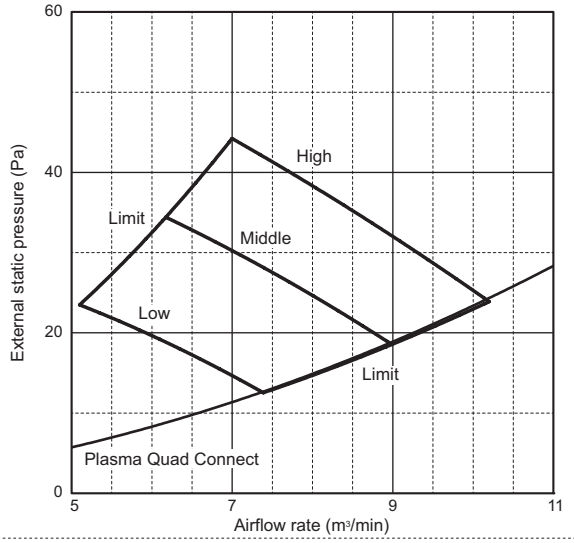


PEFY-W125VMA(L)-A

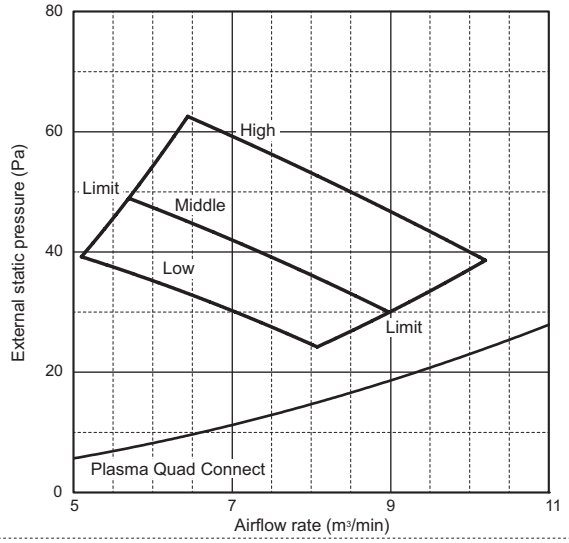
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



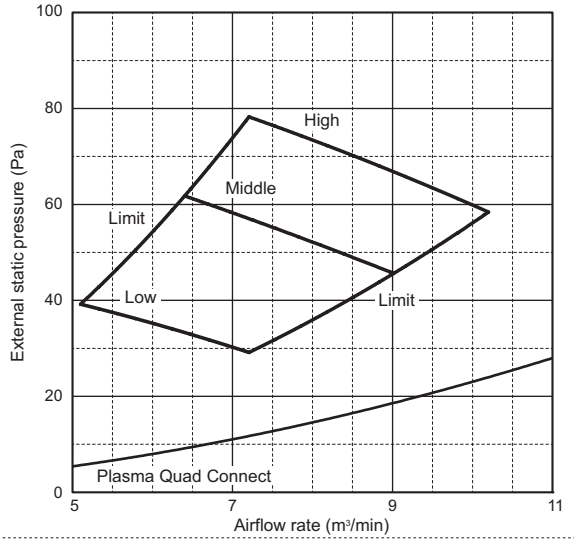
PEFY-W20, 25VMA(L)-A
External static pressure : 35Pa
Power source : 220-240V



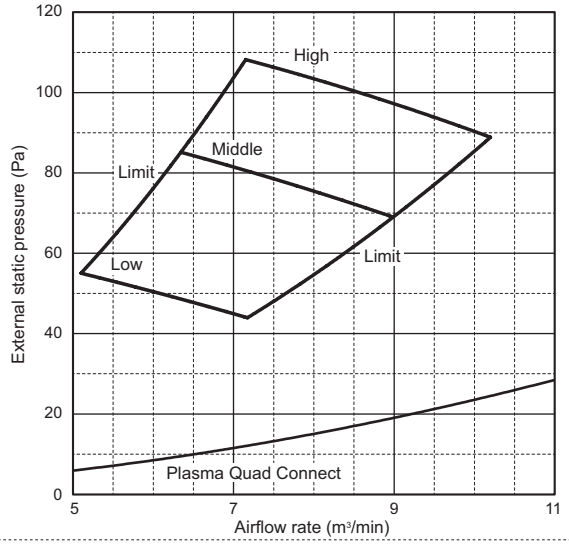
PEFY-W20, 25VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



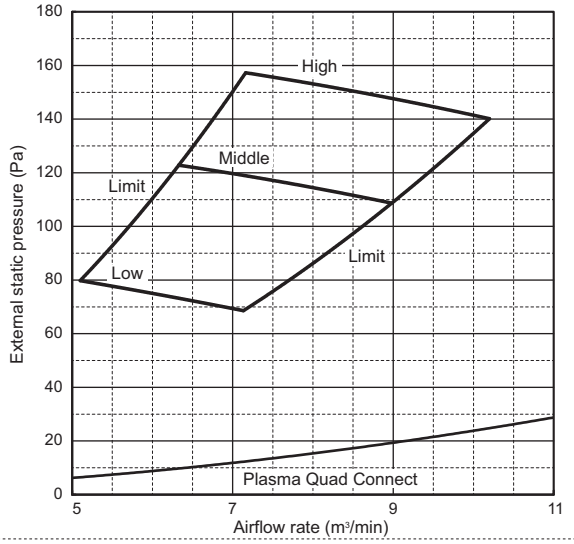
PEFY-W20, 25VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



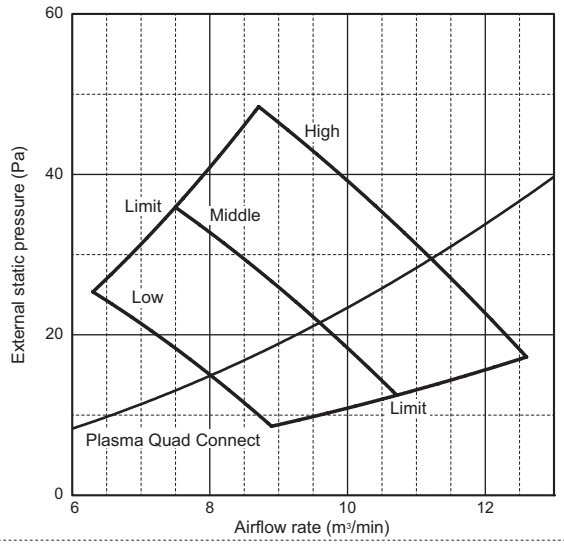
PEFY-W20, 25VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V



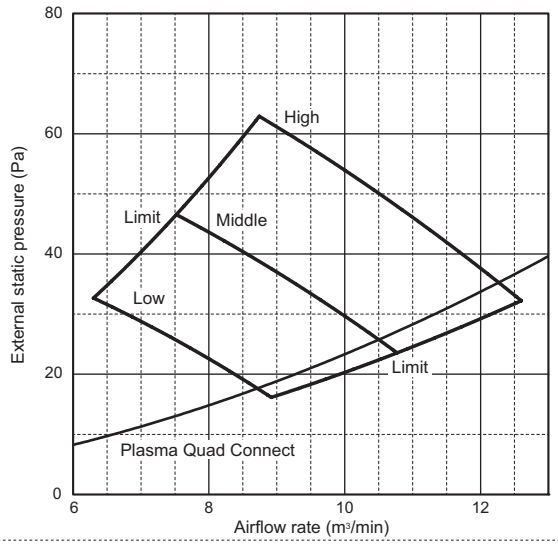
PEFY-W20, 25VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



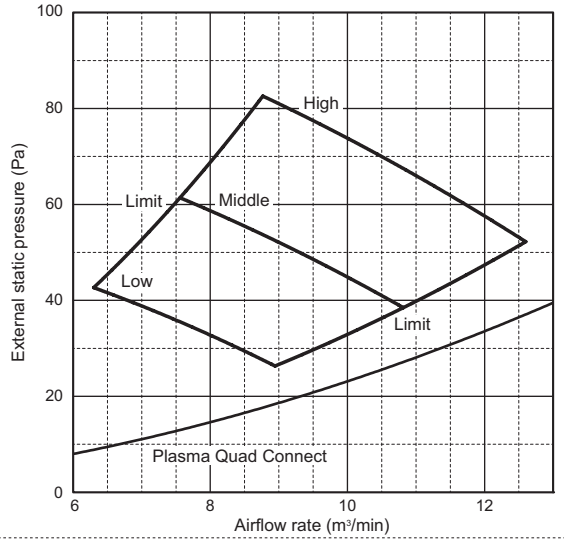
PEFY-W32VMA(L)-A
External static pressure : 35Pa
Power source : 220-240V



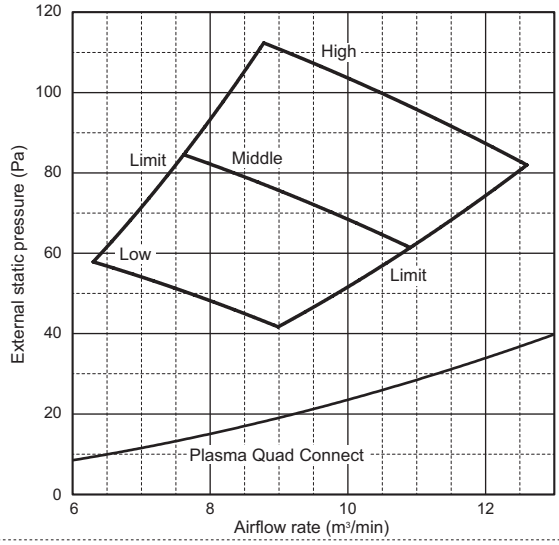
PEFY-W32VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



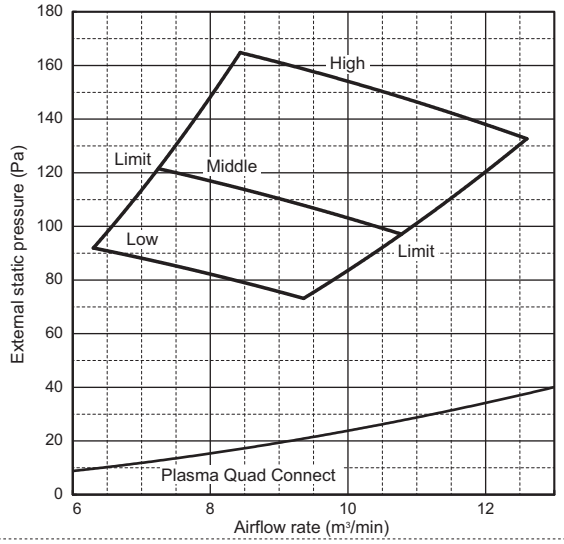
PEFY-W32VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



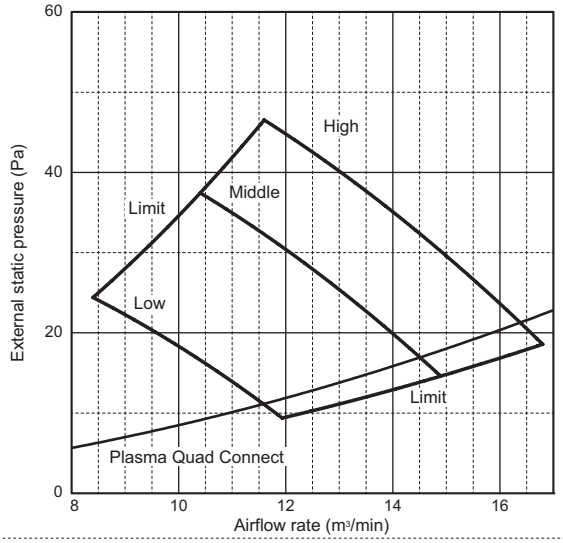
PEFY-W32VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V



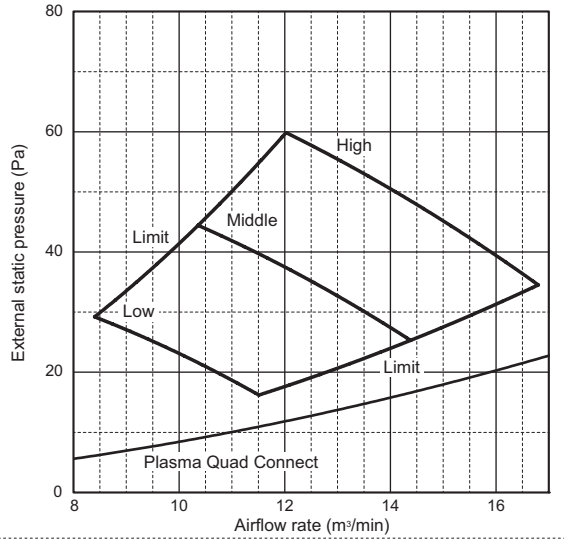
PEFY-W32VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



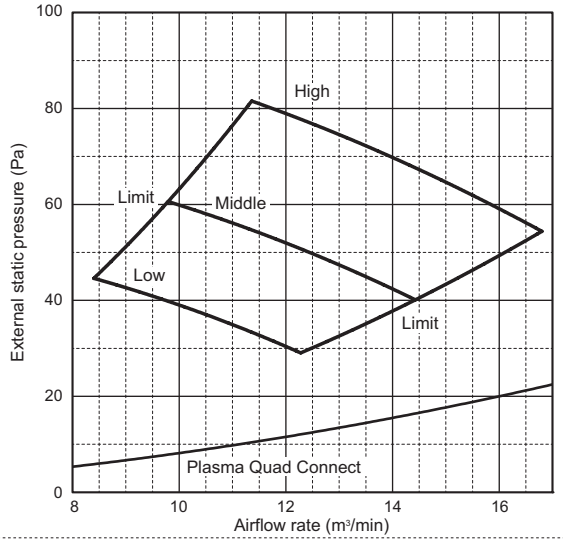
PEFY-W40VMA(L)-A
External static pressure : 35Pa
Power source : 220-240V



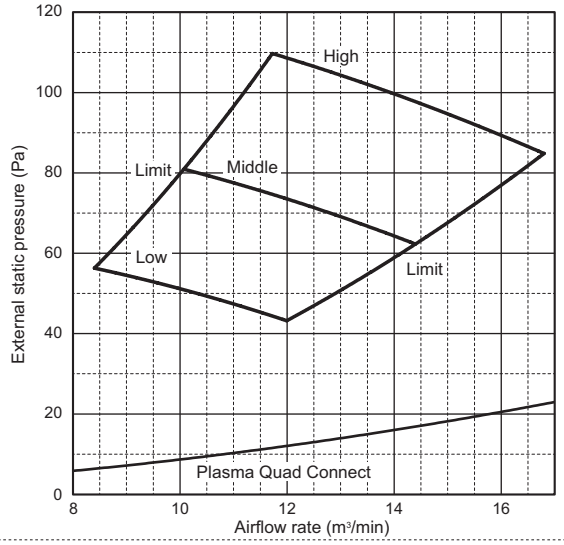
PEFY-W40VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



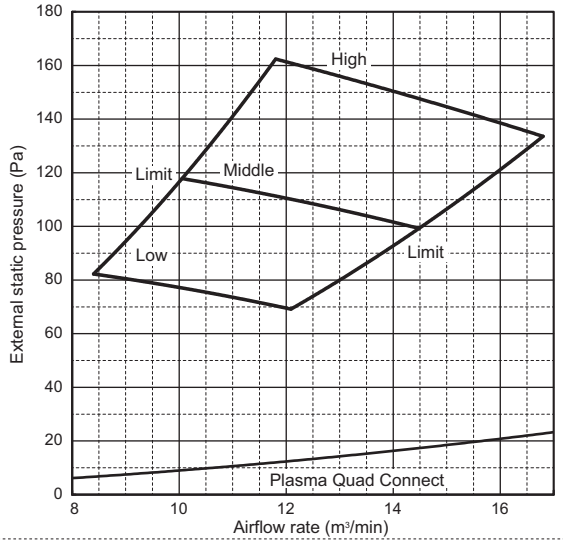
PEFY-W40VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



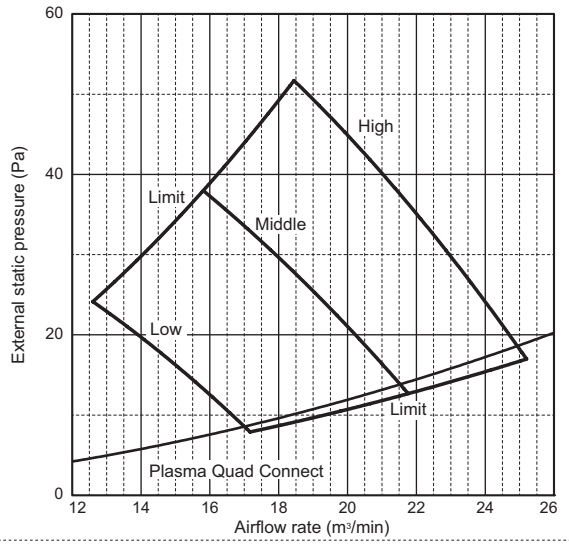
PEFY-W40VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V



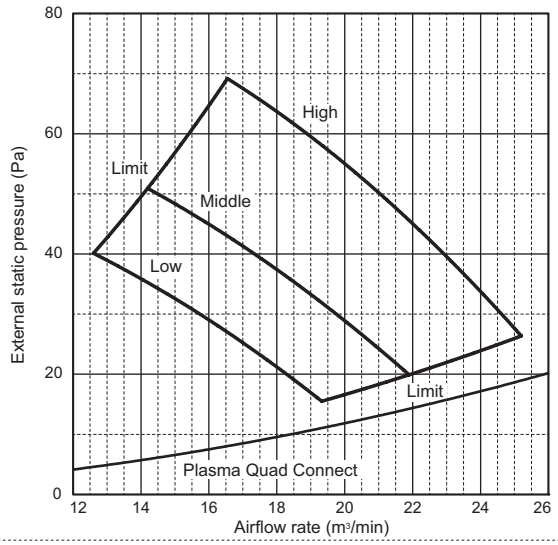
PEFY-W40VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



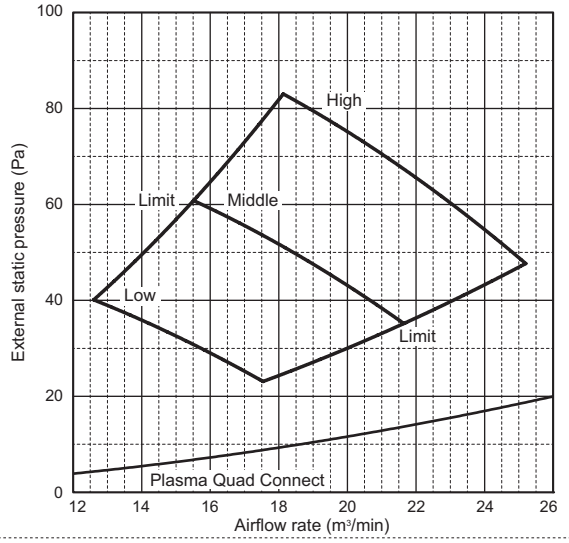
PEFY-W50, 63, 71 ,80VMA(L)-A
External static pressure : 40Pa
Power source : 220-240V



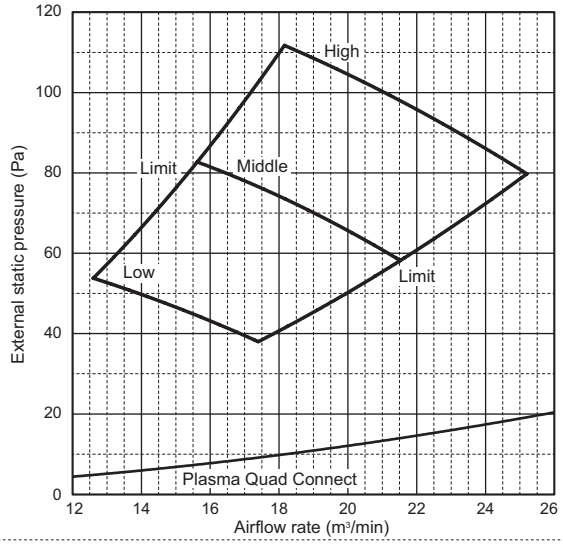
PEFY-W50, 63, 71 ,80VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



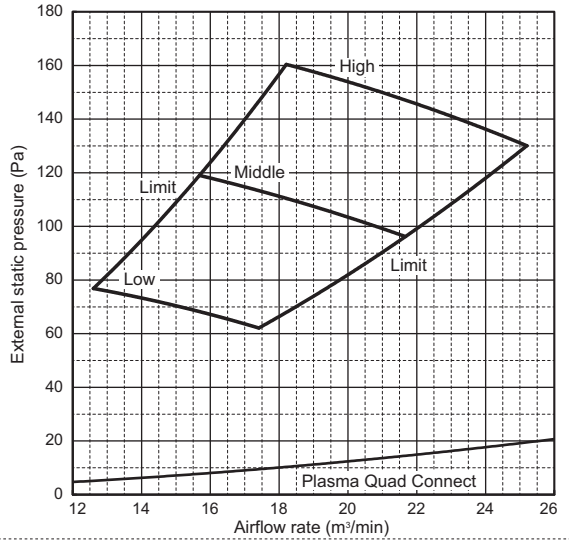
PEFY-W50, 63, 71 ,80VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



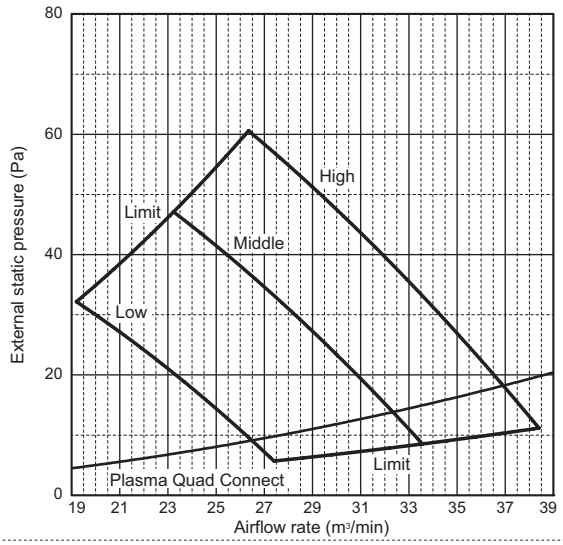
PEFY-W50, 63, 71 ,80VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V



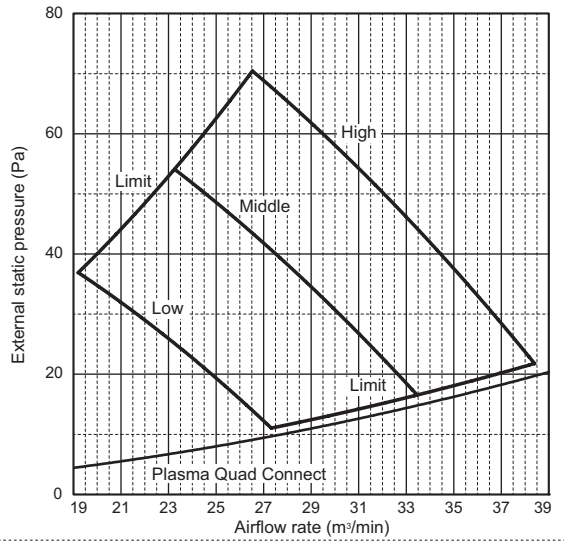
PEFY-W50, 63, 71 ,80VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



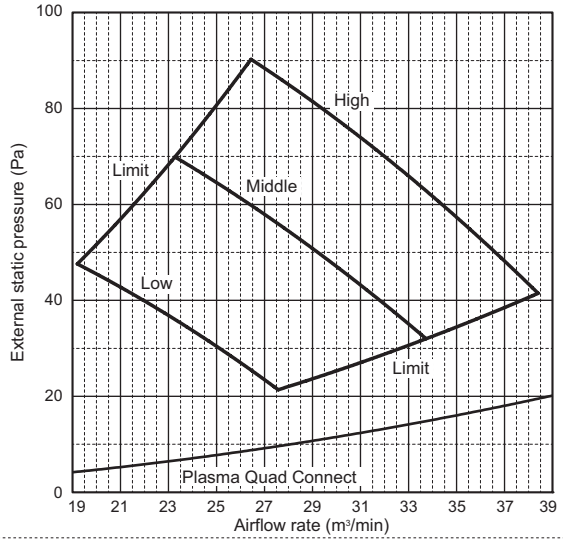
PEFY-W100VMA(L)-A
External static pressure : 40Pa
Power source : 220-240V



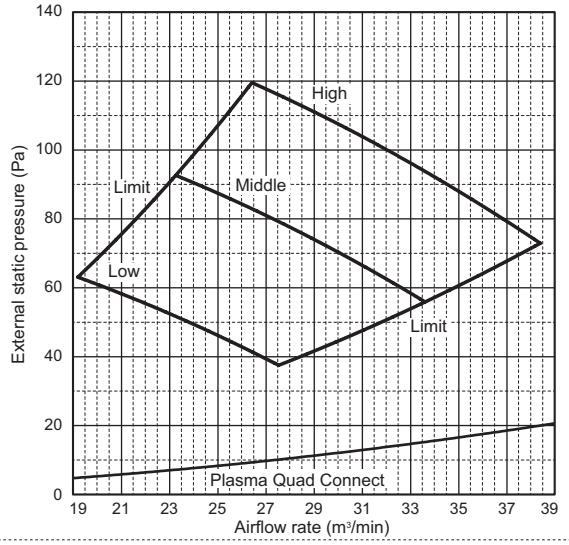
PEFY-W100VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



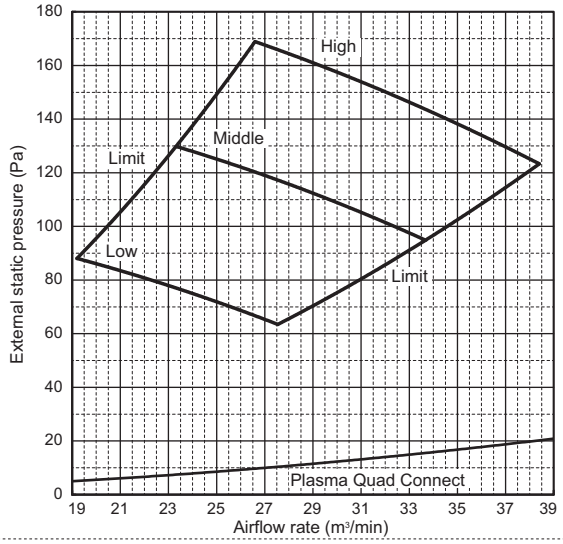
PEFY-W100VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



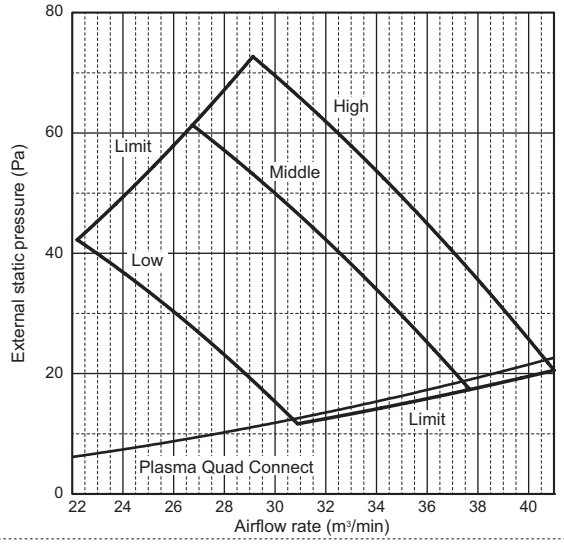
PEFY-W100VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V



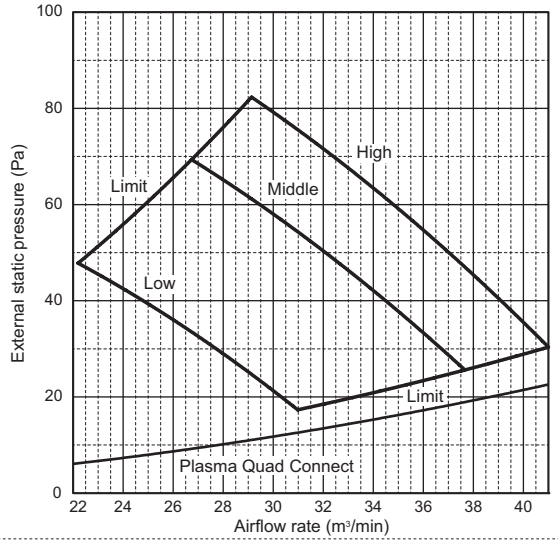
PEFY-W100VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



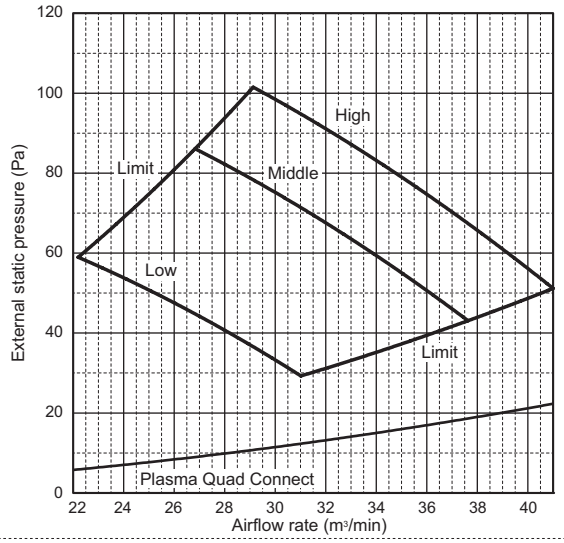
PEFY-W125VMA(L)-A
External static pressure : 40Pa
Power source : 220-240V



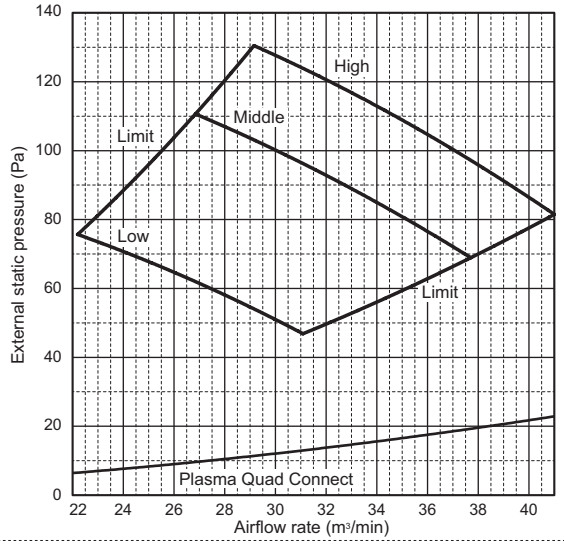
PEFY-W125VMA(L)-A
External static pressure : 50Pa
Power source : 220-240V



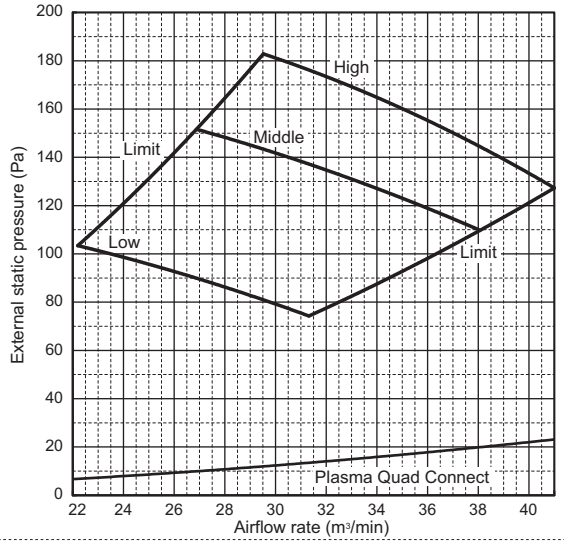
PEFY-W125VMA(L)-A
External static pressure : 70Pa
Power source : 220-240V



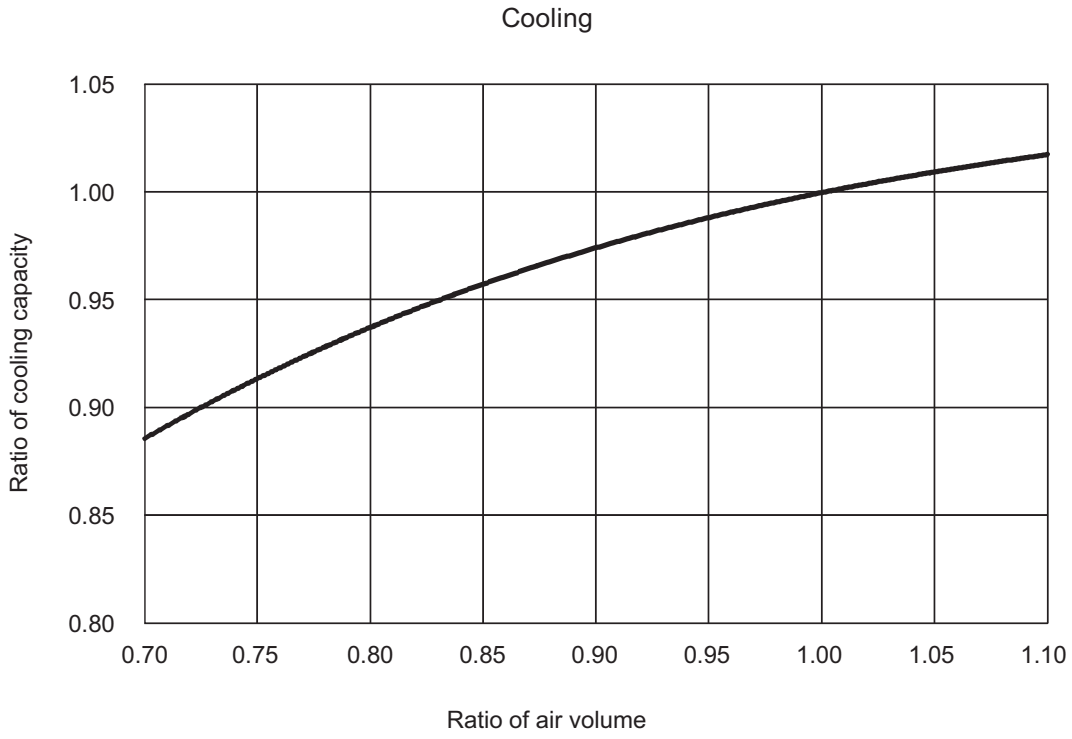
PEFY-W125VMA(L)-A
External static pressure : 100Pa
Power source : 220-240V

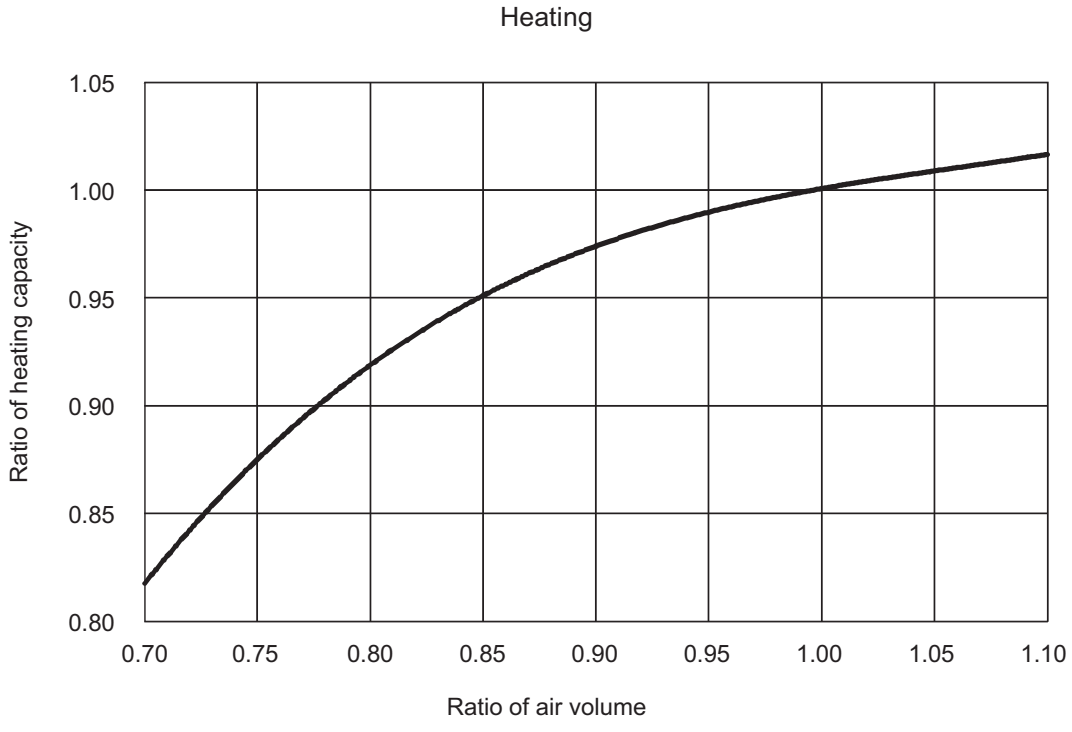


PEFY-W125VMA(L)-A
External static pressure : 150Pa
Power source : 220-240V



7-1. Correction by fan speed





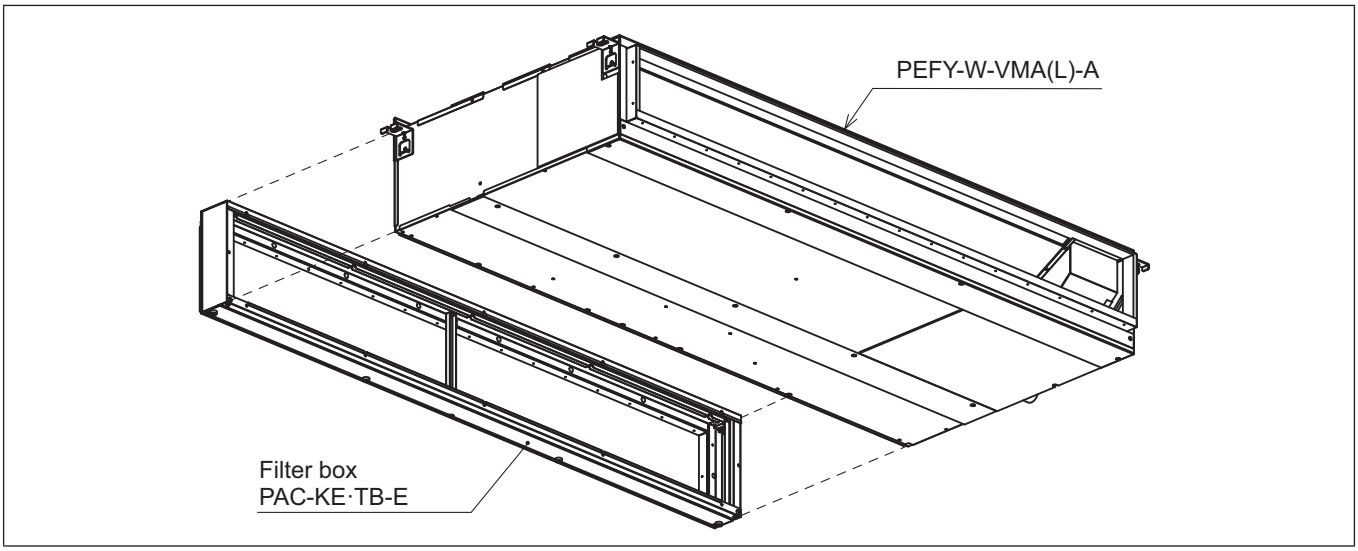
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-W-VMA(L)-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA (A)	Output (kW)	FLA (A)
PEFY-W20VMA(L)-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.93	0.085	0.74
PEFY-W25VMA(L)-A			0.93	0.085	0.74
PEFY-W32VMA(L)-A			1.19	0.085	0.95
PEFY-W40VMA(L)-A			1.45	0.121	1.16
PEFY-W50VMA(L)-A			2.35	0.121	1.88
PEFY-W63VMA(L)-A			2.35	0.121	1.88
PEFY-W71VMA(L)-A			2.35	0.121	1.88
PEFY-W80VMA(L)-A			2.35	0.121	1.88
PEFY-W100VMA(L)-A			2.81	0.300	2.25
PEFY-W125VMA(L)-A			2.93	0.300	2.34

9-1. Optional parts line up for the Indoor unit

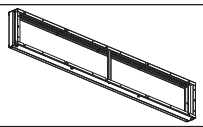
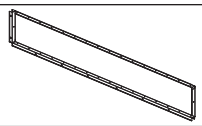
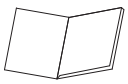
	Filter box	Plasma Quad Connect	PQ attachment (Rear inlet)	PQ attachment (Bottom inlet)	PQ box
PEFY-W20, 25, 32VMA(L)-A	PAC-KE91TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE91PTB-E
PEFY-W40VMA(L)-A	PAC-KE92TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE92PTB-E
PEFY-W50, 63, 71, 80VMA(L)-A	PAC-KE93TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE93PTB-E
PEFY-W100, 125VMA(L)-E	PAC-KE94TB-E	MAC-100FT-E	PAC-HA31PAR	PAC-HA31PAU	PAC-KE94PTB-E

● PEFY-W-VMA(L)-A



9-2. Filter box

PAC-KE-TB-E

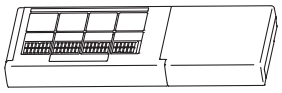
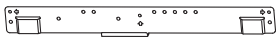
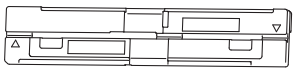
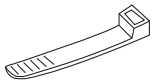
Item	1 Screw	2 Filter box	3 FLANGE	4 Installation manual	
Quantity	PAC-KE91TB-E: 20 PAC-KE92, 93TB-E: 24 PAC-KE94, 95TB-E: 30	1	1	1	
Shape					

Detailed installation information should be referred to its Installation Manual.

9-3. Plasma Quad Connect

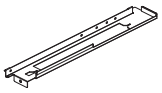
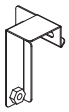
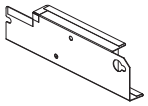
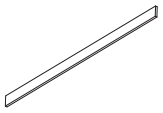
Static pressure loss is referred to 6 “FAN CHARACTERISTICS CURVES”.
Plasma Quad Connect (MAC-100FT-E) should be used together with PQ box or PQ attachment (PAC-HA31PAR or PAC-HA31PAU).
*Attaching the Plasma Quad Connect increases the pressure loss. Adjust the external static pressure setting as necessary. For the adjustment procedure, see the Installation Manual for the indoor unit.

Plasma Quad Connect (MAC-100FT-E)

Item	Plasma Quad Connect (with connecting cable)	Installation plate	Fixing screw for Plasma Quad Connect and Installation plate 4 × 25 mm
Quantity	1	1	5
Shape			
Item	Spacer Note: The spacer is used as packaging material.	Mounting cord clamp	Cable tie
Quantity	1	1	1
Shape			
Item	Screw for Mounting cord clamp 4 × 16 (Use when joining room air conditioner parts)		
Quantity	1		
Shape			

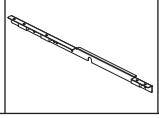
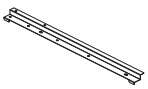
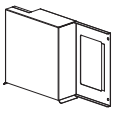
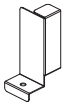
Detailed installation information should be referred to its Installation Manual.

PQ attachment (Rear inlet) (PAC-HA31PAR)

Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	Screw (5 × 10)	RUBBER PLATE
Quantity	1	–	1	1	3	2	2
Shape							

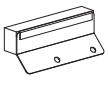
Detailed installation information should be referred to its Installation Manual.

PQ attachment (Bottom inlet) (PAC-HA31PAU)

Item	PLATE 1	PLATE 2	PLATE 3	PLATE 4	Screw (4 × 10)	CABLE STRAP	WIRE SADDLE	RUBBER PLATE
Quantity	1	1	1	1	9	1	1	2
Shape								

Detailed installation information should be referred to its Installation Manual.

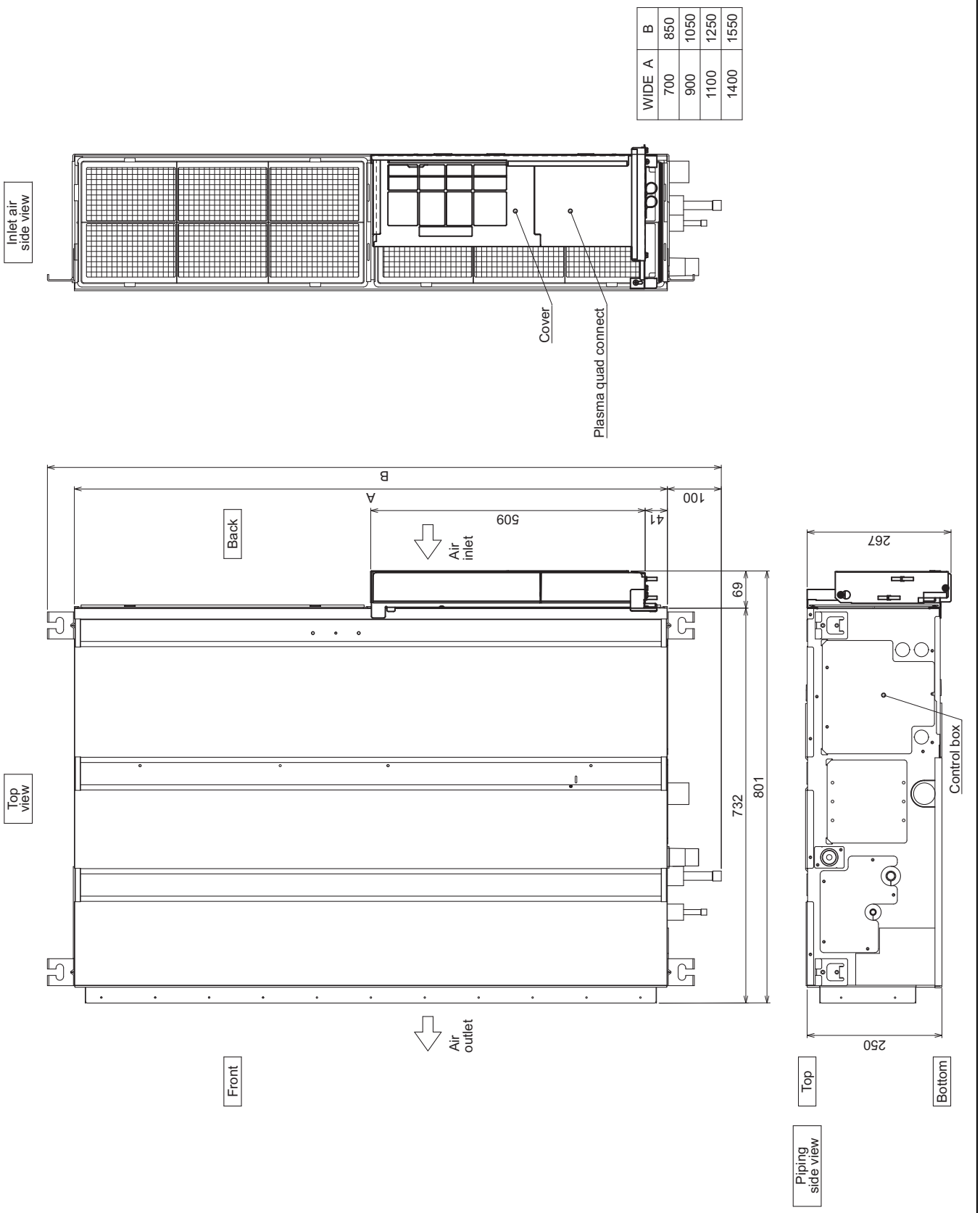
PQ box (PAC-KE91, 92, 93, 94PTB-E)

Item	Screw (4 × 10)	CABLE STRAP	SUCTION FLANGE	WIRING COVER	RUBBER PLATE
Quantity	22 (PAC-KE91PTB-E) 26 (PAC-KE92, 93PTB-E) 32 (PAC-KE94PTB-E)	2	1	1	2
Shape					

Detailed installation information should be referred to its Installation Manual.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A
with PQ attachment (Rear inlet) and Plasma Quad Connect

Unit: mm



Model	WIDE A	B
PEFY-W20,25,32VMA(L)-A	700	850
PEFY-W40VMA(L)-A	900	1050
PEFY-W50,63,71,80VMA(L)-A	1100	1250

Model	WIDE A	B
PEFY-W100,125VMA(L)-A	1400	1550

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A
with PQ attachment (Rear inlet) and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
• Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
• Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
• Create access door 4 below the control box and the unit as shown in Fig.5.
(3) For maintenance if there is more than 170mm from the top surface, the cover can be pulled out without removing the PQ attachment. (Fig.1, Fig.3)

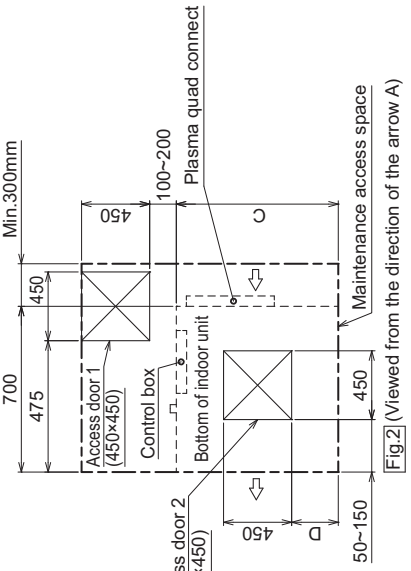


Fig.2 (Viewed from the direction of the arrow A)

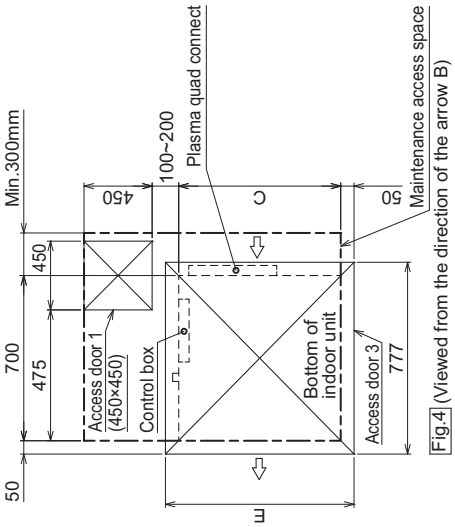


Fig.4 (Viewed from the direction of the arrow B)

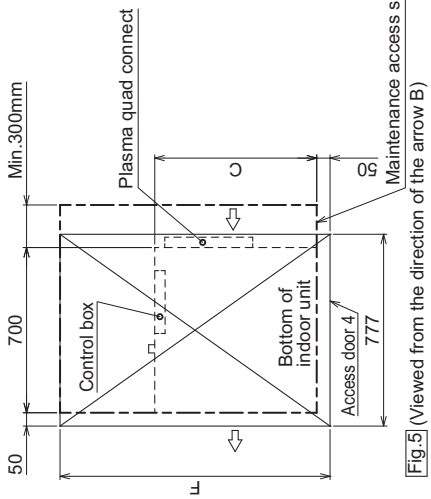


Fig.5 (Viewed from the direction of the arrow B)

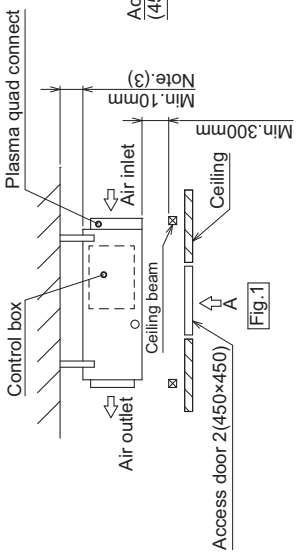


Fig.1

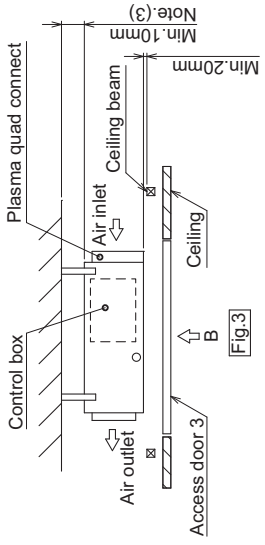


Fig.3

WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500
1100	250~350	1200	1700
1400	400~500	1500	2000

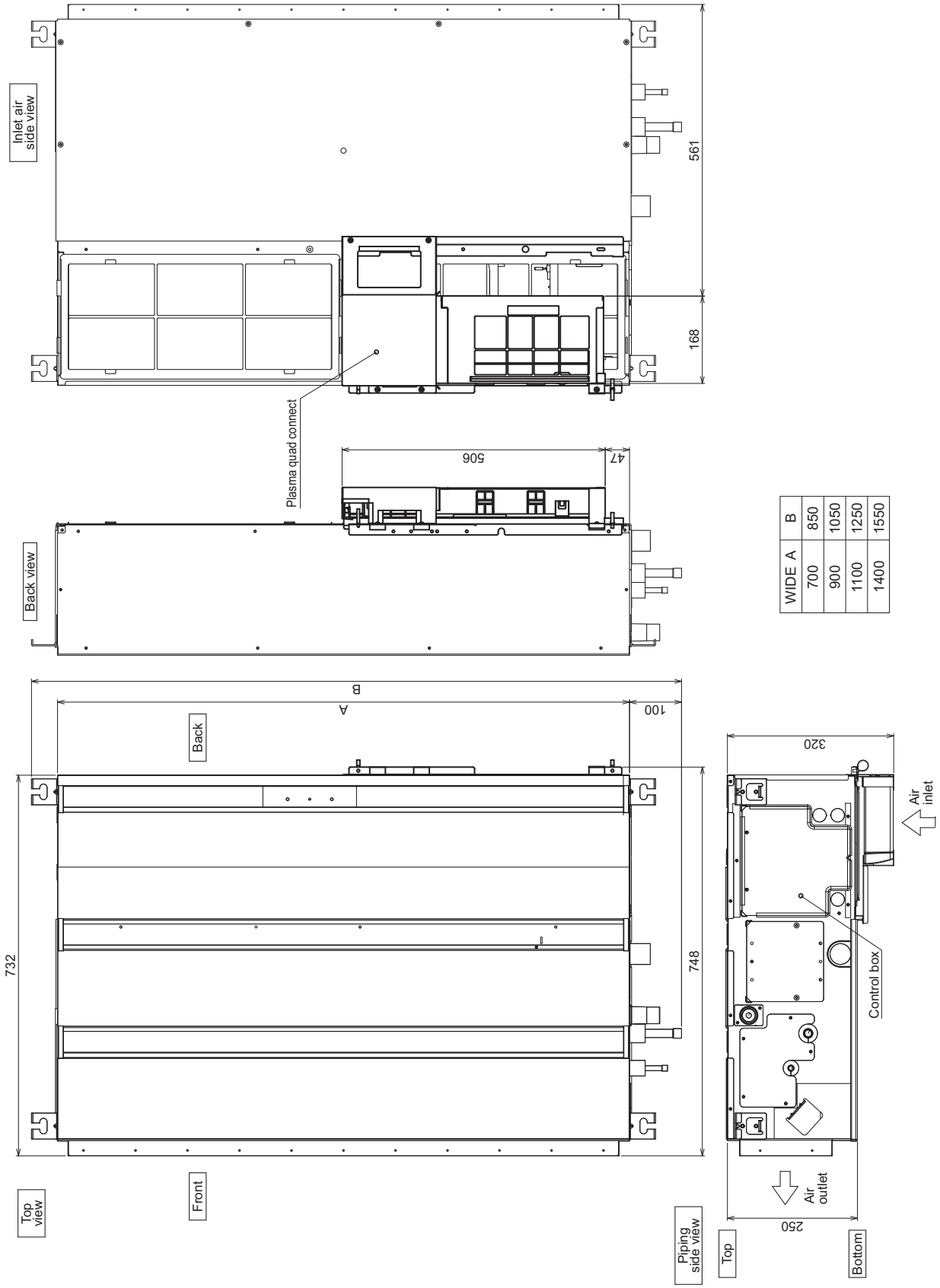
Model	WIDE C	D	E	F
PEFY-W20,25,32VMA(L)-A	700	50~150	800	1300
PEFY-W40VMA(L)-A	900	150~250	1000	1500
PEFY-W50,63,71,80VMA(L)-A	1100	250~350	1200	1700

Model	WIDE C	D	E	F
PEFY-W100,125VMA(L)-A	1400	400~500	1500	2000

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A
with PQ attachment (Bottom inlet) and Plasma Quad Connect

Unit: mm



WIDE A	B
700	850
900	1050
1100	1250
1400	1550

Model	WIDE A	B
PEFY-W20,25,32VMA(L)-A	700	850
PEFY-W40VMA(L)-A	900	1050
PEFY-W50,63,71,80VMA(L)-A	1100	1250

Model	WIDE A	B
PEFY-W100,125VMA(L)-A	1400	1550

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A with PQ attachment (Bottom inlet) and Plasma Quad Connect

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
- Create access door 1 and 2 (450x450mm each) as shown in Fig.2.
  (Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
- Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
  or
- Create access door 4 below the control box and the unit as shown in Fig.5.

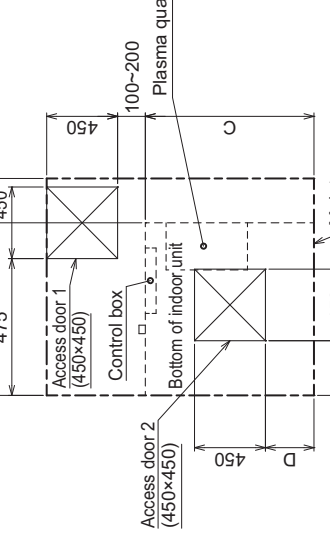


Fig.2 (Viewed from the direction of the arrow A)

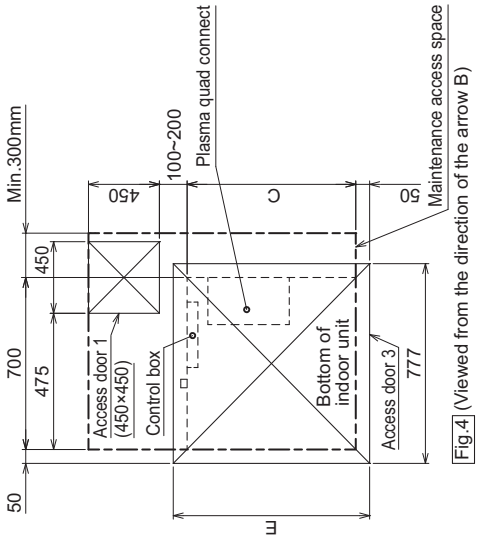


Fig.4 (Viewed from the direction of the arrow B)

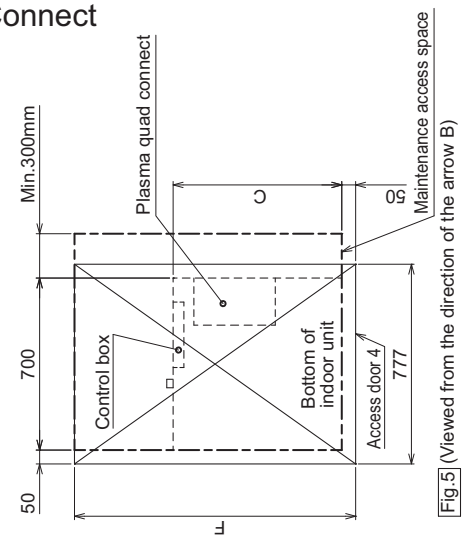


Fig.5 (Viewed from the direction of the arrow B)

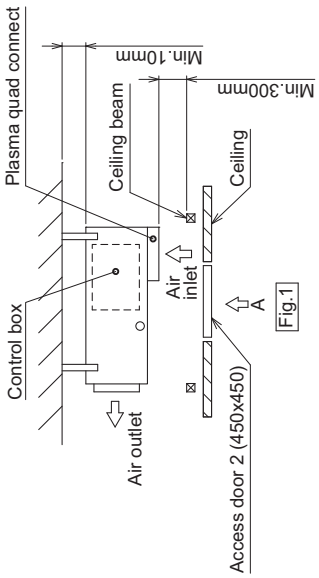


Fig.1

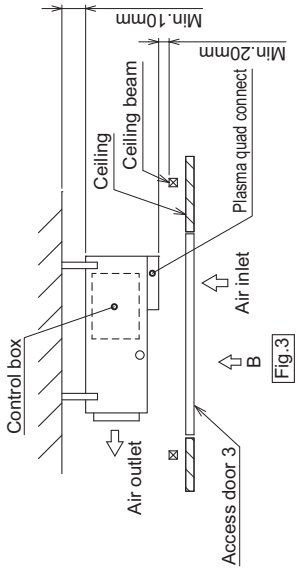


Fig.3

WIDE C	D	E	F
700	50~150	800	1300
900	150~250	1000	1500
1100	250~350	1200	1700
1400	400~500	1500	2000

Model	WIDE C	D	E	F
PEFY-W20,25,32VMA(L)-A	700	50~150	800	1300
PEFY-W40VMA(L)-A	900	150~250	1000	1500
PEFY-W50,63,71,80VMA(L)-A	1100	250~350	1200	1700

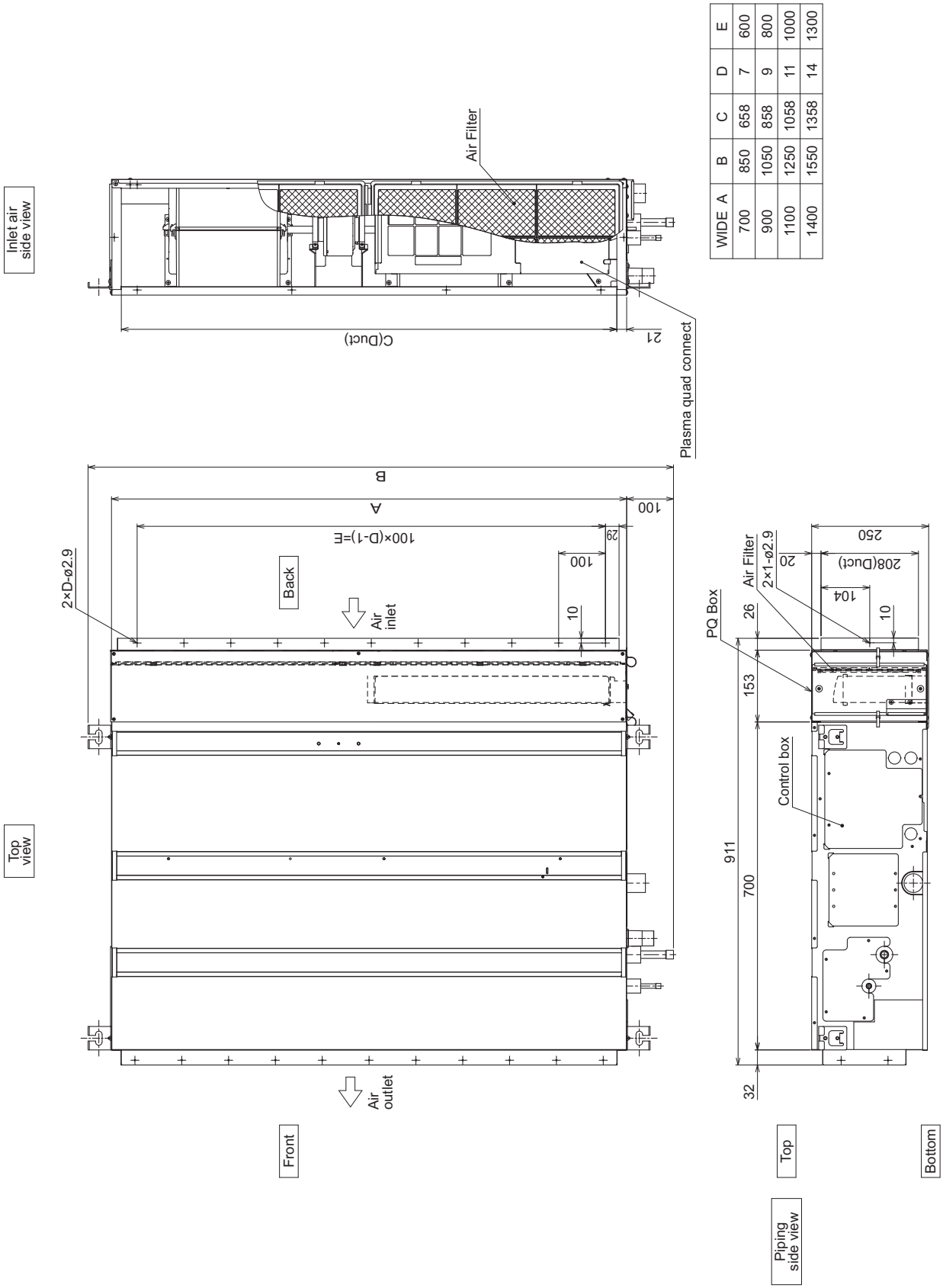
Model	WIDE C	D	E	F
PEFY-W100,125VMA(L)-A	1400	400~500	1500	2000

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A
with PQ box and Plasma Quad Connect

Unit: mm

WIDE A	B	C	D	E
700	850	658	7	600
900	1050	858	9	800
1100	1250	1058	11	1000
1400	1550	1358	14	1300



Model	WIDE A	B	C	D	E
PEFY-W20,25,32VMA(L)-A	700	850	658	7	600
PEFY-W40VMA(L)-A	900	1050	858	9	800
PEFY-W50,63,71,80VMA(L)-A	1100	1250	1058	11	1000

Model	WIDE A	B	C	D	E
PEFY-W100,125VMA(L)-A	1400	1550	1358	14	1300

The drawing above is a sample image of the optional parts being installed on a unit.

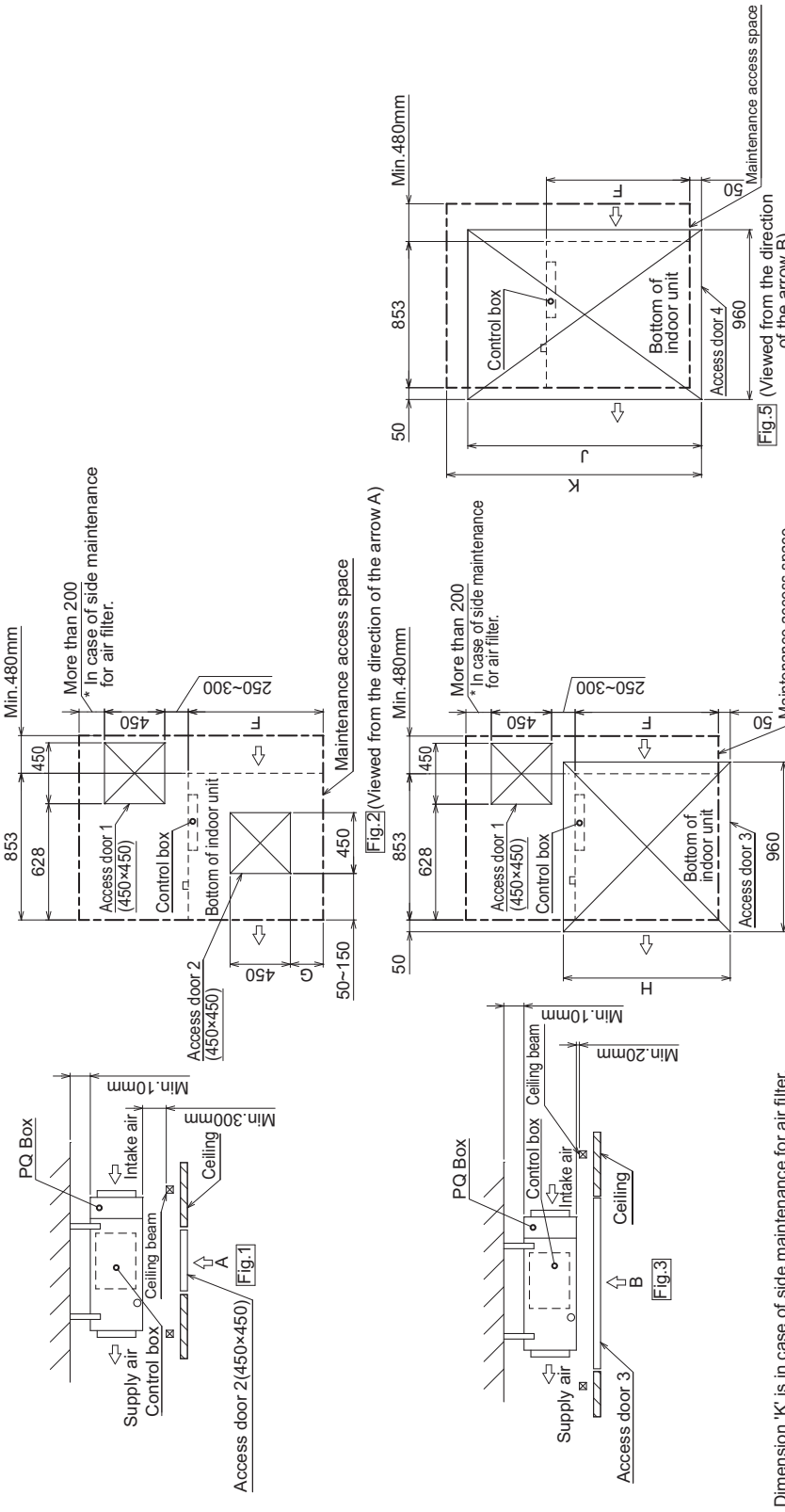
PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA(L)-A
with PQ box and Plasma Quad Connect

Unit: mm

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(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
- Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
- Create access door 4 below the control box and the unit as shown in Fig.5.



* Dimension 'K' is in case of side maintenance for air filter.

WIDE F	G	H	J	K
700	50~150	800	1300	1450
900	150~250	1000	1500	1850
1100	250~350	1200	1700	/
1400	400~500	1500	2000	2150

Model	WIDE F	G	H	J	K
PEFY-W20,25,32VMA(L)-A	700	50~150	800	1300	1450
PEFY-W40VMA(L)-A	900	150~250	1000	1500	1850
PEFY-W50,63,71,80VMA(L)-A	1100	250~350	1200	1700	-

Model	WIDE F	G	H	J	K
PEFY-W100,125VMA(L)-A	1400	400~500	1500	2000	2150

The drawing above is a sample image of the optional parts being installed on a unit.

PEFY-W-VMA2-A

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Model				PEFY-W20VMA2-A	PEFY-W25VMA2-A	PEFY-W32VMA2-A	PEFY-W40VMA2-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2 Power input		kW	0.093	0.093	0.093	0.093
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2 Power input		kW	0.091	0.091	0.091	0.091
	*2 Current input		A	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62	0.68-0.65-0.62
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732	250 x 1,100 x 732
			in.	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8	9-7/8 x 43-5/16 x 28-7/8
Net weight			kg (lbs)	30 (67)	30 (67)	30 (67)	30 (67)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	2.0	2.0	2.0	2.0
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2
*4	External static press.		Pa	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>	40 - <50> - <70> - <100> - <150>
			mmH_2O	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>	4.1 - <5.1> - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.121	0.121	0.121	0.121
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0	14.5 - 18.0 - 21.0
			L/s	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350	242 - 300 - 350
			cfm	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742	512 - 636 - 742
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0	26.0-31.0-35.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R779	KL94R779	KL94R779	KL94R779
	Wiring			KL94R848	KL94R848	KL94R848	KL94R848
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E	PAC-KE93TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E	PAC-KE93PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W50VMA2-A	PEFY-W63VMA2-A	PEFY-W71VMA2-A	PEFY-W80VMA2-A
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz
Cooling capacity		*1	kW	5.6	7.1	8.0	9.0
(Nominal)		*1	BTU/h	19,100	24,200	27,300	30,700
	*2 Power input		kW	0.208	0.208	0.208	0.208
	*2 Current input		A	1.40-1.34-1.28	1.40-1.34-1.28	1.40-1.34-1.28	1.40-1.34-1.28
Heating capacity		*3	kW	6.3	8.0	9.0	10.0
(Nominal)		*3	BTU/h	21,500	27,300	30,700	34,100
	*2 Power input		kW	0.206	0.206	0.206	0.206
	*2 Current input		A	1.40-1.34-1.28	1.40-1.34-1.28	1.40-1.34-1.28	1.40-1.34-1.28
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	250 x 1,600 x 732	250 x 1,600 x 732	250 x 1,600 x 732	250 x 1,600 x 732
			in.	9-7/8 x 63 x 28-7/8	9-7/8 x 63 x 28-7/8	9-7/8 x 63 x 28-7/8	9-7/8 x 63 x 28-7/8
Net weight			kg (lbs)	42 (93)	42 (93)	42 (93)	42 (93)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	3.5	3.5	3.5	3.5
FAN	Type × Quantity			Sirocco fan x 3	Sirocco fan x 3	Sirocco fan x 3	Sirocco fan x 3
*4	External static press.		Pa	<40> - 50 - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>
			mmH_2O	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.300	0.300	0.300	0.300
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	29.5 - 35.5 - 40.0	29.5 - 35.5 - 40.0	29.5 - 35.5 - 40.0	29.5 - 35.5 - 40.0
			L/s	492 - 592 - 667	492 - 592 - 667	492 - 592 - 667	492 - 592 - 667
			cfm	1,042 - 1,254 - 1,412	1,042 - 1,254 - 1,412	1,042 - 1,254 - 1,412	1,042 - 1,254 - 1,412
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	33.0-37.0-40.0	33.0-37.0-40.0	33.0-37.0-40.0	33.0-37.0-40.0
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	30	30	30
	Outlet		mm I.D.	20	30	30	30
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94R779	KL94R779	KL94R779	KL94R779
	Wiring			KL94R848	KL94R848	KL94R848	KL94R848
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts	Filter box			PAC-KE95TB-E	PAC-KE95TB-E	PAC-KE95TB-E	PAC-KE95TB-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR	PAC-HA31PAR
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU	PAC-HA31PAU
	PQ box			PAC-KE95PTB-E	PAC-KE95PTB-E	PAC-KE95PTB-E	PAC-KE95PTB-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-W100VMA2-A	PEFY-W125VMA2-A		
Power source				1-phase 220-230-240 V 50 Hz	1-phase 220-230-240 V 50 Hz		
Cooling capacity		*1	kW	11.2	14.0		
(Nominal)		*1	BTU/h	38,200	47,800		
	*2 Power input		kW	0.208	0.208		
	*2 Current input		A	1.40-1.34-1.28	1.40-1.34-1.28		
Heating capacity		*3	kW	12.5	16.0		
(Nominal)		*3	BTU/h	42,700	54,600		
	*2 Power input		kW	0.206	0.206		
	*2 Current input		A	1.40-1.34-1.28	1.40-1.34-1.28		
External finish				Galvanized steel plate	Galvanized steel plate		
External dimension H × W × D			mm	250 x 1,600 x 732	250 x 1,600 x 732		
			in.	9-7/8 x 63 x 28-7/8	9-7/8 x 63 x 28-7/8		
Net weight			kg (lbs)	42 (93)	42 (93)		
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)		
	Water Volume		L	3.5	3.5		
FAN	Type × Quantity			Sirocco fan x 3	Sirocco fan x 3		
*4	External static press.		Pa	<40> - 50 - <70> - <100> - <150>	<40> - 50 - <70> - <100> - <150>		
			mmH_2O	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>	<4.1> - 5.1 - <7.1> - <10.2> - <15.3>		
	Motor Type			DC motor	DC motor		
	Motor output		kW	0.300	0.300		
	Driving mechanism			Direct-driven by motor	Direct-driven by motor		
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)		
			m^3/min	29.5 - 35.5 - 40.0	29.5 - 35.5 - 40.0		
			L/s	492 - 592 - 667	492 - 592 - 667		
			cfm	1,042 - 1,254 - 1,412	1,042 - 1,254 - 1,412		
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)		
		*2	dB <A>	33.0-37.0-40.0	33.0-37.0-40.0		
Insulation material				EPS, Polystyrene foam, Urethane foam	EPS, Polystyrene foam, Urethane foam		
Air filter				PP honeycomb fabric.	PP honeycomb fabric.		
Protection device				Fuse	Fuse		
Refrigerant control device				Flow control valve	Flow control valve		
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A		
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22		
	Outlet		mm O.D.	22	22		
Field pipe size	Inlet		mm I.D.	30	30		
	Outlet		mm I.D.	30	30		
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)		
Drawing	External			KL94R779	KL94R779		
	Wiring			KL94R848	KL94R848		
	Refrigerant cycle			-	-		
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book		
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band		
Optional parts	Filter box			PAC-KE95TB-E	PAC-KE95TB-E		
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E		
	PQ attachment (Rear inlet)			PAC-HA31PAR	PAC-HA31PAR		
	PQ attachment (Bottom inlet)			PAC-HA31PAU	PAC-HA31PAU		
	PQ box			PAC-KE95PTB-E	PAC-KE95PTB-E		
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor:27°CDB/19°CWB (81°FDB/66°FWB), Outdoor:35°CDB (95°FDB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor:20°CDB (68°FDB), Outdoor:7°CDB/6°CWB (45°FDB/43°FWB)
Pipe length:7.5m (24-9/16ft.), Level difference:0m (0ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Please group units that operate on 1 branch.

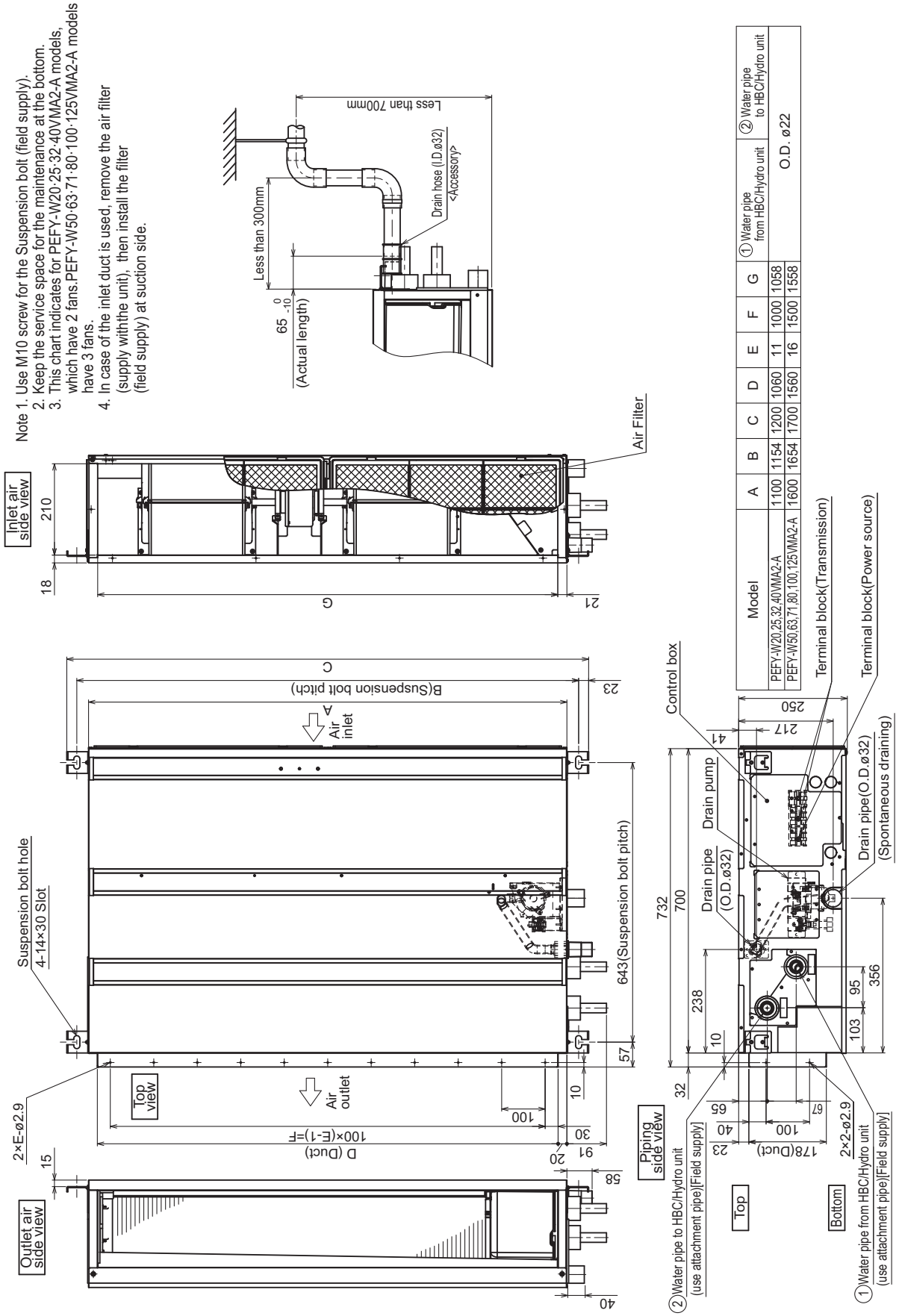
Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A

Unit: mm

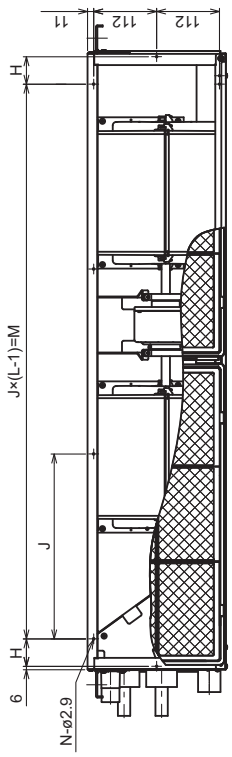


PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.
(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.



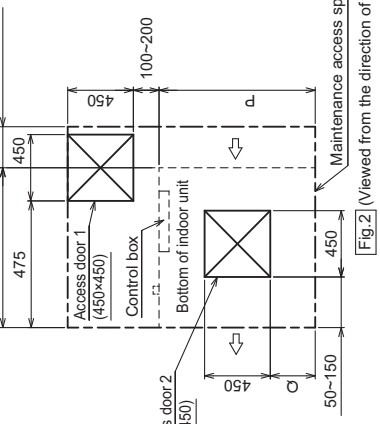


Fig.2 (Viewed from the direction of the arrow A)

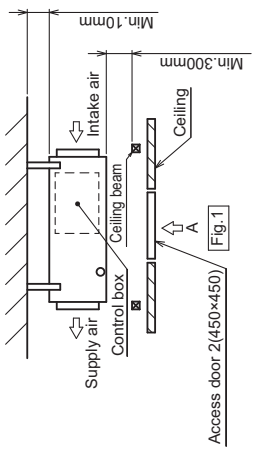


Fig.1

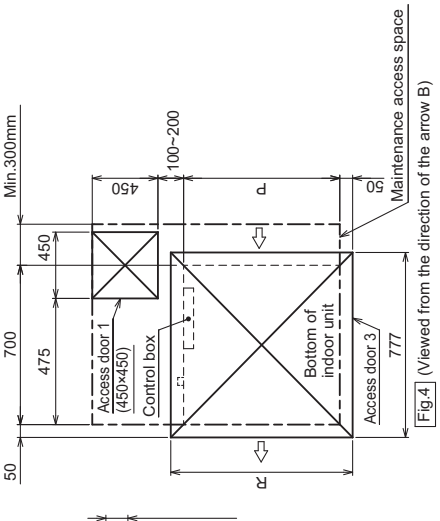


Fig.4 (Viewed from the direction of the arrow B)

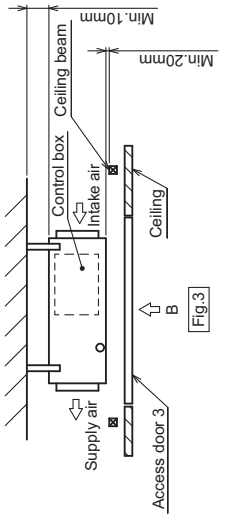


Fig.3

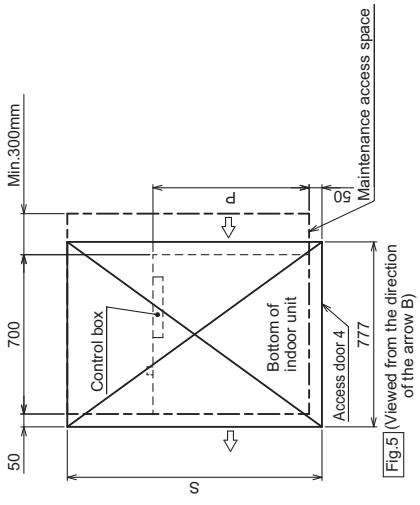
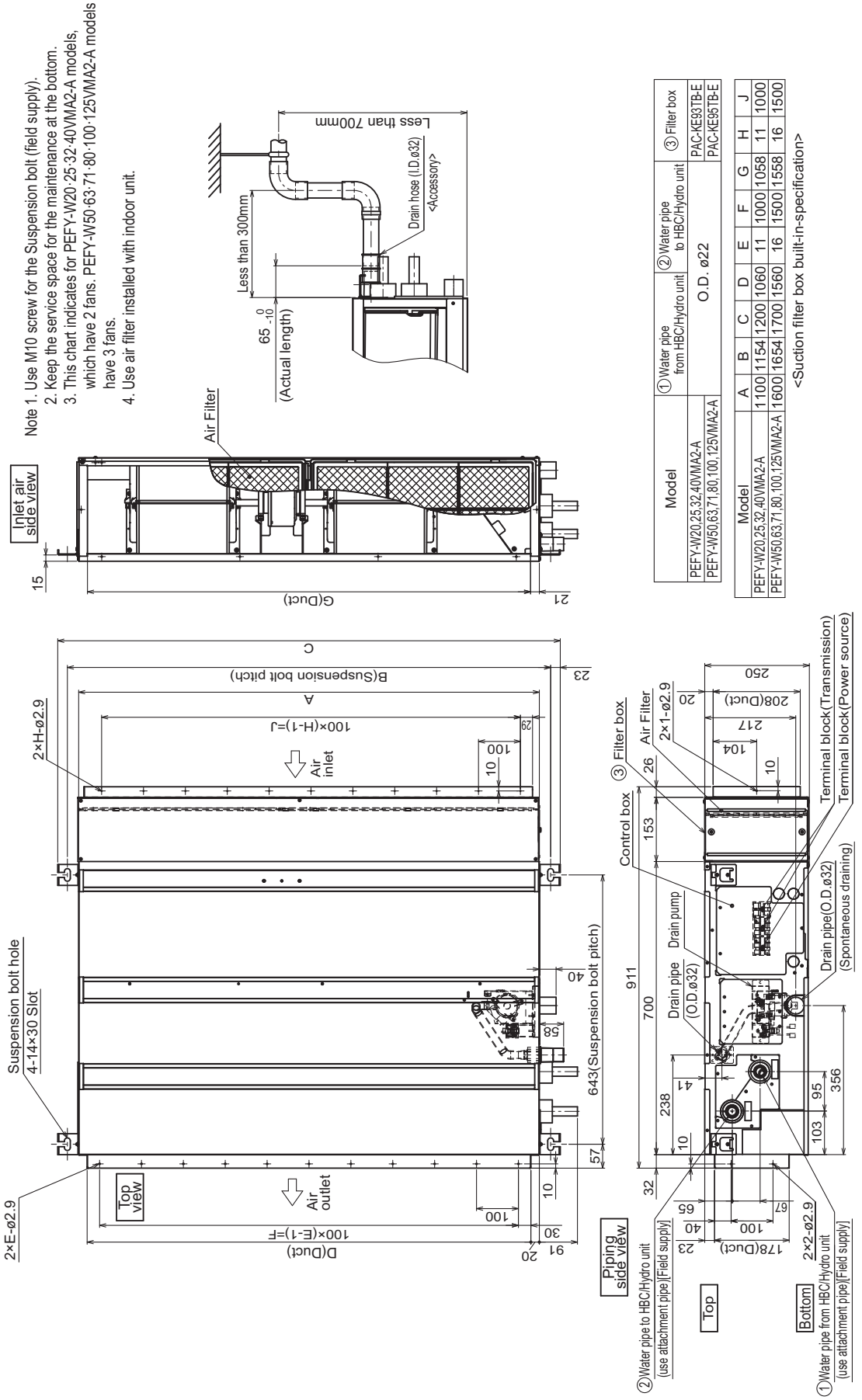


Fig.5 (Viewed from the direction of the arrow B)

Model	H	J	L	M	N	P	Q	R	S
PEFY-W20,25,32,40VMA2-A	49	330	4	990	10	1100	250~350	1200	1700
PEFY-W50,63,71,80,100,125VMA2-A	54	370	5	1480	12	1600	500~600	1700	2200

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A Suction filter box built-in-specification

Unit: mm



PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A Suction filter box built-in-specification

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, drain pump, heat exchanger, and control box in one of the following ways.
Select an installation site for the indoor unit so that its maintenance access space will not be obstructed by beams or other objects.

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling. (Fig.1)
· Create access door 1 and 2 (450×450mm each) as shown in Fig.2.
(Access door 2 is not required if enough space is available below the unit for a maintenance worker to work in.)
(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
· Create access door 1 diagonally below the control box and access door 3 below the unit as shown in Fig.4.
or
· Create access door 4 below the control box and the unit as shown in Fig.5.

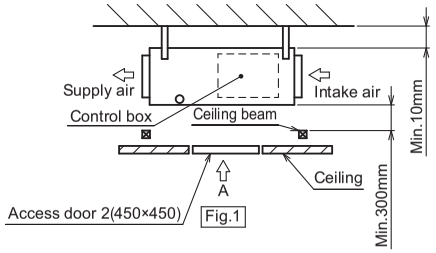


Fig.1

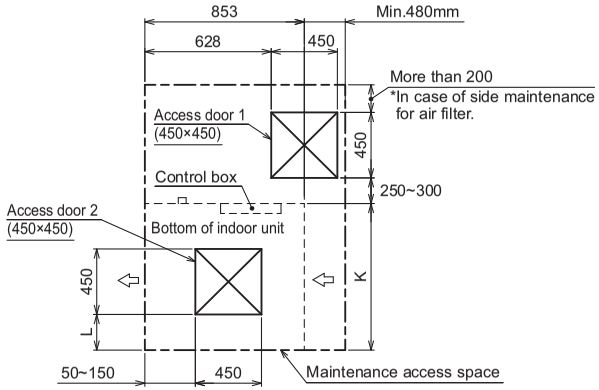


Fig.2 (Viewed from the direction of the arrow A)

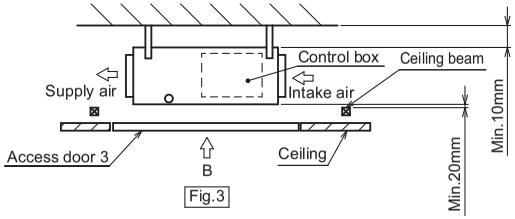


Fig.3

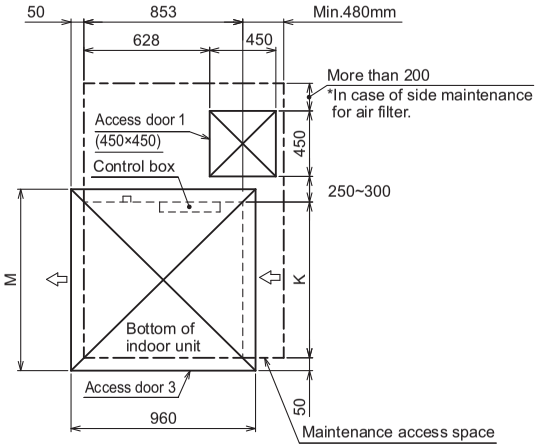


Fig.4 (Viewed from the direction of the arrow B)

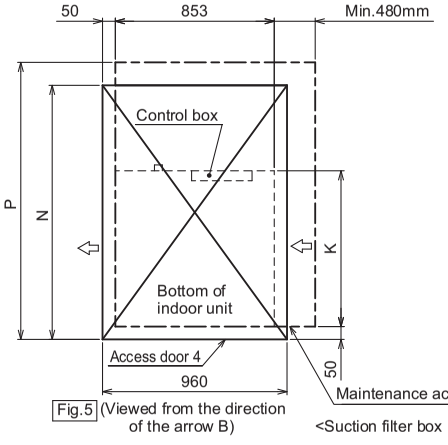


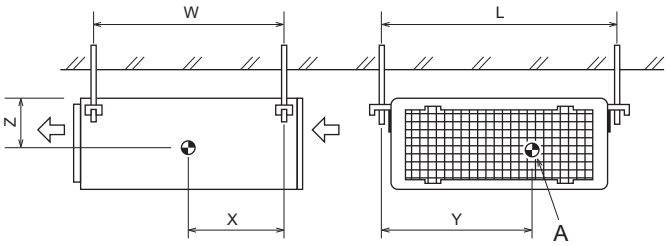
Fig.5 (Viewed from the direction of the arrow B)

<Suction filter box built-in-specification>

*Dimension 'P' is in case of side maintenance for air filter.

Model	K	L	M	N	P*
PEFY-W20,25,32,40VMA2-A	1100	250~350	1200	1700	
PEFY-W50,63,71,80,100,125VMA2-A	1600	500~600	1700	2200	2550

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A

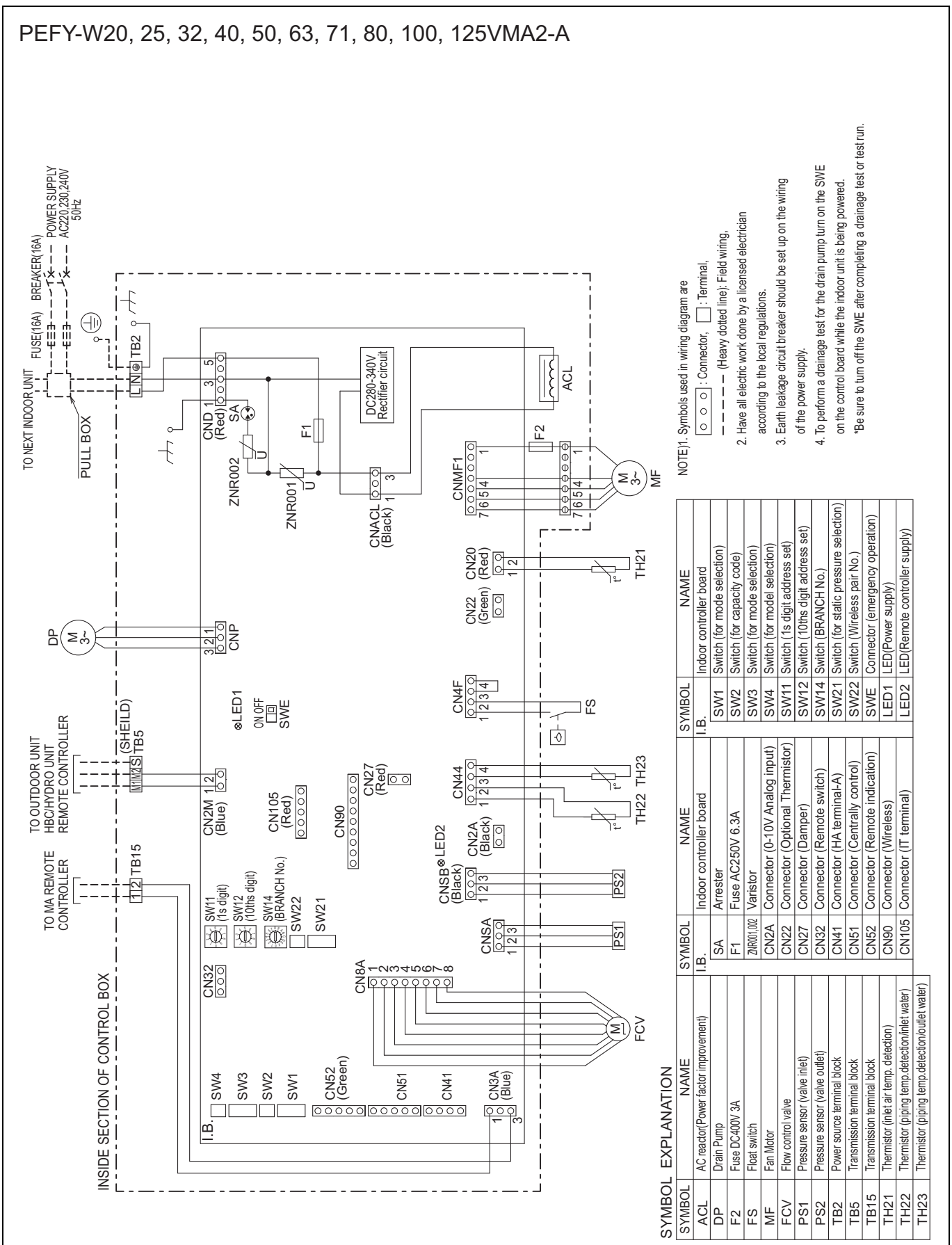


A: Center of gravity

(mm)[in]

Model name	W	L	X	Y	Z
PEFY-W20VMA2-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W25VMA2-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W32VMA2-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W40VMA2-A	643 [25 - 6/16]	1154 [45 - 7/16]	325 [12 - 13/16]	525 [20 -11/16]	130 [5 -2/16]
PEFY-W50VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]
PEFY-W63VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]
PEFY-W71VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]
PEFY-W80VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]
PEFY-W100VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]
PEFY-W125VMA2-A	643 [25 - 6/16]	1654 [65 - 2/16]	332 [13 - 2/16]	725 [28 -9/16]	130 [5 -2/16]

PEFY-W20, 25, 32, 40, 50, 63, 71, 80, 100, 125VMA2-A



NOTE)1. Symbols used in wiring diagram are
○ ○ ○ : Connector, □ : Terminal,
– – – – – (Heavy dotted line): Field wiring,
2. Have all electric work done by a licensed electrician according to the local regulations.
3. Earth leakage circuit breaker should be set up on the wiring of the power supply.
4. To perform a drainage test for the drain pump turn on the SWE on the control board while the indoor unit is being powered.
*Be sure to turn off the SWE after completing a drainage test or test run.

SYMBOL EXPLANATION

SYMBOL	NAME
ACL	AC reactor(Power factor improvement)
DP	Drain Pump
F2	Fuse DC400V 3A
FS	Float switch
MF	Fan Motor
FCV	Flow control valve
PS1	Pressure sensor (valve inlet)
PS2	Pressure sensor (valve outlet)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp. detection)
TH22	Thermistor (piping temp.detection/inlet water)
TH23	Thermistor (piping temp.detection/outlet water)

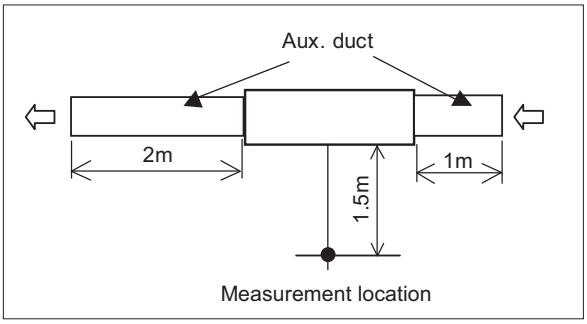
SYMBOL	NAME
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001,002	Varistor
CN2A	Connector (0-10V Analog input)
CN22	Connector (Optional Thermistor)
CN27	Connector (Damper)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)

SYMBOL	NAME
I.B.	Indoor controller board
SW1	Switch (for mode selection)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for static pressure selection)
SW22	Switch (Wireless pair No.)
SWE	Connector (emergency operation)
LED1	LED(Power supply)
LED2	LED(Remote controller supply)

5-1. Sound levels

5-1-1. Sound levels (Measured condition: With 1m air inlet duct and 2m air outlet duct)

PEFY-W-VMA2-A



* Measured in anechoic room.

Sound level at anechoic room: Low-Mid-High

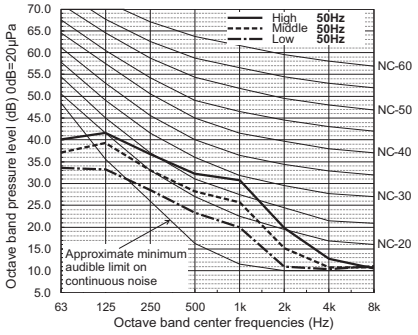
Model	Sound level dB(A)				
	40Pa	50Pa	70Pa	100Pa	150Pa
PEFY-W20, 25, 32, 40VMA2-A	26-31-35	29-32-36	29-34-38	30-36-40	33-39-43
PEFY-W50, 63, 71, 80, 100, 125VMA2-A	33-37-39	33-37-40	34-38-40	35-39-42	37-41-45

5-2. NC curves

5-2-1. NC curves (Sound level measured condition: With 1m air inlet duct and 2m air outlet duct)

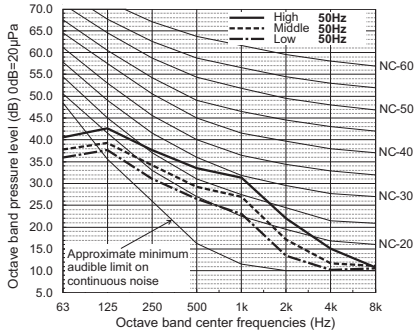
PEFY-W20,25,32,40VMA2-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



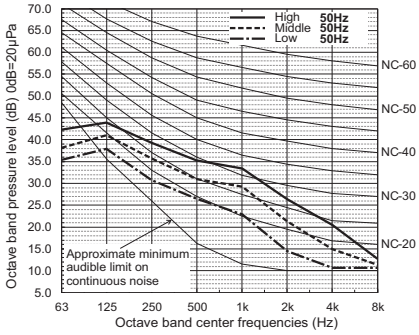
PEFY-W20,25,32,40VMA2-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



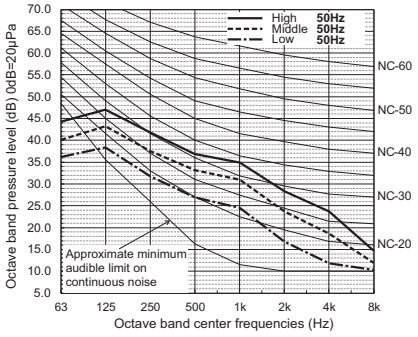
PEFY-W20,25,32,40VMA2-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



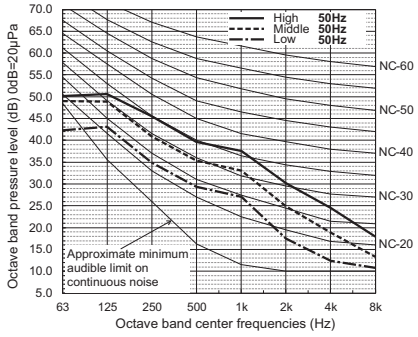
PEFY-W20,25,32,40VMA2-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V



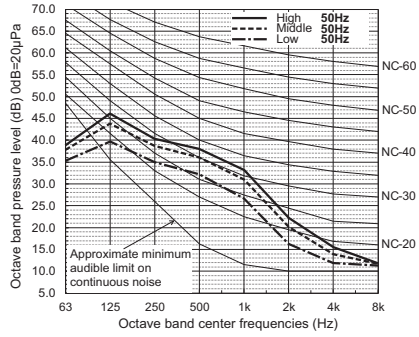
PEFY-W20,25,32,40VMA2-A

External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



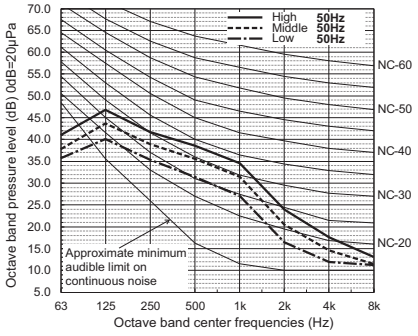
PEFY-W50,63,71,80,100,125VMA2-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



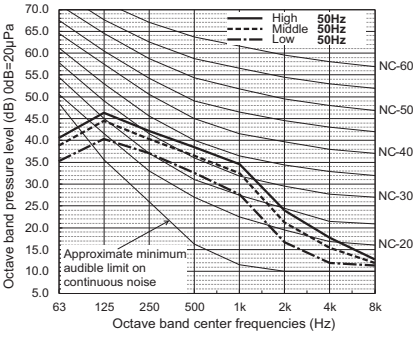
PEFY-W50,63,71,80,100,125VMA2-A

External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V



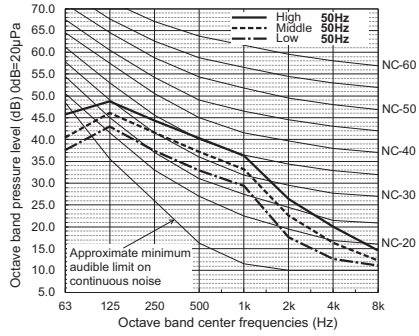
PEFY-W50,63,71,80,100,125VMA2-A

External Static Pressure: 70Pa [0.28in.WG]
Power Source: 220-240V



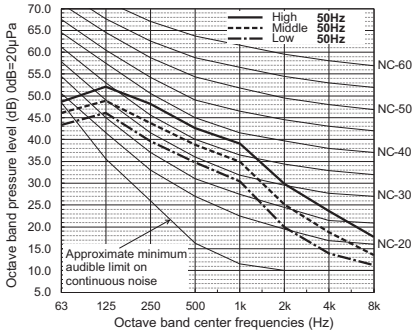
PEFY-W50,63,71,80,100,125VMA2-A

External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V

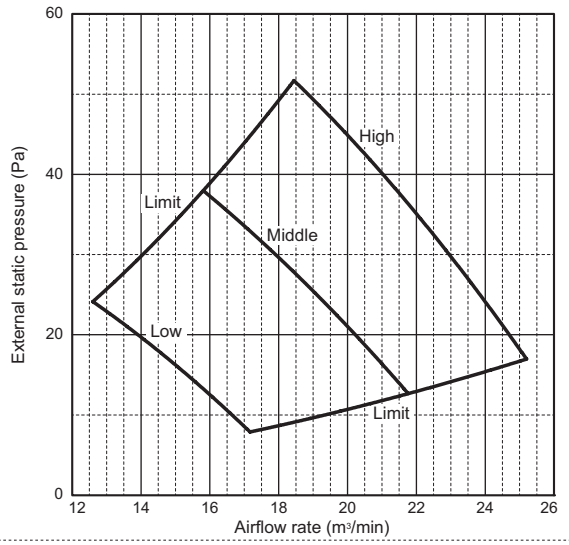


PEFY-W50,63,71,80,100,125VMA2-A

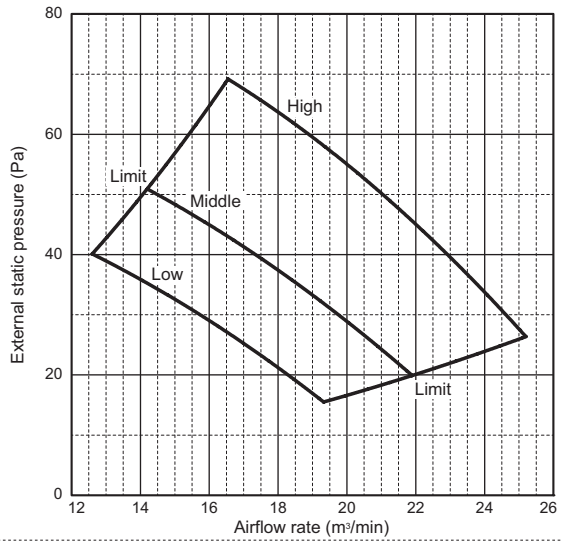
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V



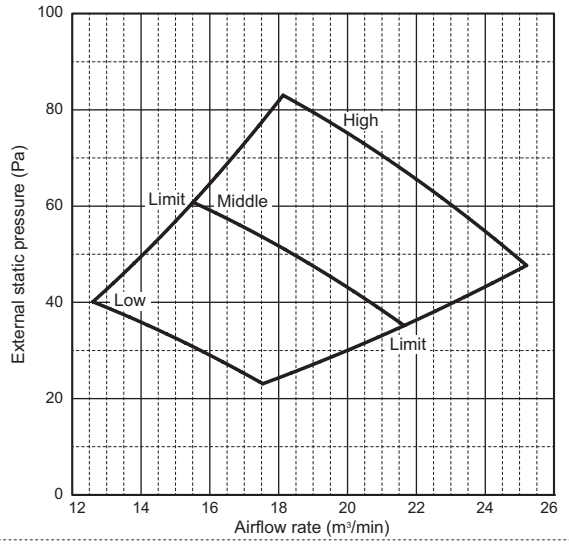
PEFY-W20, 25, 32, 40VMA2-A
External static pressure : 40Pa
Power source : 220-240V



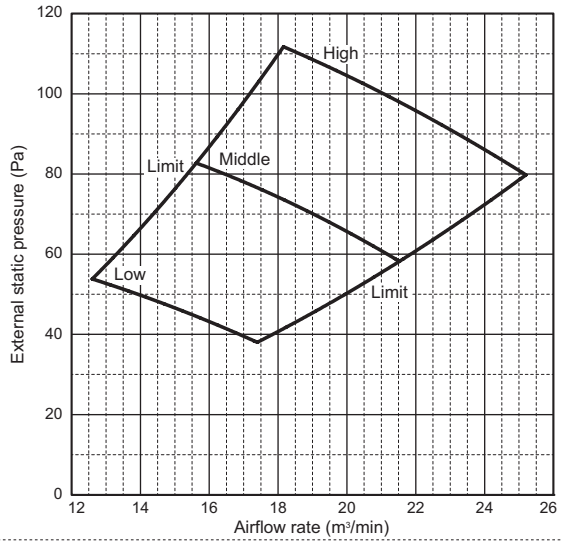
PEFY-W20, 25, 32, 40VMA2-A
External static pressure : 50Pa
Power source : 220-240V



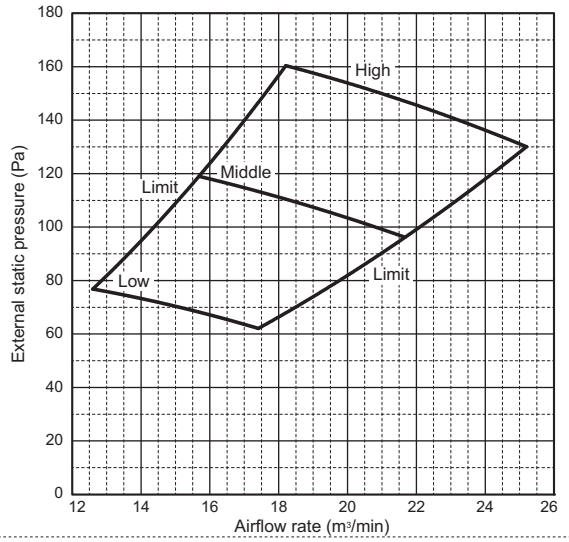
PEFY-W20, 25, 32, 40VMA2-A
External static pressure : 70Pa
Power source : 220-240V



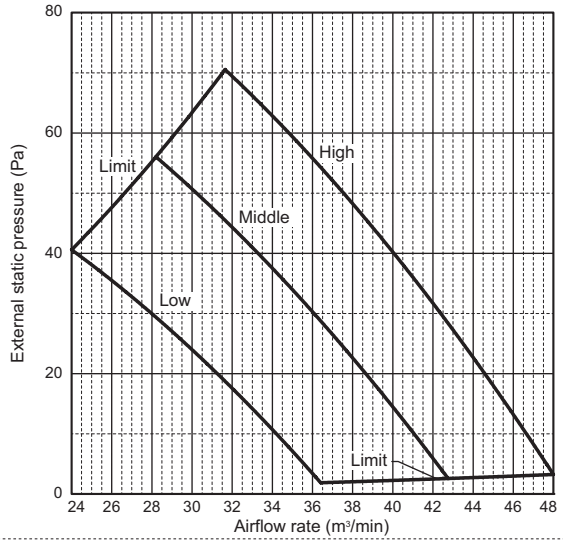
PEFY-W20, 25, 32, 40VMA2-A
External static pressure : 100Pa
Power source : 220-240V



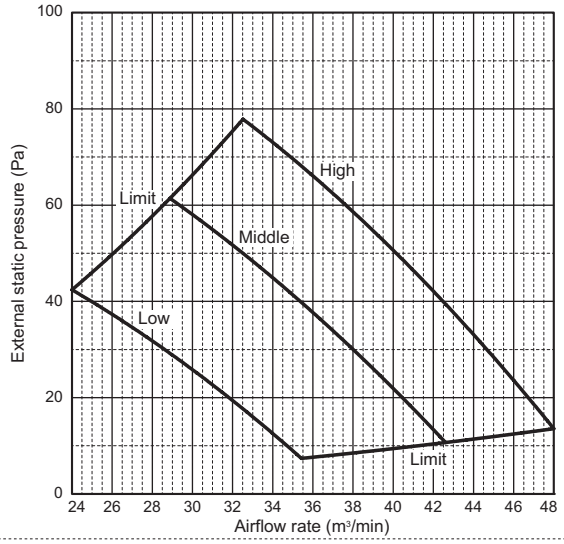
PEFY-W20, 25, 32, 40VMA2-A
External static pressure : 150Pa
Power source : 220-240V



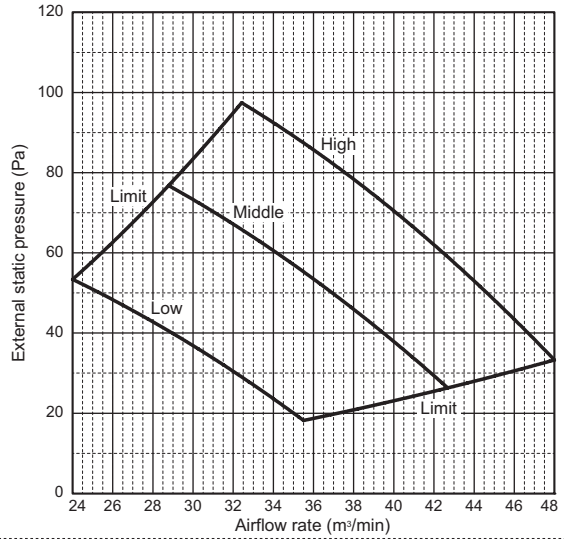
PEFY-W50, 63, 71, 80, 100, 125VMA2-A
External static pressure : 40Pa
Power source : 220-240V



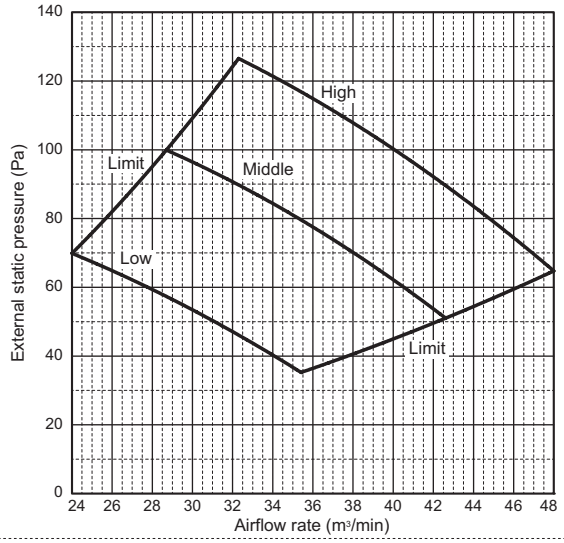
PEFY-W50, 63, 71, 80, 100, 125VMA2-A
External static pressure : 50Pa
Power source : 220-240V



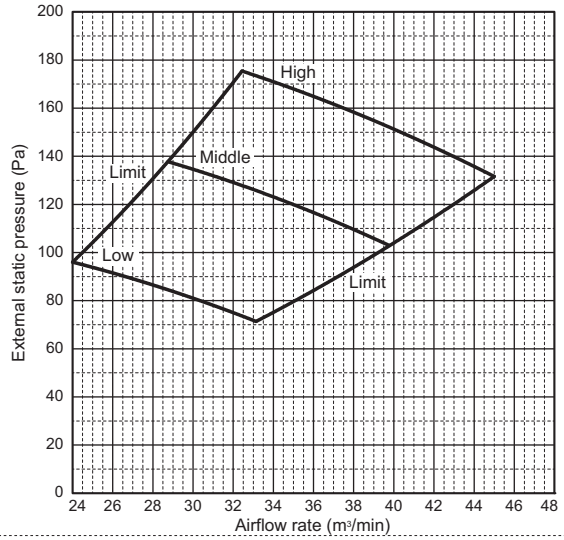
PEFY-W50, 63, 71, 80, 100, 125VMA2-A
External static pressure : 70Pa
Power source : 220-240V



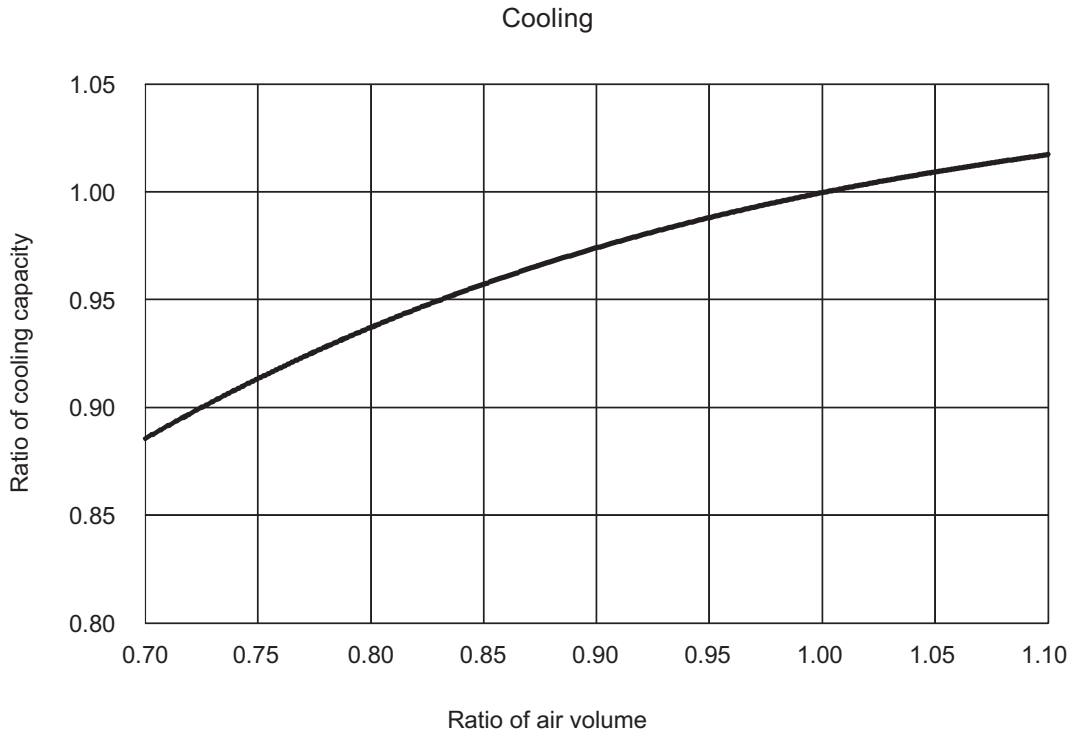
PEFY-W50, 63, 71, 80, 100, 125VMA2-A
External static pressure : 100Pa
Power source : 220-240V

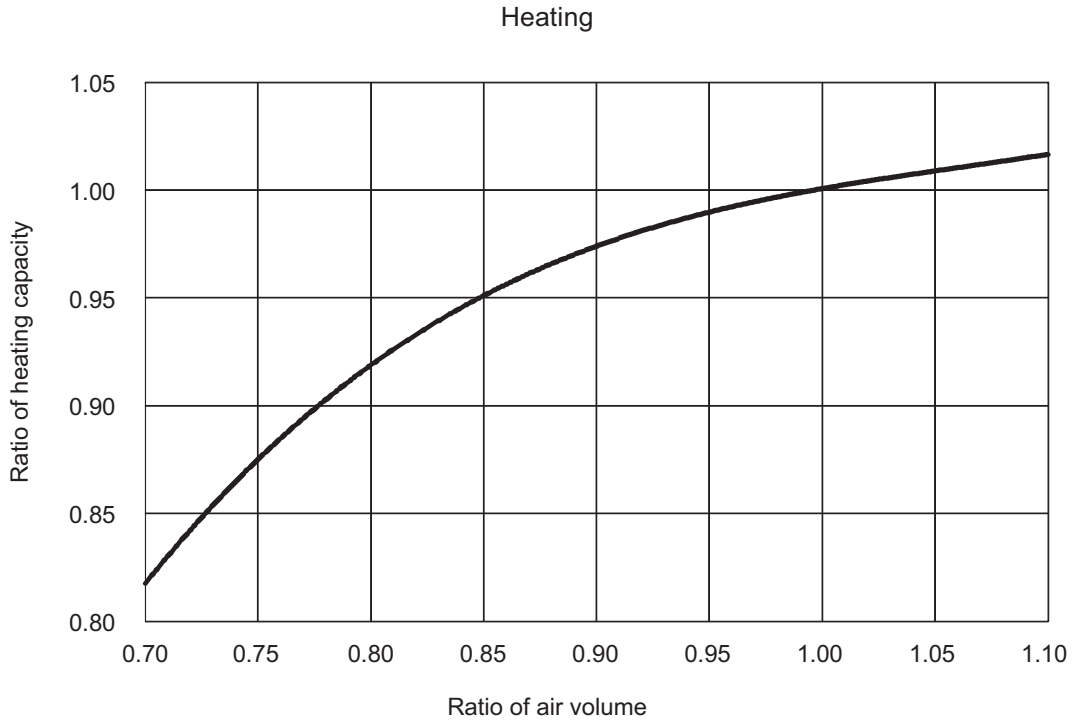


PEFY-W50, 63, 71, 80, 100, 125VMA2-A
External static pressure : 150Pa
Power source : 220-240V



7-1. Correction by fan speed





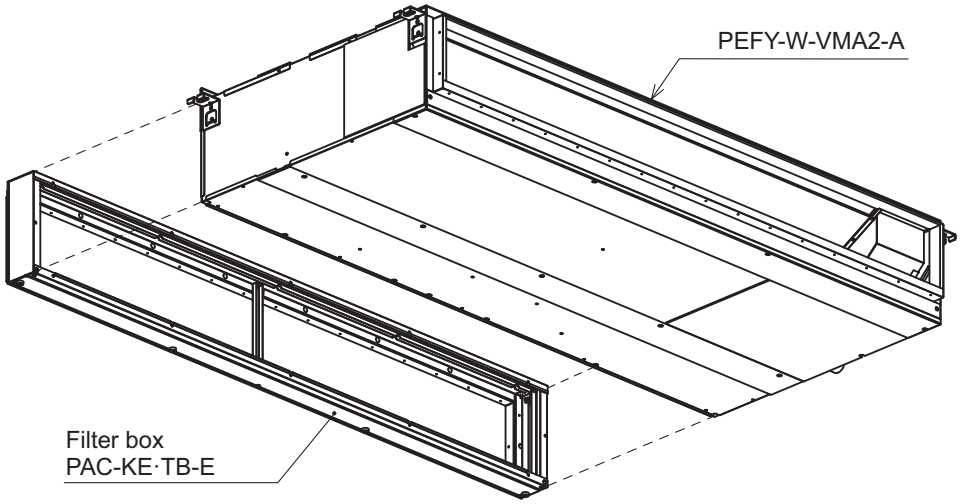
Symbols: MCA: Max.Circuit Amps (=1.25xFLA) FLA: Full Load Amps
IFM: Indoor Fan Motor Output: Fan motor rated output

PEFY-W-VMA2-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA (A)	Output (kW)	FLA (A)
PEFY-W20VMA2-A	220-240V/50Hz	Max.: 264V Min.: 198V	2.35	0.121	1.88
PEFY-W25VMA2-A			2.35	0.121	1.88
PEFY-W32VMA2-A			2.35	0.121	1.88
PEFY-W40VMA2-A			2.35	0.121	1.88
PEFY-W50VMA2-A			3.29	0.300	2.63
PEFY-W63VMA2-A			3.29	0.300	2.63
PEFY-W71VMA2-A			3.29	0.300	2.63
PEFY-W80VMA2-A			3.29	0.300	2.63
PEFY-W100VMA2-A			3.29	0.300	2.63
PEFY-W125VMA2-A			3.29	0.300	2.63

9-1. Optional parts line up for the Indoor unit

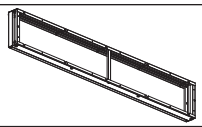
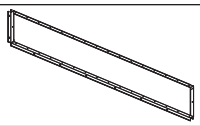
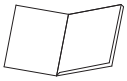
	Filter box
PEFY-W20, 25, 32, 40VMA2-A	PAC-KE93TB-E
PEFY-W50, 63, 71, 80, 100, 125VMA2-A	PAC-KE95TB-E

● PEFY-W-VMA2-A



9-2. Filter box

PAC-KE-TB-E

Item	1 Screw	2 Filter box	3 FLANGE	4 Installation manual	
Quantity	PAC-KE91TB-E: 20 PAC-KE92, 93TB-E: 24 PAC-KE94, 95TB-E: 30	1	1	1	
Shape					

Detailed installation information should be referred to its Installation Manual.

PEFY-WL-VMHS-A

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8-6. 6m Lead wire ..... 2 - 200

Model				PEFY-WL40VMHS-A	PEFY-WL50VMHS-A	PEFY-WL63VMHS-A	PEFY-WL71VMHS-A
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity	*1		kW	4.5	5.6	7.1	8.0
(Nominal)	*1		BTU/h	15,400	19,100	24,200	27,300
	*2	Power input	kW	0.055	0.077	0.095	0.075
	*2	Current input	A	0.41-0.39-0.38	0.58-0.55-0.52	0.70-0.67-0.64	0.54-0.52-0.50
Heating capacity	*3		kW	5.0	6.3	8.0	9.0
(Nominal)	*3		BTU/h	17,100	21,500	27,300	30,700
	*2	Power input	kW	0.055	0.077	0.095	0.075
	*2	Current input	A	0.41-0.39-0.38	0.58-0.55-0.52	0.70-0.67-0.64	0.54-0.52-0.50
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D			mm	380 x 745 x 900	380 x 745 x 900	380 x 745 x 900	380 x 1,030 x 900
			in.	15 x 29-3/8 x 35-7/16	15 x 29-3/8 x 35-7/16	15 x 29-3/8 x 35-7/16	15 x 40-9/16 x 35-7/16
Net weight			kg (lbs)	35 (78)	35 (78)	36 (80)	45 (100)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
		Water Volume	L	1.4	1.4	1.8	1.8
FAN		Type × Quantity		Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 1	Sirocco fan x 2
	*4	External static press.	Pa	50 - <100> - <150> - <200>	50 - <100> - <150> - <200>	50 - <100> - <150> - <200>	50 - <100> - <150> - <200>
			mmH_2O	5.1 - <10.2> - <15.3> - <20.4>	5.1 - <10.2> - <15.3> - <20.4>	5.1 - <10.2> - <15.3> - <20.4>	5.1 - <10.2> - <15.3> - <20.4>
		Motor Type		DC motor	DC motor	DC motor	DC motor
		Motor output	kW	0.121	0.121	0.121	0.244
		Driving mechanism		Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
		Air flow rate		(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	10.0 - 12.0 - 14.0	13.0 - 15.0 - 18.0	13.5 - 16.0 - 19.0	15.5 - 18.0 - 22.0
			L/s	167 - 200 - 233	217 - 250 - 300	225 - 267 - 317	258 - 300 - 367
			cfm	353 - 424 - 494	459 - 530 - 636	477 - 565 - 671	547 - 636 - 777
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
	*2		dB <A>	22.0-25.0-29.0	24.0-27.0-32.0	25.5-28.5-32.5	24.0-27.0-31.0
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam
Air filter				Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*5, 6					
	Connection size	Inlet	mm O.D.	22	22	22	22
		Outlet	mm O.D.	22	22	22	22
	Field pipe size	Inlet	mm I.D.	20	20	30	30
		Outlet	mm I.D.	20	20	30	30
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing		External		KB94C3VR	KB94C3VR	KB94C3VR	KB94C3VR
		Wiring		KB94C3VS	KB94C3VS	KB94C3VS	KB94C3VS
		Refrigerant cycle		-	-	-	-
Standard attachment		Document		Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
		Accessory		Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band
Optional parts		Drain pump kit		PAC-DRP10DP-E2	PAC-DRP10DP-E2	PAC-DRP10DP-E2	PAC-DRP10DP-E2
		Long life filter		PAC-KE86LAF	PAC-KE86LAF	PAC-KE86LAF	PAC-KE88LAF
		Filter box		PAC-KE63TB-F	PAC-KE63TB-F	PAC-KE63TB-F	PAC-KE99TB-F
		Valve kit	*7	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1. Nominal cooling conditions
   Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2. The values are measured at the factory setting of external static pressure.
3. Nominal heating conditions
   Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
   Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4. The factory setting of airflow mode and external static pressure mode is shown without < >.
   Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5. Be sure to install a valve on the water inlet/outlet.
6. Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7. Certain restrictions apply to indoor unit combinations.
   Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
   When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
   The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
   • Please group units that operate on 1 branch.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

Model				PEFY-WL80VMHS-A	PEFY-WL100VMHS-A	PEFY-WL125VMHS-A	
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	
Cooling capacity		*1	kW	9.0	11.2	14.0	
(Nominal)		*1	BTU/h	30,700	38,200	47,800	
	*2 Power input		kW	0.090	0.160	0.175	
	*2 Current input		A	0.63-0.61-0.58	1.05-1.01-0.96	1.17-1.13-1.09	
Heating capacity		*3	kW	10.0	12.5	16.0	
(Nominal)		*3	BTU/h	34,100	42,700	54,600	
	*2 Power input		kW	0.090	0.160	0.175	
	*2 Current input		A	0.63-0.61-0.58	1.05-1.01-0.96	1.17-1.13-1.09	
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	
External dimension H × W × D			mm	380 x 1,030 x 900	380 x 1,195 x 900	380 x 1,195 x 900	
			in.	15 x 40-9/16 x 35-7/16	15 x 47-1/16 x 35-7/16	15 x 47-1/16 x 35-7/16	
Net weight			kg (lbs)	45 (100)	51 (113)	53 (117)	
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	
	Water Volume		L	1.8	2.3	2.9	
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	
*4	External static press.		Pa	50 - <100> - <150> - <200>	50 - <100> - <150> - <200>	50 - <100> - <150> - <200>	
			mmH_2O	5.1 - <10.2> - <15.3> - <20.4>	5.1 - <10.2> - <15.3> - <20.4>	5.1 - <10.2> - <15.3> - <20.4>	
	Motor Type			DC motor	DC motor	DC motor	
	Motor output		kW	0.244	0.375	0.375	
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
			m^3/min	18.0 - 21.5 - 25.0	26.5 - 32.0 - 38.0	26.5 - 32.0 - 38.0	
			L/s	300 - 358 - 417	442 - 533 - 633	442 - 533 - 633	
			cfm	636 - 759 - 883	936 - 1,130 - 1,342	936 - 1,130 - 1,342	
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	
		*2	dB <A>	26.0-29.0-32.0	28.0-32.0-36.0	28.0-32.0-36.0	
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	
Air filter				Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	Option:Synthetic fiber unwoven cloth filter (long life filter) and filter box are recommended.	
Protection device				Fuse	Fuse	Fuse	
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	
Water piping diameter		*5, 6					
Connection size	Inlet		mm O.D.	22	22	22	
	Outlet		mm O.D.	22	22	22	
Field pipe size	Inlet		mm I.D.	30	30	30	
	Outlet		mm I.D.	30	30	30	
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	
Drawing	External			KB94C3VR	KB94C3VR	KB94C3VR	
	Wiring			KB94C3VS	KB94C3VS	KB94C3VS	
	Refrigerant cycle			-	-	-	
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	
	Accessory			Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	Washer, Drain hose, Tie band	
Optional parts	Drain pump kit			PAC-DRP10DP-E2	PAC-DRP10DP-E2	PAC-DRP10DP-E2	
	Long life filter			PAC-KE88LAF	PAC-KE89LAF	PAC-KE89LAF	
	Filter box			PAC-KE99TB-F	PAC-KE140TB-F	PAC-KE140TB-F	
	Valve kit		*7	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E	
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E	
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E	
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The factory setting of airflow mode and external static pressure mode is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
5.Be sure to install a valve on the water inlet/outlet.
6.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
7.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
• Please group units that operate on 1 branch.

Unit converter

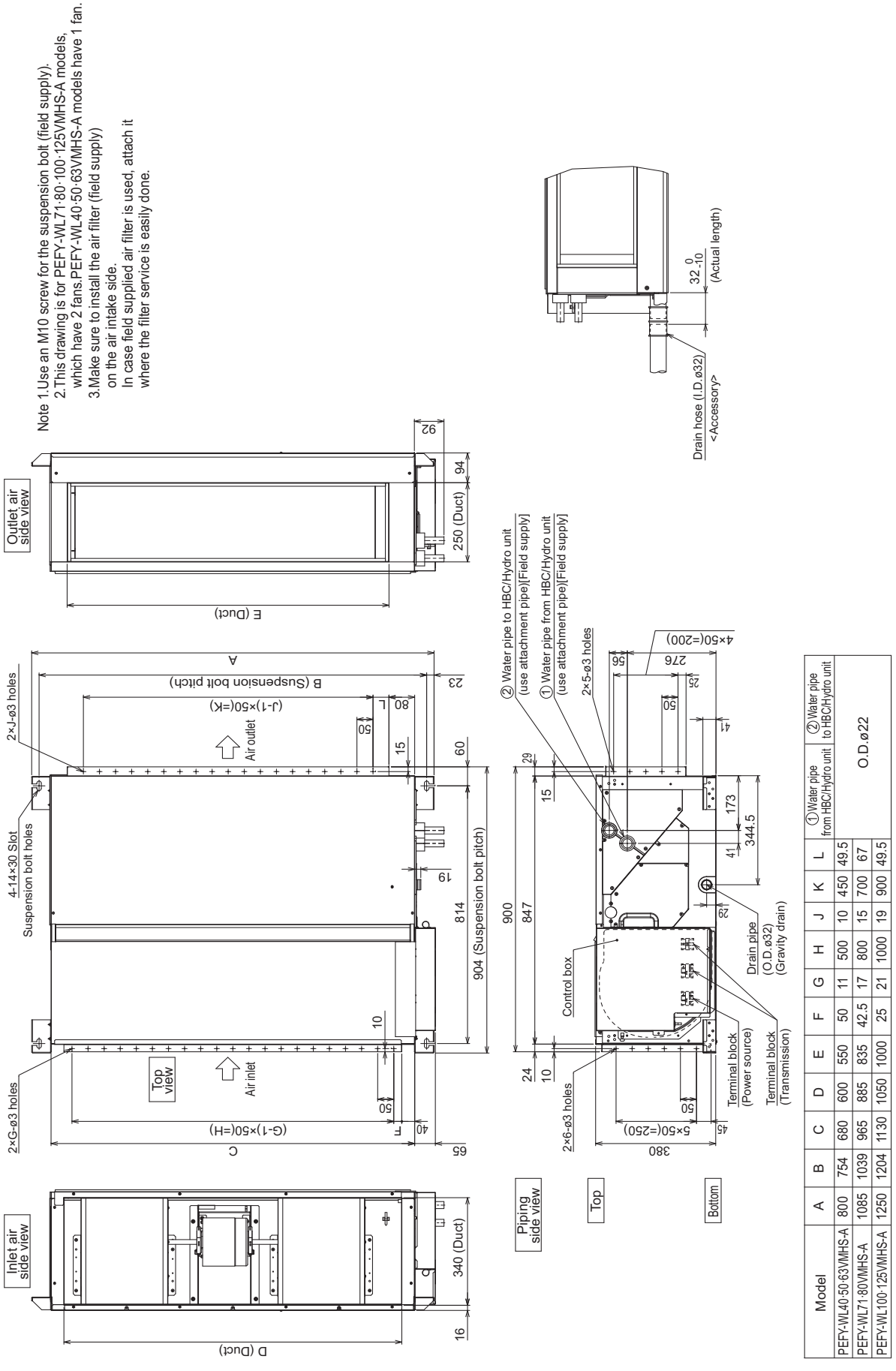
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PEFY-WL-VMHS-A

PEFY-WL40, 50, 63, 71, 80, 100, 125VMHS-A

Unit: mm



Model	A	B	C	D	E	F	G	H	J	K	L	①Water pipe from HBC/Hydro unit	②Water pipe to HBC/Hydro unit
PEFY-WL40·50·63VMHS-A	800	754	680	600	550	50	11	500	10	450	49.5	O.D.ø22	
PEFY-WL71·80VMHS-A	1085	1039	965	885	835	42.5	17	800	15	700	67		
PEFY-WL100·125VMHS-A	1250	1204	1130	1050	1000	25	21	1000	19	900	49.5		

PEFY-WL40, 50, 63, 71, 80, 100, 125VMHS-A

Unit: mm

[Maintenance access space]

Secure enough access space to allow for the maintenance,inspection,and replacement of the motor,fan,heat exchanger, drain pan and control box in one of the following ways.
Select an installation site for the indoor unit so that it's maintenance access space will not be obstructed by beam or other objects.

Create access door 1(450x450mm) for the maintenance from the unit side when the thermistor, and control box is exchanged.(Fig.2,4)

(1) When a space of 300mm or more is available below the unit between the unit and the ceiling.
Create access door 2(600x600mm) for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.2)

(2) When a space of less than 300mm is available below the unit between the unit and the ceiling.
(At least 20mm of space should be left below the unit as shown in Fig.3.)
Create access door 3 for the maintenance from the bottom when the motor,fan,heat exchanger and drain pan is cleaned(exchanged).(Fig.4)

Fig.1

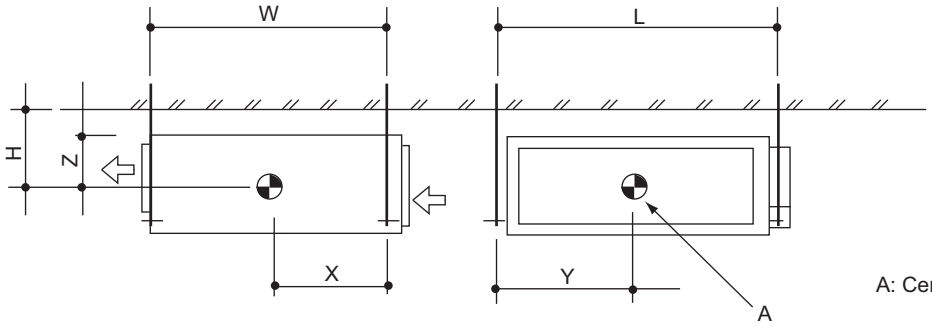
Model	C	M	N
PEFY-WL40·50·63VMHS-A	680	780	0~50
PEFY-WL71·80VMHS-A	965	1065	100~150
PEFY-WL100·125VMHS-A	1130	1230	200~250

Fig.2 (Viewed from the direction of the arrow Z)

Fig.3

Fig.4 (Viewed from the direction of the arrow Y)

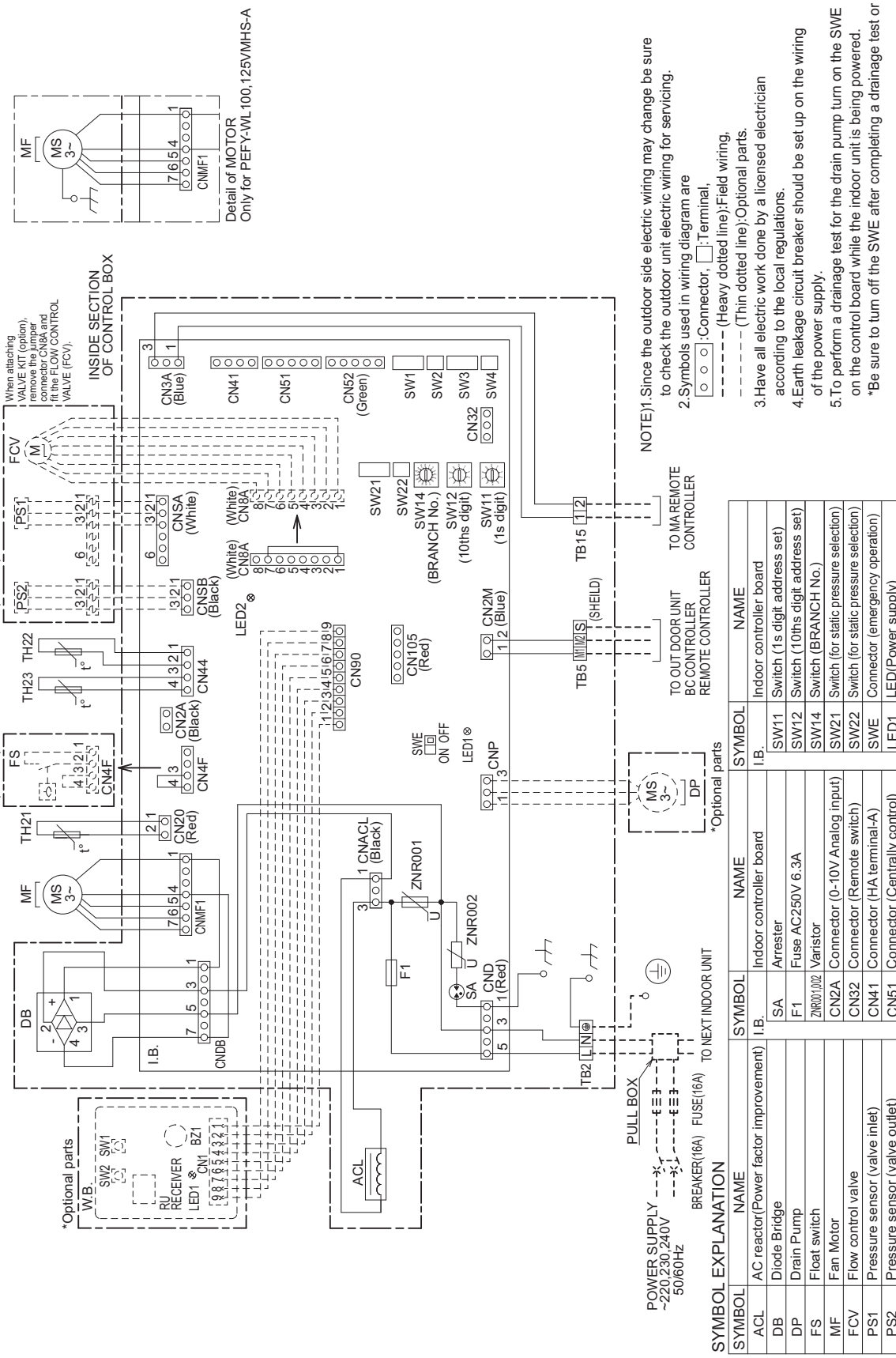
PEFY-WL40, 50, 63, 71, 80, 100, 125VMHS-A



(mm)[in]

Model name	W	L	H	X	Y	Z
PEFY-WL40VMHS-A	814 [32-1/16]	754 [29-11/16]	210 [8-9/32]	374 [14-3/4]	440 [17-11/32]	190 [7-1/2]
PEFY-WL50VMHS-A	814 [32-1/16]	754 [29-11/16]	210 [8-9/32]	374 [14-3/4]	440 [17-11/32]	190 [7-1/2]
PEFY-WL63VMHS-A	814 [32-1/16]	754 [29-11/16]	210 [8-9/32]	374 [14-3/4]	440 [17-11/32]	190 [7-1/2]
PEFY-WL71VMHS-A	814 [32-1/16]	1039 [40-15/16]	210 [8-9/32]	364 [14-11/32]	548 [21-5/8]	190 [7-1/2]
PEFY-WL80VMHS-A	814 [32-1/16]	1039 [40-15/16]	210 [8-9/32]	364 [14-11/32]	548 [21-5/8]	190 [7-1/2]
PEFY-WL100VMHS-A	814 [32-1/16]	1204 [47-13/32]	210 [8-9/32]	364 [14-11/32]	649 [25-9/16]	190 [7-1/2]
PEFY-WL125VMHS-A	814 [32-1/16]	1204 [47-13/32]	210 [8-9/32]	364 [14-11/32]	649 [25-9/16]	190 [7-1/2]

PEFY-WL40, 50, 63, 71, 80, 100, 125VMHS-A



SYMBOL EXPLANATION

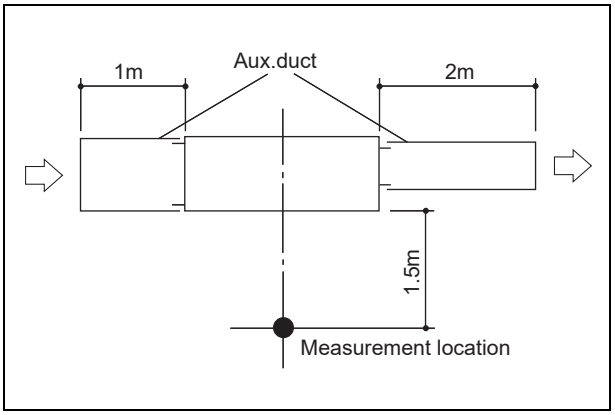
SYMBOL	NAME
ACL	AC reactor(Power factor improvement)
DB	Diode Bridge
DP	Drain Pump
FS	Float switch
MF	Fan Motor
FCV	Flow control valve
PS1	Pressure sensor (valve inlet)
PS2	Pressure sensor (valve outlet)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp.detection)
TH22	Thermistor (piping temp.detection/inlet water)
TH23	Thermistor (piping temp.detection/outlet water)

SYMBOL	NAME
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001/002	Varistor
CN2A	Connector (0-10V Analog input)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)
SW1	Switch (for mode selection)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)

SYMBOL	NAME
I.B.	Indoor controller board
SW11	Switch (1s digit address set)
SW12	Switch (10ths digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for static pressure selection)
SW22	Switch (for static pressure selection)
SWE	Connector (emergency operation)
LED1	LED(Power supply)
LED2	LED(Remote controller supply)
W.B.	Wireless remote controller board
BZ1	Buzzer
LED1	LED(Run indicator)
RU	Receiving unit
SW1	Switch (Heating on/off)
SW2	Switch (Cooling on/off)

5-1. Sound levels

PEFY-WL-VMHS-A



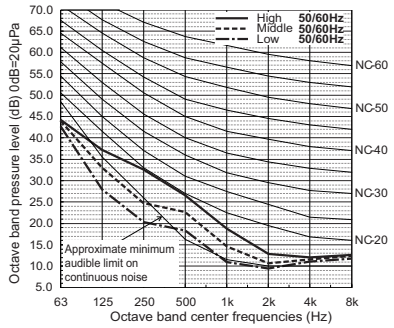
* Measured in anechoic room.

Sound level at anechoic room: Low-Mid-High

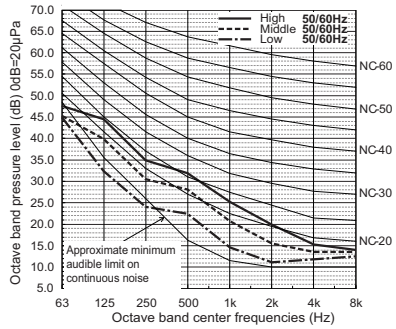
		Sound level dB (A)			
		50Pa	100Pa	150Pa	200Pa
PEFY-WL40VMHS-A	220-240V	22-25-29	25-30-34	30-34-38	33-37-41
PEFY-WL50VMHS-A	220-240V	24-27--32	28-31-36	31-35-39	34-37-42
PEFY-WL63VMHS-A	220-240V	25.5-28.5-32.5	28-32-36	32-35-39	34-37-41
PEFY-WL71VMHS-A	220-240V	24-27-31	28-31-36	31-35-40	34-37-42
PEFY-WL80VMHS-A	220-240V	26-29-32	29-33-37	32-36-40	36-40-43
PEFY-WL100VMHS-A	220-240V	28-32-36	30-34-39	32-37-42	35-40-45
PEFY-WL125VMHS-A	220-240V	28-32-36	30-34-39	32-37-42	35-40-45

5-2. NC curves

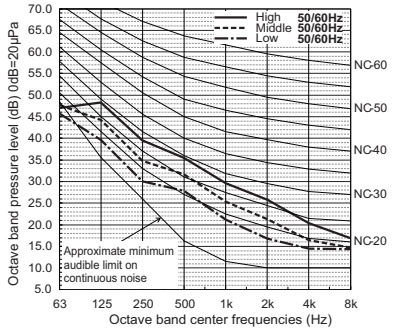
PEFY-WL40VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



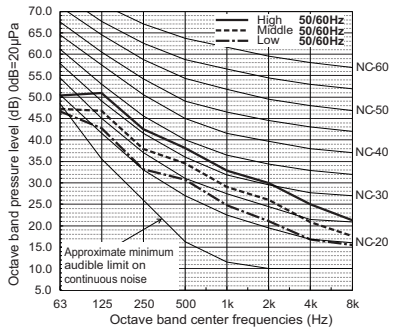
PEFY-WL40VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



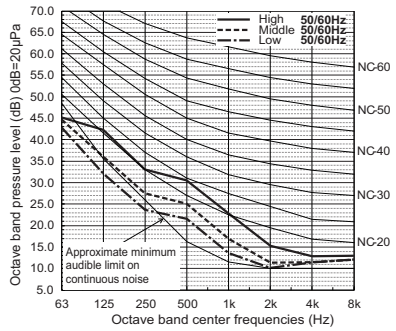
PEFY-WL40VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



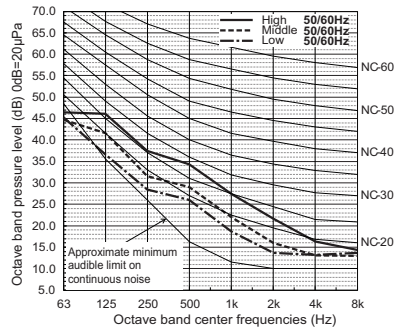
PEFY-WL40VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



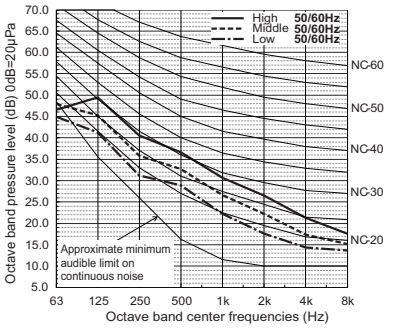
PEFY-WL50VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



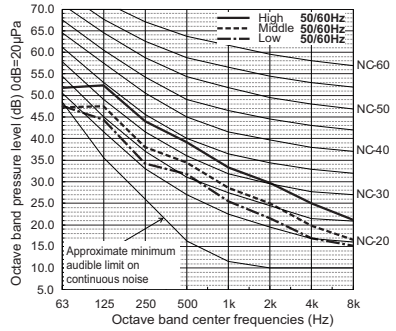
PEFY-WL50VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



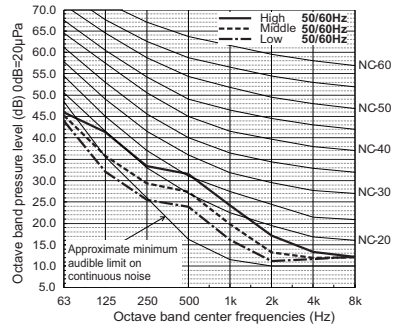
PEFY-WL50VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



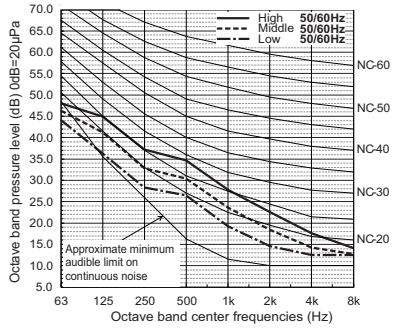
PEFY-WL50VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



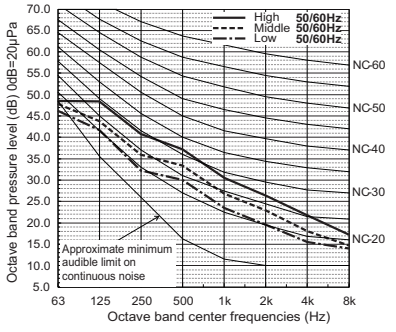
PEFY-WL63VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



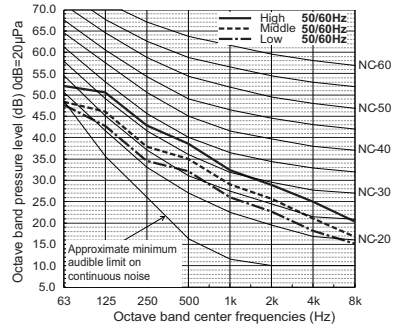
PEFY-WL63VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



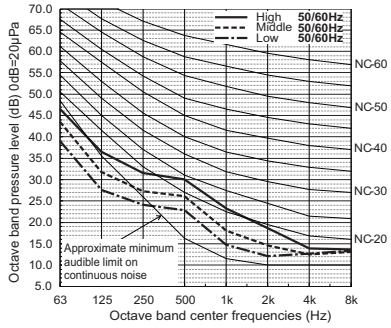
PEFY-WL63VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



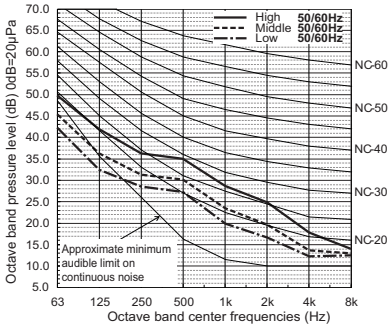
PEFY-WL63VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



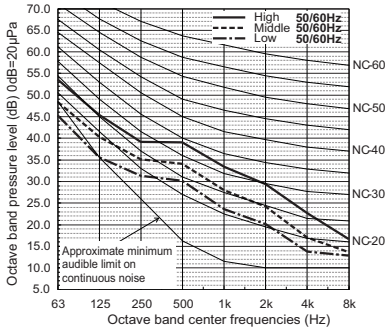
PEFY-WL71VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



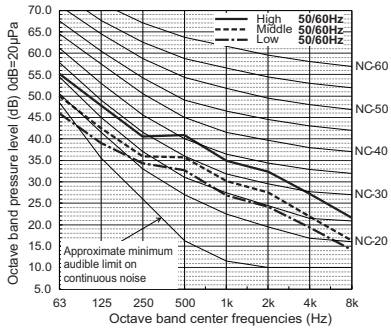
PEFY-WL71VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



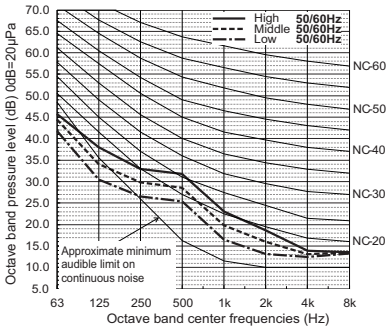
PEFY-WL71VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



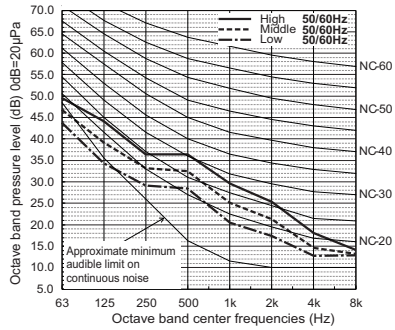
PEFY-WL71VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



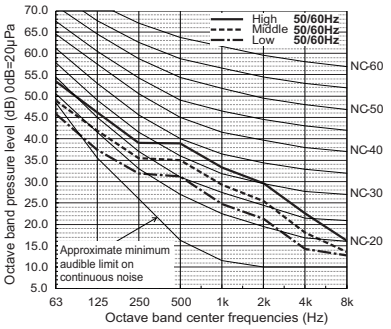
PEFY-WL80VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



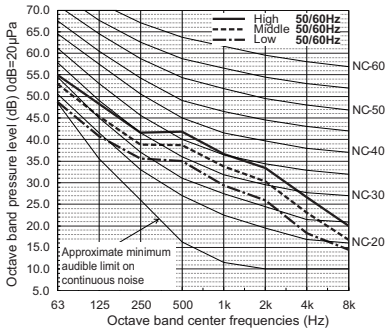
PEFY-WL80VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



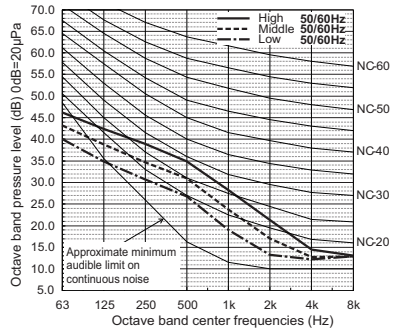
PEFY-WL80VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



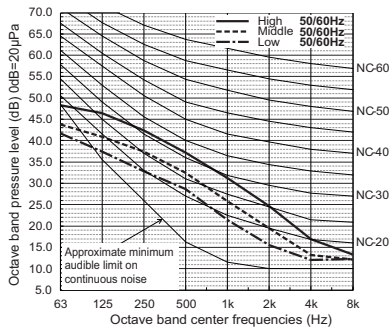
PEFY-WL80VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



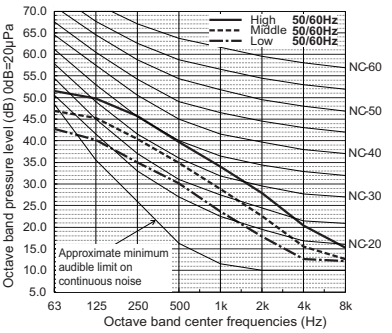
PEFY-WL100VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



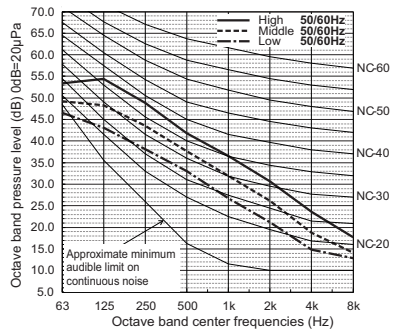
PEFY-WL100VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



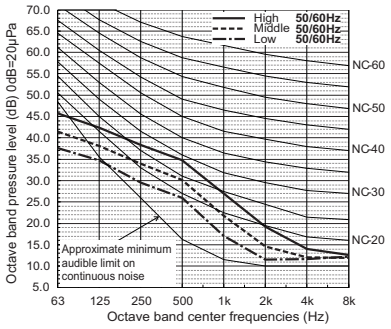
PEFY-WL100VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



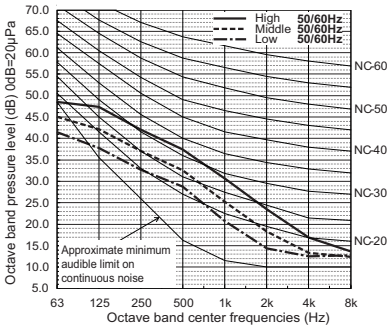
PEFY-WL100VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



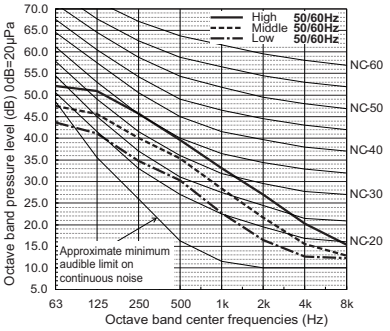
PEFY-WL125VMHS-A
External Static Pressure: 50Pa [0.20in.WG]
Power Source: 220-240V, 50/60Hz



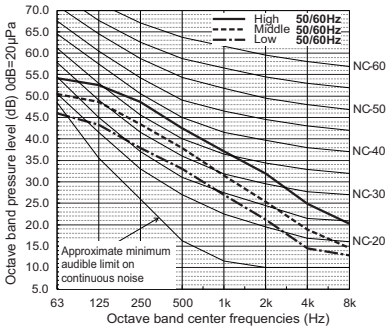
PEFY-WL125VMHS-A
External Static Pressure: 100Pa [0.40in.WG]
Power Source: 220-240V, 50/60Hz



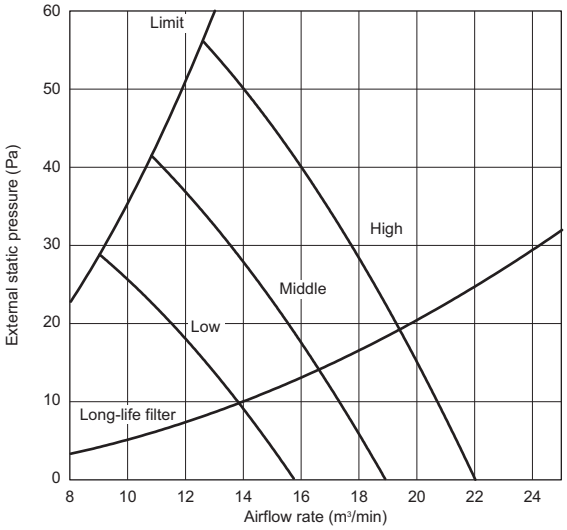
PEFY-WL125VMHS-A
External Static Pressure: 150Pa [0.60in.WG]
Power Source: 220-240V, 50/60Hz



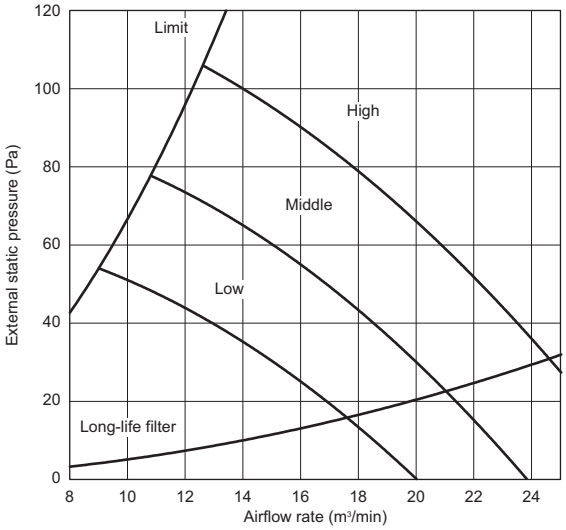
PEFY-WL125VMHS-A
External Static Pressure: 200Pa [0.80in.WG]
Power Source: 220-240V, 50/60Hz



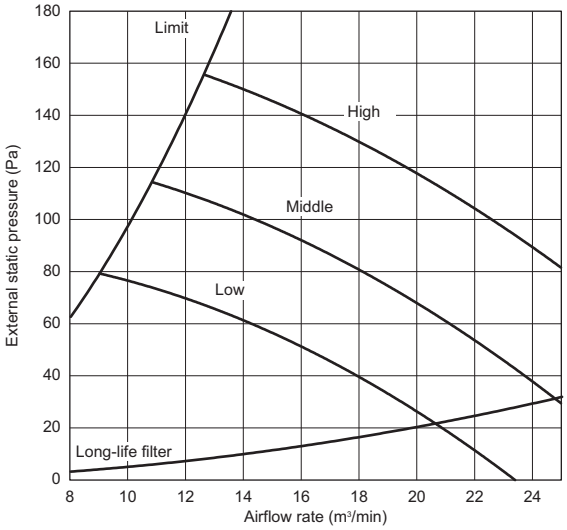
PEFY-WL40VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



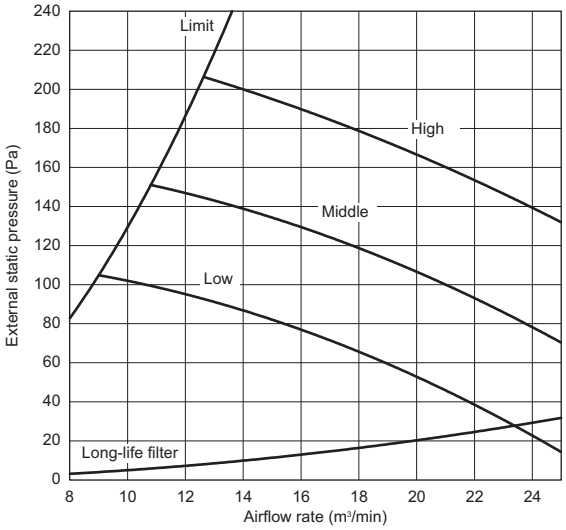
PEFY-WL40VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



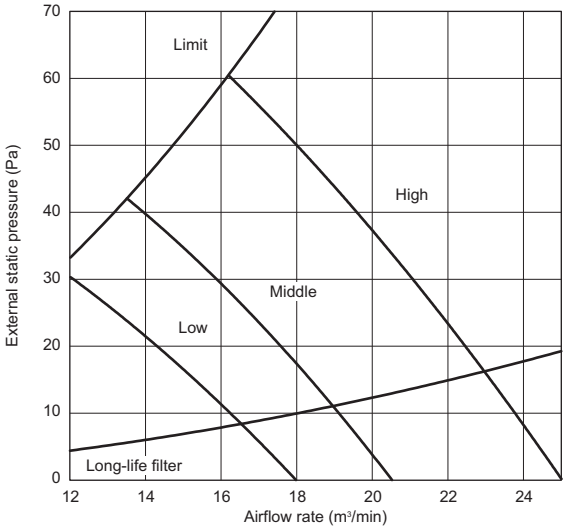
PEFY-WL40VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



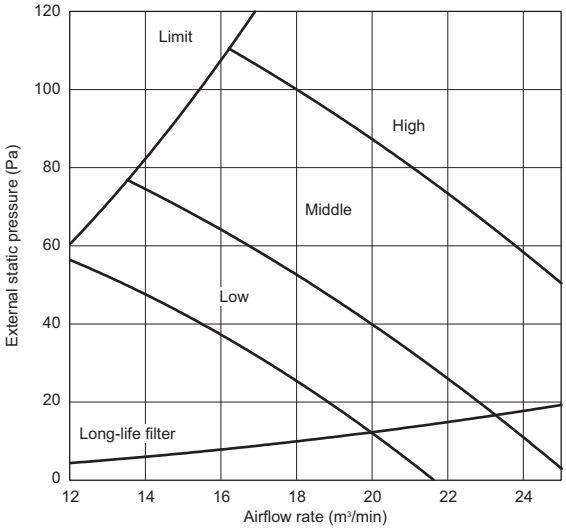
PEFY-WL40VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



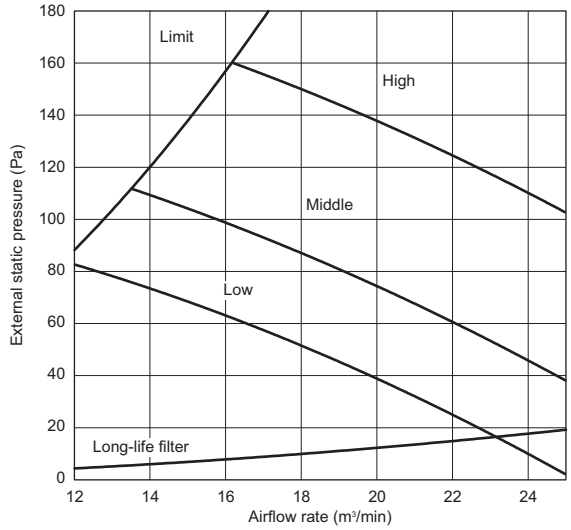
PEFY-WL50VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



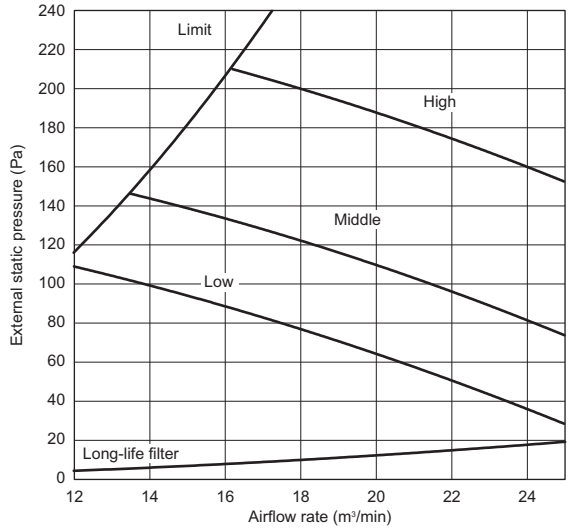
PEFY-WL50VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



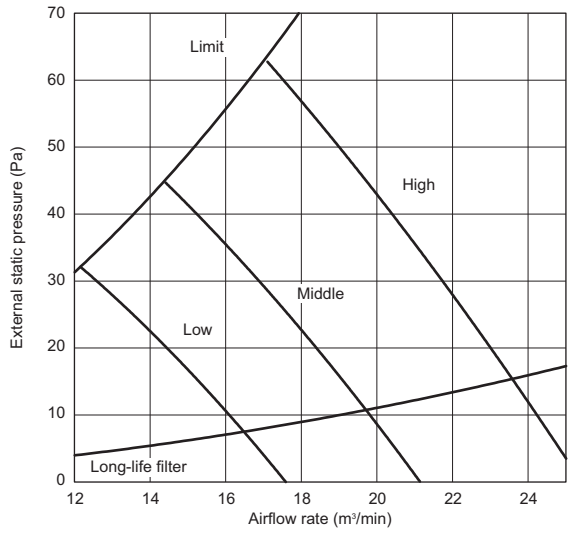
PEFY-WL50VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



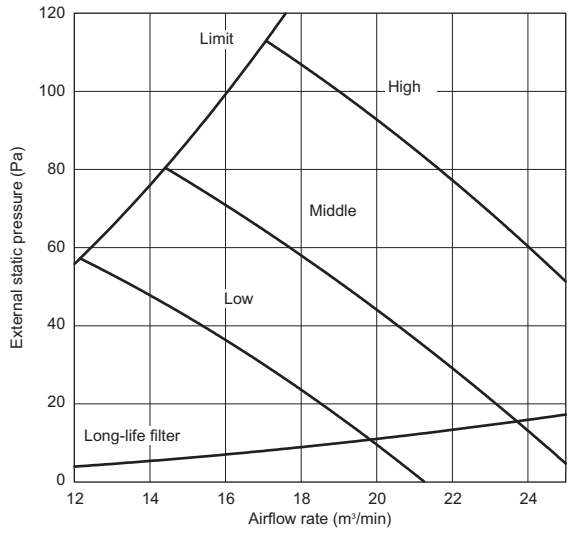
PEFY-WL50VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



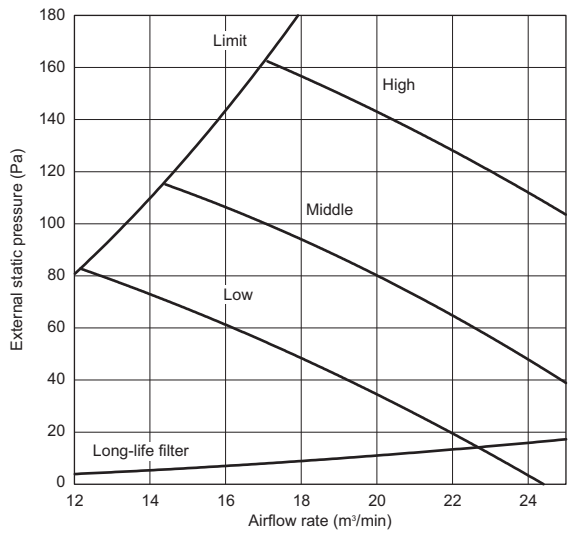
PEFY-WL63VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



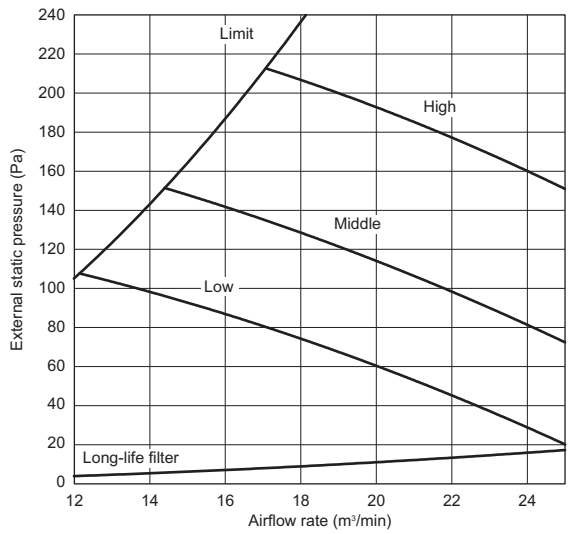
PEFY-WL63VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



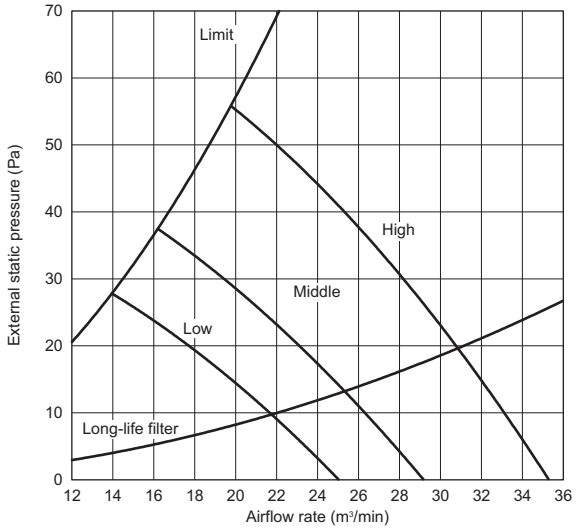
PEFY-WL63VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



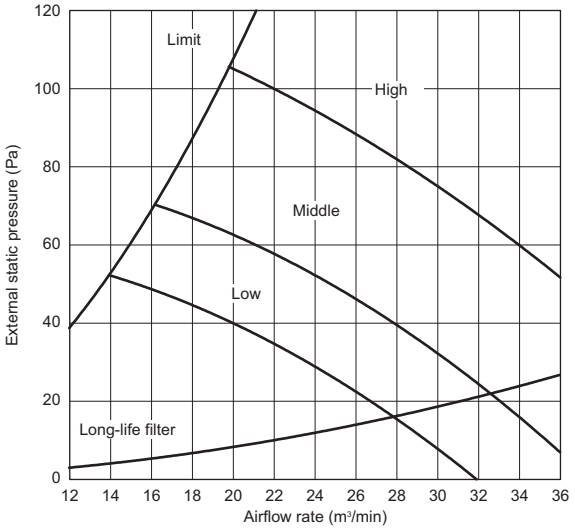
PEFY-WL63VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



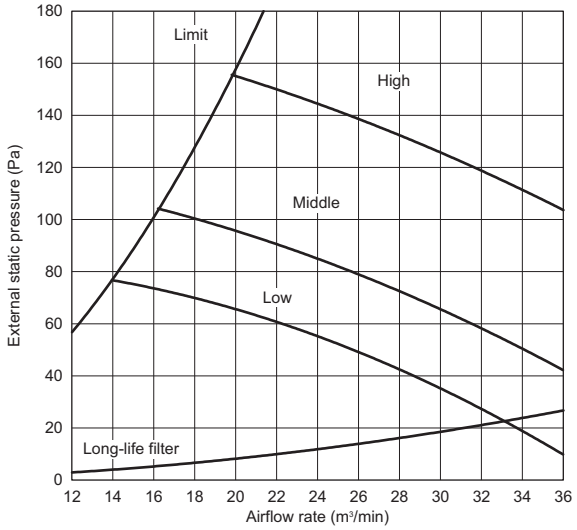
PEFY-WL71VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



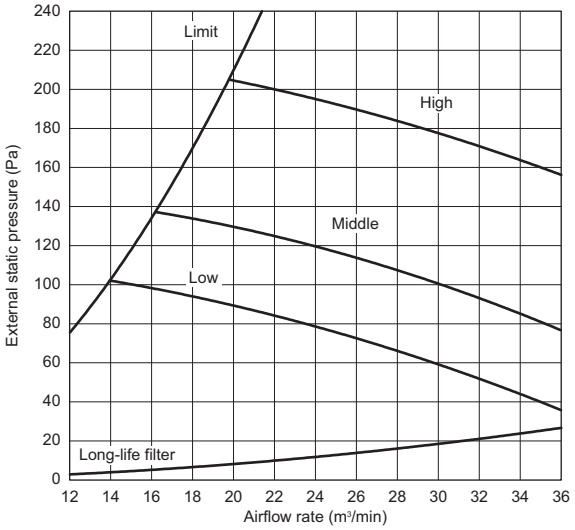
PEFY-WL71VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



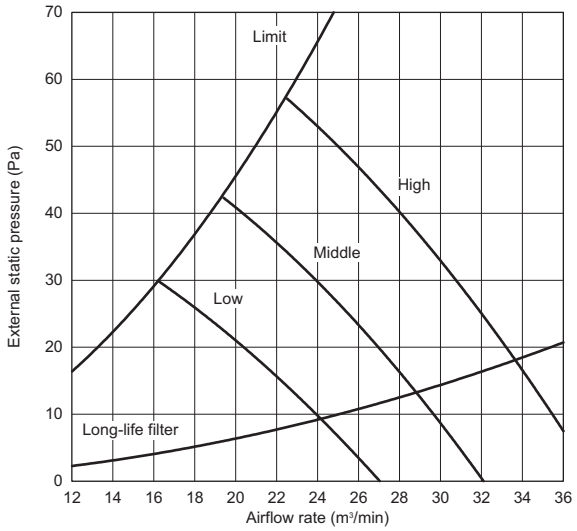
PEFY-WL71VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



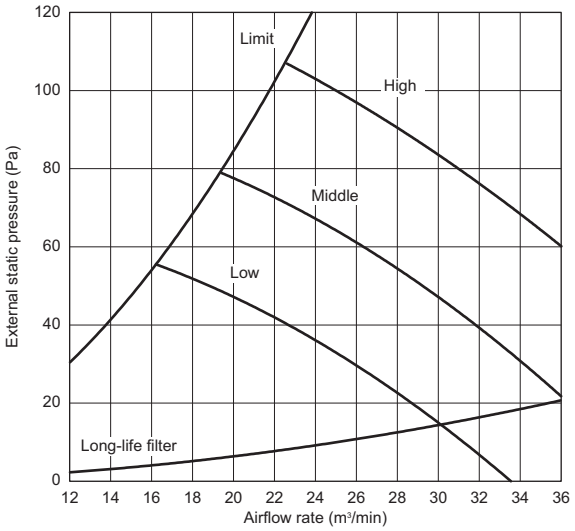
PEFY-WL71VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



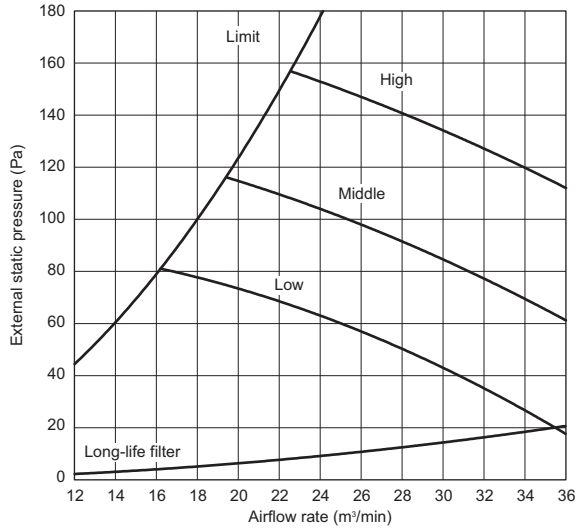
PEFY-WL80VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



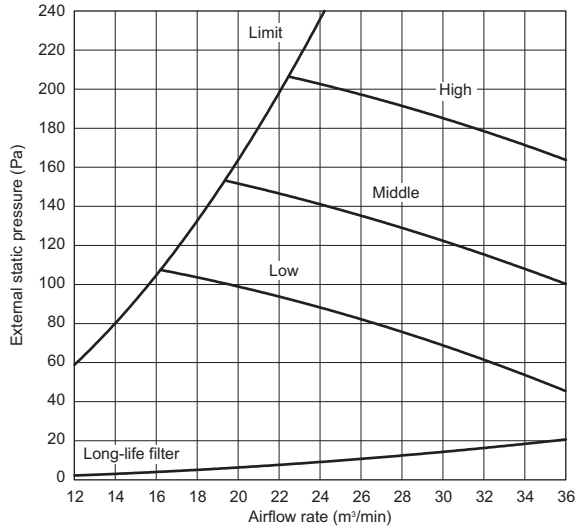
PEFY-WL80VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



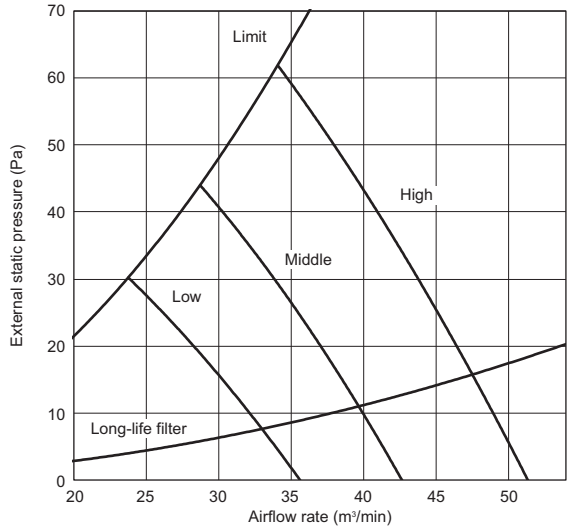
PEFY-WL80VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



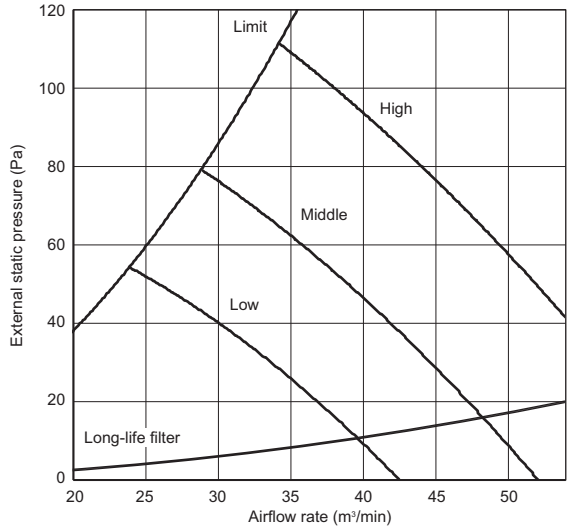
PEFY-WL80VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



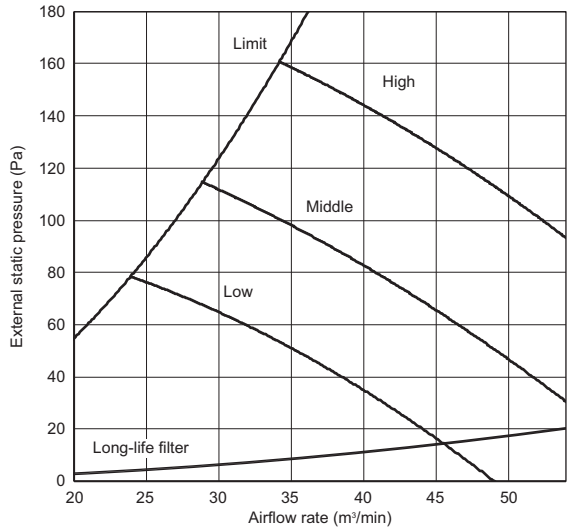
PEFY-WL100VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



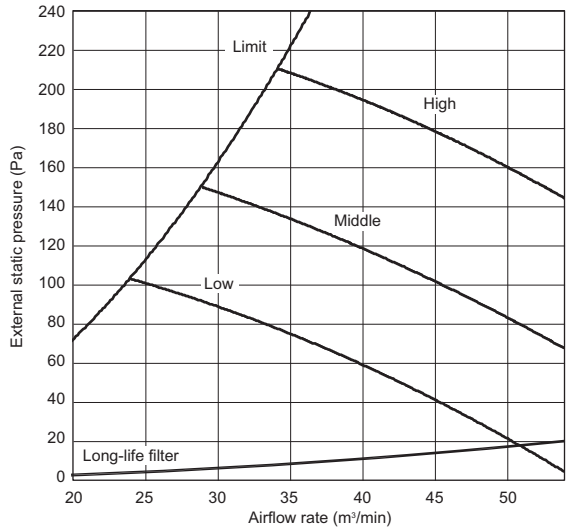
PEFY-WL100VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



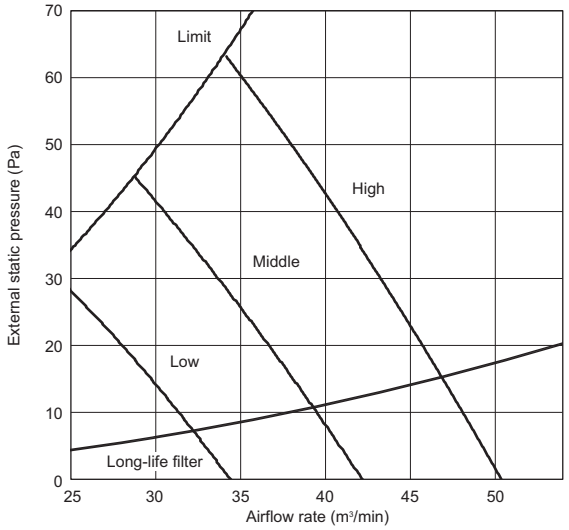
PEFY-WL100VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



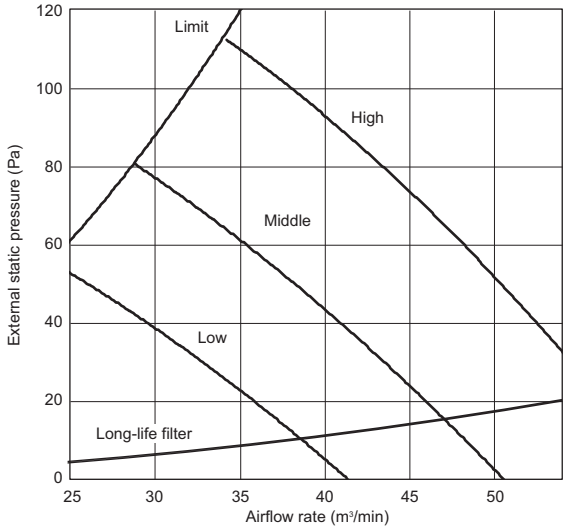
PEFY-WL100VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



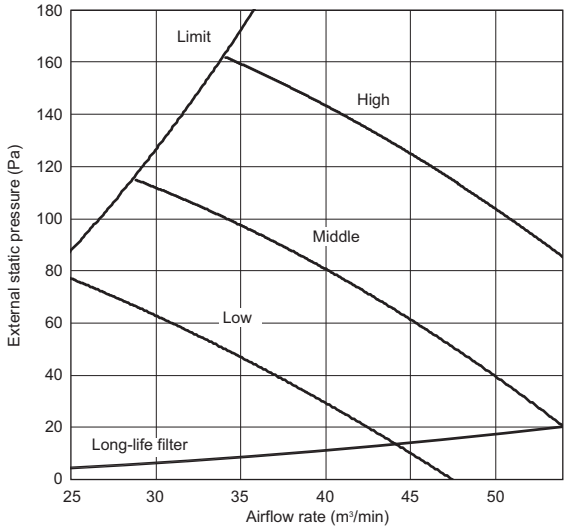
PEFY-WL125VMHS-A
External static pressure : 50Pa
Power source : 220-240V, 50/60Hz



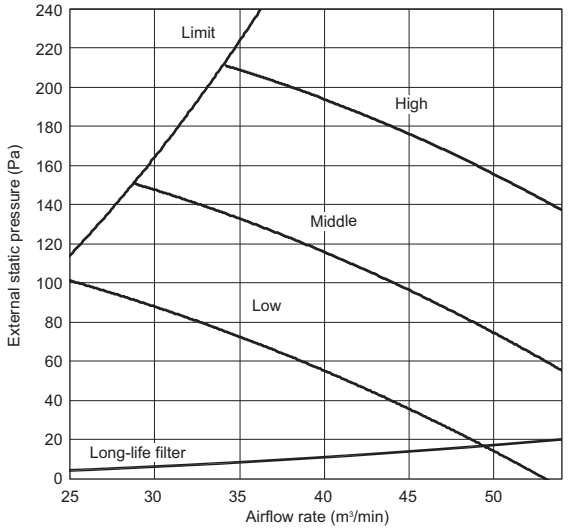
PEFY-WL125VMHS-A
External static pressure : 100Pa
Power source : 220-240V, 50/60Hz



PEFY-WL125VMHS-A
External static pressure : 150Pa
Power source : 220-240V, 50/60Hz



PEFY-WL125VMHS-A
External static pressure : 200Pa
Power source : 220-240V, 50/60Hz



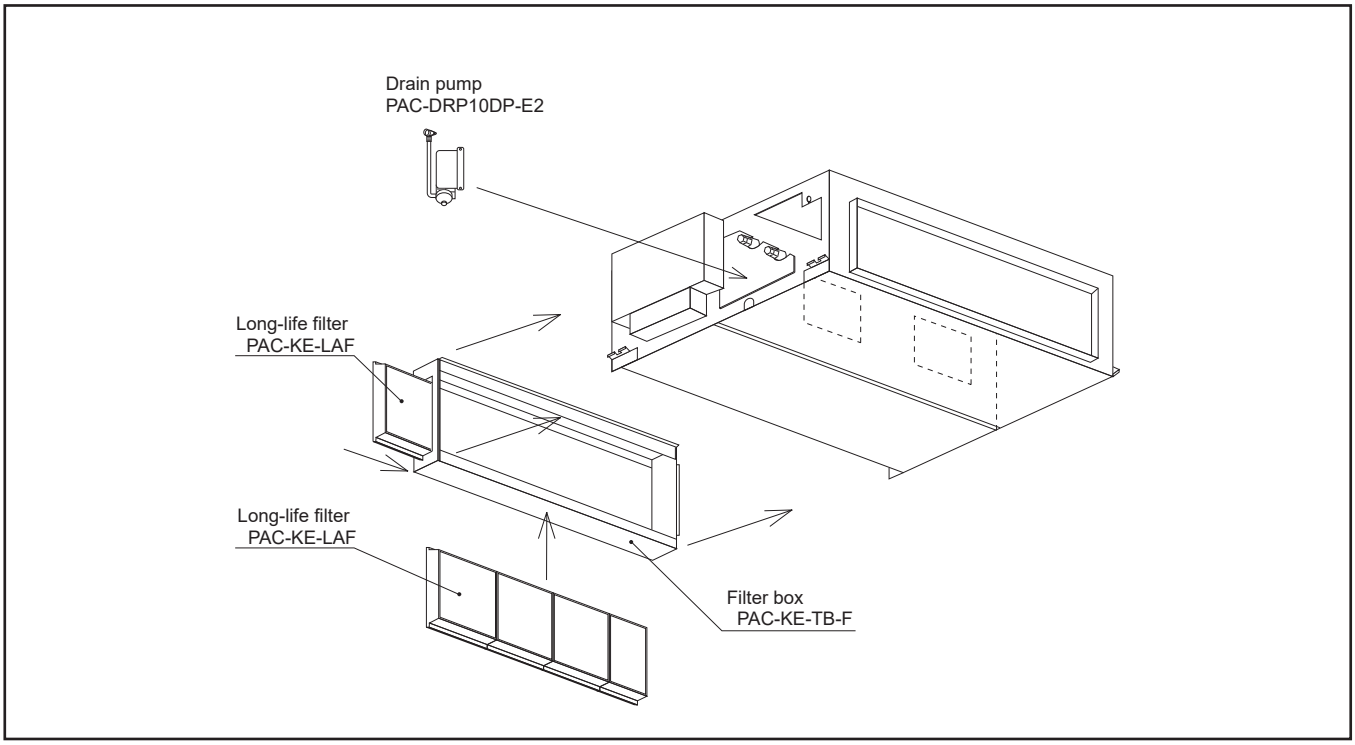
Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

PEFY-WL-VMHS-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A) (50/60Hz)	Output (kW)	FLA(A) (50/60Hz)
PEFY-WL40VMHS-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	1.78	0.121	1.42
PEFY-WL50VMHS-A			1.88	0.121	1.50
PEFY-WL63VMHS-A			2.00	0.121	1.60
PEFY-WL71VMHS-A			2.38	0.244	1.90
PEFY-WL80VMHS-A			2.45	0.244	1.96
PEFY-WL100VMHS-A			3.85	0.375	3.08
PEFY-WL125VMHS-A			4.00	0.375	3.20

8-1. Optional parts line up for the Indoor unit

Description	Model	Applicable capacity
Long life filter	PAC-KE86LAF	WL40, WL50, WL63
	PAC-KE88LAF	WL71, WL80
	PAC-KE89LAF	WL100, WL125
Filter box	PAC-KE63TB-F	WL40, WL50, WL63
	PAC-KE99TB-F	WL71, WL80
	PAC-KE140TB-F	WL100, WL125
Drain pump	PAC-DRP10DP-E2	WL40, WL50, WL63, WL71, WL80, WL100, WL125
Valve kit	PAC-SK35VK-E	WL40, WL50, WL63, WL71, WL80, WL100, WL125
Attachment plate	PAC-SK39AP-E	WL40, WL50, WL63, WL71, WL80, WL100, WL125
6m Lead wire	PAC-SK40LW-E	WL40, WL50, WL63, WL71, WL80, WL100, WL125

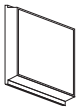
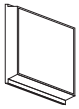
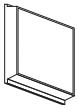
PEFY-WL-VMHS-A



8-2. Long-life filter

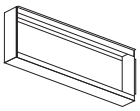
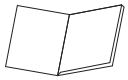
Life span: 2,500 hr (Dust concentration 0.15mg/m^3)
* The actual dust situation affects the filter life span, which should be considered at the applying site.
Material: Synthetic fiber unwoven cloth filter
Static pressure loss is referred to 6 “FAN CHARACTERISTICS CURVES”.
Long-life filter should be used together with filter box PAC-KE-TB-F.

PAC-KE-LAF

Item	PAC-KE86LAF	PAC-KE88LAF	PAC-KE89LAF
Quantity	2	3	3
Shape	(298X300) 	(298X300) 	(298X300) 

Detailed installation information should be referred to its Installation Manual.

PAC-KE-TB-F

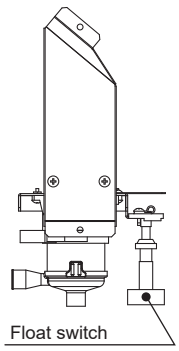
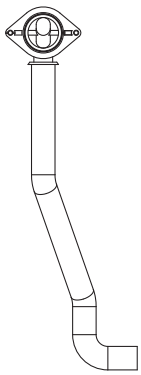
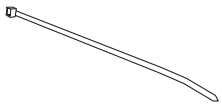
Item	① Screw	② Filter box	③ Installation manual	
Quantity	10/12*	1	1	
Shape				*PAC-KE250TB has 12 pieces of screw.

Detailed installation information should be referred to its Installation Manual.

8-3. Drain pump

If drain water can not flow out the Indoor unit by gravity and gradient, a Drain-pump for draining is needed.
Drain pump PAC-DRP10DP-E2 can pump water up to 550mm [21-11/16 in.] high from the drain pan.

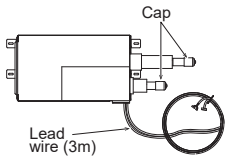
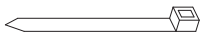
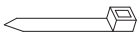
PAC-DRP10DP-E2

Item	① Drain pump ass'y	② Drain socket ass'y	③ Rubber plug	④ Band	⑤ PTT screw 4 × 10
Quantity	1	1	1	3	2 + 1 (spare)
Shape					

Detailed installation information should be referredto its Installation Manual.

8-4. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

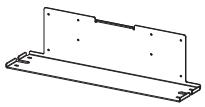
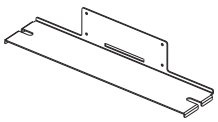
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

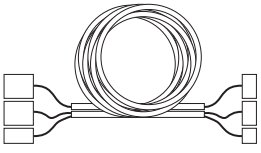
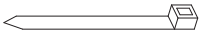
8-5. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-6. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m).
Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.

Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

PCFY-WL-VKM-E

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Model				PCFY-WL40VKM-E	PCFY-WL63VKM-E	PCFY-WL80VKM-E	PCFY-WL100VKM-E
Power source				1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz
Cooling capacity	*1	kW		4.5	7.1	9.0	11.2
(Nominal)	*1	BTU/h		15,400	24,200	38,200	47,800
*2	Power input	kW		0.04	0.06	0.08	0.11
*2	Current input	A		0.34	0.52	0.69	0.95
Heating capacity	*3	kW		5.0	8.0	10.0	12.5
(Nominal)	*3	BTU/h		17,100	27,300	42,700	54,600
*2	Power input	kW		0.04	0.06	0.08	0.11
*2	Current input	A		0.34	0.52	0.69	0.95
External finish				MUNSELL (6.4Y 8.9/0.4)	MUNSELL (6.4Y 8.9/0.4)	MUNSELL (6.4Y 8.9/0.4)	MUNSELL (6.4Y 8.9/0.4)
External dimension H × W × D		mm		230×960×680	230×1280×680	230×1600×680	230×1600×680
		in.		9-1/16×37-13/16×26-3/4	9-1/16×50-3/8×26-3/4	9-1/16×63×26-3/4	9-1/16×63×26-3/4
Net weight		kg (lbs)		25 (55)	32 (71)	39 (86)	39 (86)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume	L		1.1	1.9	2.5	2.5
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 3	Sirocco fan x 4	Sirocco fan x 4
	External static press.	Pa		0	0	0	0
		mmH_2O		0	0	0	0
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output	kW		0.090	0.095	0.160	0.160
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
		m^3/min		10-11-12-13	15-17-19-21	22-23-25-27	22-25-28-31
		L/s		167-183-200-217	233-250-267-300	350-400-433-467	350-400-450-517
		cfm		353-388-424-459	494-530-565-636	742-847-918-989	742-847-953-1095
Sound pressure level (measured in anechoic room)				(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)	(Low-Mid2-Mid1-High)
	*2	dB <A>		32-35-37-39	34-37-40-43	39-40-42-44	39-42-45-47
Insulation material				Polyeter sheet	Polyeter sheet	Polyeter sheet	Polyeter sheet
Air filter				PP honeycomb	PP honeycomb	PP honeycomb	PP honeycomb
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-V-AB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-V-AB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-V-AB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-V-AB/CMH-WM-V-A
Water piping diameter	*4, 5						
Connection size	Inlet	mm O.D.		22	22	22	22
	Outlet	mm O.D.		22	22	22	22
Field pipe size	Inlet	mm I.D.		20	30	30	30
	Outlet	mm I.D.		20	30	30	30
Field drain pipe size		mm (in.)		O.D.26 (1)	O.D.26 (1)	O.D.26 (1)	O.D.26 (1)
Drawing	External			RG01V955	RG01V955	RG01V955	RG01V955
	Wiring			RH79B150	RH79B150	RH79B150	RH79B150
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			-	-	-	-
Optional parts	High efficiency filter			PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E	PAC-SH90KF-E
	Wireless remote controller kit			PAR-SL94B-E	PAR-SL94B-E	PAR-SL94B-E	PAR-SL94B-E
	Anti-allergy enzyme filter			PAC-SK48KF-E	PAC-SK49KF-E	PAC-SK50KF-E	PAC-SK50KF-E
	V Blocking filter			PAC-SK55KF-E	PAC-SK56KF-E	PAC-SK57KF-E	PAC-SK57KF-E
	Wired remote controller kit			PAR-41MAA	PAR-41MAA	PAR-41MAA	PAR-41MAA
	Valve kit		*6	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.Be sure to install a valve on the water inlet/outlet.
5.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
6.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
7.Please group units that operate on 1 branch of HBC controller.

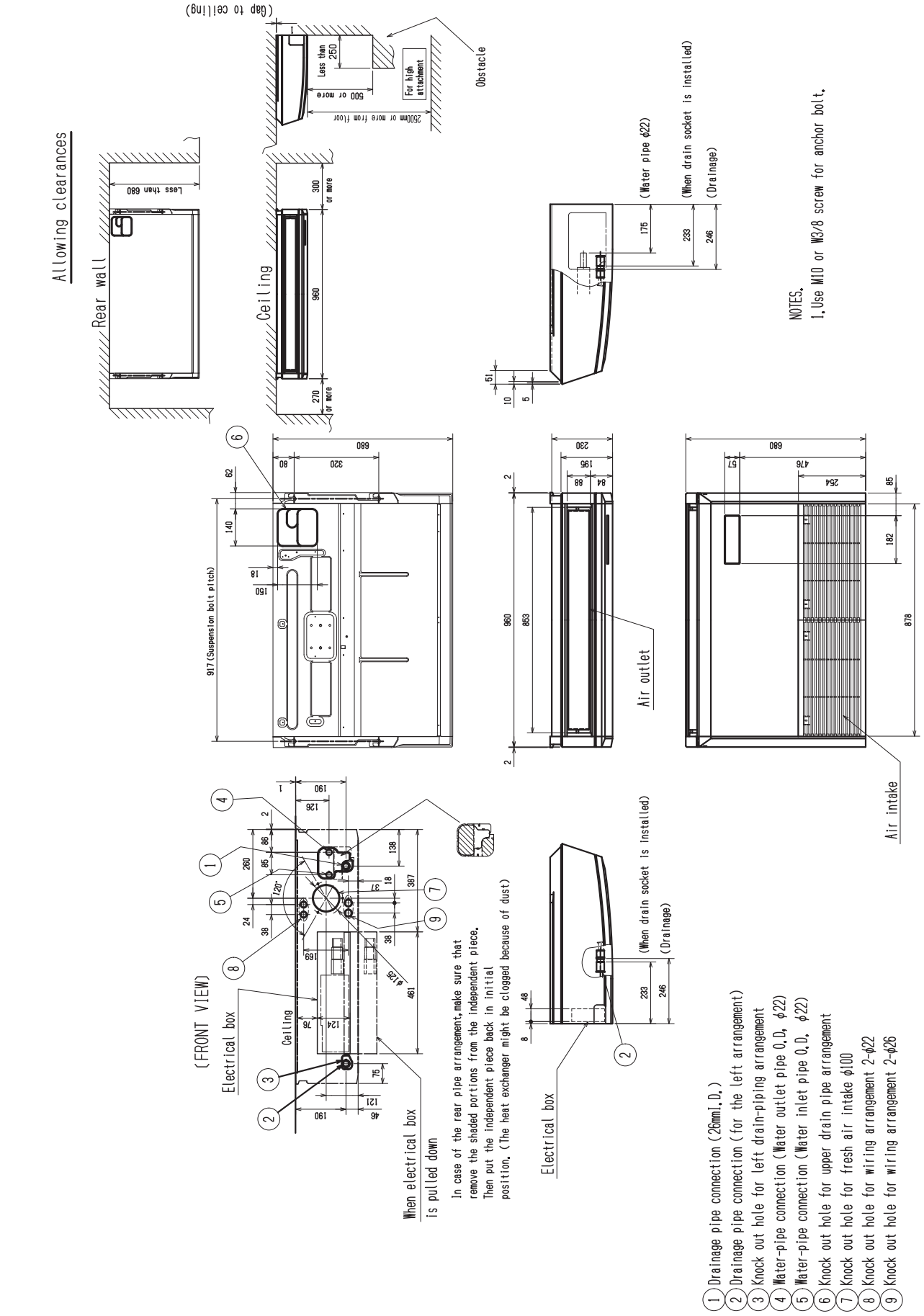
Unit converter

BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

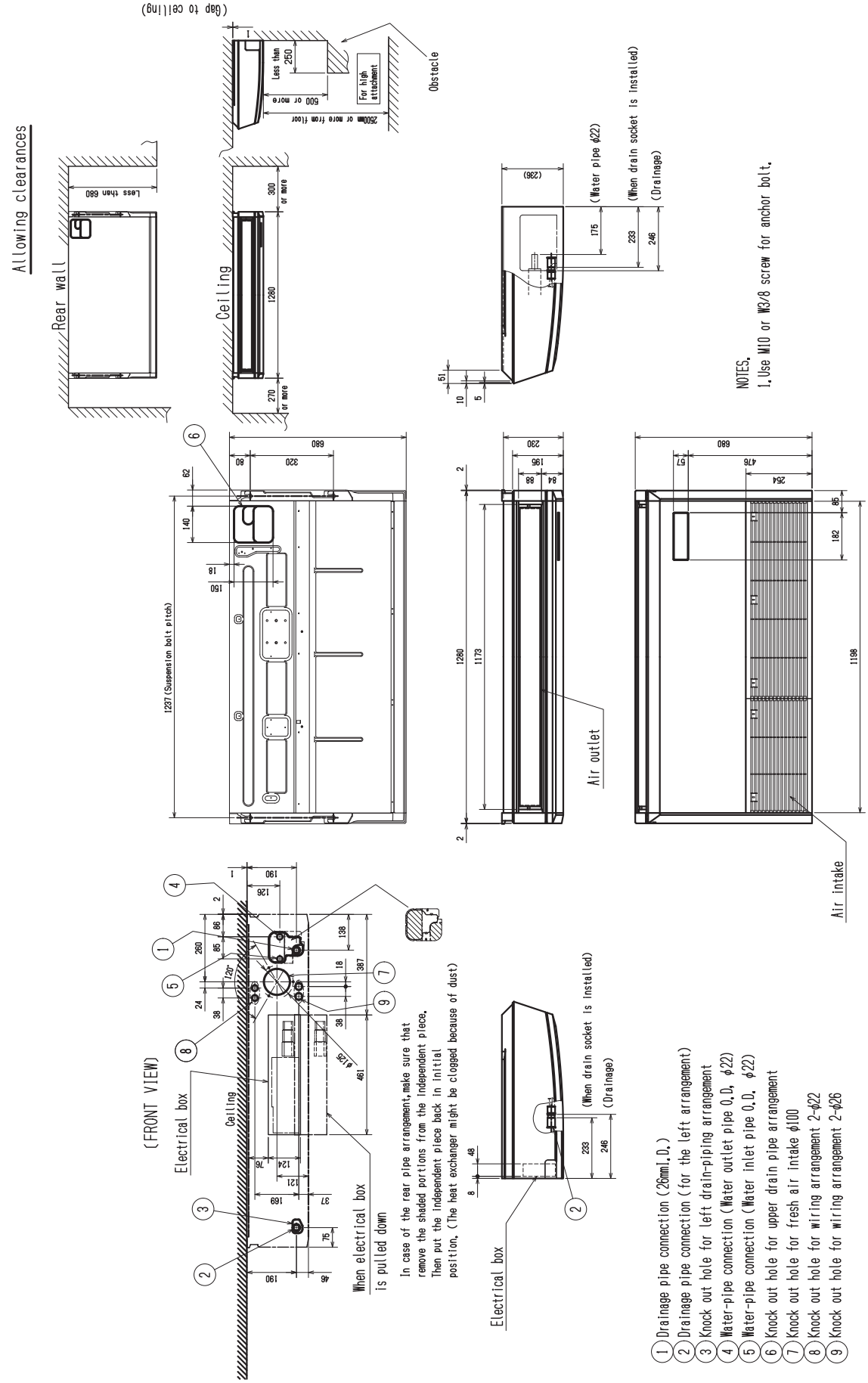
PCFY-WL40VKM-E

Unit: mm



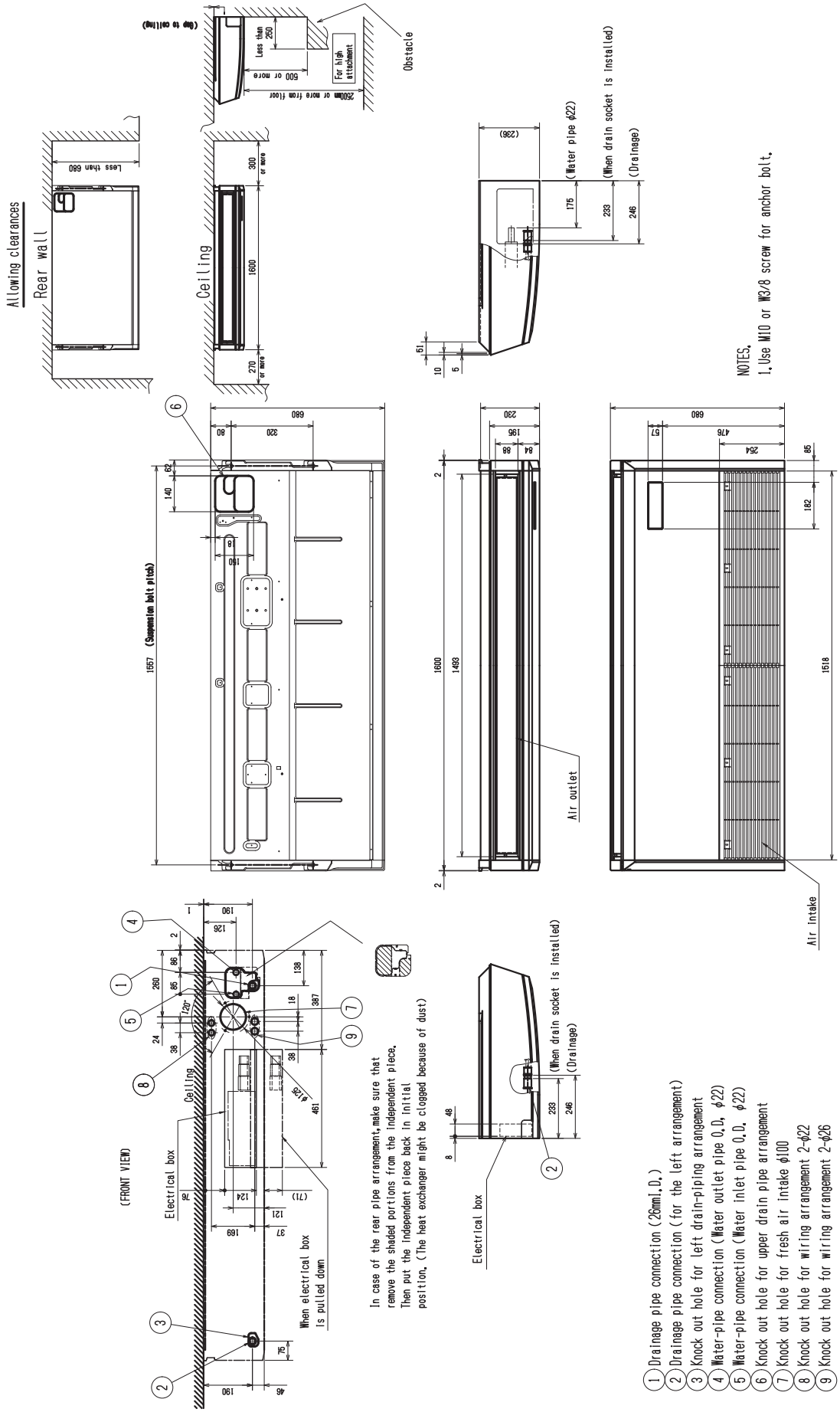
PCFY-WL63VKM-E

Unit: mm

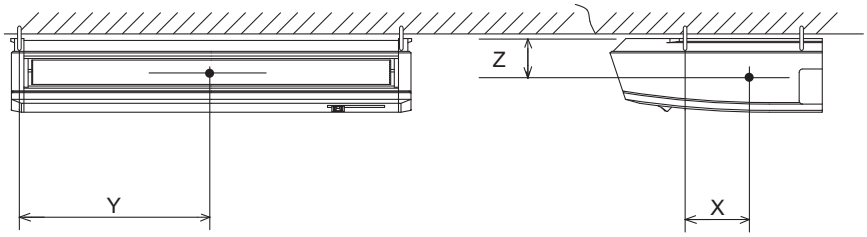


PCFY-WL80,100VKM-E

Unit: mm



PCFY-WL40, 63, 80, 100VKM-E



Model name	X	Y	Z
PCFY-WL40VKM-E	110	450	115
PCFY-WL63VKM-E	110	610	115
PCFY-WL80VKM-E	110	770	115
PCFY-WL100VKM-E	110	770	115

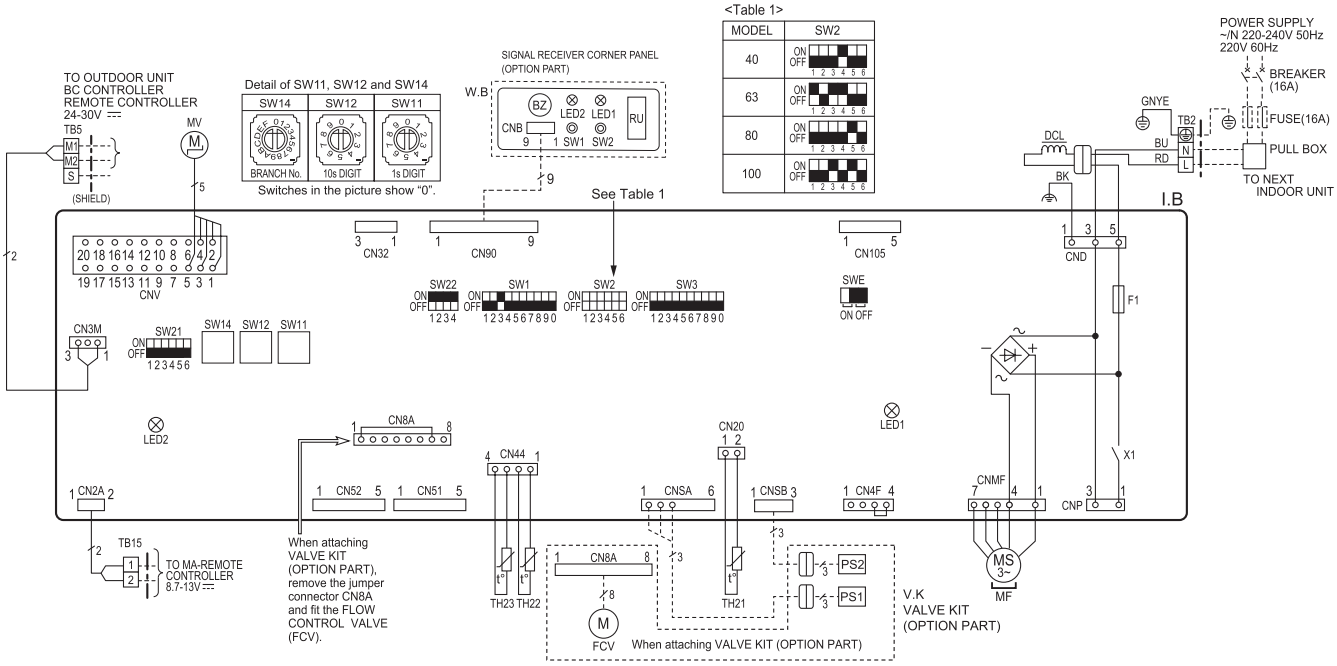
PCFY-WL40, 63, 80, 100VKM-E

[LEGEND]

SYMBOL		NAME		SYMBOL		NAME	
I. B		INDOOR CONTROLLER BOARD		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C / 15kΩ, 25°C / 5.4kΩ)
	CN32	CONNECTOR	REMOTE SWITCH			
	CN51		CENTRALLY CONTROL	TH22		PIPE TEMP. DETECTION / INLET (0°C / 15kΩ, 25°C / 5.4kΩ)
	CN52		REMOTE INDICATION			
	CN105		IT TERMINAL	TH23		PIPE TEMP. DETECTION / OUTLET (0°C / 15kΩ, 25°C / 5.4kΩ)
	F1	FUSE (T6.3AL250V)				
	SW1	SWITCH	MODE SELECTION	OPTIONAL PARTS		
	SW2		CAPACITY CODE		W.B	PCB FOR WIRELESS REMOTE CONTROLLER
	SW3		MODE SELECTION		BZ	BUZZER
	SW11		ADDRESS SETTING 1s DIGIT		LED1	LED (OPERATION INDICATION : GREEN)
	SW12		ADDRESS SETTING 10s DIGIT		LED2	LED (PREPARATION FOR HEATING : ORANGE)
	SW14		BRANCH No.		RU	RECEIVING UNIT
	SW21		CEILING HEIGHT SELECTOR OPTION SELECTOR		SW1	EMERGENCY OPERATION (HEAT / DOWN)
					SW2	EMERGENCY OPERATION (COOL / UP)
	SW22		PAIR NO. SETTING		V.K	VALVE KIT
	SWE		TEST MODE		PS1	PRESSURE SENSOR 1 (INLET)
DCL		REACTOR			PS2	PRESSURE SENSOR 2 (OUTLET)
MF		FAN MOTOR			FCV	FLOW CONTROL VALVE
MV		VANE MOTOR				
TB2		TERMINAL BLOCK	POWER SUPPLY			
TB5			TRANSMISSION			
TB15			MA-REMOTE CONTROLLER			

<Table 1>

MODEL	SW2
40	ON OFF 1 2 3 4 5 6
63	ON OFF 1 2 3 4 5 6
80	ON OFF 1 2 3 4 5 6
100	ON OFF 1 2 3 4 5 6



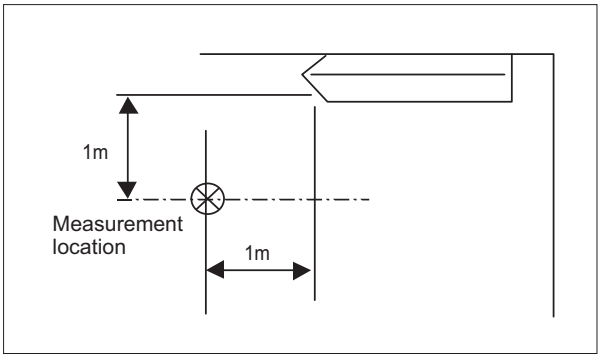
LED on indoor board for service

Mark	Meaning	Function
LED1	Main power supply	Main Power supply (Indoor unit:220-240V AC) power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

NOTES:
1. At servicing for outdoor unit, always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15.
   (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S] of TB5 is the shield wire connection.
5. Symbols used in wiring diagram are, □□□: terminal block, ○ ○ ○, □□□□: connector.
6. The setting of the SW2 differs in the capacity. For the detail, refer the Table 1.
7. The black square (■) in the wiring diagram indicates a switch position.

5-1. Sound levels

Ceiling suspended



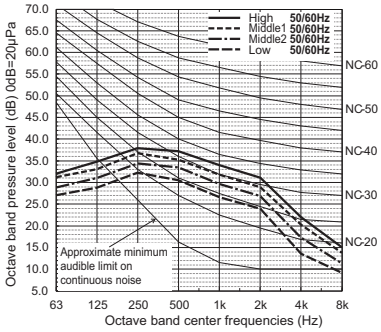
Sound level at anechoic room : Low-Middle2-Middle1-High

Model	Sound level dB (A)
PCFY-WL40VKM-E	32-35-37-39
PCFY-WL63VKM-E	34-37-40-43
PCFY-WL80VKM-E	39-40-42-44
PCFY-WL100VKM-E	39-42-45-47

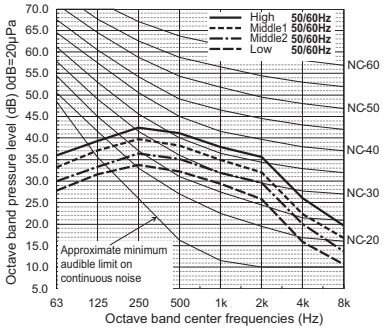
* Measured in anechoic room.

5-2. NC curves

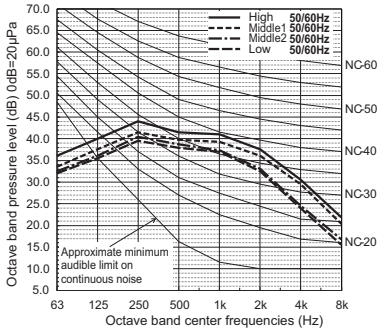
PCFY-WL40VKM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V 50Hz / 220V 60Hz



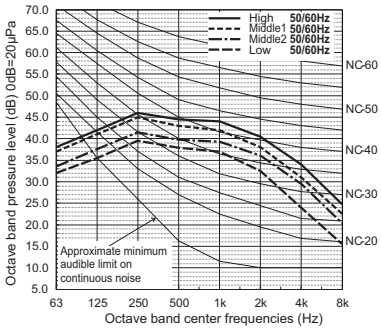
PCFY-WL63VKM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V 50Hz / 220V 60Hz



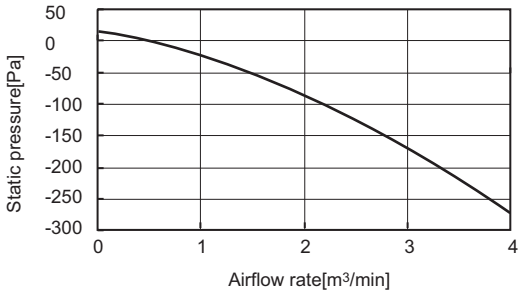
PCFY-WL80VKM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V 50Hz / 220V 60Hz



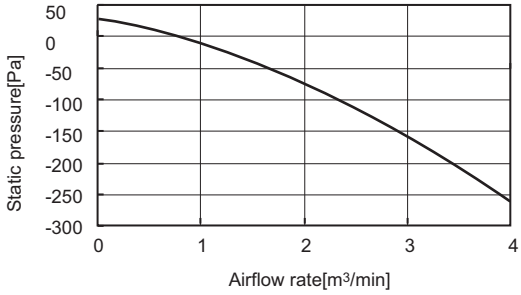
PCFY-WL100VKM-E
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V 50Hz / 220V 60Hz



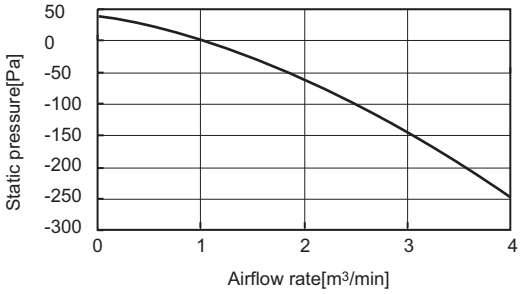
■ PCFY-WL40VKM-E



■ PCFY-WL63VKM-E



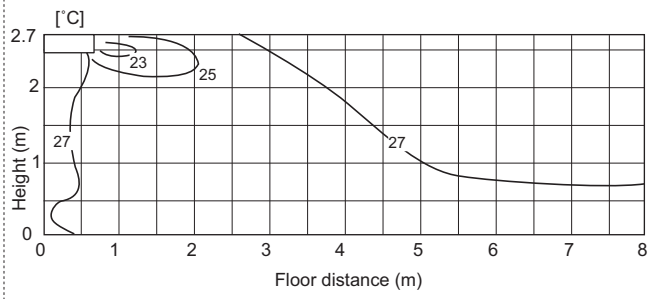
■ PCFY-WL80, 100VKM-E



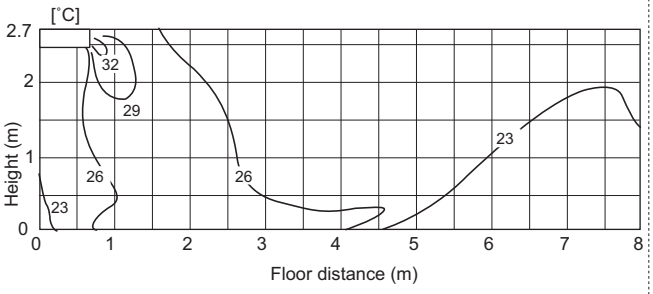
7-1. Temperature distributions

Temperature distributions
PCFY-WL40, 63VKM-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C
High notch

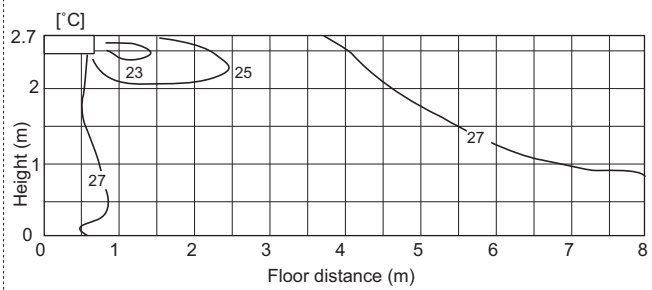


<Heating mode>
Flow angle : 60˚
Temperature setting : 20˚C
High notch

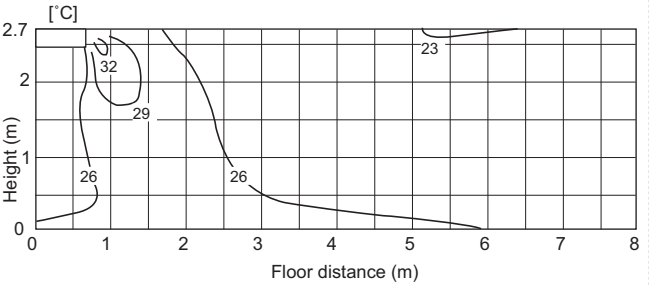


PCFY-WL100VKM-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C
High notch



<Heating mode>
Flow angle : 60˚
Temperature setting : 20˚C
High notch

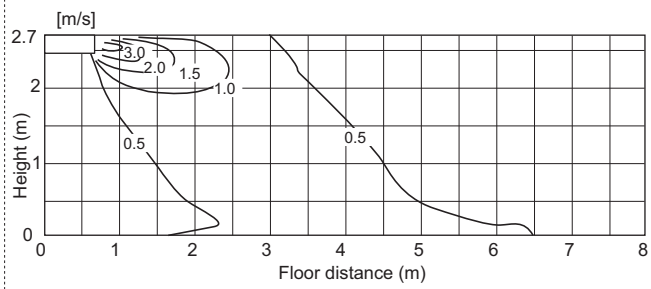


Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

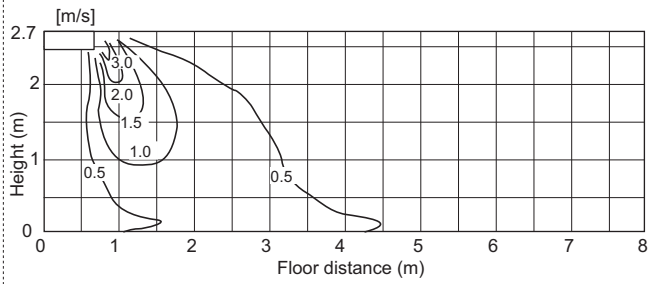
7-2. Airflow distributions

Airflow distributions
PCFY-WL40, 63VKM-E

<Cooling mode>
Flow angle : 10˚
Temperature setting : 27˚C
High notch
Ceiling height : 2.7m

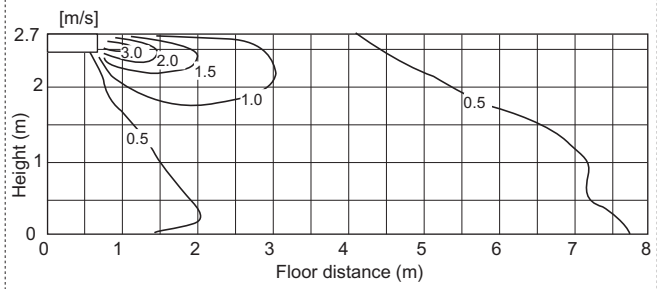


<Heating mode>
Flow angle : 60˚
Temperature setting : 27˚C
High notch
Ceiling height : 2.7m

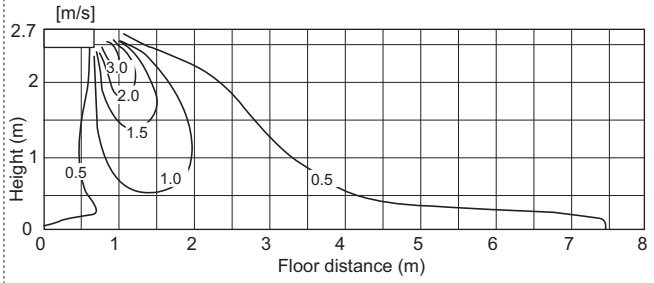


PCFY-WL100VKM-E

<Fan mode>
Flow angle : 10˚
Temperature setting : 27˚C
High notch
Ceiling height : 2.7m



<Fan mode>
Flow angle : 60˚
Temperature setting : 27˚C
High notch
Ceiling height : 2.7m



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

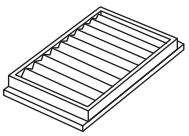
Model	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PCFY-WL40VKM-E	220-240V/50Hz 220V/60Hz	Max.: 264V Min.: 198V	0.43	0.090	0.34
PCFY-WL63VKM-E			0.65	0.095	0.52
PCFY-WL80VKM-E			0.87	0.160	0.69
PCFY-WL100VKM-E			1.19	0.160	0.95

9-1. Optional parts line up for the Indoor unit

	High-efficiency filter	Wireless remote controller kit	Valve kit	Attachment plate	6m Lead wire	V Blocking filter
PCFY-WL40VKM-E	PAC-SH88KF-E	PAR-SL94B-E	PAC-SK35VK-E	PAC-SK39AP-E	PAC-SK40LW-E	PAC-SK55KF-E
PCFY-WL63VKM-E	PAC-SH89KF-E	PAR-SL94B-E	PAC-SK35VK-E	PAC-SK39AP-E	PAC-SK40LW-E	PAC-SK56KF-E
PCFY-WL80, 100VKM-E	PAC-SH90KF-E	PAR-SL94B-E	PAC-SK35VK-E	PAC-SK39AP-E	PAC-SK40LW-E	PAC-SK57KF-E

9-2. High efficiency filter

Material: PP honeycomb
Gravimetric method: 70%

Item	PAC-SH88KF-E	PAC-SH89KF-E	PAC-SH90KF-E
Quantity	2 (Small)	1 (Small), 2 (Large)	2 (Large)
Shape			

9-3. Wireless remote controller kit

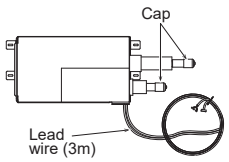
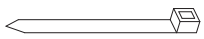
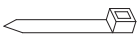
Wireless remote controller receiver is built-in type.

Item	① Wireless remote controller receiver	② Wireless remote controller	③ Remote control holder	④ "AAA" LR3 alkanine batterise	⑤ 4.1 x 16 wood screw
Quantity	1	1	1	2	2
Item	⑥ Cord rataining clips	⑦Connection cord fixing seal (12x30 size)			
Quantity	2	1			

Detailed installation information should be referred to its Installation Manual.

9-4. Valve kit

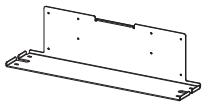
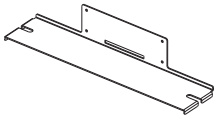
Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

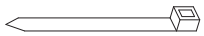
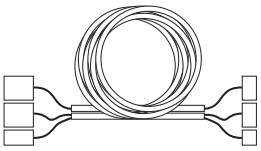
Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

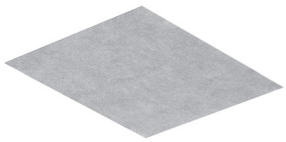
9-5. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.		
Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

9-6. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m). Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.		
Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

9-7. V blocking filter

V Blocking Filter with antiviral effect inhibits 99% of adhered virus, and other harmful substances, such as bacteria, mold and allergen. Two-layered filter with non-woven fabric and electrostatic filter can effectively capture and remove small particles from the air in your room.		
Quantity	1	
Shape		

Detailed installation information is referred in its Installation Manual.

PKFY-WL-VLM-E, PKFY-WL-VKM-E

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Model				PKFY-WL10VLM-E	PKFY-WL15VLM-E	PKFY-WL20VLM-E
Power source				1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz
Cooling capacity		*1	kW	1.2	1.7	2.2
(Nominal)		*1	BTU / h	4,100	5,800	7,500
	Power input		kW	0.02	0.02	0.03
(220V)	Current input		A	0.20	0.20	0.25
Heating capacity		*2	kW	1.4	1.9	2.5
(Nominal)		*2	BTU / h	4,800	6,500	8,500
	Power input		kW	0.01	0.01	0.02
(220V)	Current input		A	0.15	0.15	0.20
External finish				Plastic, MUNSELL (0.7PB 9.2/0.4)	Plastic, MUNSELL (0.7PB 9.2/0.4)	Plastic, MUNSELL (0.7PB 9.2/0.4)
External dimension HxWxD			mm	299x773x237	299x773x237	299x773x237
			in.	11-25/32 x 30-7/16 x 9-11/32	11-25/32 x 30-7/16 x 9-11/32	11-25/32 x 30-7/16 x 9-11/32
Net weight			kg(lbs)	11 (25)	11 (25)	11 (25)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.6	0.6	0.7
FAN	Type x Quantity			Line flow fan x 1	Line flow fan x 1	Line flow fan x 1
	External static press.		Pa	0	0	0
			mmH_2O	0	0	0
	Motor Type			DC motor	DC motor	DC motor
	Motor output		kW	0.030	0.030	0.030
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Airflow rate		m^3 / min	3.3-3.8-4.1-4.5	3.3-3.8-4.3-4.9	4.0-5.0-6.0-7.0
	(Low-Mid2-Mid1-High)		L/s	55-63-68-75	55-63-72-82	67-83-100-117
			cfm	117-134-145-159	117-134-152-173	141-177-212-247
Sound pressure level (measured in anechoic room) (Low-Mid2-Mid1-High)			dB <A>	22-26-28-30	22-26-29-32	22-28-33-36
Insulation material				Polyethylene sheet	Polyethylene sheet	Polyethylene sheet
Air filter				PP honeycomb	PP honeycomb	PP honeycomb
Protection device				Fuse	Fuse	Fuse
Refrigerant control device				-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter *3 *4	Connection size	Inlet	in.	RC 3/4 screw	RC 3/4 screw	RC 3/4 screw
		Outlet	in.	RC 3/4 screw	RC 3/4 screw	RC 3/4 screw
	Field pipe size	Inlet	mm I.D	20	20	20
		Outlet	mm I.D	20	20	20
Field drain pipe size			mm(in.)	I.D. 16(5/8)	I.D. 16(5/8)	I.D. 16(5/8)
Drawing	External			BT01B059	BT01B059	BT01B059
	Wiring			RH79C061	RH79C061	RH79C061
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band	Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band	Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band
Optional parts	Drain pump kit			PAC-SK01DM-E	PAC-SK01DM-E	PAC-SK01DM-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specification may be subject to change without notice.		

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PKFY-WL-VLM-E, VKM-E

Model				PKFY-WL25VLM-E	PKFY-WL32VLM-E	PKFY-WL40VLM-E
Power source				1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz
Cooling capacity		*1	kW	2.8	3.6	4.5
(Nominal)		*1	BTU / h	9,600	12,300	15,400
	Power input		kW	0.04	0.04	0.05
(220V)	Current input		A	0.35	0.35	0.45
Heating capacity		*2	kW	3.2	4.0	5.0
(Nominal)		*2	BTU / h	10,900	13,600	17,100
	Power input		kW	0.03	0.03	0.04
(220V)	Current input		A	0.30	0.30	0.40
External finish				Plastic, MUNSELL (0.7PB 9.2/0.4)	Plastic, MUNSELL (0.7PB 9.2/0.4)	Plastic, MUNSELL (0.7PB 9.2/0.4)
External dimension HxWxD			mm	299x773x237	299x898x237	299x898x237
			in.	11-25/32 x 30-7/16 x 9-11/32	11-25/32 x 35-3/8 x 9-11/32	11-25/32 x 35-3/8 x 9-11/32
Net weight			kg(lbs)	11 (25)	13(29)	13(29)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.7	1.0	1.1
FAN	Type x Quantity			Line flow fan x 1	Line flow fan x 1	Line flow fan x 1
	External static press.		Pa	0	0	0
			mmH_2O	0	0	0
	Motor Type			DC motor	DC motor	DC motor
	Motor output		kW	0.030	0.030	0.030
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Airflow rate		m^3 / min	4.0-5.4-7.0-8.4	6.3-7.6-9.0-10.4	6.4-8.2-10.0-11.9
	(Low-Mid2-Mid1-High)		L/s	67-90-117-140	105-127-150-173	107-137-167-198
			cfm	141-191-247-297	222-268-318-367	226-290-353-420
Sound pressure level (measured in anechoic room) (Low-Mid2-Mid1-High)			dB <A>	22-30-36-41	29-34-38-41	30-36-41-45
Insulation material				Polyethylene sheet	Polyethylene sheet	Polyethylene sheet
Air filter				PP honeycomb	PP honeycomb	PP honeycomb
Protection device				Fuse	Fuse	Fuse
Refrigerant control device				-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter *3 *4	Connection size	Inlet	in.	RC 3/4 screw	RC 3/4 screw	RC 3/4 screw
		Outlet	in.	RC 3/4 screw	RC 3/4 screw	RC 3/4 screw
	Field pipe size	Inlet	mm I.D	20	20	20
		Outlet	mm I.D	20	20	20
Field drain pipe size			mm(in.)	I.D. 16(5/8)	I.D. 16(5/8)	I.D. 16(5/8)
Drawing	External			BT01B059	BT01B060	BT01B060
	Wiring			RH79C061	RH79C061	RH79C061
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band	Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band	Mount board, Screw, Felt tape, Compression joint, L-shape connection pipe A/B, Compression joint ring (ø15), Insulation, Tie band
Optional parts	Drain pump kit			PAC-SK01DM-E	PAC-SK01DM-E	PAC-SK01DM-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specification may be subject to change without notice.		

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PKFY-WL50VKM-E	PKFY-WL63VKM-E	PKFY-WL80VKM-E
Power source				1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz	1-phase 220-240V 50Hz, 1-phase 220V 60Hz
Cooling capacity		*1	kW	5.6	7.1	9.0
(Nominal)		*1	BTU / h	19,100	24,200	30,700
	Power input		kW	0.04	0.05	0.07
(220V)	Current input		A	0.46	0.56	0.76
Heating capacity		*2	kW	6.3	8.0	10.0
(Nominal)		*2	BTU / h	21,500	27,300	34,100
	Power input		kW	0.04	0.05	0.07
(220V)	Current input		A	0.40	0.50	0.70
External finish				Plastic, MUNSELL (1.0Y 9.2/0.2)	Plastic, MUNSELL (1.0Y 9.2/0.2)	Plastic, MUNSELL (1.0Y 9.2/0.2)
External dimension HxWxD			mm	365 x 1170 x 295	365 x 1170 x 295	365 x 1170 x 295
			in.	14-3/8 x 46-1/16 x 11-5/8	14-3/8 x 46-1/16 x 11-5/8	14-3/8 x 46-1/16 x 11-5/8
Net weight			kg(lbs)	20 (44)	20 (44)	20 (44)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	2.0	2.0	2.0
FAN	Type x Quantity			Line flow fan x 1	Line flow fan x 1	Line flow fan x 1
	External static press.		Pa	0	0	0
			mmH_2O	0	0	0
	Motor Type			DC motor	DC motor	DC motor
	Motor output		kW	0.069	0.069	0.069
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Airflow rate		m^3 / min	18-20	18-22	18-26
	(Low-High)		L/s	300-333	300-367	300-433
			cfm	636-706	636-777	636-918
Sound pressure level (measured in anechoic room) (Low-High)			dB <A>	39-42	39-45	39-49
Insulation material				Polyethylene sheet	Polyethylene sheet	Polyethylene sheet
Air filter				PP honeycomb	PP honeycomb	PP honeycomb
Protection device				Fuse	Fuse	Fuse
Refrigerant control device				-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA,CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter *3 *4	Connection size	Inlet	in.	RC 3/4 screw	RC 1-1/4 screw	RC 1-1/4 screw
		Outlet	in.	RC 3/4 screw	RC 1-1/4 screw	RC 1-1/4 screw
	Field pipe size	Inlet	mm I.D	20	30	30
		Outlet	mm I.D	20	30	30
Field drain pipe size			mm(in.)	I.D. 16(5/8)	I.D. 16(5/8)	I.D. 16(5/8)
Drawing	External			RK01N845	RK01N845	RK01N845
	Wiring			BT79B108	BT79B108	BT79B108
	Refrigerant cycle			-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Mount board, Screw, Felt tape, L-shape connection pipe A/B, I-shape connection pipe A/B, Insulation, Tie band	Mount board, Screw, Felt tape, L-shape connection pipe A/B, I-shape connection pipe A, Insulation, Tie band	Mount board, Screw, Felt tape, L-shape connection pipe A/B, I-shape connection pipe A, Insulation, Tie band
Optional parts	Drain pump kit			PAC-SK19DM-E	PAC-SK19DM-E	PAC-SK19DM-E
	Valve kit		*5	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
	Plasma Quad Connect			MAC-100FT-E	MAC-100FT-E	MAC-100FT-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specification may be subject to change without notice.		

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.Be sure to install a valve on the water outlet.
4.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
5.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
*Please group units that operate on 1 branch.

Unit converter

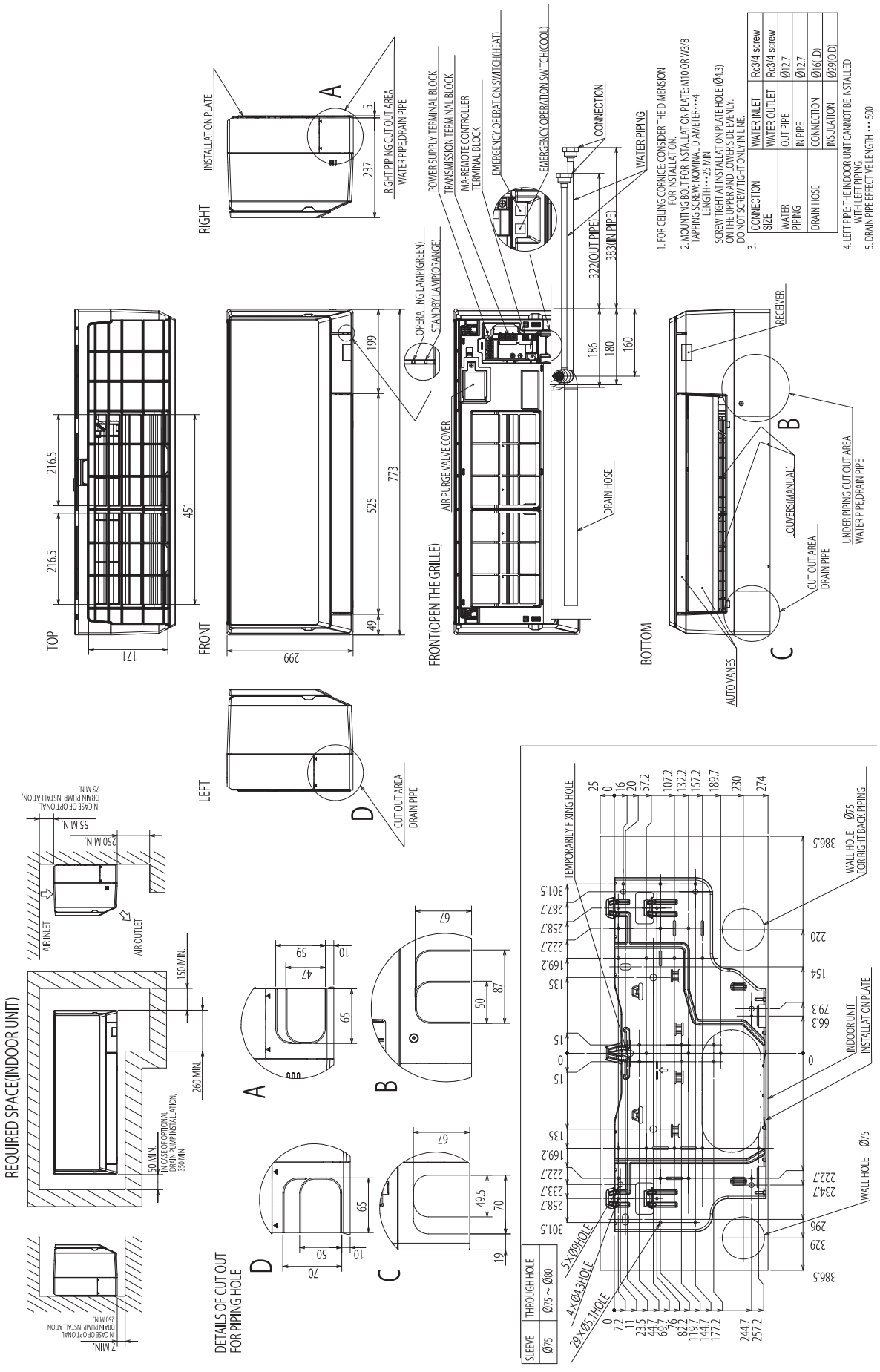
BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PKFY-WL-VLM-E, VKM-E

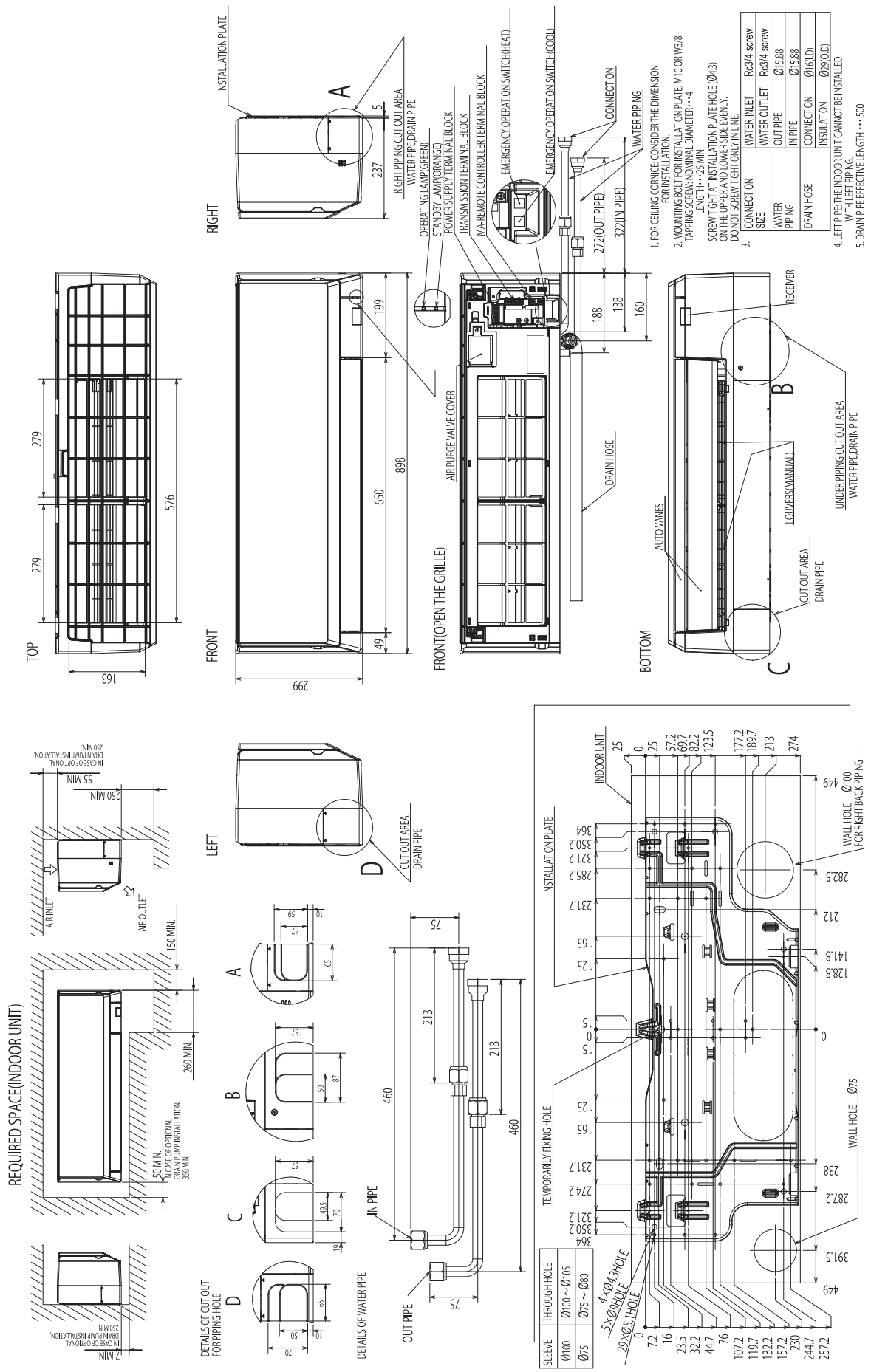
PKFY-WL10, 15, 20, 25VLM-E

Unit: mm



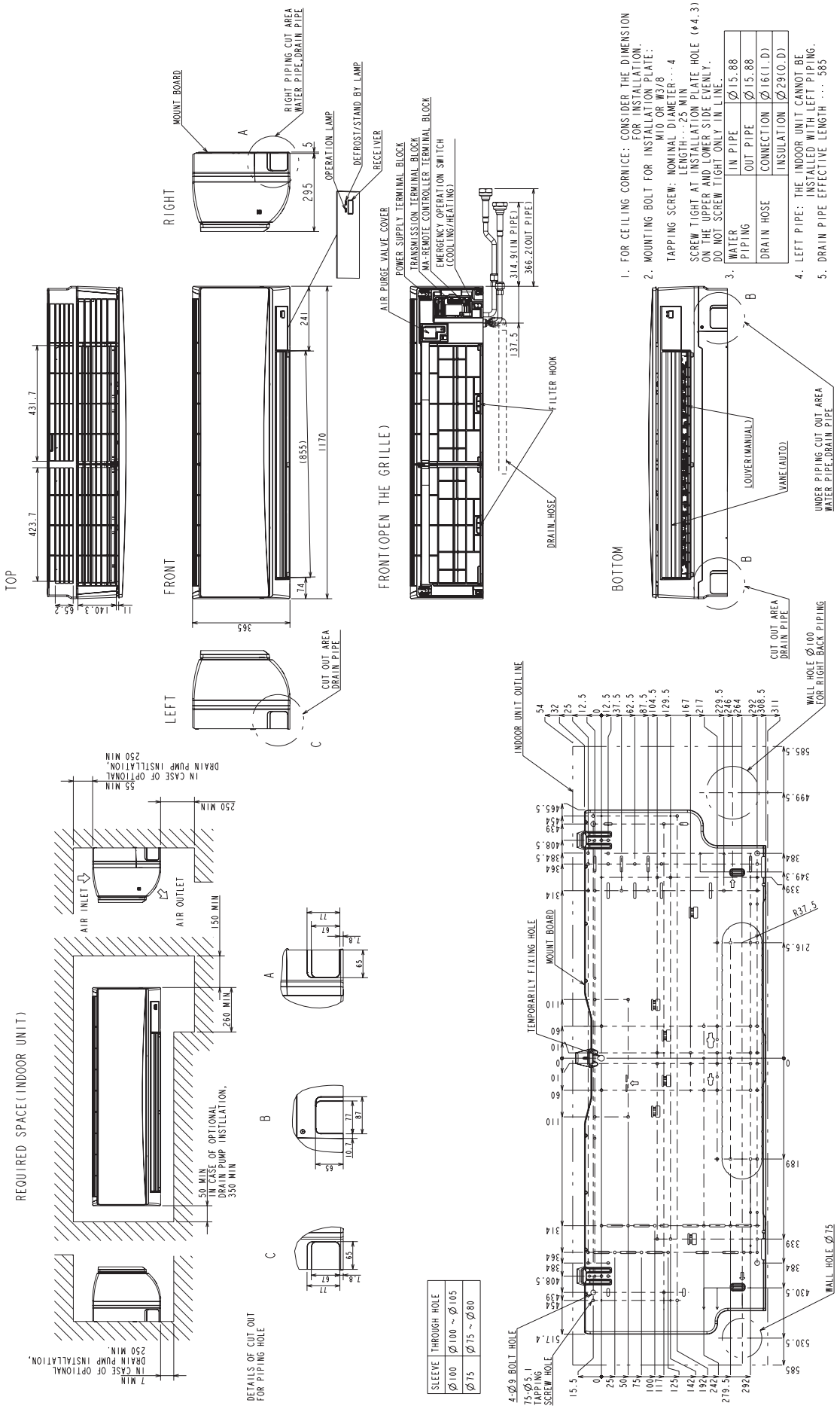
PKFY-WL32, 40VLM-E

Unit: mm



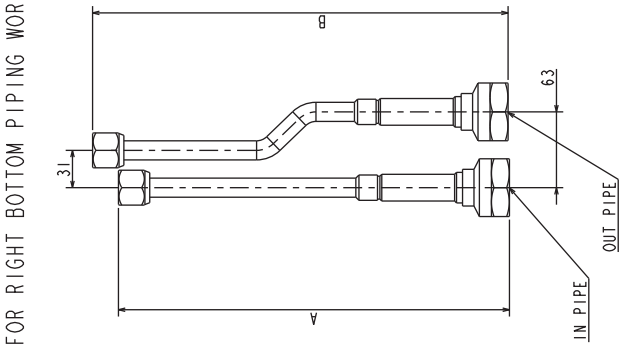
PKFY-WL50, 63, 80VKM-E

Unit: mm



PKFY-WL50, 63, 80VKM-E

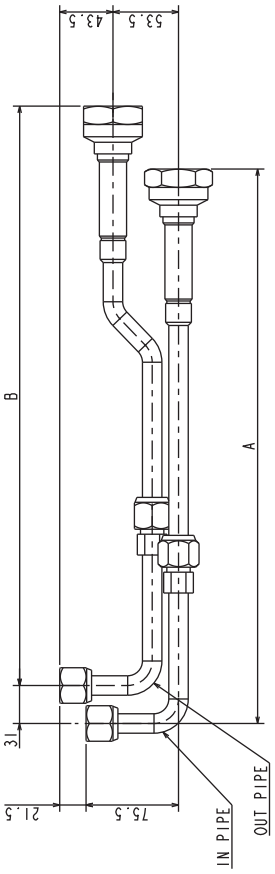
Unit: mm

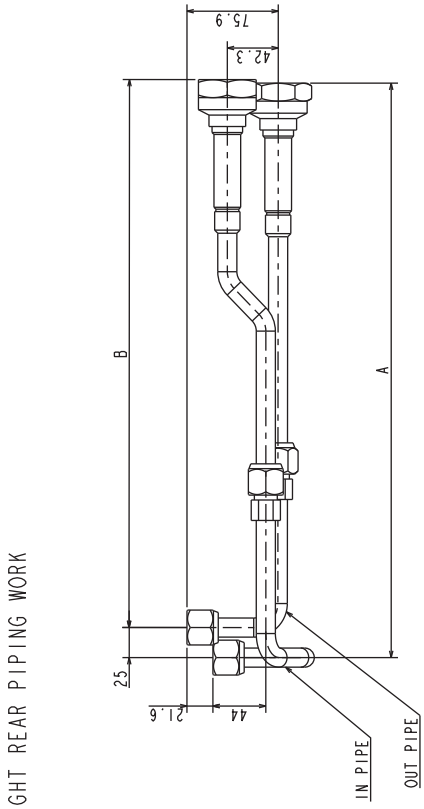


DIMENSIONAL CHANGE DUE TO JOINT (mm)

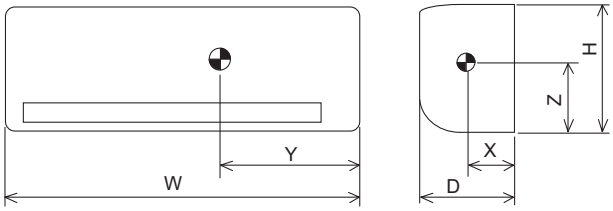
	FOR RIGHT BOTTOM PIPING WORK		FOR RIGHT PIPING WORK		FOR RIGHT REAR PIPING WORK	
A/B	A	B	A	B	A	B
WL50(RC3/4)	319	339.4	446.6	466.9	471.5	449.4
WL63/80(RC1-1/4)	325	345.4	452.6	472.9	477.5	455.4

DETAILS OF WATER PIPE





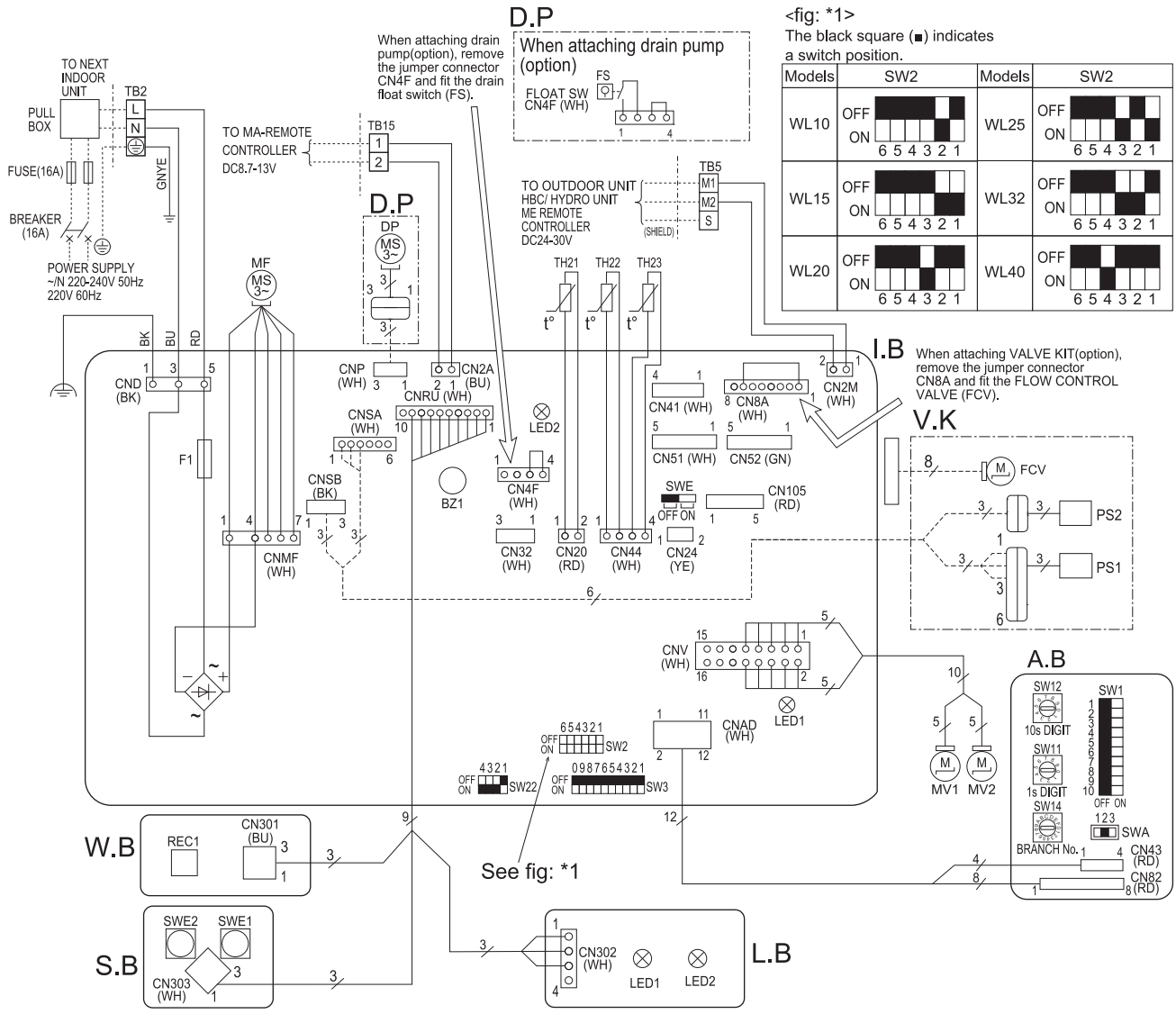
PKFY-WL-VLM-E, VKM-E



(mm)

Model	W	D	H	X	Y	Z
PKFY-WL10VLM-E	773	237	299	130	340	150
PKFY-WL15VLM-E	773	237	299	130	340	150
PKFY-WL20VLM-E	773	237	299	130	340	150
PKFY-WL25VLM-E	773	237	299	130	340	150
PKFY-WL32VLM-E	898	237	299	120	390	150
PKFY-WL40VLM-E	898	237	299	120	390	150
PKFY-WL50VKM-E	1170	295	365	190	460	190
PKFY-WL63VKM-E	1170	295	365	190	460	190
PKFY-WL80VKM-E	1170	295	365	190	460	190

PKFY-WL10, 15, 20, 25, 32, 40VLM-E



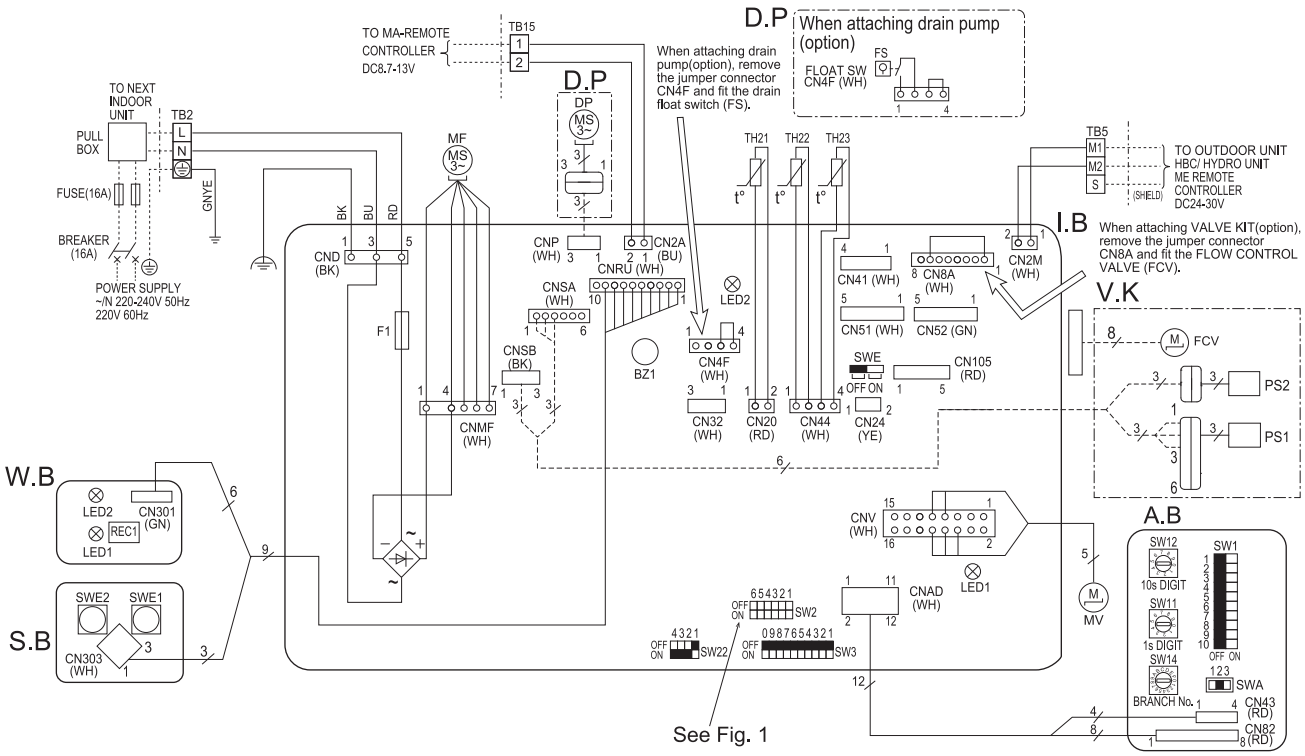
SYMBOL	NAME		SYMBOL	NAME	
I.B	INDOOR CONTROLLER BOARD		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5.4kΩ)
CN32	CONNECTOR	REMOTE SWITCH	TH22		PIPE TEMP. DETECTION / INLET WATER (0°C/15kΩ, 25°C/5.4kΩ)
CN51		CENTRALLY CONTROL	TH23		PIPE TEMP. DETECTION / OUTLET WATER (0°C/15kΩ, 25°C/5.4kΩ)
CN52		REMOTE INDICATION			
CN105		IT TERMINAL			
BZ1	BUZZER		A.B	ADDRESS BOARD	
F1	FUSE (T3.15AL250V)		SW1	SWITCH	MODE SELECTION
LED1	POWER SUPPLY (I.B)		SW11		ADDRESS SETTING 1s DIGIT
LED2	POWER SUPPLY (MA-REMOTE CONTROLLER)		SW12		ADDRESS SETTING 10s DIGIT
SW2	SWITCH	CAPACITY CODE	SW14		BRANCH No.
SW3		MODE SELECTION	S.B	SWITCH BOARD	
SW22		PAIR NO. SETTING	SWE1	EMERGENCY OPERATION(HEAT)	
SWE		FAN•DRAIN PUMP (TEST MODE)	SWE2	EMERGENCY OPERATION(COOL)	
MF	FAN MOTOR		W.B	PCB FOR WIRELESS REMOTE CONTROLLER	
MV1	VANE MOTOR (UPPER)		REC1	RECEIVING UNIT	
MV2	VANE MOTOR (LOWER)		L.B	LED BOARD	
TB2	TERMINAL BLOCK	POWER SUPPLY	LED1	LED(OPERATING INDICATOR:GREEN)	
TB5		TRANSMISSION	LED2	LED(STANDBY FOR HEATING : ORANGE)	
TB15		MA-REMOTE CONTROLLER	D.P	DRAIN PUMP KIT (OPTION)	
V.K	VALVE KIT (OPTION)		FS	DRAIN FLOAT SWITCH	
FCV	FLOW CONTROL VALVE		DP	DRAIN PUMP	
PS1	PRESSURE SENSOR 1 (INLET WATER)				
PS2	PRESSURE SENSOR 2 (OUTLET WATER)				

NOTES:
1. At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S]of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, ▭▭▭ : terminal block, ○ ○ ○ ▭▭ :connecter.
6. The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the fig : *1.

LED on indoor controller board for service

Symbol	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit:220-240V) Power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

PKFY-WL50, 63, 80VKM-E



[LEGEND]

SYMBOL	NAME		SYMBOL	NAME	
I.B	INDOOR CONTROLLER BOARD		TH21	THERMISTOR	ROOM TEMP. DETECTION (0°C/15kΩ, 25°C/5.4kΩ)
CN32	CONNECTOR	REMOTE SWITCH			
CN51		CENTRALLY CONTROL	TH22		PIPE TEMP. DETECTION / INLET WATER (0°C/15kΩ, 25°C/5.4kΩ)
CN52		REMOTE INDICATION			
CN105		IT TERMINAL	TH23		PIPE TEMP. DETECTION / OUTLET WATER (0°C/15kΩ, 25°C/5.4kΩ)
BZ1	BUZZER		A.B	ADDRESS BOARD	
F1	FUSE (T3.15AL250V)		SW1	SWITCH	MODE SELECTION
LED1	POWER SUPPLY (I.B)		SW11		ADDRESS SETTING 1s DIGIT
LED2	POWER SUPPLY (MA-REMOTE CONTROLLER)		SW12		ADDRESS SETTING 10s DIGIT
SW2	SWITCH	CAPACITY CODE	SW14		BRANCH No.
SW3		MODE SELECTION	S.B	SWITCH BOARD	
SW22		PAIR NO. SETTING	SWE1	EMERGENCY OPERATION(HEAT)	
SWE		FAN•DRAIN PUMP (TEST MODE)	SWE2	EMERGENCY OPERATION(COOL)	
MF	FAN MOTOR		W.B	PCB FOR WIRELESS REMOTE CONTROLLER	
MV	VANE MOTOR		LED1	LED(OPERATION INDICATOR:GREEN)	
TB2	TERMINAL BLOCK	POWER SUPPLY	LED2	LED(PREPARATION FOR HEATING : ORANGE)	
TB5		TRANSMISSION	REC1	RECEIVING UNIT	
TB15		MA-REMOTE CONTROLLER	D.P	DRAIN PUMP KIT (OPTION)	
V.K	VALVE KIT (OPTION)		FS	DRAIN FLOAT SWITCH	
FCV	FLOW CONTROL VALVE		DP	DRAIN PUMP	
PS1	PRESSURE SENSOR 1 (INLET WATER)				
PS2	PRESSURE SENSOR 2 (OUTLET WATER)				

<Fig.1>
The black square(■) indicates a switch position.

Models	SW2
WL50	OFF ON 654321
WL63	OFF ON 654321
WL80	OFF ON 654321

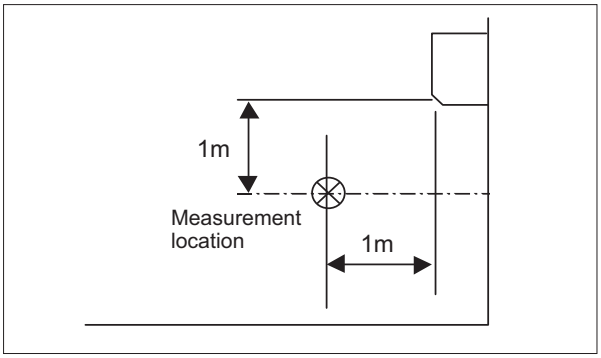
NOTES:
1. At servicing for outdoor unit,always follow the wiring diagram of outdoor unit.
2. In case of using MA-Remote controller, please connect to TB15. (Remote controller wire is non-polar.)
3. In case of using M-NET, please connect to TB5. (Transmission line is non-polar.)
4. Symbol [S]of TB5 is the shield wire connection.
5. Symbols used in wiring diagram above are, □□□ : terminal block, ○ ○ ○ , ▭ :connector.
6. The setting of the SW2 dip switches differs in the capacity. For the detail, refer to the Fig. 1.

LED on indoor controller board for service

Symbol	Meaning	Function
LED1	Main power supply	Main power supply (Indoor unit:220-240V) Power on → lamp is lit
LED2	Power supply for MA-Remote controller	Power supply for MA-Remote controller on → lamp is lit

5-1. Sound levels

Wall mounted



* Measured in anechoic room.

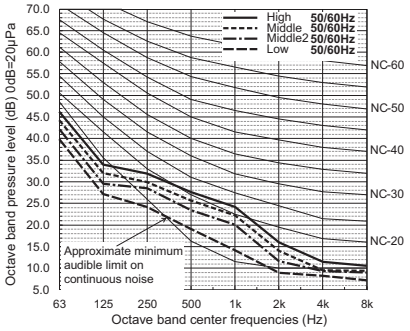
Sound level at anechoic room: Low-(Middle2-Middle1)-High

Model	Sound level dB (A)
PKFY-WL10VLM-E	22-26-28-30
PKFY-WL15VLM-E	22-26-29-32
PKFY-WL20VLM-E	22-28-33-36
PKFY-WL25VLM-E	22-30-36-41
PKFY-WL32VLM-E	29-34-38-41
PKFY-WL40VLM-E	30-36-41-45
PKFY-WL50VKM-E	39-42
PKFY-WL63VKM-E	39-45
PKFY-WL80VKM-E	39-49

5-2. NC curves

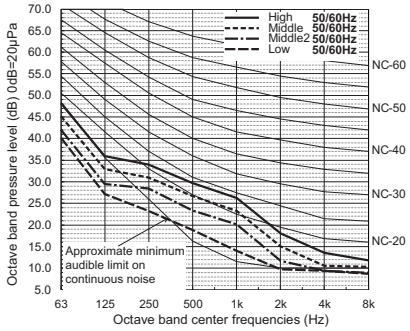
PKFY-WL10VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



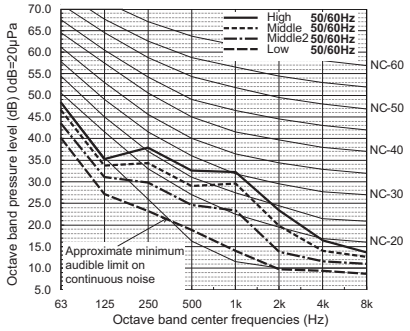
PKFY-WL15VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



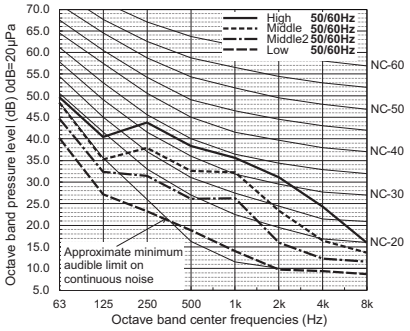
PKFY-WL20VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



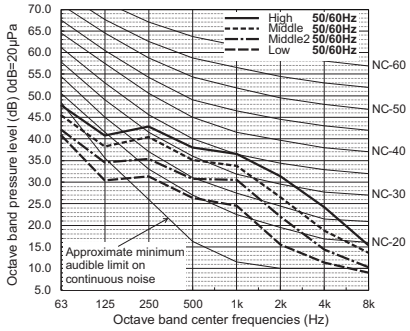
PKFY-WL25VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



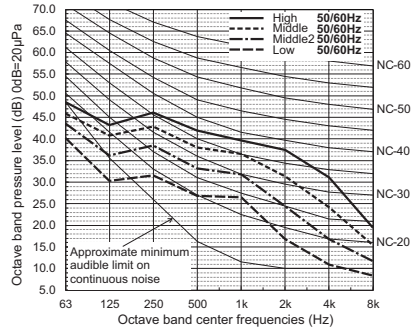
PKFY-WL32VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



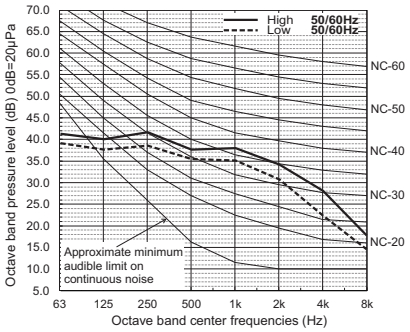
PKFY-WL40VLM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



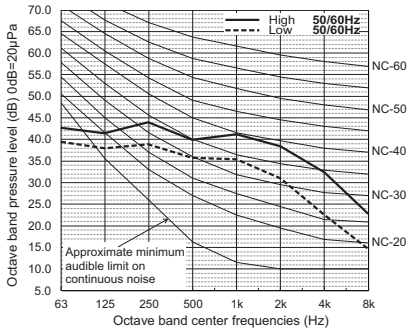
PKFY-WL50VKM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



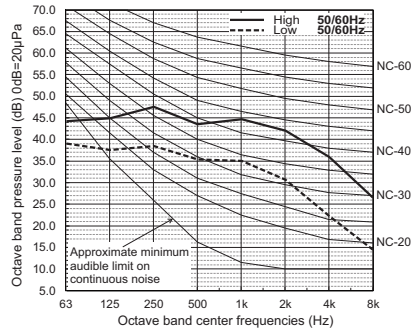
PKFY-WL63VKM-E

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



PKFY-WL80VKM-E

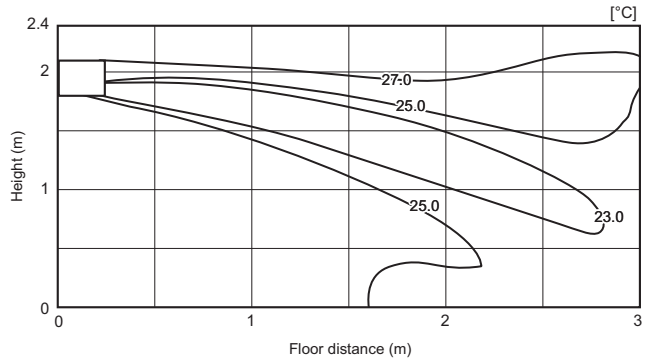
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-230-240V 50Hz/220V 60Hz



6-1. Temperature distributions

PKFY-WL10VLM-E

<Cooling mode>
Horizontal air flow

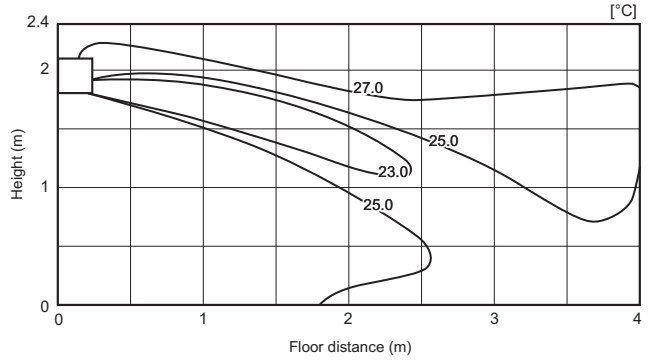


<Heating mode>
Downward air flow

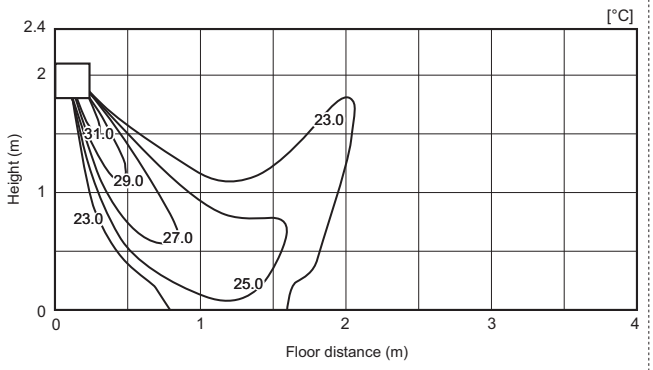


PKFY-WL15VLM-E

<Cooling mode>
Horizontal air flow

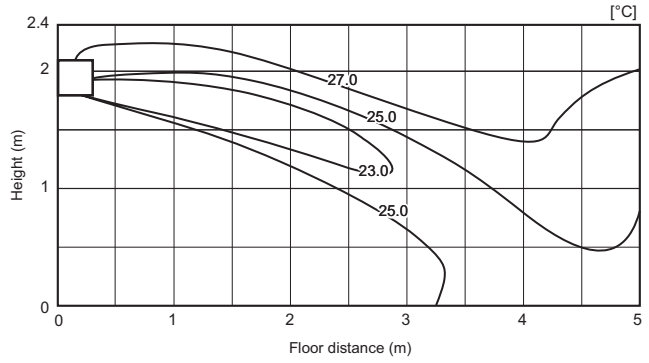


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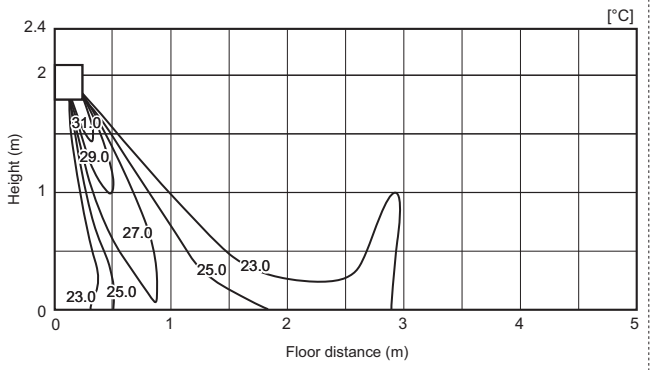


PKFY-WL20VLM-E

<Cooling mode>
Horizontal air flow



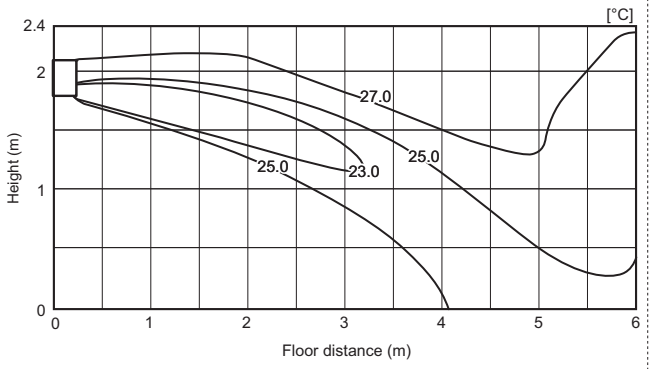
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Downward air flow



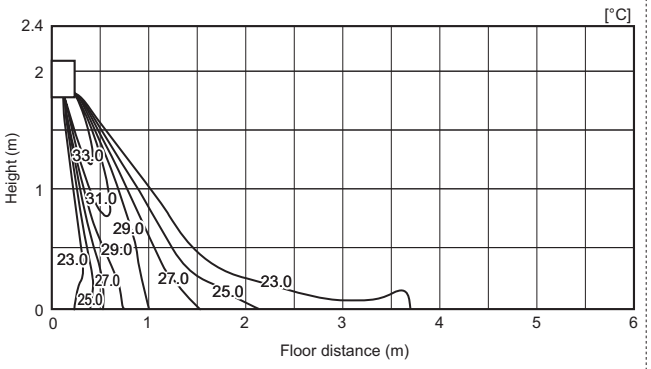
Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

PKFY-WL25VLM-E

<Cooling mode>
Horizontal air flow

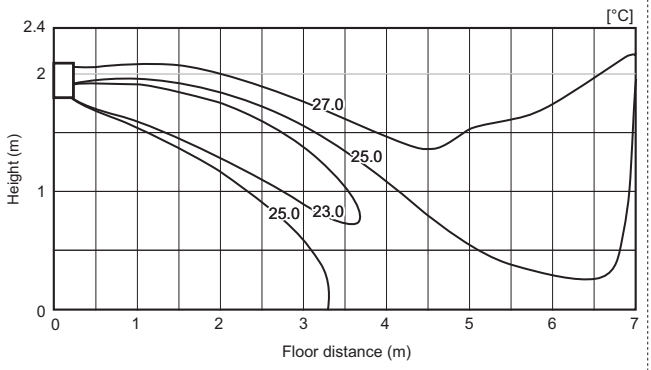


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Downward air flow

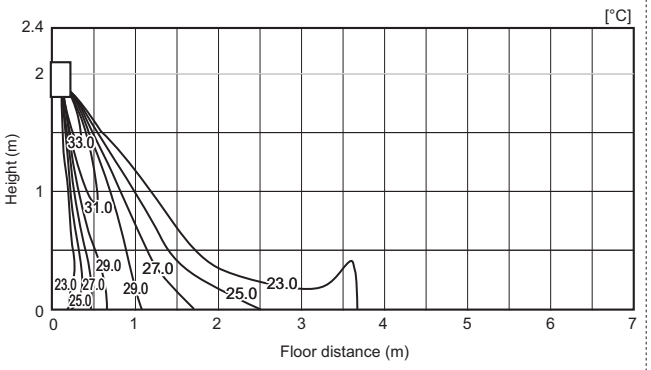


PKFY-WL32VLM-E

<Cooling mode>
Horizontal air flow



<Heating mode>
Downward air flow

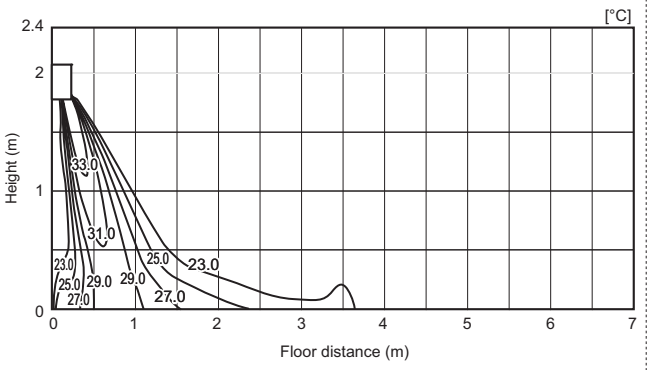


PKFY-WL40VLM-E

<Cooling mode>
Horizontal air flow



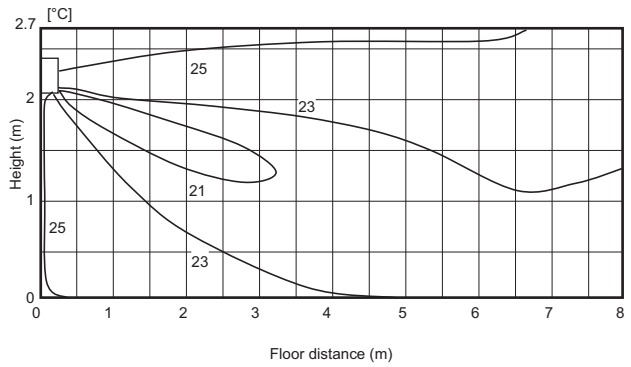
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Downward air flow



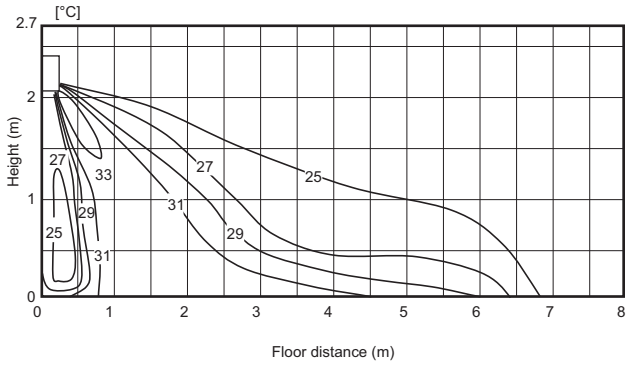
Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

PKFY-P50, 63, 80VKM-E

<Cooling mode>
Horizontal air flow



<Heating mode>
Downward air flow

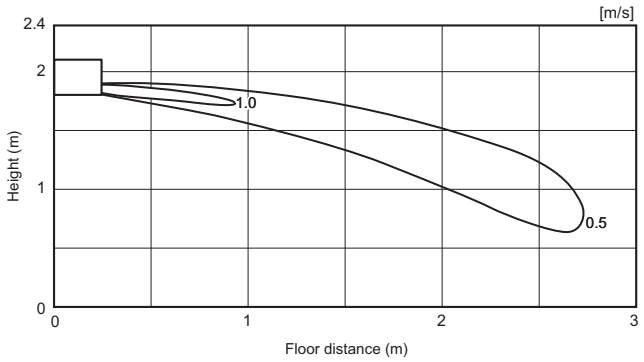


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

6-2. Airflow distributions

PKFY-WL10VLM-E

<Cooling mode>
Horizontal air flow

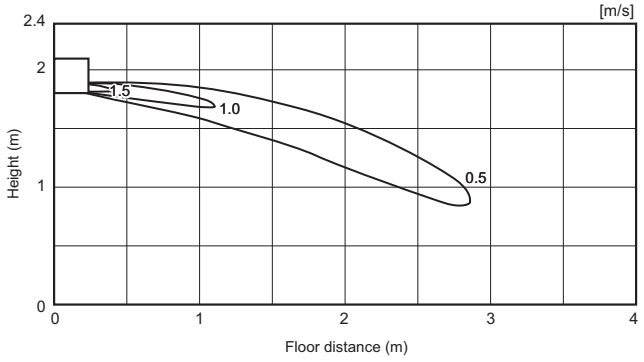


<Heating mode>
Downward air flow



PKFY-WL15VLM-E

<Cooling mode>
Horizontal air flow

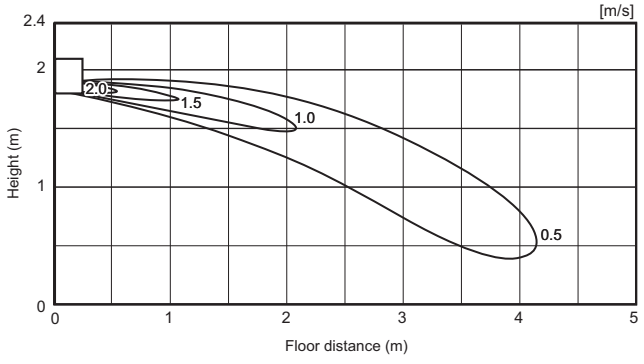


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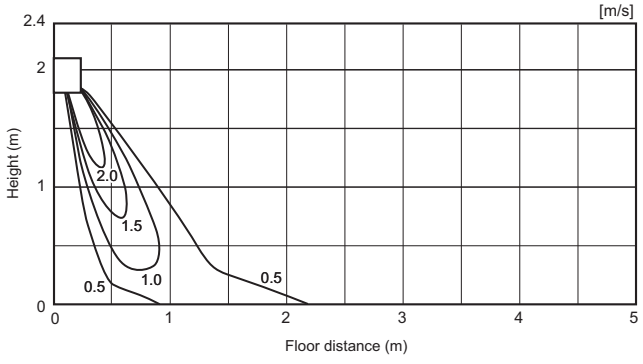


PKFY-WL20VLM-E

<Cooling mode>
Horizontal air flow



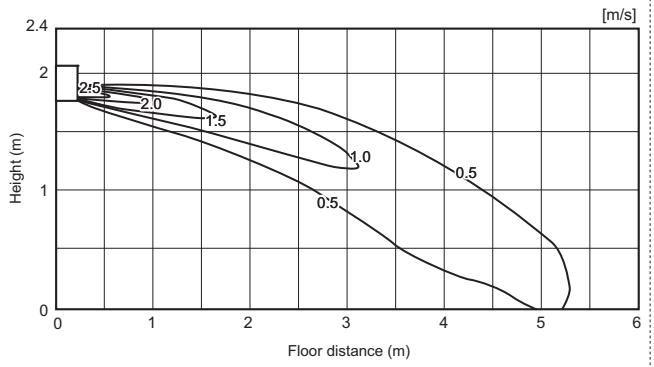
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Downward air flow



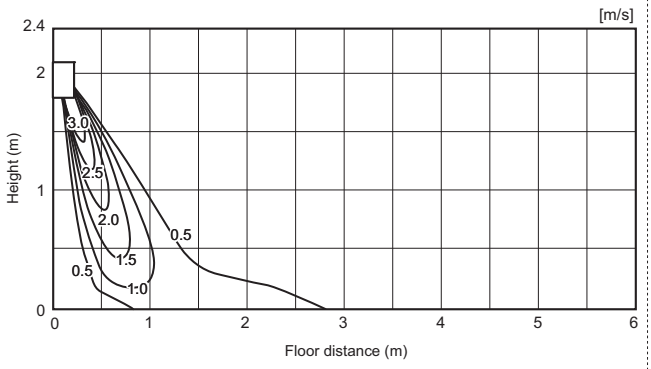
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

PKFY-WL25VLM-E

<Cooling mode>
Horizontal air flow

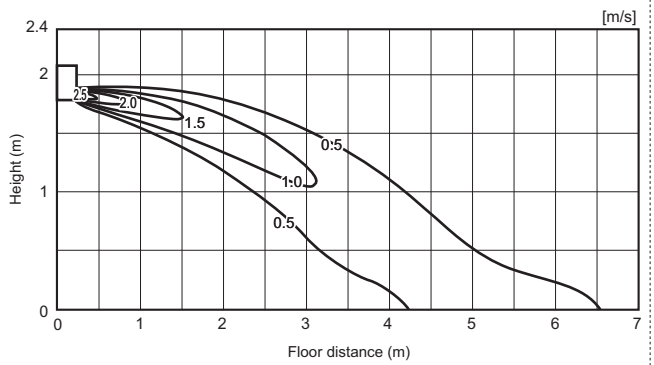


<Heating mode>
Downward air flow

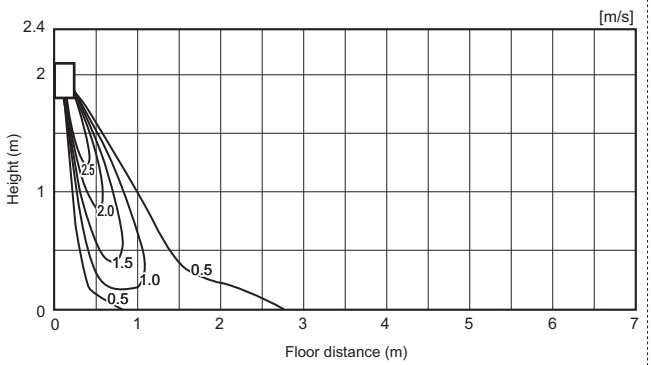


PKFY-WL32VLM-E

<Cooling mode>
Horizontal air flow

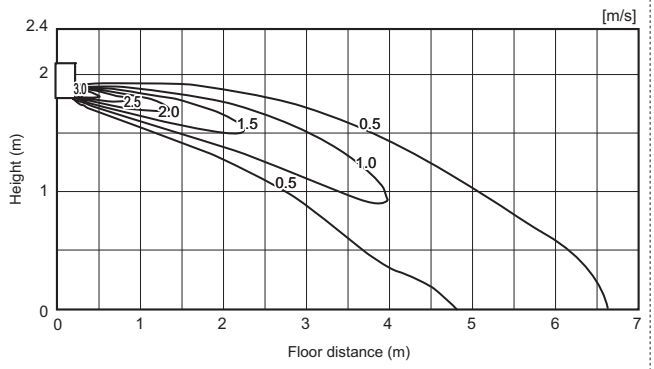


<Heating mode>
Downward air flow



PKFY-WL40VLM-E

<Cooling mode>
Horizontal air flow



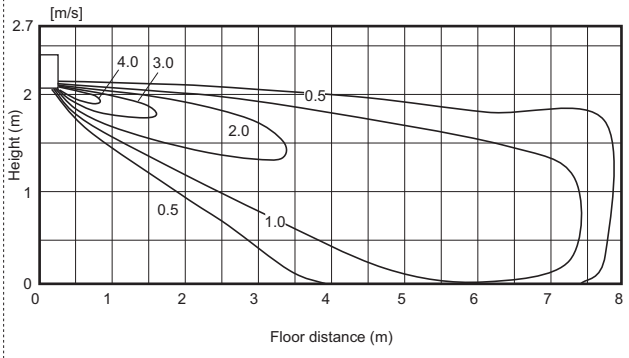
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Downward air flow



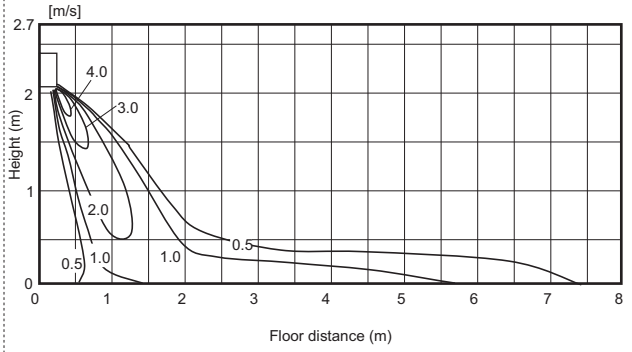
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

PKFY-P50, 63, 80VKM-E

<Fan mode>
Horizontal air flow



<Fan mode>
Downward air flow



Note : These figures show typical airflow distributions in the conditions above. In the actual installation, they may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PKFY-WL10VLM-E	220-240V/50Hz 220V/60Hz	Max.: 264V Min.: 198V	0.25	0.030	0.20
PKFY-WL15VLM-E			0.25	0.030	0.20
PKFY-WL20VLM-E			0.32	0.030	0.25
PKFY-WL25VLM-E			0.44	0.030	0.35
PKFY-WL32VLM-E			0.44	0.030	0.35
PKFY-WL40VLM-E			0.57	0.030	0.45
PKFY-WL50VKM-E			0.58	0.069	0.46
PKFY-WL63VKM-E			0.70	0.069	0.56
PKFY-WL80VKM-E			0.95	0.069	0.76

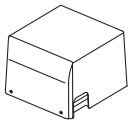
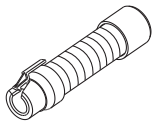
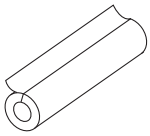
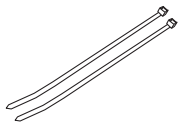
8-1. Optional parts line up for the Indoor unit

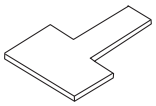
	Description	Model
PKFY-WL-VLM-E	Drain pump kit	PAC-SK01DM-E
	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E
	Plasma Quad Connect	MAC-100FT-E
PKFY-WL-VKM-E	Drain pump kit	PAC-SK19DM-E
	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E
	Plasma Quad Connect	MAC-100FT-E

8-2. Drain pump

PAC-SK01DM-E

If drain water can not flow out the Indoor unit by gravity and gradient, a Drain-pump for draining is needed.
Drain pump PAC-SK01DM-E can pump water up to 850mm [33-1/2 in.] high from the drain pan.

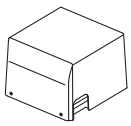
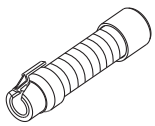
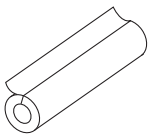
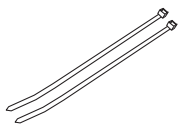
Item	① Drain pump	② Screw	③ Drain hose	④ Flexible hose cover	⑤ Band
Quantity	1	(M4×16)×1, (M4×35)×6	1	1	2
Shape					

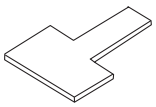
Item	⑥ Paper gauge
Quantity	1
Shape	

Detailed installation information should be referred to its Installation Manual.

PAC-SK19DM-E

If drain water can not flow out the Indoor unit by gravity and gradient, a Drain-pump for draining is needed.
Drain pump PAC-SK19DM-E can pump water up to 850mm [33-1/2 in.] high from the drain pan.

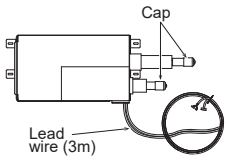
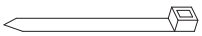
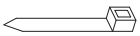
Item	① Drain pump	② Screw	③ Drain hose	④ Flexible hose cover	⑤ Band
Quantity	1	(M4×16)×1, (M4×35)×6	1	1	2
Shape					

Item	⑥ Paper gauge
Quantity	1
Shape	

Detailed installation information should be referred to its Installation Manual.

8-3. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

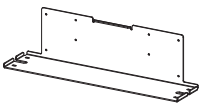
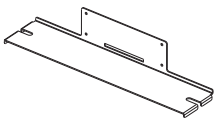
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

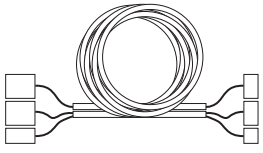
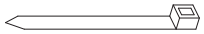
8-4. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

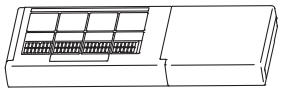
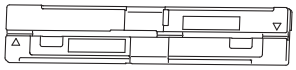
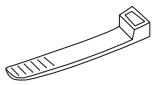
8-5. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m).
Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.

Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

8-6. Plasma Quad Connect

MAC-100FT-E

Item	Plasma Quad Connect (with connecting cable)	Installation plate	Fixing screw for Plasma Quad Connect and Installation plate 4 × 25 mm
Quantity	1	1	5
Shape			
Item	Spacer Note: The spacer is used as packaging material.	Mounting cord clamp	Cable tie
Quantity	1	1	1
Shape			
Item	Screw for Mounting cord clamp 4 × 16 (Use when joining room air conditioner parts)		
Quantity	1		
Shape			

Detailed installation information should be referred to its Installation Manual.

PFFY-WL-VEM-A

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Model				PFFY-WL20VEM-A	PFFY-WL25VEM-A	PFFY-WL32VEM-A	PFFY-WL40VEM-A
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	Power input		kW	0.021	0.029	0.036	0.037
	Current input		A	0.26-0.25-0.24	0.34-0.33-0.31	0.40-0.39-0.37	0.39-0.38-0.36
Heating capacity		*2	kW	2.5	3.2	4.0	5.0
(Nominal)		*2	BTU/h	8,500	10,900	13,600	17,100
	Power input		kW	0.021	0.029	0.036	0.037
	Current input		A	0.26-0.25-0.24	0.34-0.33-0.31	0.40-0.39-0.37	0.39-0.38-0.36
External finish				Galvanized steel plate, MUNSELL (1.0Y 9.2/0.2)/ABS, MUNSELL (5.32GY 8.75/0.37)	Galvanized steel plate, MUNSELL (1.0Y 9.2/0.2)/ABS, MUNSELL (5.32GY 8.75/0.37)	Galvanized steel plate, MUNSELL (1.0Y 9.2/0.2)/ABS, MUNSELL (5.32GY 8.75/0.37)	Galvanized steel plate, MUNSELL (1.0Y 9.2/0.2)/ABS, MUNSELL (5.32GY 8.75/0.37)
External dimension H × W × D		*3	mm	669 (726) x 1,142 x 217	669 (726) x 1,142 x 217	669 (726) x 1,142 x 217	669 (726) x 1,342 x 217
		*3	in.	26-3/8 (28-5/8) x 45 x 8-9/16	26-3/8 (28-5/8) x 45 x 8-9/16	26-3/8 (28-5/8) x 45 x 8-9/16	26-3/8 (28-5/8) x 52-7/8 x 8-9/16
Net weight			kg (lbs)	29.5 (67)	29.5 (67)	30 (67)	35 (78)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.8	0.8	1.0	1.3
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 3
	External		Pa	0	0	0	0
	static press.		mmH_2O	0.0	0.0	0.0	0.0
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	5.0 - 6.0 - 7.0	5.5 - 7.0 - 8.5	6.5 - 7.5 - 9.0	8.0 - 9.5 - 11.0
			L/s	83 - 100 - 117	92 - 117 - 142	108 - 125 - 150	133 - 158 - 183
			cfm	177 - 212 - 247	194 - 247 - 300	230 - 265 - 318	282 - 335 - 388
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			dB <A>	23.0-27.0-31.0	25.0-31.0-36.0	29.0-33.0-37.0	29.0-33.0-36.0
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*4, 5					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KB94C4K4, KB94C4K5	KB94C4K4, KB94C4K5	KB94C4K4, KB94C4K5	KB94C4K4, KB94C4K5
	Wiring			KB94C4K3	KB94C4K3	KB94C4K3	KB94C4K3
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band, Leg, Leg cover, M4 screw, M5 screw	Washer, Drain hose, Tie band, Leg, Leg cover, M4 screw, M5 screw	Washer, Drain hose, Tie band, Leg, Leg cover, M4 screw, M5 screw	Washer, Drain hose, Tie band, Leg, Leg cover, M4 screw, M5 screw
Optional parts	Back decoration panel			PAC-BP32VEM-E	PAC-BP32VEM-E	PAC-BP32VEM-E	PAC-BP50VEM-E
	Valve kit		*6	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.The values in () show the height of unit with leg.
4.Be sure to install a valve on the water inlet/outlet.
5.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
6.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
7.Please group units that operate on 1 branch of HBC controller.

Unit converter	
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-WL-VEM-A

Model				PFFY-WL50VEM-A			
Power source				1-phase 220-230-240 V 50/60 Hz			
Cooling capacity		*1	kW	5.6			
(Nominal)		*1	BTU/h	19,100			
	Power input		kW	0.064			
	Current input		A	0.68-0.65-0.63			
Heating capacity		*2	kW	6.3			
(Nominal)		*2	BTU/h	21,500			
	Power input		kW	0.064			
	Current input		A	0.68-0.65-0.63			
External finish				Galvanized steel plate, MUNSELL (1.0Y 9.2/0.2)/ABS, MUNSELL (5.32GY 8.75/0.37)			
External dimension H × W × D		*3	mm	669 (726) x 1,342 x 217			
		*3	in.	26-3/8 (28-5/8) x 52-7/8 x 8-9/16			
Net weight			kg (lbs)	35 (78)			
Heat exchanger				Cross fin (Aluminum fin and copper tube)			
	Water Volume		L	1.3			
FAN	Type × Quantity			Sirocco fan x 3			
	External		Pa	0			
	static press.		mmH_2O	0.0			
	Motor Type			DC motor			
	Motor output		kW	0.096			
	Driving mechanism			Direct-driven by motor			
	Air flow rate			(Low-Mid-High)			
			m^3/min	10.5 - 12.5 - 14.5			
			L/s	175 - 208 - 242			
			cfm	371 - 441 - 512			
Sound pressure level (measured in anechoic room)				(Low-Mid-High)			
			dB <A>	35.0-40.0-43.0			
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam			
Air filter				PP honeycomb fabric.			
Protection device				Fuse			
Refrigerant control device				-			
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A			
Water piping diameter		*4, 5					
Connection size	Inlet		mm O.D.	22			
	Outlet		mm O.D.	22			
Field pipe size	Inlet		mm I.D.	20			
	Outlet		mm I.D.	20			
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)			
Drawing	External			KB94C4K4, KB94C4K5			
	Wiring			KB94C4K3			
	Refrigerant cycle			-			
Standard attachment	Document			Installation Manual, Instruction Book			
	Accessory			Washer, Drain hose, Tie band, Leg, Leg cover, M4 screw, M5 screw			
Optional parts	Back decoration panel			PAC-BP50VEM-E			
	Valve kit		*6	PAC-SK35VK-E			
		6m Lead wire		PAC-SK40LW-E			
		Attachment plate		PAC-SK39AP-E			
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
3.The values in () show the height of unit with leg.
4.Be sure to install a valve on the water inlet/outlet.
5.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
6.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
7.Please group units that operate on 1 branch of HBC controller.

Unit converter

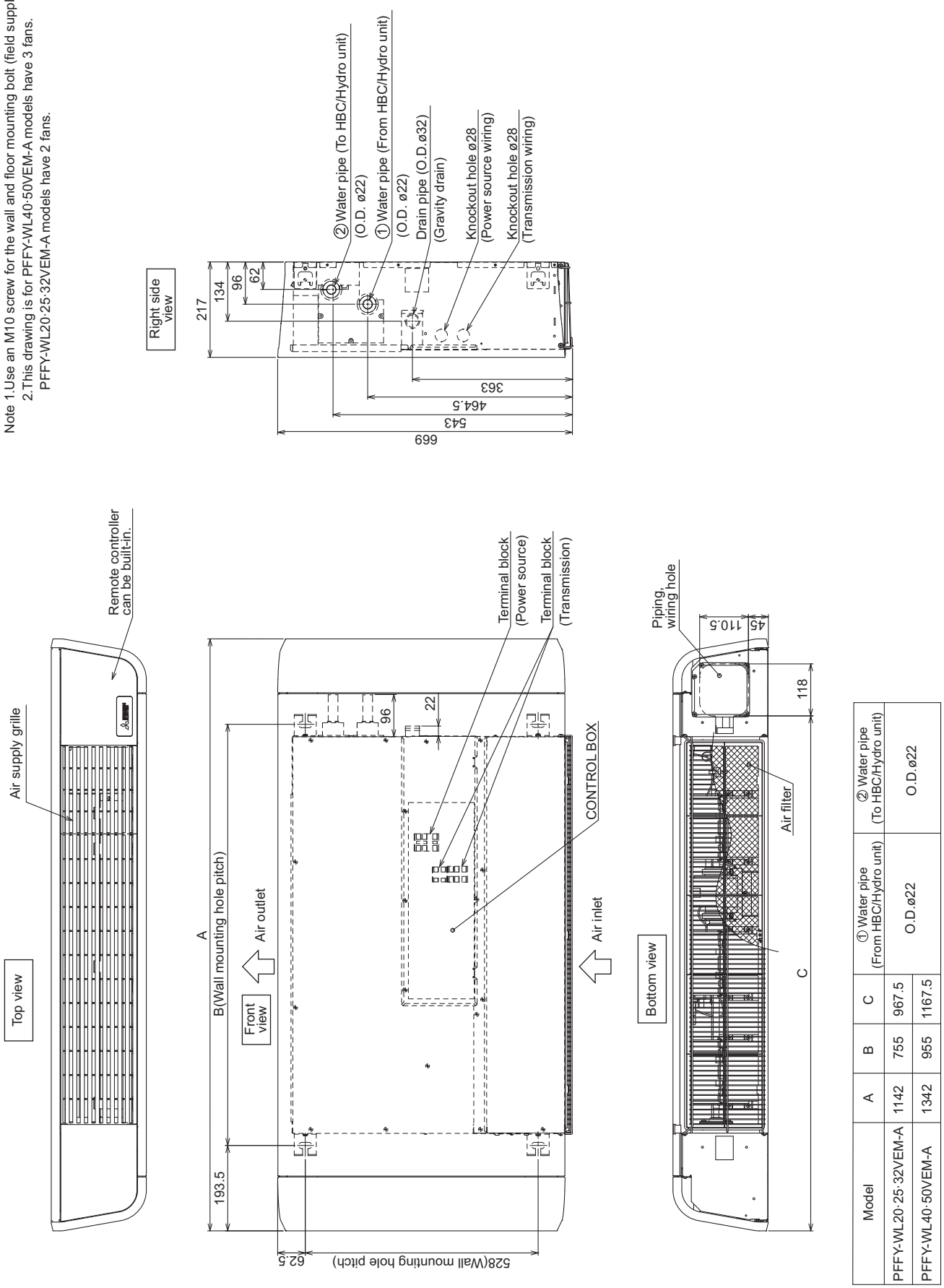
BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-WL20, 25, 32, 40, 50VEM-A - wall mounting

Unit: mm

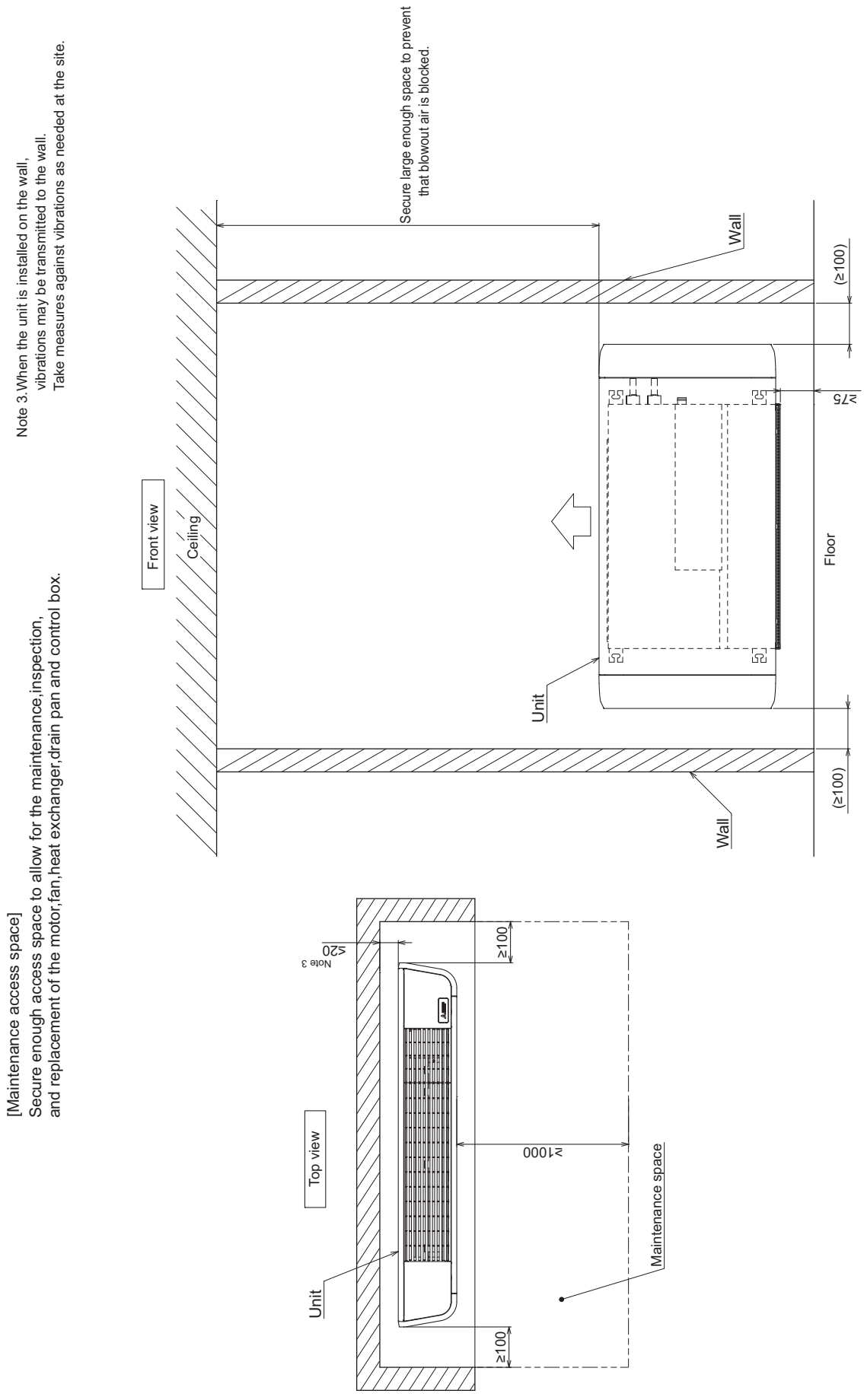
Note 1.Use an M10 screw for the wall and floor mounting bolt (field supply).
2.This drawing is for PFFY-WL40·50VEM-A models have 3 fans.
PFFY-WL20·25·32VEM-A models have 2 fans.



Model	A	B	C	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VEM-A	1142	755	967.5	O.D.ø22	O.D.ø22
PFFY-WL40·50VEM-A	1342	955	1167.5		

PFFY-WL20, 25, 32, 40, 50VEM-A - wall mounting

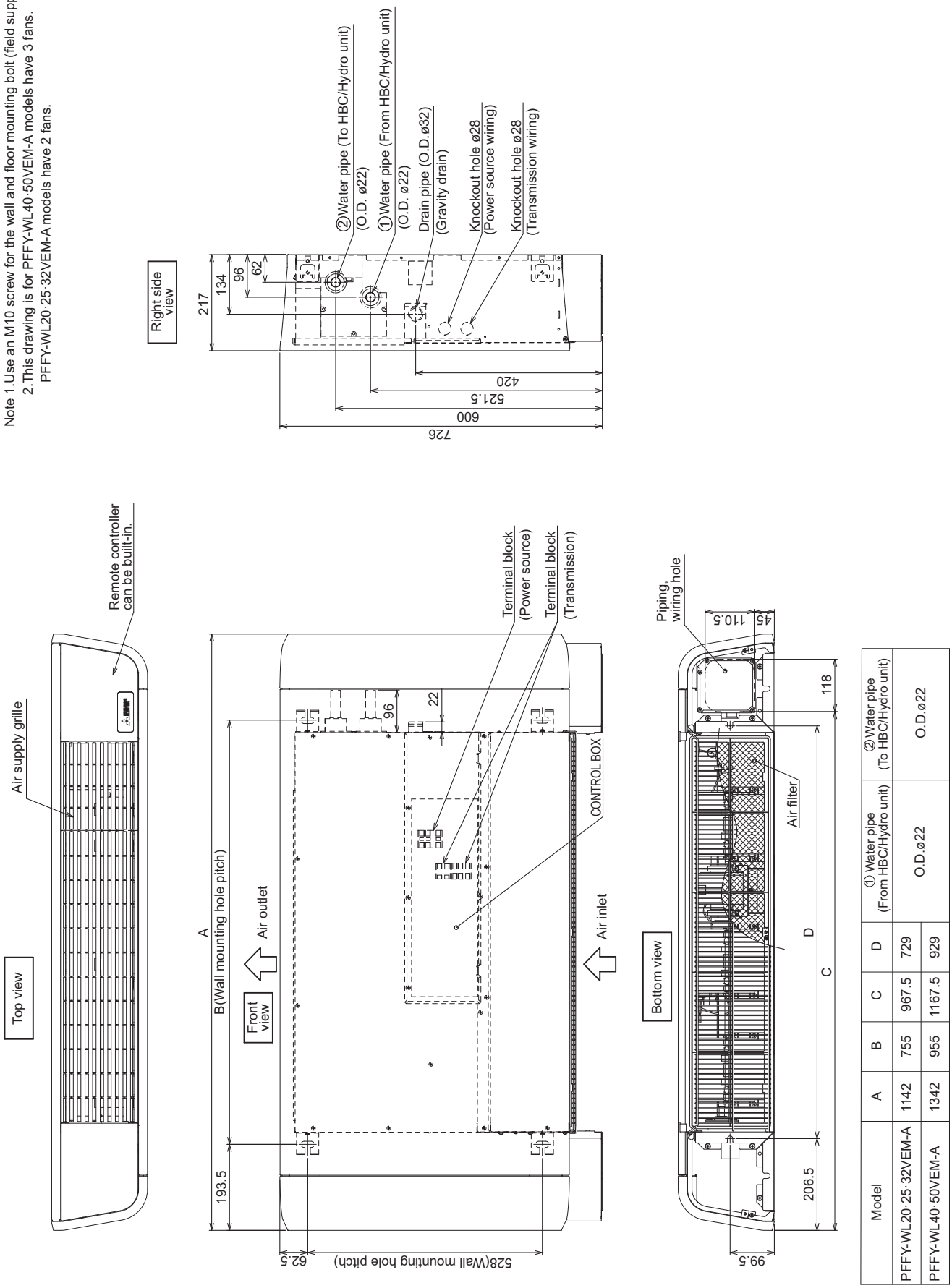
Unit: mm



PFFY-WL20, 25, 32, 40, 50VEM-A - floor mounting

Unit: mm

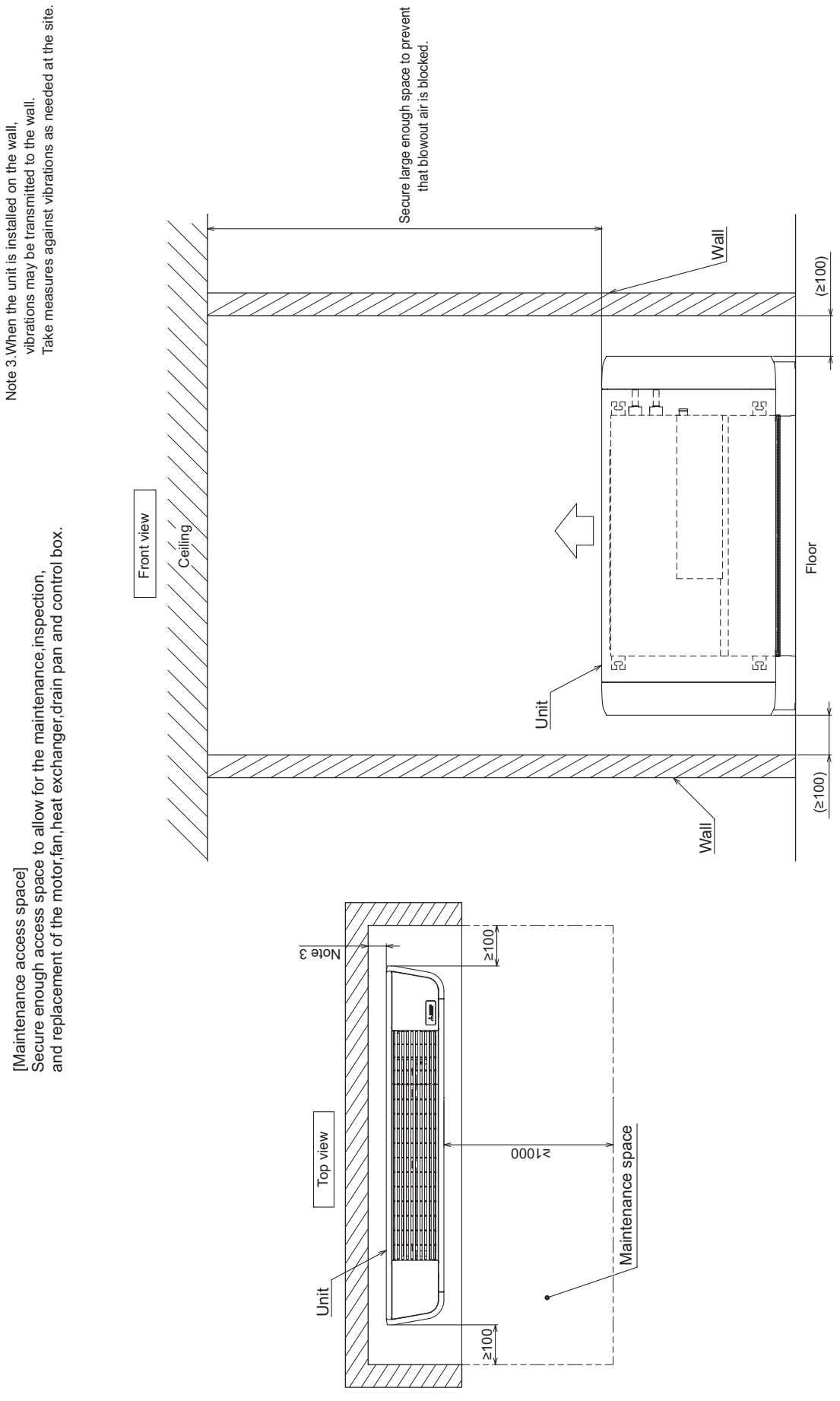
Note 1.Use an M10 screw for the wall and floor mounting bolt (field supply).
2.This drawing is for PFFY-WL40·50VEM-A models have 3 fans.
PFFY-WL20·25·32VEM-A models have 2 fans.



Model	A	B	C	D	① Water pipe (From HBC/Hydro unit)	②Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VEM-A	1142	755	967.5	729	O.D.ø22	O.D.ø22
PFFY-WL40·50VEM-A	1342	955	1167.5	929		

PFFY-WL20, 25, 32, 40, 50VEM-A - floor mounting

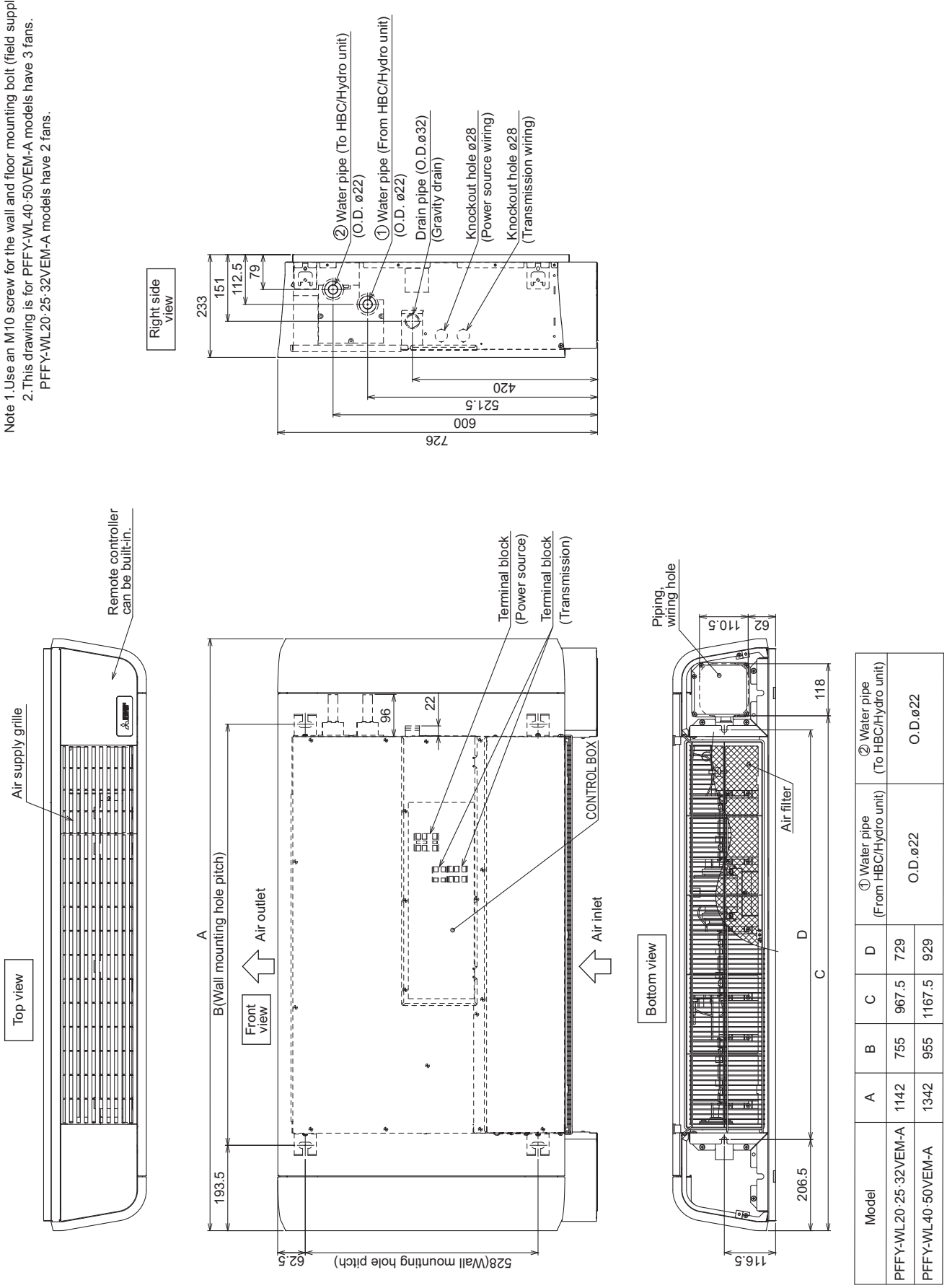
Unit: mm



PFFY-WL20, 25, 32, 40, 50VEM-A - back panel installation - floor mounting

Unit: mm

Note 1. Use an M10 screw for the wall and floor mounting bolt (field supply).
2. This drawing is for PFFY-WL40·50VEM-A models have 3 fans.
PFFY-WL20·25·32VEM-A models have 2 fans.



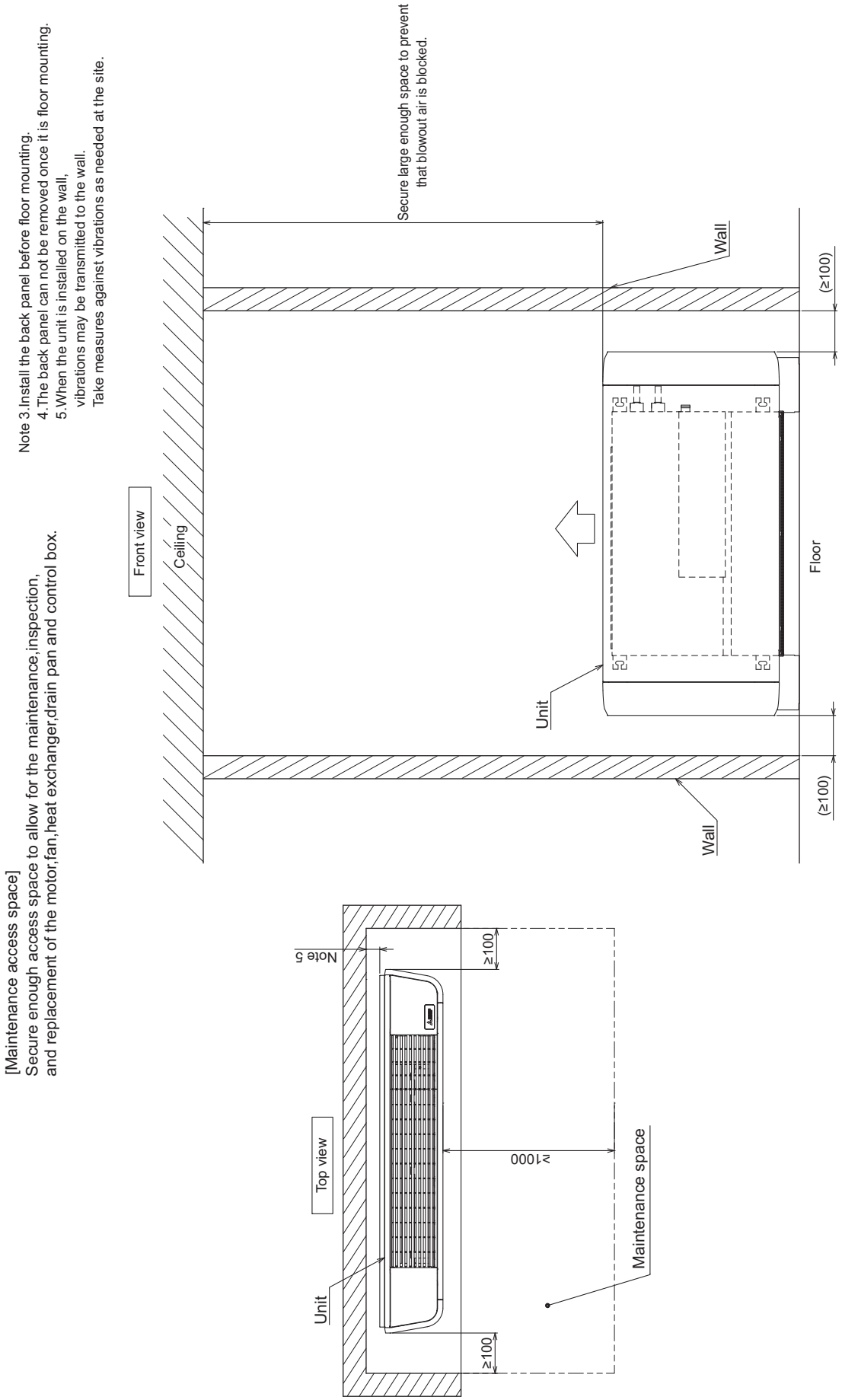
Model	A	B	C	D	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VEM-A	1142	755	967.5	729	O.D.ø22	O.D.ø22
PFFY-WL40·50VEM-A	1342	955	1167.5	929		

PFFY-WL20, 25, 32, 40, 50VEM-A - back panel installation - floor mounting

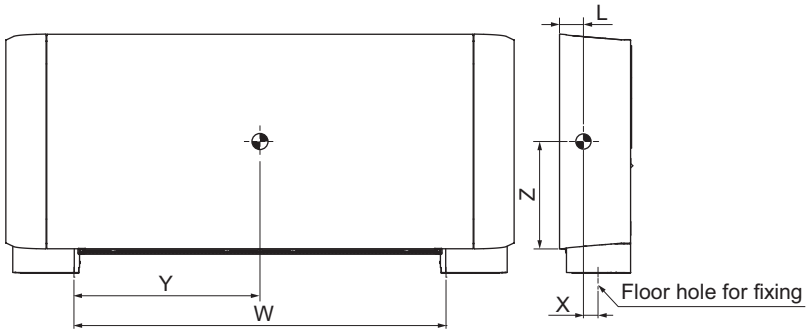
Unit: mm

Note 3.Install the back panel before floor mounting.
4.The back panel can not be removed once it is floor mounting.
5.When the unit is installed on the wall, vibrations may be transmitted to the wall. Take measures against vibrations as needed at the site.

[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection, and replacement of the motor,fan,heat exchanger,drain pan and control box.



PFFY-WL20, 25, 32, 40, 50VEM-A



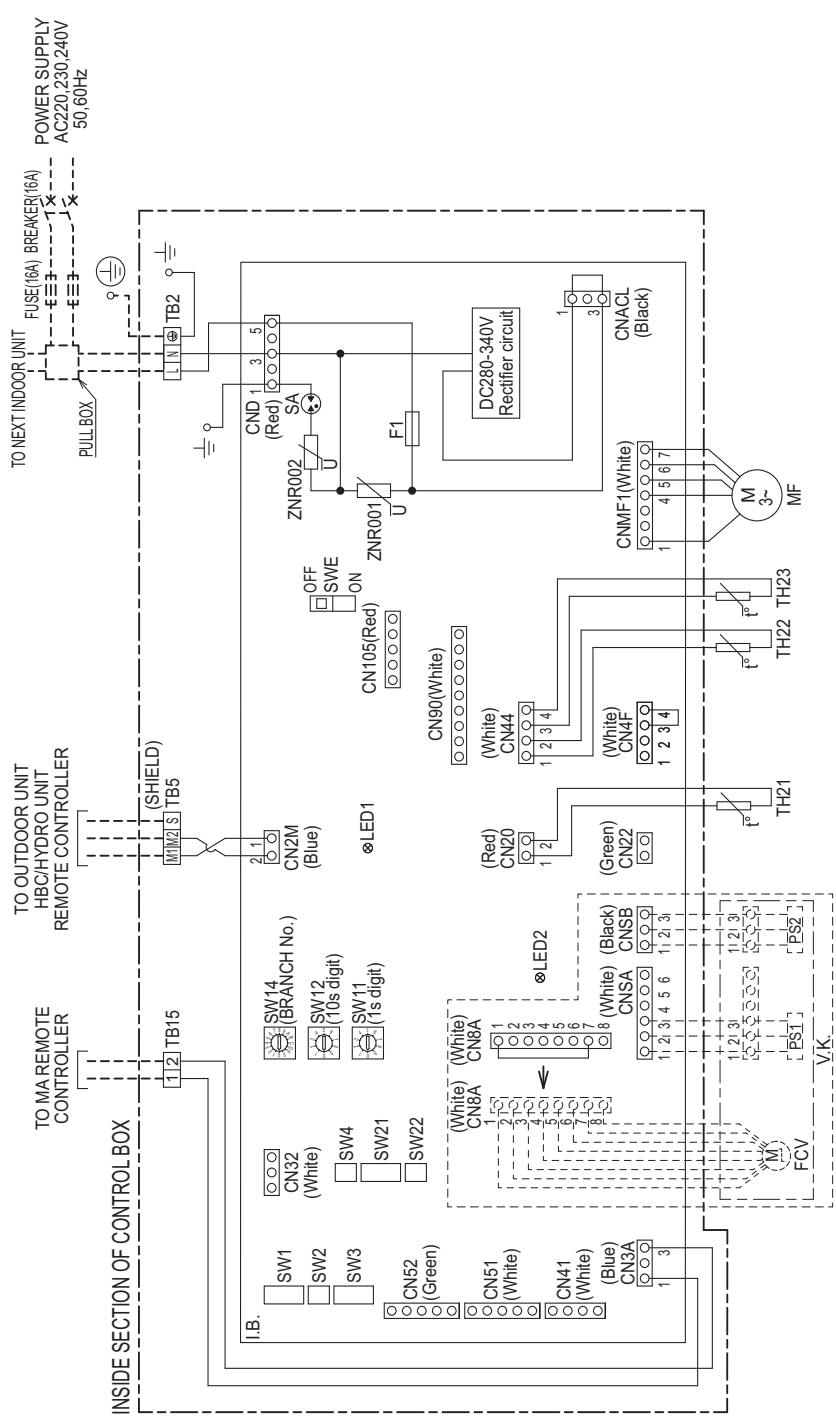
(mm) [in]

Model name	W	L	X	Y	Z
PFFY-WL20VEM-A	730 [28-3/4]	76 [3]	40 [1-5/8]	365 [14-3/8]	320 [12-5/8]
PFFY-WL25VEM-A	730 [28-3/4]	76 [3]	40 [1-5/8]	365 [14-3/8]	320 [12-5/8]
PFFY-WL32VEM-A	730 [28-3/4]	76 [3]	40 [1-5/8]	365 [14-3/8]	320 [12-5/8]
PFFY-WL40VEM-A	930 [36-5/8]	76 [3]	40 [1-5/8]	475 [18-3/4]	330 [13]
PFFY-WL50VEM-A	930 [36-5/8]	76 [3]	40 [1-5/8]	475 [18-3/4]	330 [13]

PFFY-WL20, 25, 32, 40, 50VEM-A

SYMBOL EXPLANATION

SYMBOL	NAME
MF	Fan Motor
FCV	Flow control valve
PS1	Pressure sensor (valve inlet)
PS2	Pressure sensor (valve outlet)
TB2	Power source terminal block
TB5	Transmission terminal block
TB15	Transmission terminal block
TH21	Thermistor (inlet air temp. detection)
TH22	Thermistor (piping temp.detection/inlet water)
TH23	Thermistor (piping temp.detection/outlet water)
I.B.	Indoor controller board
SA	Arrester
F1	Fuse AC250V 6.3A
ZNR001	Varistor
ZNR002	Varistor
CN22	Connector (Optional Thermistor)
CN32	Connector (Remote switch)
CN41	Connector (HA terminal-A)
CN51	Connector (Centrally control)
CN52	Connector (Remote indication)
CN90	Connector (Wireless)
CN105	Connector (IT terminal)
SW1	Switch (for mode selection)
SW2	Switch (for capacity code)
SW3	Switch (for mode selection)
SW4	Switch (for model selection)
SW11	Switch (1s digit address set)
SW12	Switch (10s digit address set)
SW14	Switch (BRANCH No.)
SW21	Switch (for mode selection)
SW22	Switch (Wireless pair No.)
SWE	Connector (emergency operation)
LED1	LED (Power supply)
LED2	LED (Remote controller supply)

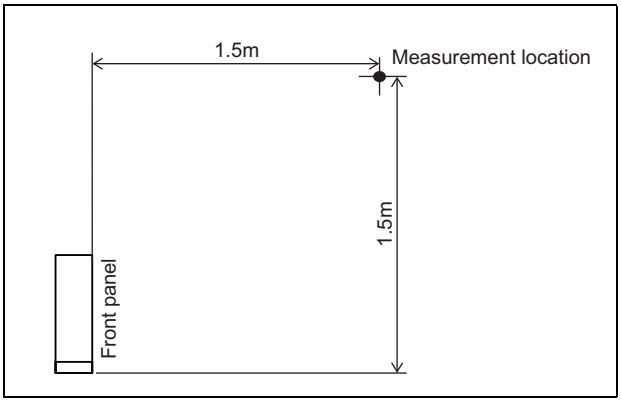


NOTE)1.Symbols used in wiring diagram are
○ ○ ○ :Connector, □:Terminal,
\- - - - - - (Heavy dotted line):Field wiring,
\- - - - - - (Thin dotted line):Optional parts.
2.Have all electric work done by a licensed electrician according to the local regulations.
3.Earth leakage circuit breaker should be set up on the wiring of the power supply.

MODEL	SW1	SW2	SW3	SW4	SW21	SW22	SWE
PFFY-WL20VEM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL25VEM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL32VEM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL40VEM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL50VEM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF

5-1. Sound levels

PFFY-WL-VEM-A



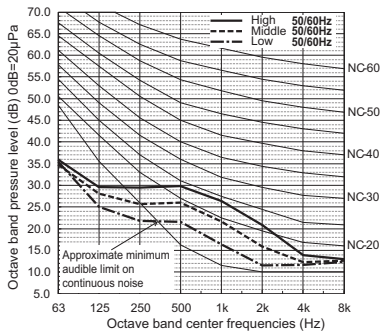
* Measured in anechoic room

Sound level at anechoic room: Low-Mid-High

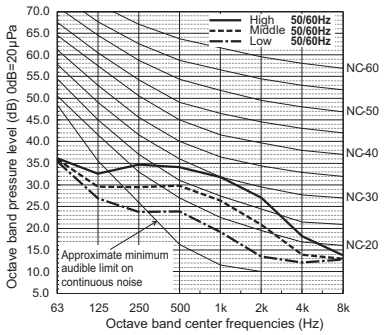
	Sound level dB (A)
PFFY-WL20VEM-A	23.0-27.0-31.0
PFFY-WL25VEM-A	25.0-31.0-36.0
PFFY-WL32VEM-A	29.0-33.0-37.0
PFFY-WL40VEM-A	29.0-33.0-36.0
PFFY-WL50VEM-A	35.0-40.0-43.0

5-2. NC curves

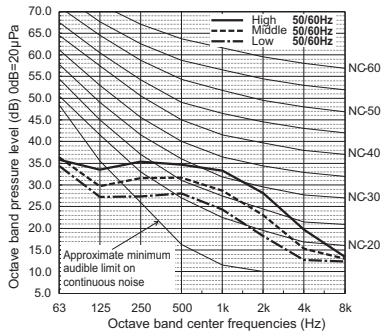
PFFY-WL20VEM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



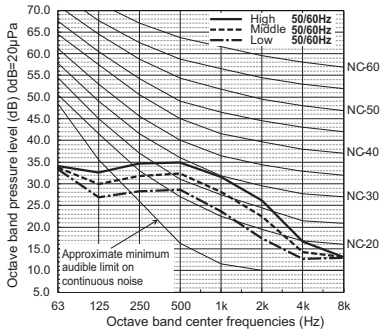
PFFY-WL25VEM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



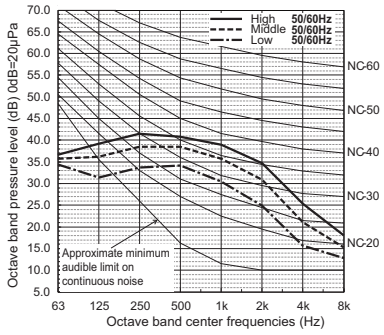
PFFY-WL32VEM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



PFFY-WL40VEM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



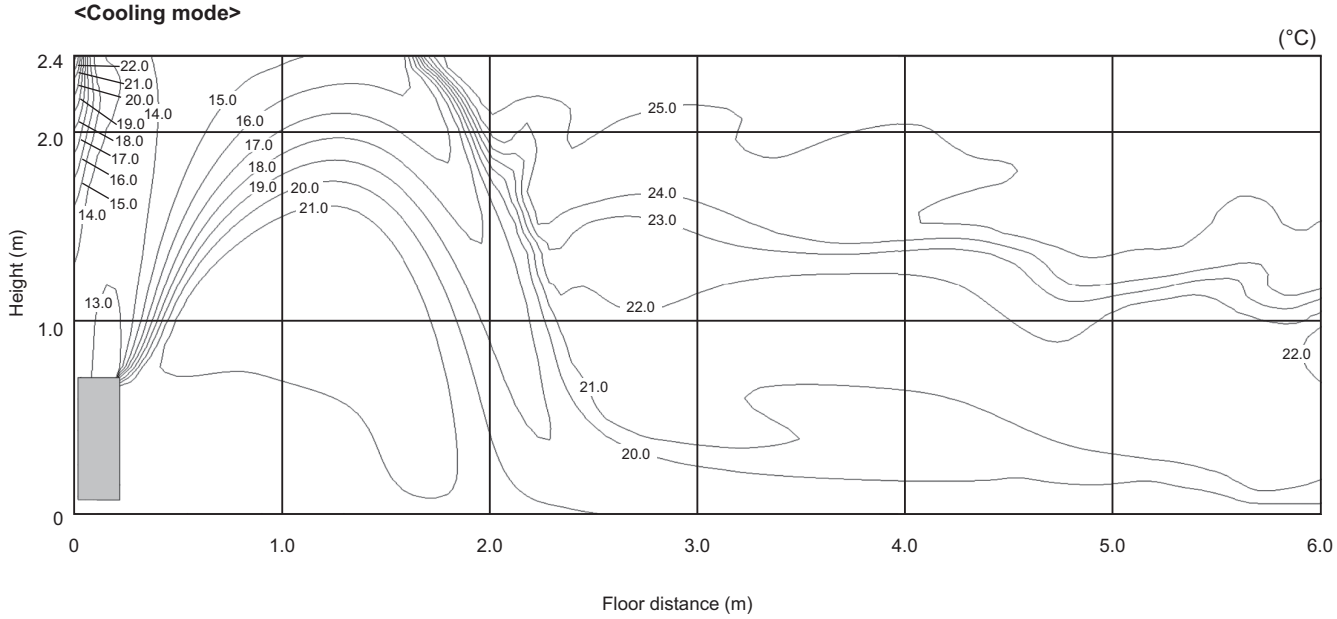
PFFY-WL50VEM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



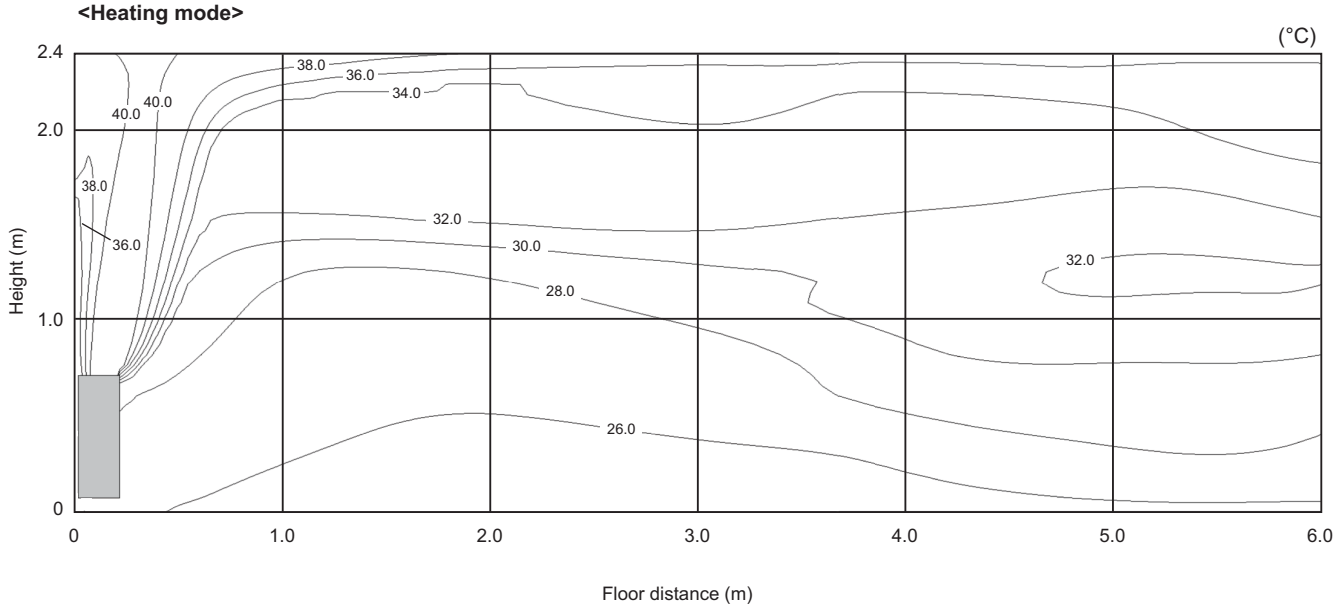
6-1. Temperature distributions

PFFY-WL20-50VEM-A

<Cooling mode>



<Heating mode>

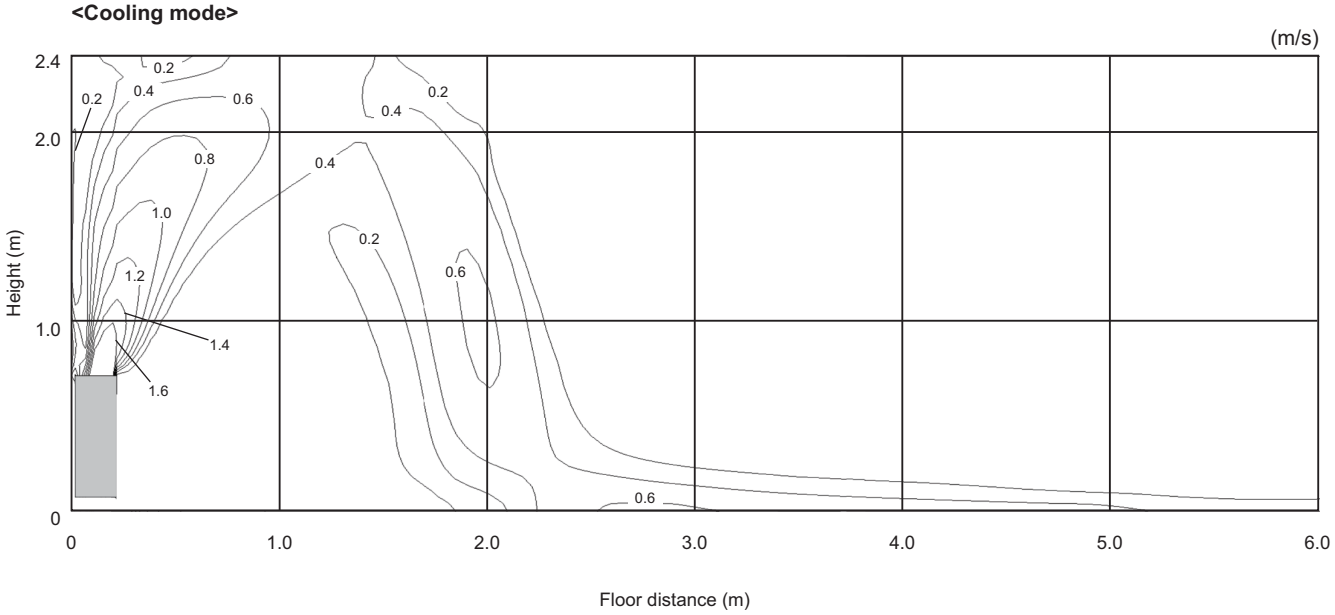


Note : These figures show typical temperature distributions in the conditions above. In the actual installation, the actual temperature distribution may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

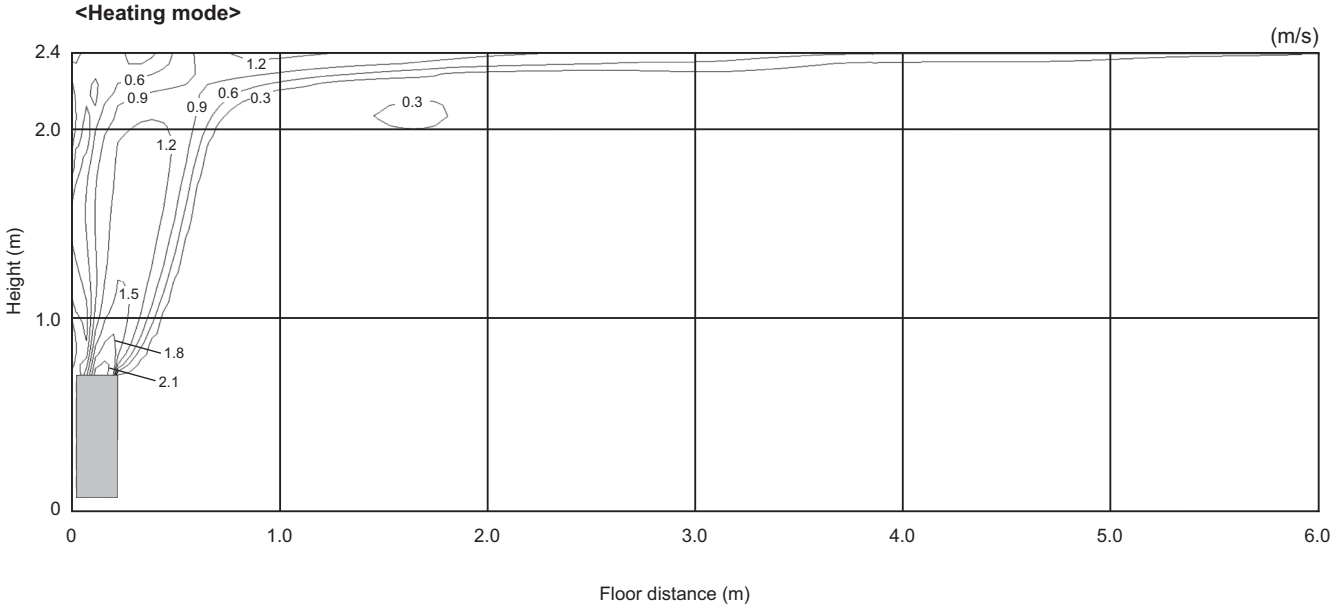
6-2. Airflow distributions

PFFY-WL20-50VEM-A

<Cooling mode>



<Heating mode>



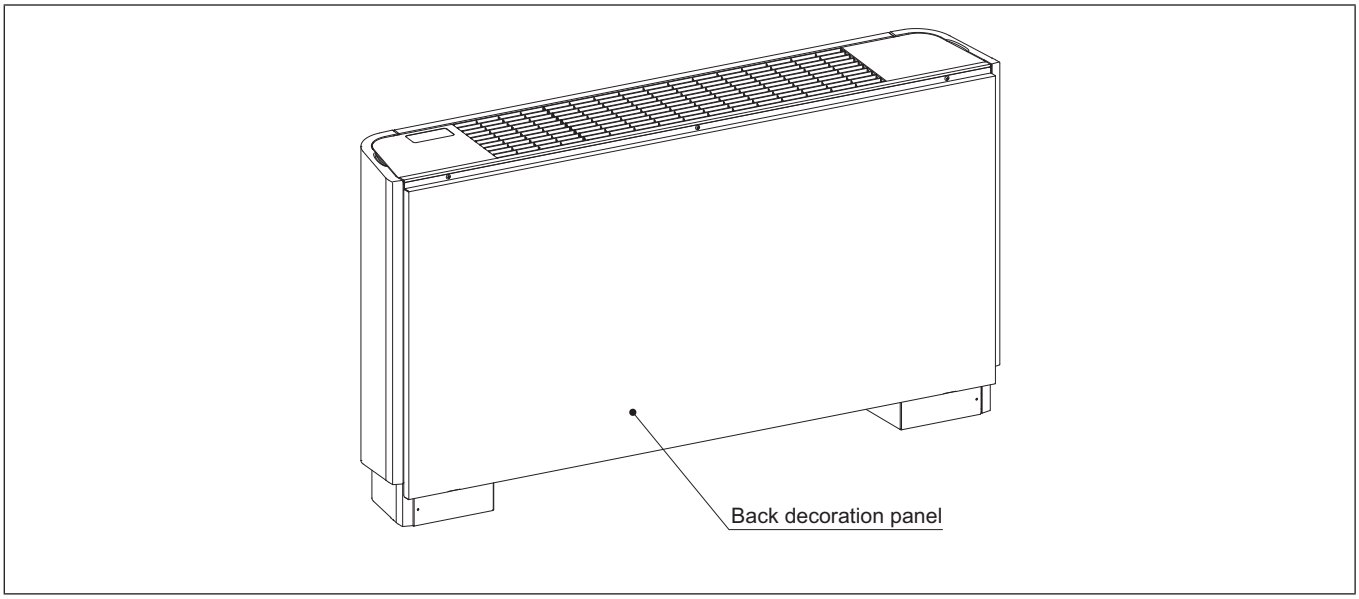
Note : These figures show typical airflow distributions in the conditions above. In the actual installation, the actual airflow distribution may differ from these figures under the influence of air temperature conditions, ceiling height, cooling/heating load,obstacles,etc.

Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

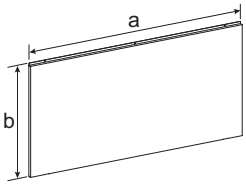
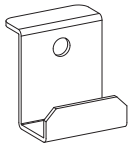
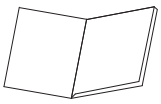
Model	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA (A)	Output (kW)	FLA (A)
PFFY-WL20VEM-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.42	0.096	0.33
PFFY-WL25VEM-A			0.54	0.096	0.43
PFFY-WL32VEM-A			0.62	0.096	0.49
PFFY-WL40VEM-A			0.65	0.096	0.52
PFFY-WL50VEM-A			0.85	0.096	0.68

8-1. Optional parts line up for the Indoor unit

	Description	Model
PFFY-WL20, 25, 32VEM-A	Back decoration panel	PAC-BP32VEM-E
PFFY-WL40, 50VEM-A		PAC-BP50VEM-E
PFFY-WL-VEM-A	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E



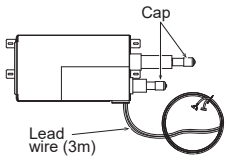
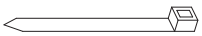
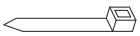
8-2. Back decoration panel

Item	Shape		Quantity	Model name
Back decoration panel		a × b	-	-
		1098 × 641	1	PAC-BP32VEM-E
		1298 × 641	1	PAC-BP50VEM-E
		1498 × 641	1	PAC-BP63VEM-E *1
Attachment			2	PAC-BP32•50•63VEM-E *1
Screw (4x10)			5	PAC-BP32•50•63VEM-E *1
Installation manual			1	-

Detailed installation information should be referred to its Installation Manual.
*1 PAC-BP63VEM-E is used for PFFY-P-VEM-E model only.

8-3. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

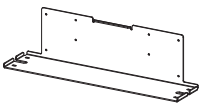
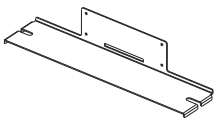
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

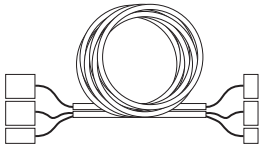
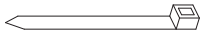
8-4. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-5. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m).
Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.

Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

PFFY-W-VCM-A

1. SPECIFICATIONS ..... 2 - 256
2. EXTERNAL DIMENSIONS ..... 2 - 258
3. CENTER OF GRAVITY ..... 2 - 262
4. ELECTRICAL WIRING DIAGRAMS ..... 2 - 263
5. SOUND LEVELS ..... 2 - 264
5-1. Sound levels ..... 2 - 264
5-2. NC curves ..... 2 - 264
6. FAN CHARACTERISTICS CURVES ..... 2 - 266
7. ELECTRICAL CHARACTERISTICS ..... 2 - 269

Model				PFFY-W20VCM-A	PFFY-W25VCM-A	PFFY-W32VCM-A	PFFY-W40VCM-A
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2	Power input	kW	0.022	0.029	0.035	0.038
(220V)	*2	Current input	A	0.25	0.33	0.38	0.38
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2	Power input	kW	0.022	0.029	0.035	0.038
(220V)	*2	Current input	A	0.25	0.33	0.38	0.38
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D		*4	mm	615 (690) x 700 x 200	615 (690) x 700 x 200	615 (690) x 700 x 200	615 (690) x 900 x 200
		*4	in.	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 35-7/16 x 7-7/8
Net weight			kg (lbs)	18.5 (42)	18.5 (42)	19 (42)	23 (51)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volime		L	0.8	0.8	1.0	1.3
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 3
*5	External static press.		Pa	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>
			mmH_2O	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	5.0 - 6.0 - 7.0	5.5 - 7.0 - 8.5	6.5 - 7.5 - 9.0	8.0 - 9.5 - 11.0
			L/s	83 - 100 - 117	92 - 117 - 142	108 - 125 - 150	133 - 158 - 183
			cfm	177 - 212 - 247	194 - 247 - 300	230 - 265 - 318	282 - 335 - 388
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	21.0-23.0-26.0	22.0-26.0-30.0	25.0-28.0-32.0	25.0-27.0-30.0
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				Flow control valve	Flow control valve	Flow control valve	Flow control valve
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*6, 7					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KL94T470, KL94R952	KL94T470, KL94R952	KL94T470, KL94R952	KL94T470, KL94R952
	Wiring			KL94R951	KL94R951	KL94R951	KL94R951
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The values in () show the height of unit with leg.
5.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
6.Be sure to install a valve on the water inlet/outlet.
7.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
8.Please group units that operate on 1 branch of HBC.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-W-VCM-A

Model				PFFY-W50VCM-A			
Power source				1-phase 220-230-240 V 50/60 Hz			
Cooling capacity			*1 kW	5.6			
(Nominal)			*1 BTU/h	19,100			
	*2	Power input	kW	0.062			
(220V)	*2	Current input	A	0.52			
Heating capacity			*3 kW	6.3			
(Nominal)			*3 BTU/h	21,500			
	*2	Power input	kW	0.062			
(220V)	*2	Current input	A	0.52			
External finish				Galvanized steel plate			
External dimension H × W × D			*4 mm	615 (690) x 900 x 200			
			*4 in.	24-1/4 (27-3/16) x 35-7/16 x 7-7/8			
Net weight			kg (lbs)	23 (51)			
Heat exchanger				Cross fin (Aluminum fin and copper tube)			
		Water Volime	L	1.3			
FAN		Type × Quantity		Sirocco fan x 3			
	*5	External static press.	Pa	<0> - 10 - <40> - <60>			
			mmH_2O	<0.0> - 1.0 - <4.1> - <6.1>			
		Motor Type		DC motor			
		Motor output	kW	0.096			
		Driving mechanism		Direct-driven by motor			
		Air flow rate		(Low-Mid-High)			
			m^3/min	10.5 - 12.5 - 14.5			
			L/s	175 - 208 - 242			
			cfm	371 - 441 - 512			
Sound pressure level (measured in anechoic room)				(Low-Mid-High)			
			*2 dB <A>	28.0-32.0-35.0			
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam			
Air filter				PP honeycomb fabric.			
Protection device				Fuse			
Refrigerant control device				Flow control valve			
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A			
Water piping diameter			*6, 7				
	Connection size	Inlet	mm O.D.	22			
		Outlet	mm O.D.	22			
	Field pipe size	Inlet	mm I.D.	20			
		Outlet	mm I.D.	20			
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)			
Drawing		External		KL94T470, KL94R952			
		Wiring		KL94R951			
		Refrigerant cycle		-			
Standard attachment		Document		Installation Manual, Instruction Book			
		Accessory		Washer, Drain hose, Tie band, Leg, Screw			
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The values in () show the height of unit with leg.
5.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
6.Be sure to install a valve on the water inlet/outlet.
7.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
8.Please group units that operate on 1 branch of HBC.

Unit converter

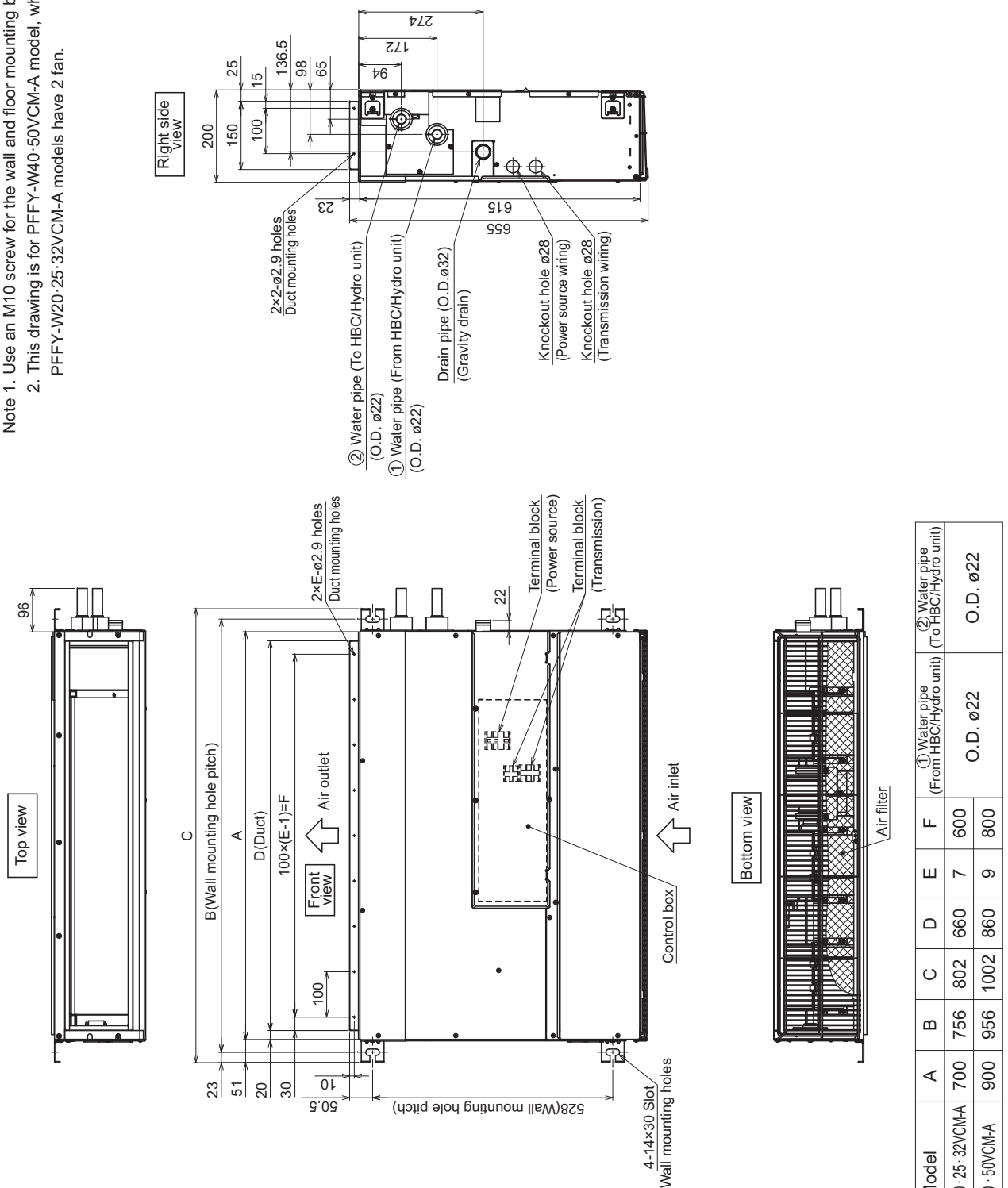
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-W20, 25, 32, 40, 50VCM-A Bottom suction · wall mounting

Unit: mm

Note 1. Use an M10 screw for the wall and floor mounting bolt (field supply).
2. This drawing is for PFFY-W40·50VCM-A model, which have 3 fans.
PFFY-W20·25·32VCM-A models have 2 fan.

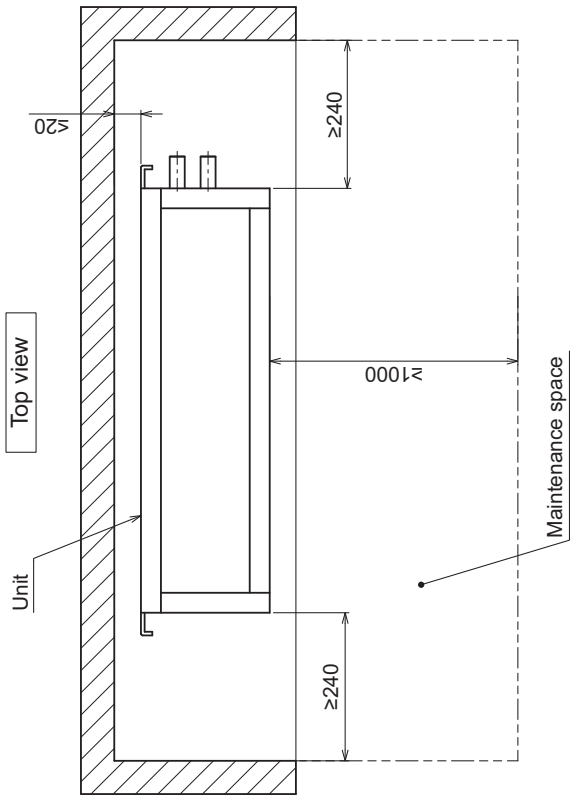


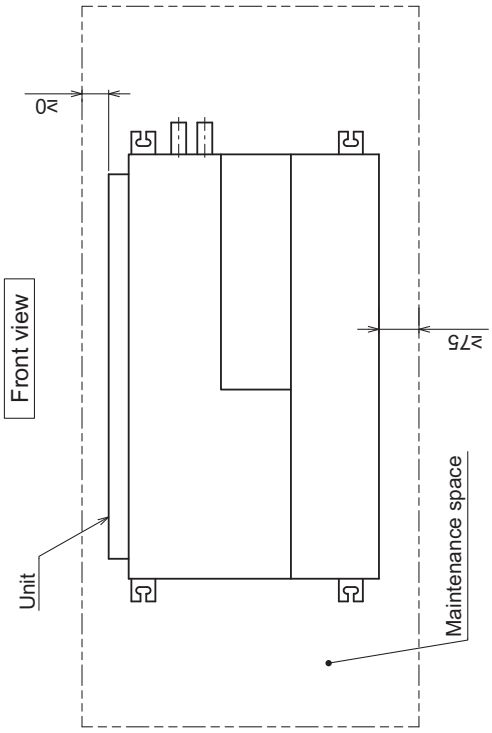
Model	A	B	C	D	E	F	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-W20 · 25 · 32VCM-A	700	756	802	660	7	600	O.D. ø22	O.D. ø22
PFFY-W40 · 50VCM-A	900	956	1002	860	9	800		

PFFY-W20, 25, 32, 40, 50VCM-A Bottom suction · wall mounting

Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, drain pan and control box.

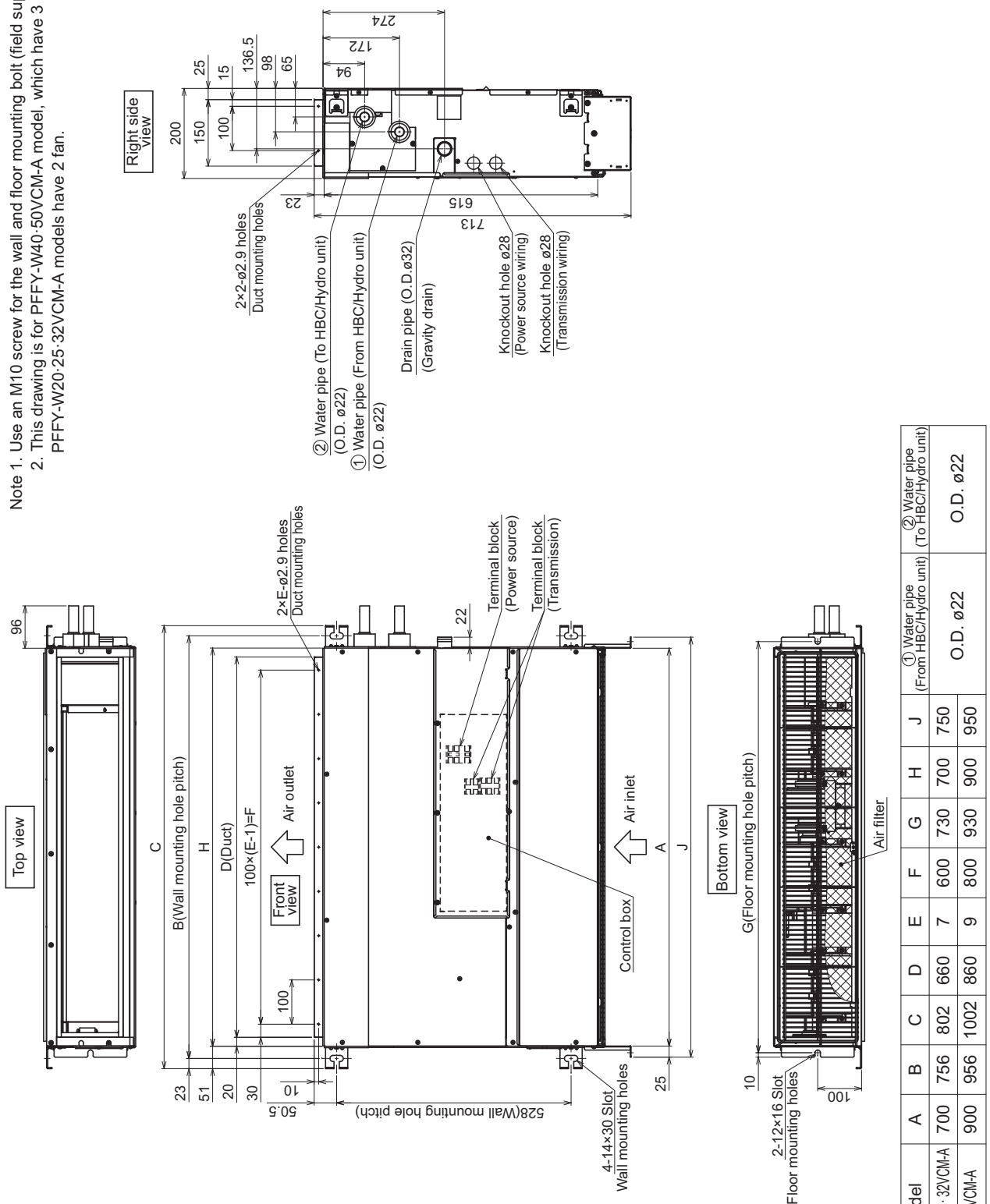




PFFY-W20, 25, 32, 40, 50VCM-A Bottom suction · floor mounting

Unit: mm

Note 1. Use an M10 screw for the wall and floor mounting bolt (field supply).
2. This drawing is for PFFY-W40·50VCM-A model, which have 3 fans.
PFFY-W20·25·32VCM-A models have 2 fan.

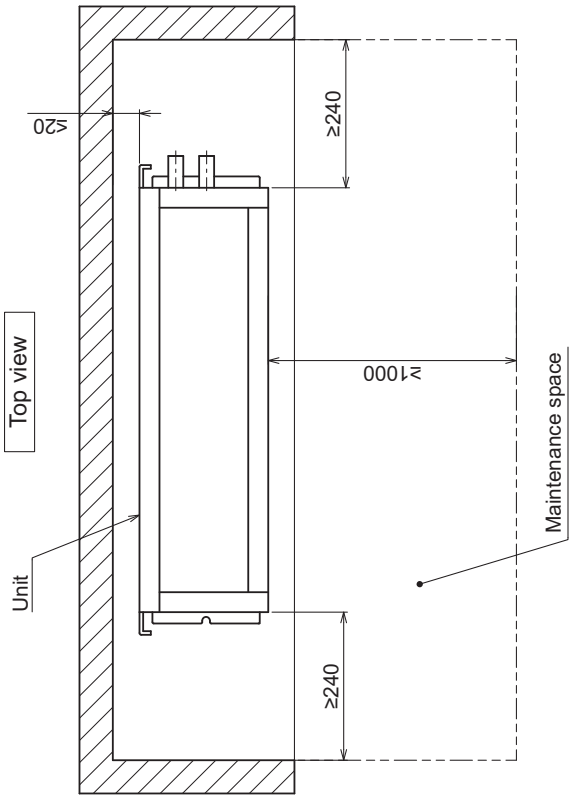


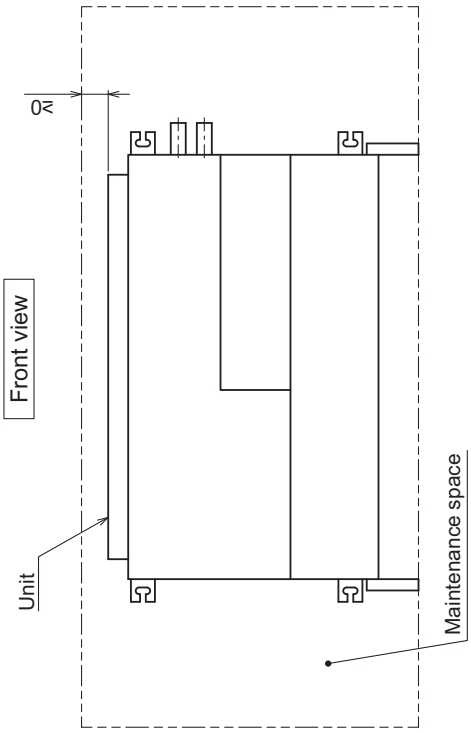
Model	A	B	C	D	E	F	G	H	J	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-W20 · 25 · 32VCM-A	700	756	802	660	7	600	730	700	750	O.D. ø22	O.D. ø22
PFFY-W40 · 50VCM-A	900	956	1002	860	9	800	930	900	950		

PFFY-W20, 25, 32, 40, 50VCM-A Bottom suction · floor mounting

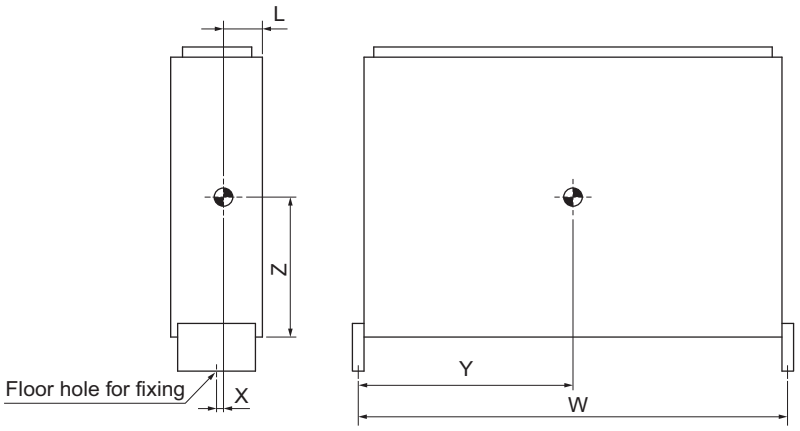
Unit: mm

[Maintenance access space]
Secure enough access space to allow for the maintenance, inspection, and replacement of the motor, fan, heat exchanger, drain pan and control box.





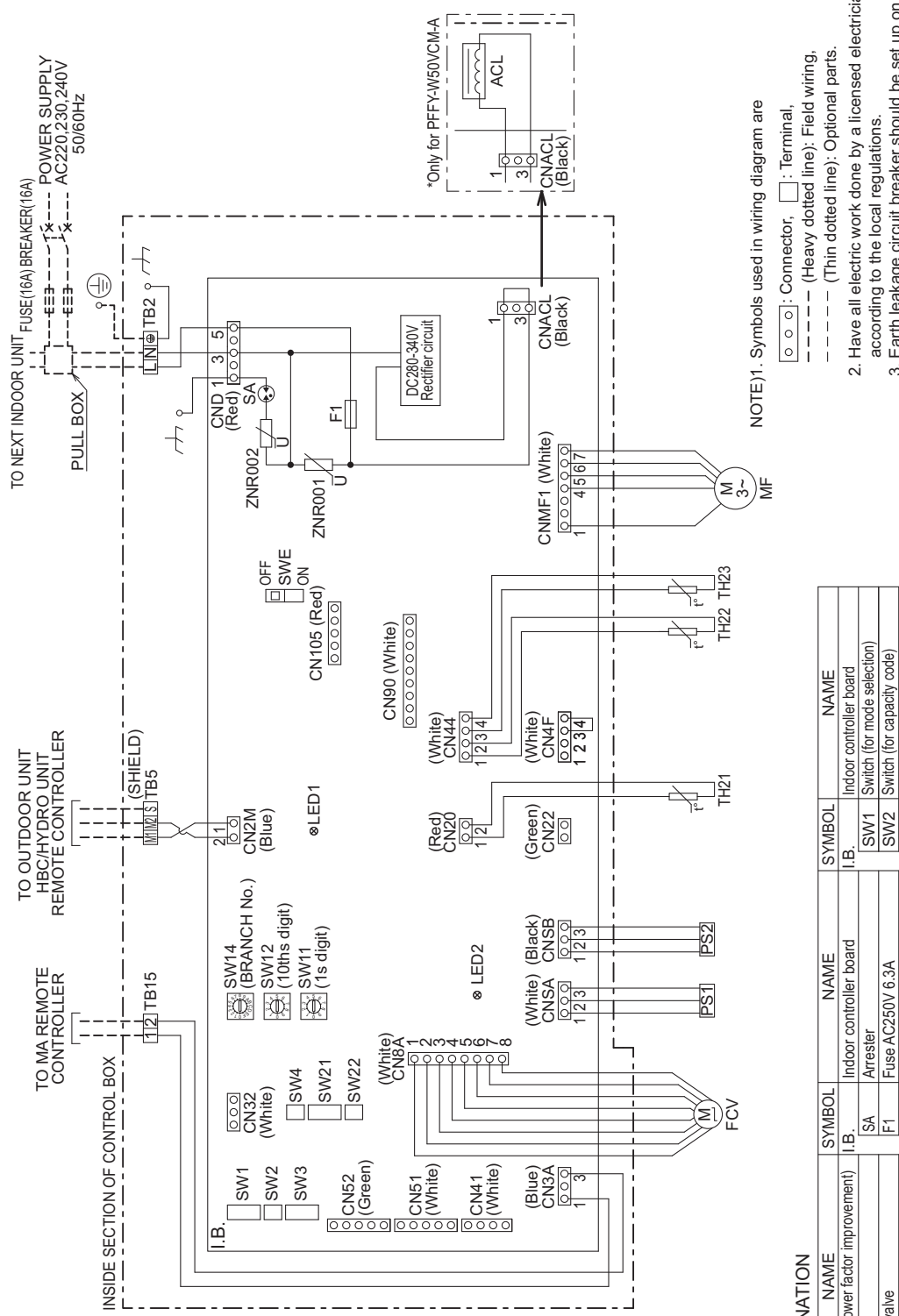
PFFY-W20, 25, 32, 40, 50VCM-A



(mm) [in.]

Model name	W	L	X	Y	Z
PFFY-W20VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	280 [11-1/16]
PFFY-W25VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	280 [11-1/16]
PFFY-W32VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	280 [11-1/16]
PFFY-W40VCM-A	930 [36-5/8]	95 [3-3/4]	5 [1/4]	495 [19-1/2]	290 [11-7/16]
PFFY-W50VCM-A	930 [36-5/8]	95 [3-3/4]	5 [1/4]	495 [19-1/2]	290 [11-7/16]

PFFY-W20, 25, 32, 40, 50VCM-A

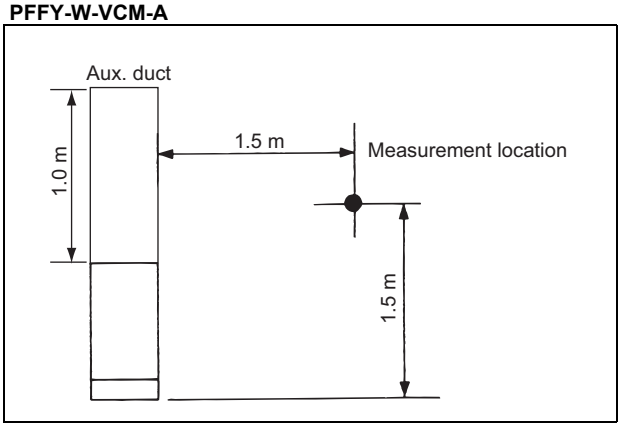


SYMBOL EXPLANATION

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
ACL	AC reactor(Power factor improvement)	I.B.	Indoor controller board	I.B.	Indoor controller board
MF	Fan Motor	SA	Arrester	SW1	Switch (for mode selection)
FCV	Flow control valve	F1	Fuse AC250V 6.3A	SW2	Switch (for capacity code)
PS1	Pressure sensor (valve inlet)	ZNR001	Varistor	SW3	Switch (for mode selection)
PS2	Pressure sensor (valve outlet)	ZNR002	Varistor	SW4	Switch (for model selection)
TB2	Power source terminal block	CN22	Connector (Optional Thermistor)	SW11	Switch (1s digit address set)
TB5	Transmission terminal block	CN32	Connector (Remote switch)	SW12	Switch (10ths digit address set)
TB15	Transmission terminal block	CN41	Connector (HA terminal-A)	SW14	Switch (BRANCH No.)
TH21	Thermistor (inlet air temp. detection)	CN51	Connector (Centrally control)	SW21	Switch (for static pressure selection)
TH22	Thermistor (piping temp.detection/inlet water)	CN52	Connector (Remote indication)	SW22	Switch (Wireless pair No.)
TH23	Thermistor (piping temp.detection/outlet water)	CN90	Connector (Wireless)	SWE	Connector (emergency operation)
		CN105	Connector (IT terminal)	LED1	LED(Power supply)
				LED2	LED(Remote controller supply)

5-1. Sound levels

PFFY-W-VCM-A



* Measured in anechoic room

Sound level at anechoic room: Low-Middle-High

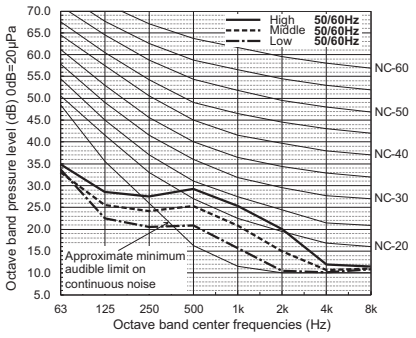
	Sound level dB (A)			
	0Pa	10Pa	40Pa	60Pa
PFFY-W20VCM-A	22-26-30	21-23-26	22-25-29	24-28-32
PFFY-W25VCM-A	25-31-36	22-26-30	24-29-34	25-31-36
PFFY-W32VCM-A	29-33-38	25-28-32	28-31-36	29-33-37
PFFY-W40VCM-A	26-30-33	25-27-30	27-30-34	28-32-35
PFFY-W50VCM-A	33-37-41	28-32-35	30-34-38	31-35-39

* The value for the sound pressure level 0 Pa is the value when the duct is not attached.

5-2. NC curves

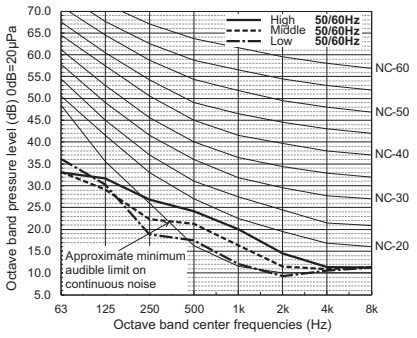
PFFY-W20VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



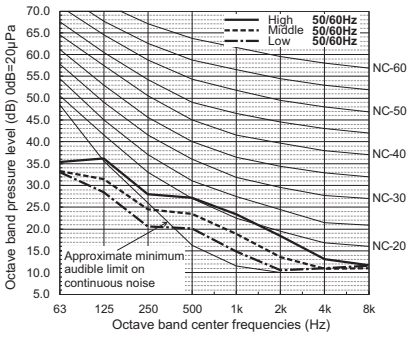
PFFY-W20VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



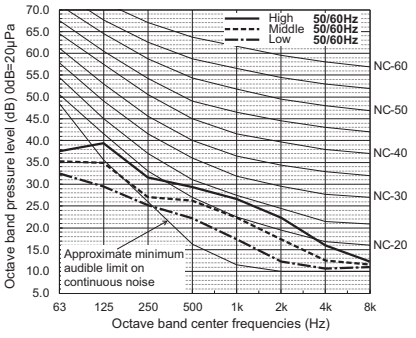
PFFY-W20VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



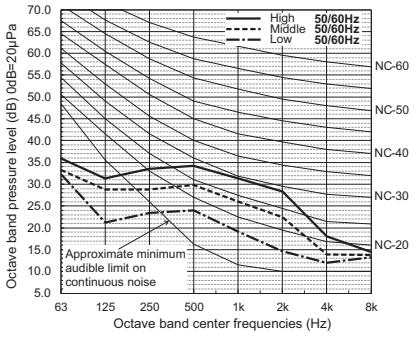
PFFY-W20VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



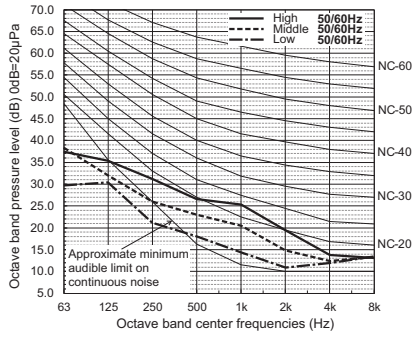
PFFY-W25VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



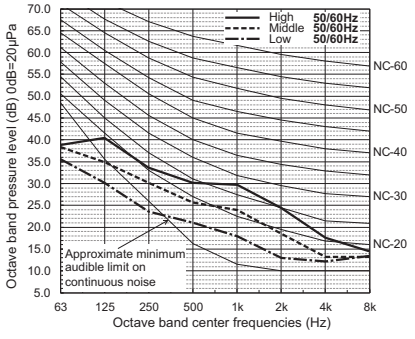
PFFY-W25VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



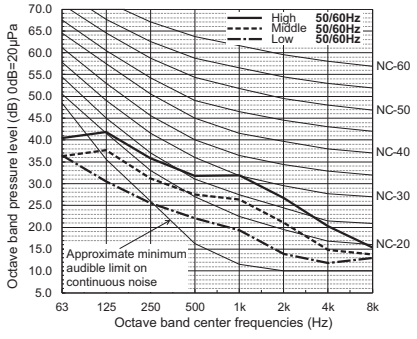
PFFY-W25VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



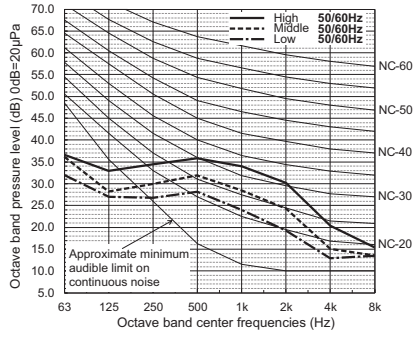
PFFY-W25VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



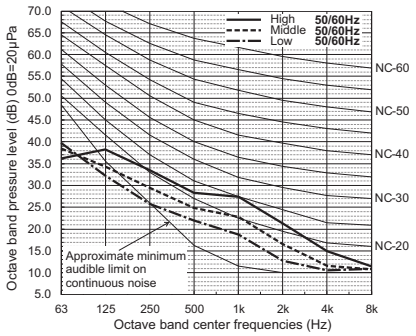
PFFY-W32VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



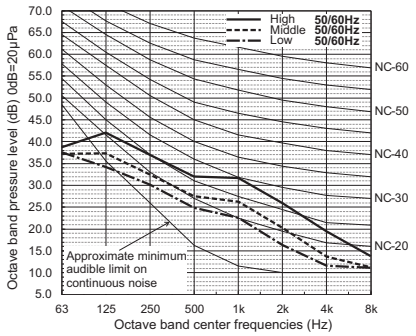
PFFY-W32VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



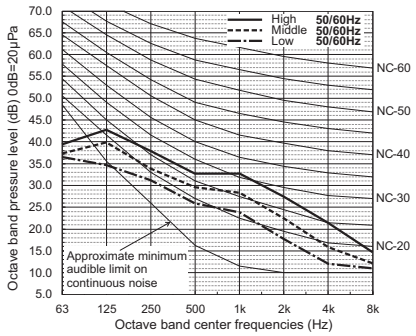
PFFY-W32VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



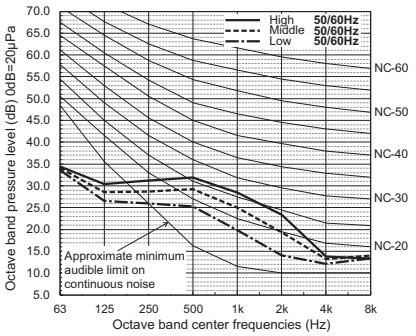
PFFY-W32VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



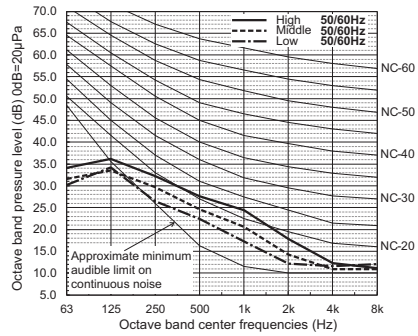
PFFY-W40VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



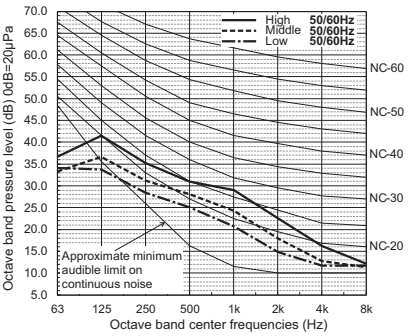
PFFY-W40VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



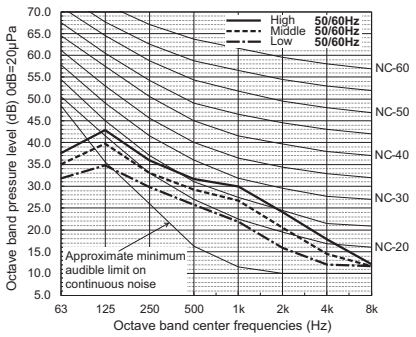
PFFY-W40VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



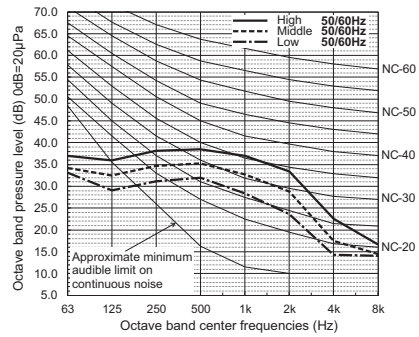
PFFY-W40VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



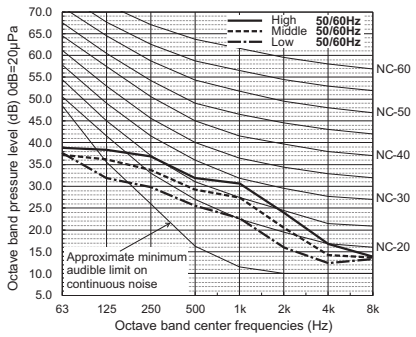
PFFY-W50VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



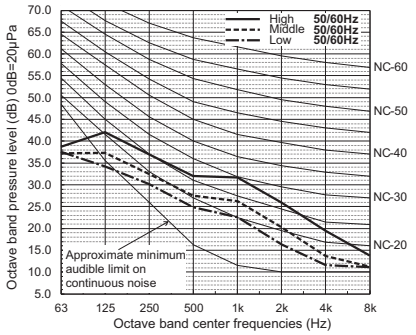
PFFY-W50VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



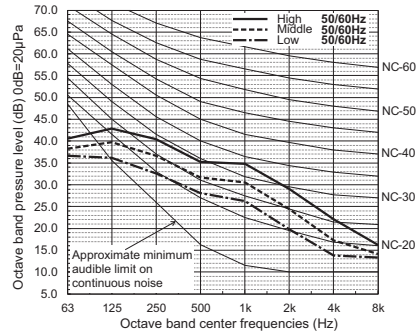
PFFY-W50VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V

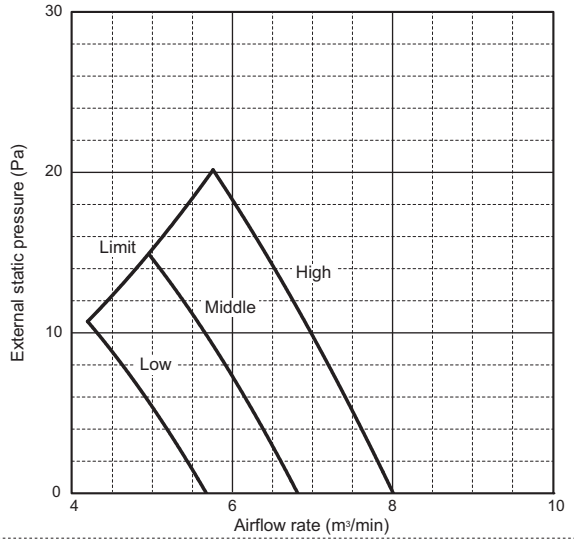


PFFY-W50VCM-A

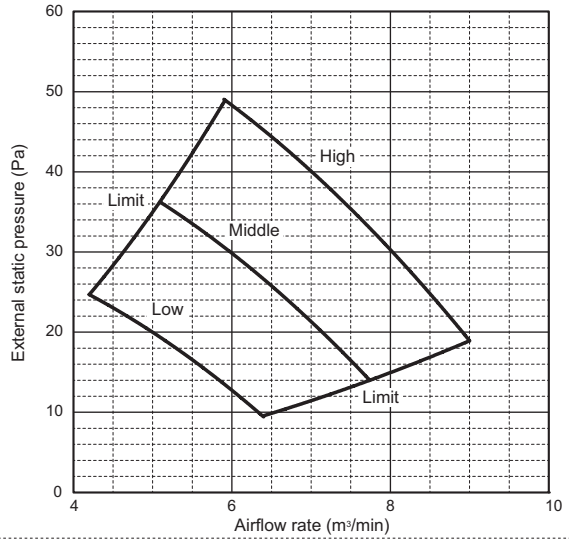
External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



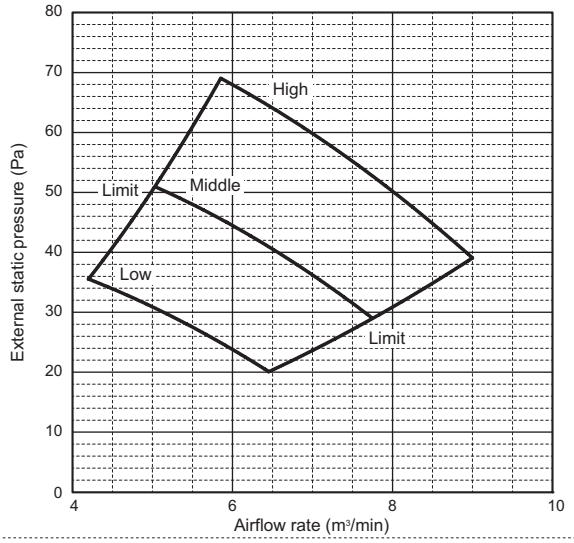
PFFY-W20VCM-A
External static pressure : 10Pa
Power source : 220-240V



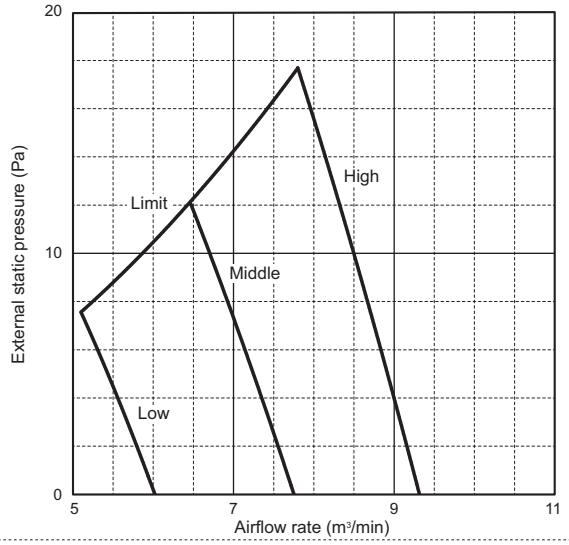
PFFY-W20VCM-A
External static pressure : 40Pa
Power source : 220-240V



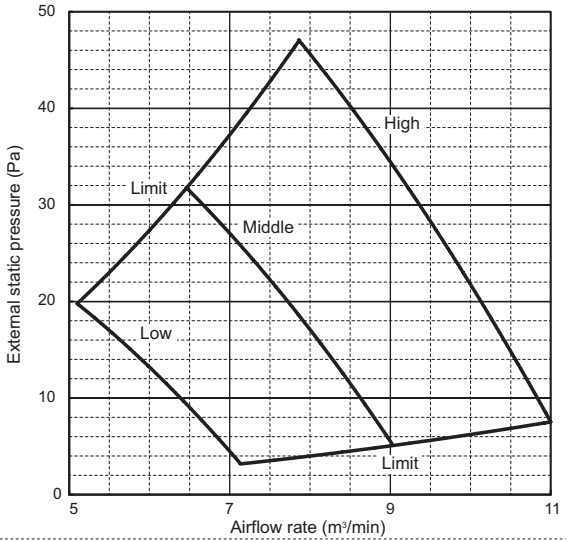
PFFY-W20VCM-A
External static pressure : 60Pa
Power source : 220-240V



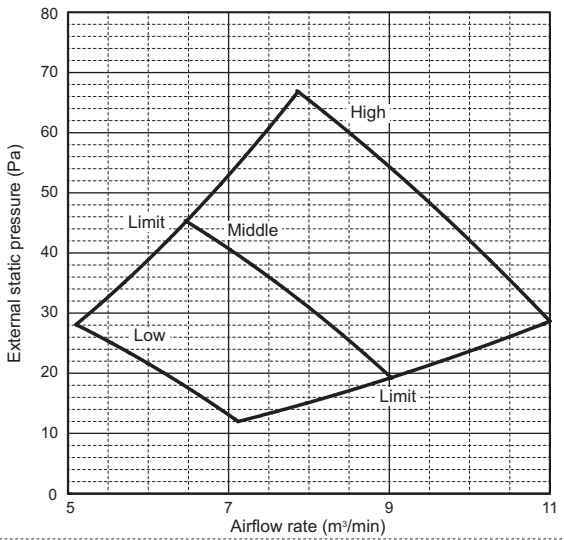
PFFY-W25VCM-A
External static pressure : 10Pa
Power source : 220-240V



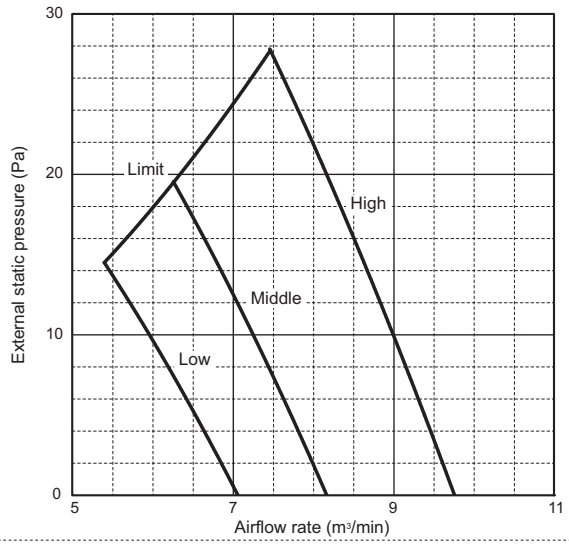
PFFY-W25VCM-A
External static pressure : 40Pa
Power source : 220-240V



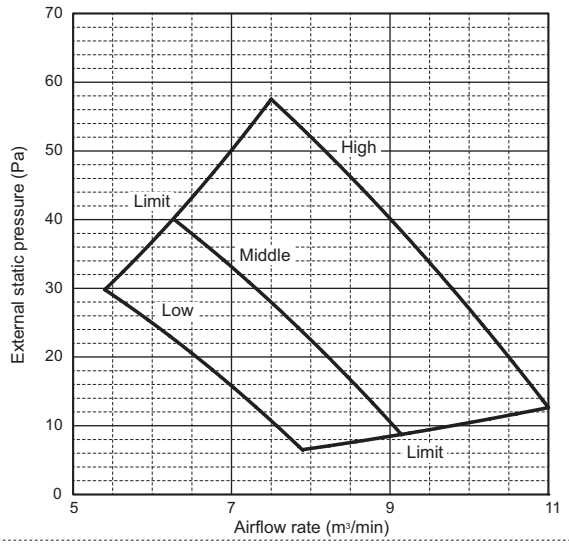
PFFY-W25VCM-A
External static pressure : 60Pa
Power source : 220-240V



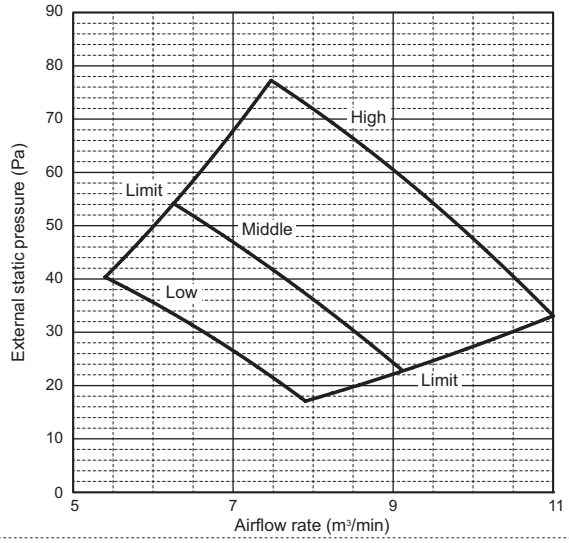
PFFY-W32VCM-A
External static pressure : 10Pa
Power source : 220-240V



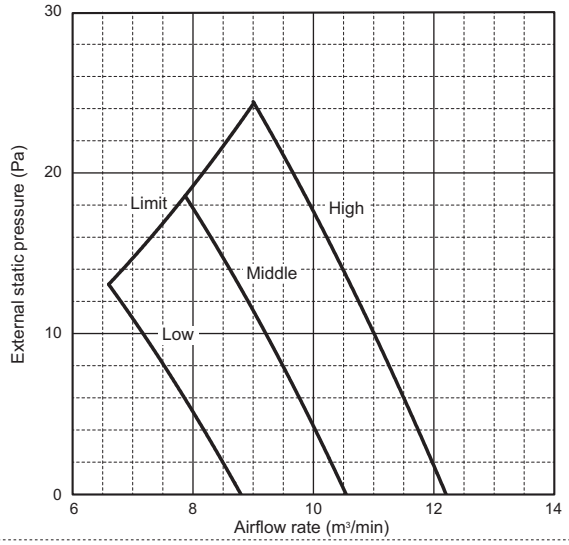
PFFY-W32VCM-A
External static pressure : 40Pa
Power source : 220-240V



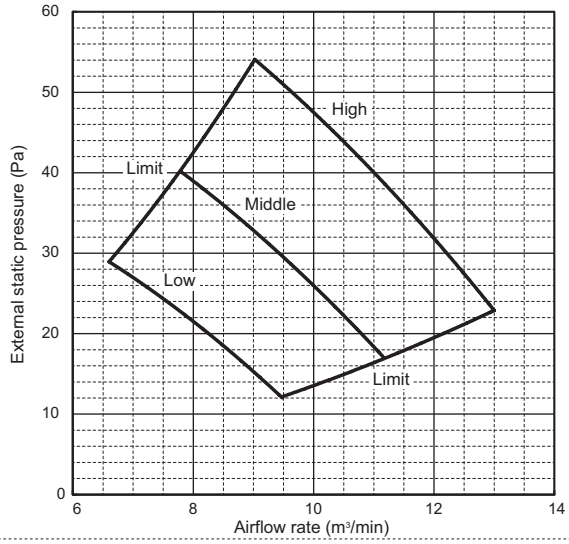
PFFY-W32VCM-A
External static pressure : 60Pa
Power source : 220-240V



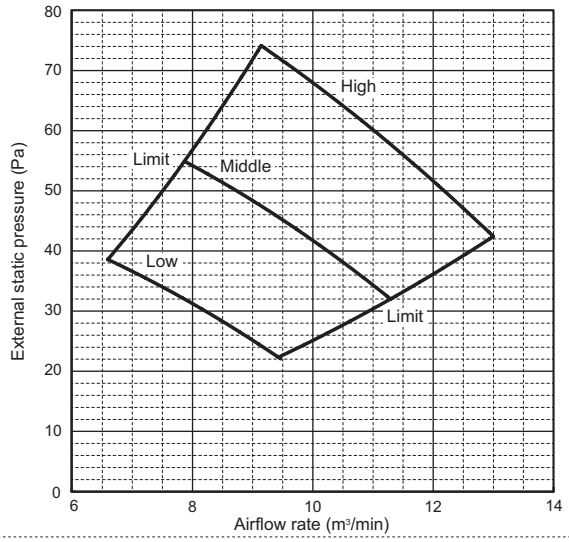
PFFY-W40VCM-A
External static pressure : 10Pa
Power source : 220-240V



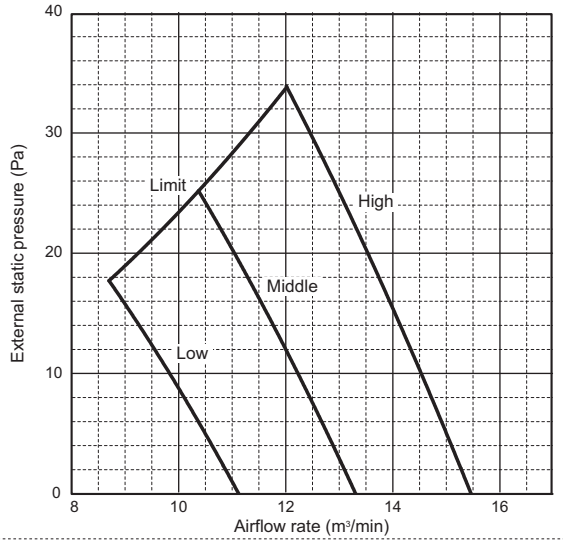
PFFY-W40VCM-A
External static pressure : 40Pa
Power source : 220-240V



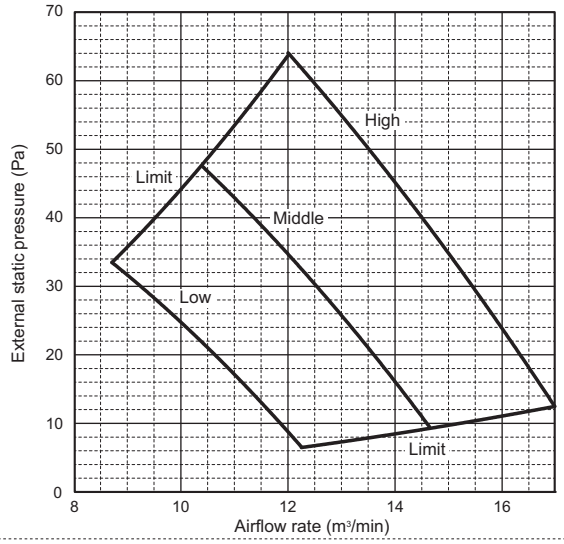
PFFY-W40VCM-A
External static pressure : 60Pa
Power source : 220-240V



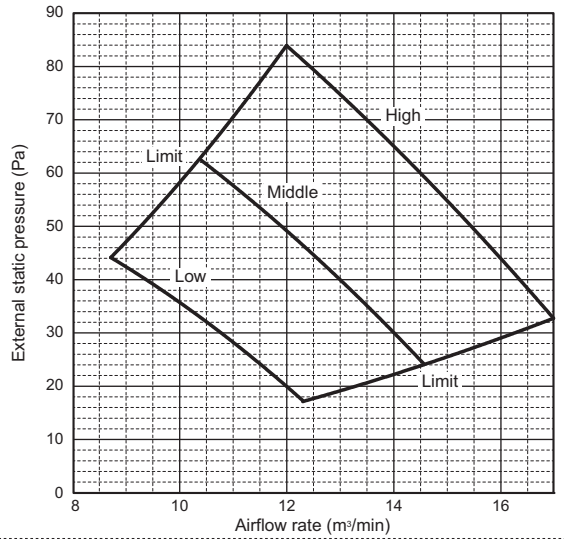
PFFY-W50VCM-A
External static pressure : 10Pa
Power source : 220-240V



PFFY-W50VCM-A
External static pressure : 40Pa
Power source : 220-240V



PFFY-W50VCM-A
External static pressure : 60Pa
Power source : 220-240V



Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

PFFY-W-VCM-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PFFY-W20VCM-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.59	0.096	0.47
PFFY-W25VCM-A			0.70	0.096	0.56
PFFY-W32VCM-A			0.82	0.096	0.65
PFFY-W40VCM-A			0.83	0.096	0.66
PFFY-W50VCM-A			1.08	0.096	0.86

PFFY-WL-VCM-A

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Model				PFFY-WL20VCM-A	PFFY-WL25VCM-A	PFFY-WL32VCM-A	PFFY-WL40VCM-A
Power source				1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz	1-phase 220-230-240 V 50/60 Hz
Cooling capacity		*1	kW	2.2	2.8	3.6	4.5
(Nominal)		*1	BTU/h	7,500	9,600	12,300	15,400
	*2 Power input		kW	0.022	0.029	0.035	0.038
	*2 Current input		A	0.25-0.24-0.23	0.33-0.32-0.30	0.38-0.36-0.35	0.38-0.36-0.35
Heating capacity		*3	kW	2.5	3.2	4.0	5.0
(Nominal)		*3	BTU/h	8,500	10,900	13,600	17,100
	*2 Power input		kW	0.022	0.029	0.035	0.038
	*2 Current input		A	0.25-0.24-0.23	0.33-0.32-0.30	0.38-0.36-0.35	0.38-0.36-0.35
External finish				Galvanized steel plate	Galvanized steel plate	Galvanized steel plate	Galvanized steel plate
External dimension H × W × D		*4	mm	615 (690) x 700 x 200	615 (690) x 700 x 200	615 (690) x 700 x 200	615 (690) x 900 x 200
		*4	in.	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 27-9/16 x 7-7/8	24-1/4 (27-3/16) x 35-7/16 x 7-7/8
Net weight			kg (lbs)	18 (40)	18 (40)	18.5 (42)	22.5 (51)
Heat exchanger				Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)	Cross fin (Aluminum fin and copper tube)
	Water Volume		L	0.8	0.8	1.0	1.3
FAN	Type × Quantity			Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 2	Sirocco fan x 3
*5	External static press.		Pa	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>	<0> - 10 - <40> - <60>
			mmH_2O	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>	<0.0> - 1.0 - <4.1> - <6.1>
	Motor Type			DC motor	DC motor	DC motor	DC motor
	Motor output		kW	0.096	0.096	0.096	0.096
	Driving mechanism			Direct-driven by motor	Direct-driven by motor	Direct-driven by motor	Direct-driven by motor
	Air flow rate			(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
			m^3/min	5.0 - 6.0 - 7.0	5.5 - 7.0 - 8.5	6.5 - 7.5 - 9.0	8.0 - 9.5 - 11.0
			L/s	83 - 100 - 117	92 - 117 - 142	108 - 125 - 150	133 - 158 - 183
			cfm	177 - 212 - 247	194 - 247 - 300	230 - 265 - 318	282 - 335 - 388
Sound pressure level (measured in anechoic room)				(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)	(Low-Mid-High)
		*2	dB <A>	21.0-23.0-26.0	22.0-26.0-30.0	25.0-28.0-32.0	25.0-27.0-30.0
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam	Polystyrene foam, Polyethylene foam, Urethane foam
Air filter				PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.	PP honeycomb fabric.
Protection device				Fuse	Fuse	Fuse	Fuse
Refrigerant control device				-	-	-	-
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A	CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A
Water piping diameter		*6, 7					
Connection size	Inlet		mm O.D.	22	22	22	22
	Outlet		mm O.D.	22	22	22	22
Field pipe size	Inlet		mm I.D.	20	20	20	20
	Outlet		mm I.D.	20	20	20	20
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)	O.D.32 (1-1/4)
Drawing	External			KB94C4K8, KB94C4KA	KB94C4K8, KB94C4KA	KB94C4K8, KB94C4KA	KB94C4K8, KB94C4KA
	Wiring			KB94C4KB	KB94C4KB	KB94C4KB	KB94C4KB
	Refrigerant cycle			-	-	-	-
Standard attachment	Document			Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book	Installation Manual, Instruction Book
	Accessory			Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw	Washer, Drain hose, Tie band, Leg, Screw
Optional parts	Valve kit		*8	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E	PAC-SK35VK-E
		6m Lead wire		PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E	PAC-SK40LW-E
		Attachment plate		PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E	PAC-SK39AP-E
Remarks				* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.			

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The height that includes the duct flange is 638 (713) mm. The values in () show the height of unit with leg.
5.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
6.Be sure to install a valve on the water inlet/outlet.
7.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
8.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
9.Please group units that operate on 1 branch of HBC controller.

Unit converter

BTU/h =kW x 3,412
cfm =m^3/min x 35.31
lbs =kg/0.4536

*Above specification data is subject to rounding variation.

Model				PFFY-WL50VCM-A			
Power source				1-phase 220-230-240 V 50/60 Hz			
Cooling capacity		*1	kW	5.6			
(Nominal)		*1	BTU/h	19,100			
	*2 Power input		kW	0.062			
	*2 Current input		A	0.52-0.50-0.46			
Heating capacity		*3	kW	6.3			
(Nominal)		*3	BTU/h	21,500			
	*2 Power input		kW	0.062			
	*2 Current input		A	0.52-0.50-0.46			
External finish				Galvanized steel plate			
External dimension H × W × D		*4	mm	615 (690) x 900 x 200			
		*4	in.	24-1/4 (27-3/16) x 35-7/16 x 7-7/8			
Net weight			kg (lbs)	22.5 (51)			
Heat exchanger				Cross fin (Aluminum fin and copper tube)			
	Water Volume		L	1.3			
FAN	Type × Quantity			Sirocco fan x 3			
*5	External static press.		Pa	<0> - 10 - <40> - <60>			
			mmH_2O	<0.0> - 1.0 - <4.1> - <6.1>			
	Motor Type			DC motor			
	Motor output		kW	0.096			
	Driving mechanism			Direct-driven by motor			
	Air flow rate			(Low-Mid-High)			
			m^3/min	10.5 - 12.5 - 14.5			
			L/s	175 - 208 - 242			
			cfm	371 - 441 - 512			
Sound pressure level (measured in anechoic room)				(Low-Mid-High)			
		*2	dB <A>	28.0-32.0-35.0			
Insulation material				Polystyrene foam, Polyethylene foam, Urethane foam			
Air filter				PP honeycomb fabric.			
Protection device				Fuse			
Refrigerant control device				-			
Connectable HBC/Hydro unit				CMB-WM-V-AA, CMB-WM-F-AA, CMB-WM-V-BB/CMH-WM-V-A			
Water piping diameter		*6, 7					
Connection size	Inlet		mm O.D.	22			
	Outlet		mm O.D.	22			
Field pipe size	Inlet		mm I.D.	20			
	Outlet		mm I.D.	20			
Field drain pipe size			mm (in.)	O.D.32 (1-1/4)			
Drawing	External			KB94C4K8, KB94C4KA			
	Wiring			KB94C4KB			
	Refrigerant cycle			-			
Standard attachment	Document			Installation Manual, Instruction Book			
	Accessory			Washer, Drain hose, Tie band, Leg, Screw			
Optional parts	Valve kit		*8	PAC-SK35VK-E			
		6m Lead wire		PAC-SK40LW-E			
		Attachment plate		PAC-SK39AP-E			
Remarks	* Details on foundation work, duct work, insulation work, electrical wiring, power source switch, and other items shall be referred to the Installation Manual. * Due to continuing improvement, above specifications may be subject to change without notice.						

Notes:

1.Nominal cooling conditions
Indoor: 27°CD.B./19°CW.B. (81°FD.B./66°FW.B.), Outdoor: 35°CD.B. (95°FD.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
2.The values are measured at the factory setting of external static pressure.
3.Nominal heating conditions
Indoor: 20°CD.B. (68°FD.B.), Outdoor: 7°CD.B./6°CW.B. (45°FD.B./43°FW.B.)
Pipe length: 7.5 m (24-9/16 ft.), Level difference: 0 m (0 ft.)
4.The height that includes the duct flange is 638 (713) mm. The values in () show the height of unit with leg.
5.The factory setting of external static pressure is shown without < >.
Refer to "Fan characteristics curves", according to the external static pressure, in DATA BOOK for the usable range of air flow rate.
6.Be sure to install a valve on the water inlet/outlet.
7.Install a strainer (40 mesh or more) on the pipe next to the valve to remove the foreign matters.
8.Certain restrictions apply to indoor unit combinations.
Refer to the section on the valve kit in the chapter "OPTIONAL PARTS" in the DATA BOOK for the restrictions.
When the valve kit is installed farther away from the HBC than the distance between the HBC and the WL-model indoor unit, the maximum allowable height difference between the HBC and the valve kit is 15 meters.
The maximum allowable piping length between the indoor unit and the valve kit is 5 meters.
9.Please group units that operate on 1 branch of HBC controller.

Unit converter

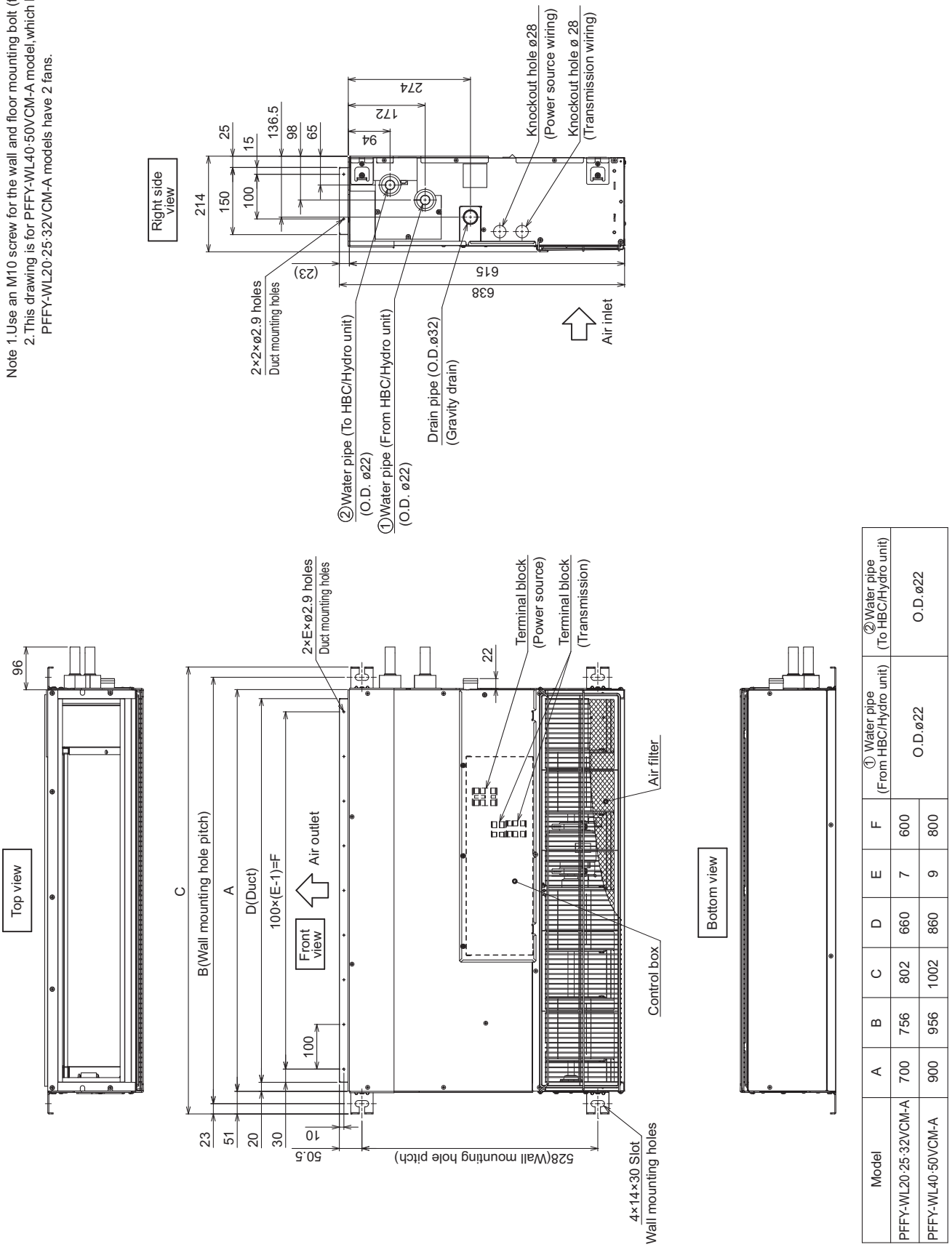
BTU/h	=kW x 3,412
cfm	=m^3/min x 35.31
lbs	=kg/0.4536

*Above specification data is subject to rounding variation.

PFFY-WL20, 25, 32, 40, 50VCM-A - front suction - wall mounting

Unit: mm

Note 1.Use an M10 screw for the wall and floor mounting bolt (field supply).
2.This drawing is for PFFY-WL40·50VCM-A model,which have 3 fans.
PFFY-WL20·25·32VCM-A models have 2 fans.



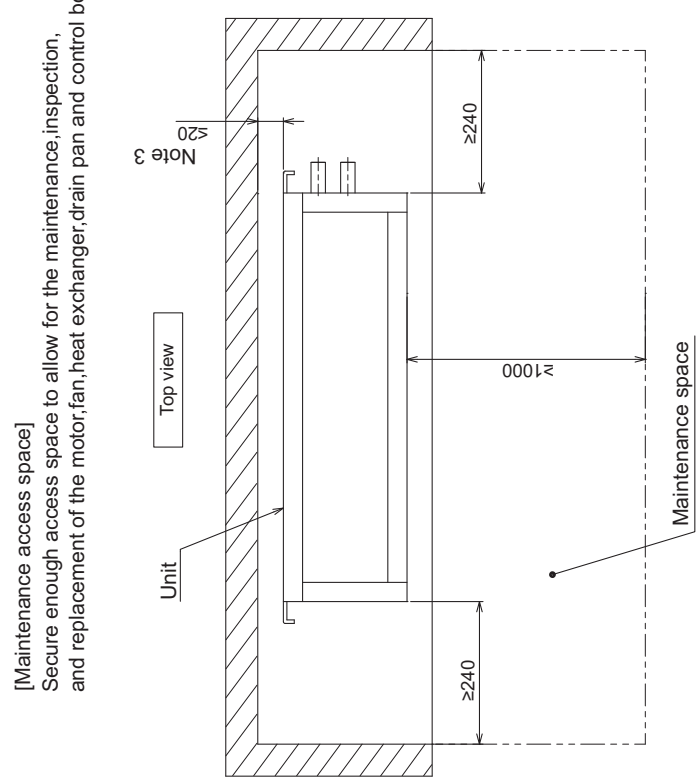
Model	A	B	C	D	E	F	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VCM-A	700	756	802	660	7	600	O.D.ø22	O.D.ø22
PFFY-WL40·50VCM-A	900	956	1002	860	9	800		

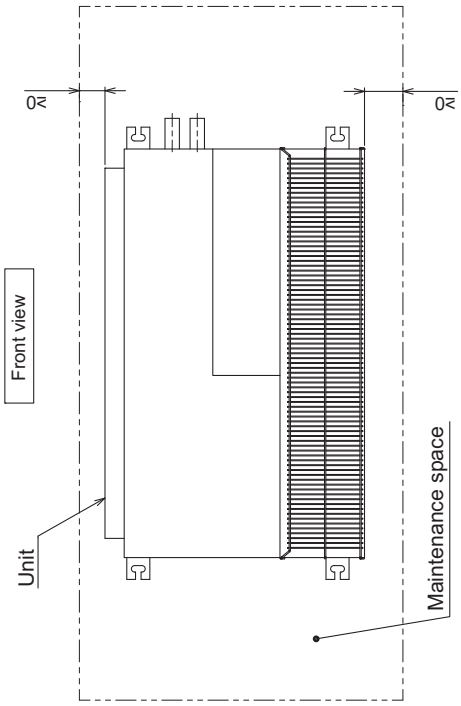
PFFY-WL20, 25, 32, 40, 50VCM-A - front suction - wall mounting

Unit: mm

Note 3.When the unit is installed on the wall,
vibrations may be transmitted to the wall.
Take measures against vibrations as needed at the site.

[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection,
and replacement of the motor,fan,heat exchanger,drain pan and control box.

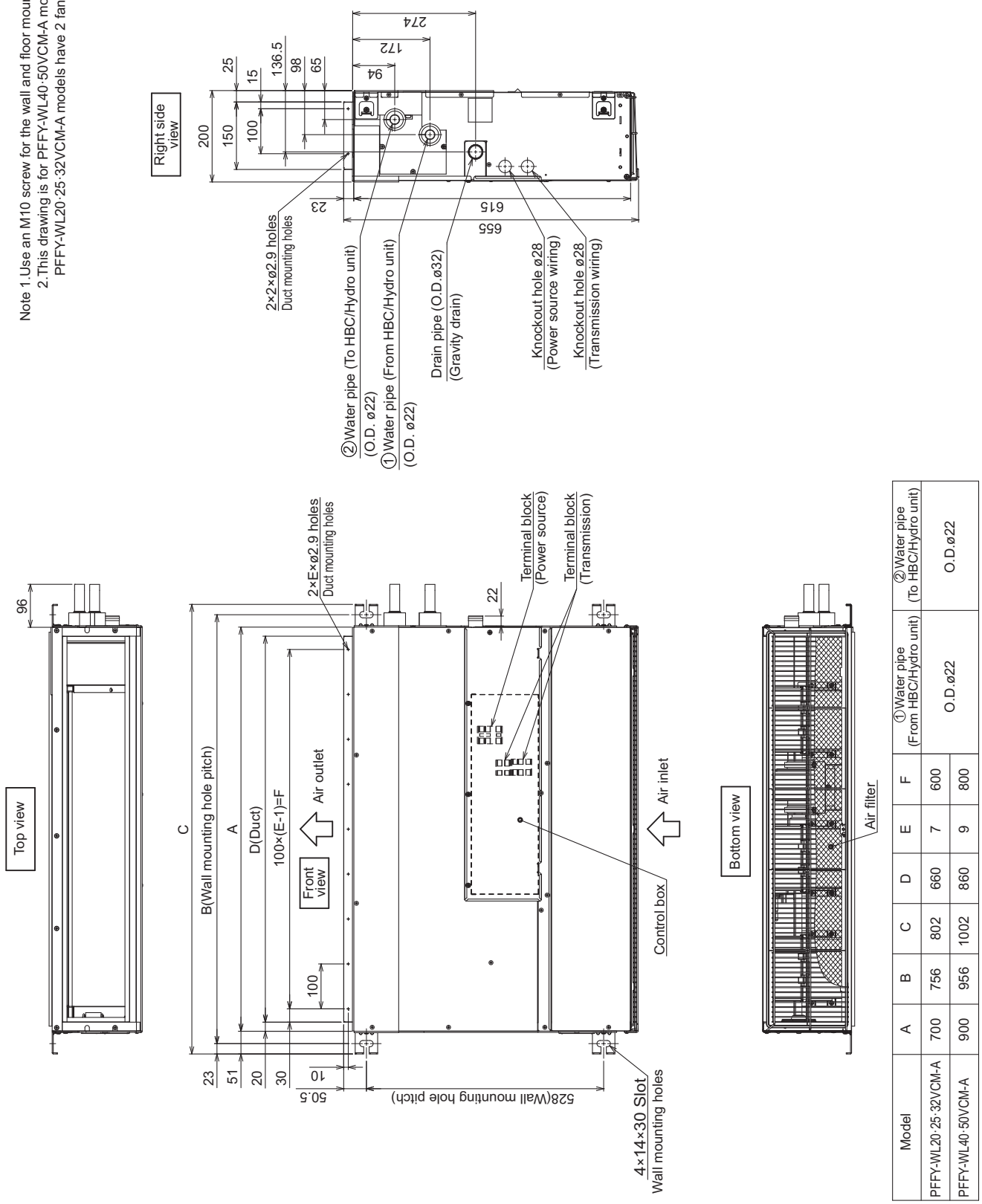




PFFY-WL20, 25, 32, 40, 50VCM-A - bottom suction - wall mounting

Unit: mm

Note 1.Use an M10 screw for the wall and floor mounting bolt (field supply).
2.This drawing is for PFFY-WL40·50VCM-A model.which have 3 fans.
PFFY-WL20·25·32VCM-A models have 2 fans.



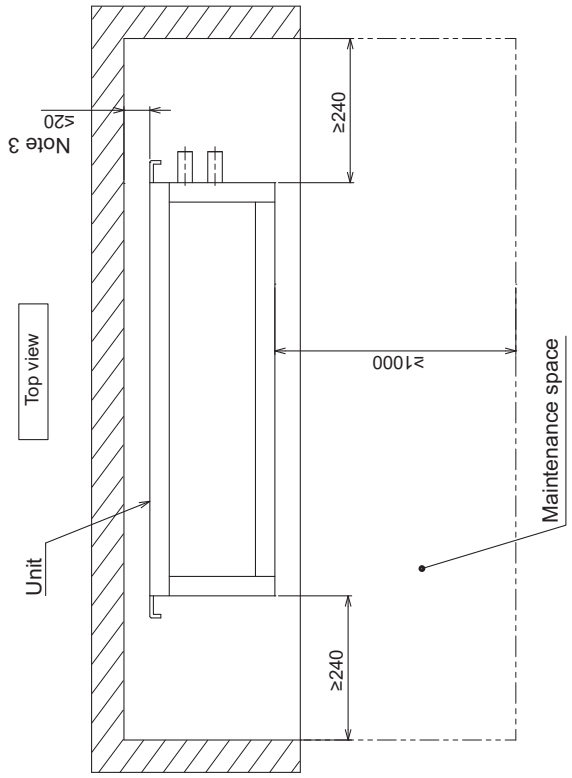
Model	A	B	C	D	E	F	①Water pipe (From HBC/Hydro unit)	②Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VCM-A	700	756	802	660	7	600	O.D.ø22	O.D.ø22
PFFY-WL40·50VCM-A	900	956	1002	860	9	800		

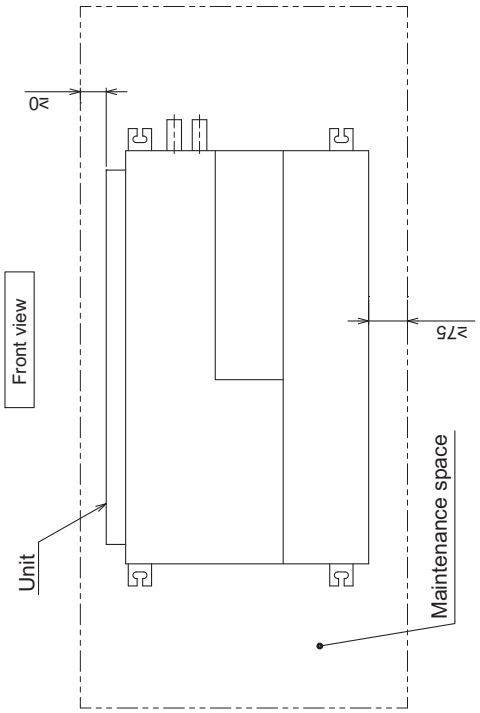
PFFY-WL20, 25, 32, 40, 50VCM-A - bottom suction - wall mounting

Unit: mm

Note 3.When the unit is installed on the wall,
vibrations may be transmitted to the wall.
Take measures against vibrations as needed at the site.

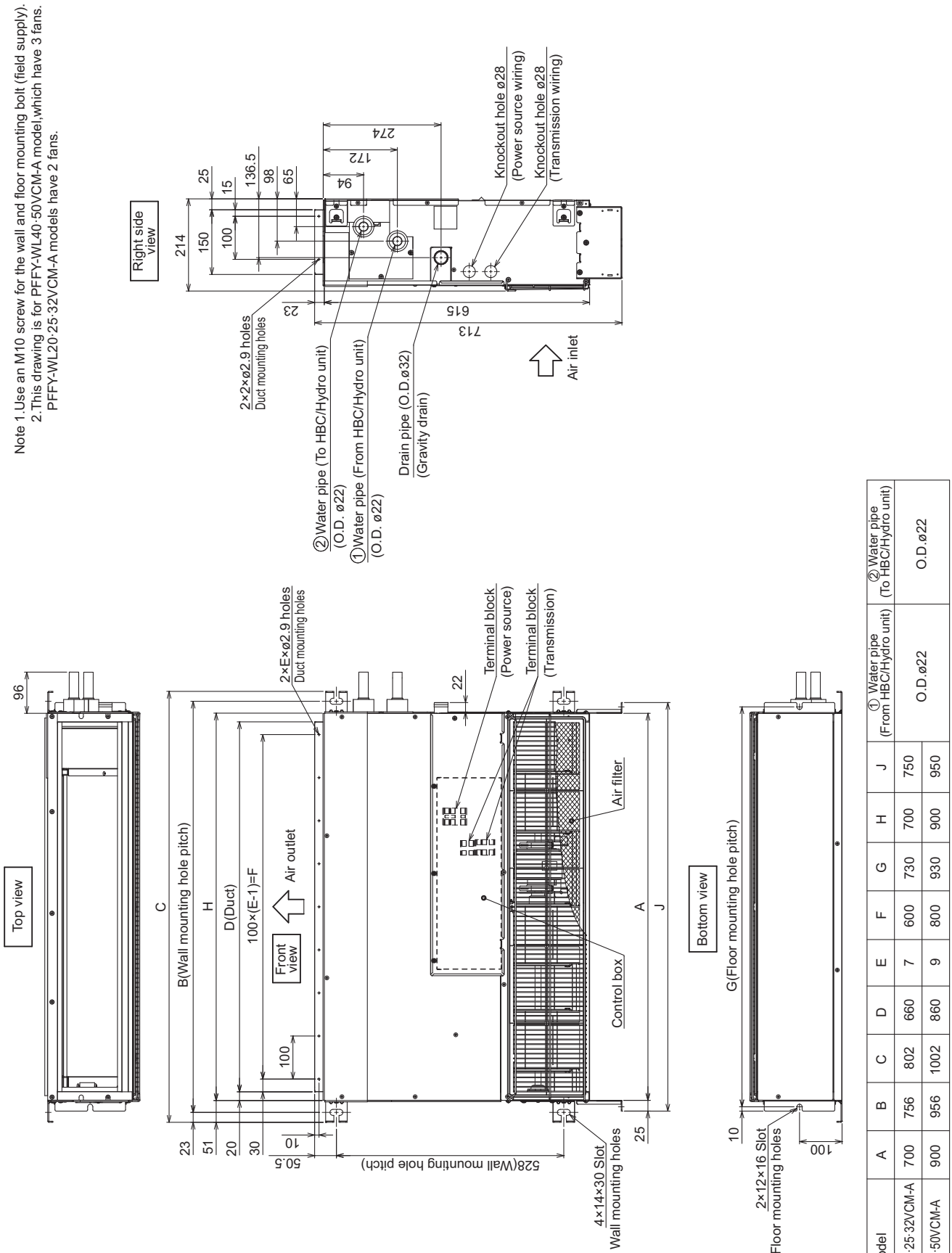
[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection,
and replacement of the motor,fan,heat exchanger,drain pan and control box.





PFFY-WL20, 25, 32, 40, 50VCM-A - front suction - floor mounting

Unit: mm



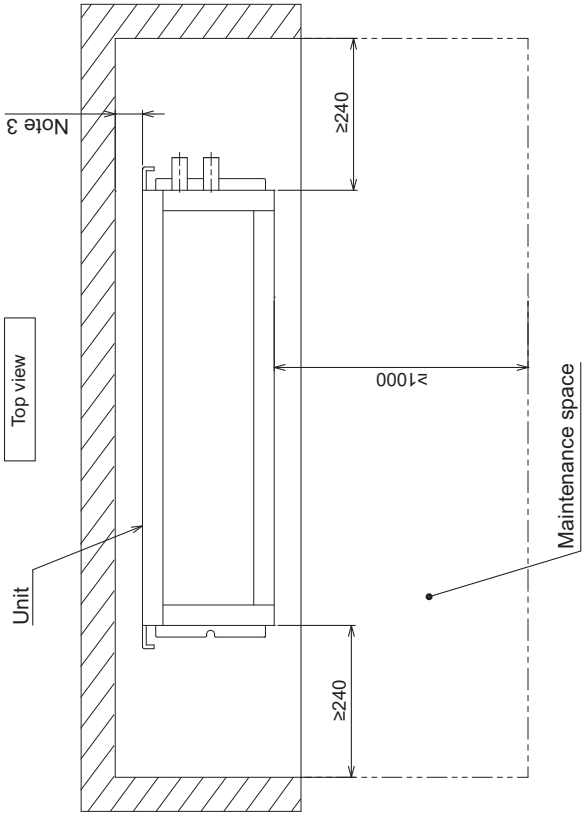
Model	A	B	C	D	E	F	G	H	J	① Water pipe (From HBC/Hydro unit)	② Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VCM-A	700	756	802	660	7	600	730	700	750	O.D.ø22	O.D.ø22
PFFY-WL40·50VCM-A	900	956	1002	860	9	800	930	900	950		

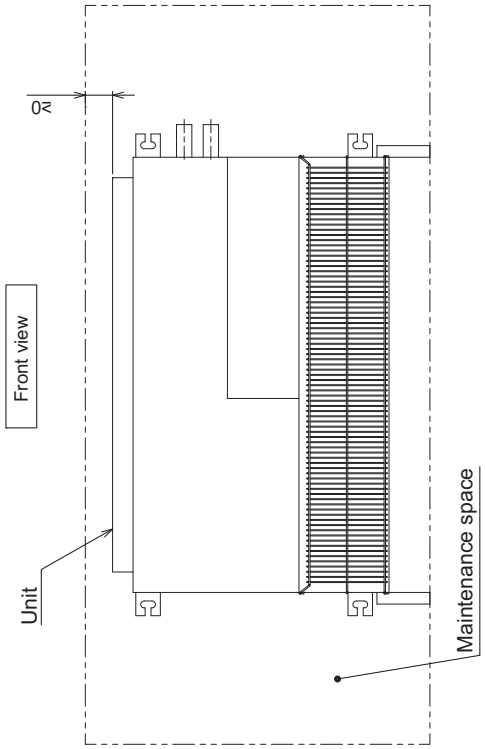
PFFY-WL20, 25, 32, 40, 50VCM-A - front suction - floor mounting

Unit: mm

Note 3.When the unit is installed on the wall,
vibrations may be transmitted to the wall.
Take measures against vibrations as needed at the site.

[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection,
and replacement of the motor,fan,heat exchanger,drain pan and control box.

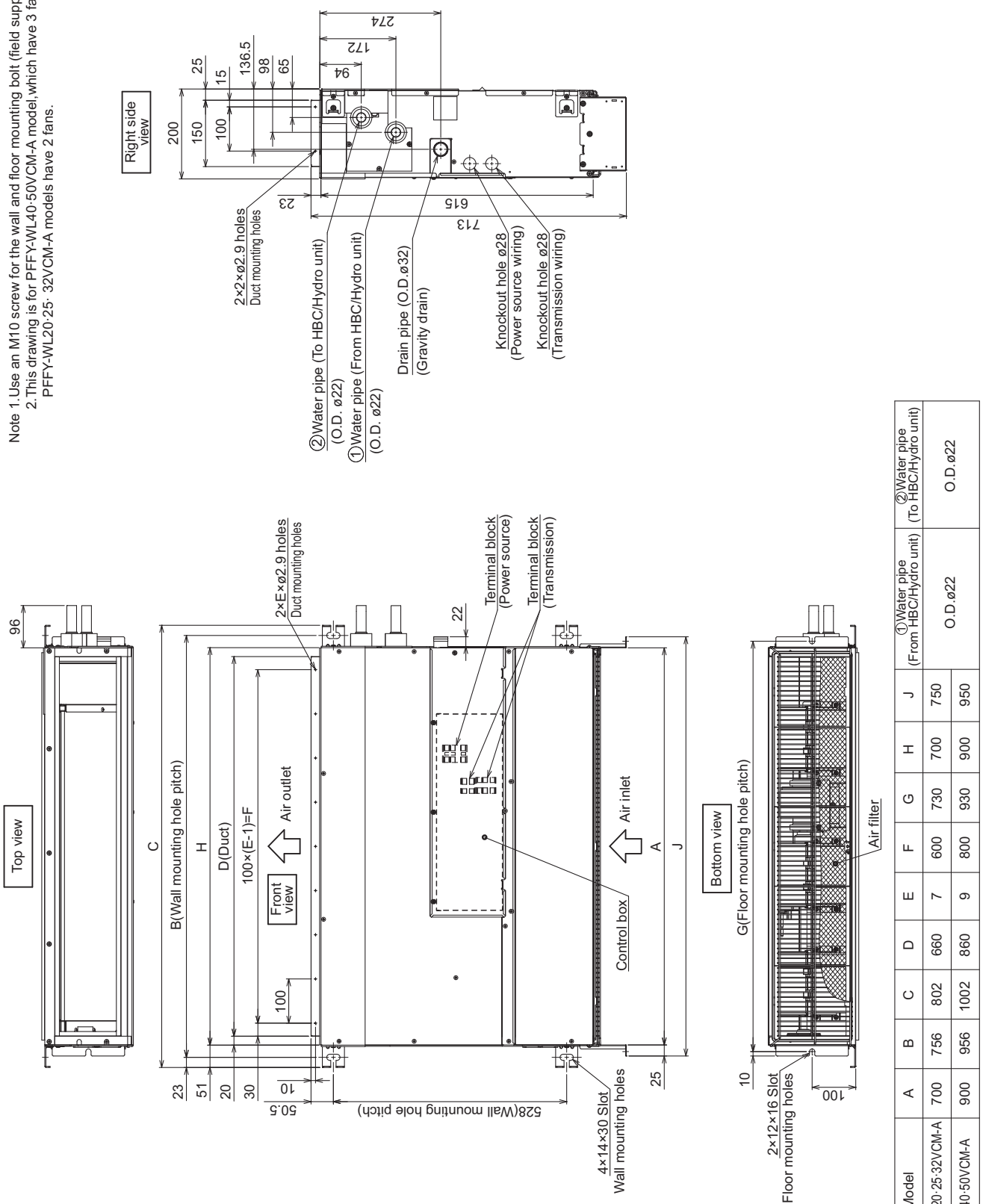




PFFY-WL20, 25, 32, 40, 50VCM-A - bottom suction - floor mounting

Unit: mm

Note 1.Use an M10 screw for the wall and floor mounting bolt (field supply).
2.This drawing is for PFFY-WL40·50VCM-A model,which have 3 fans.
PFFY-WL20·25· 32VCM-A models have 2 fans.



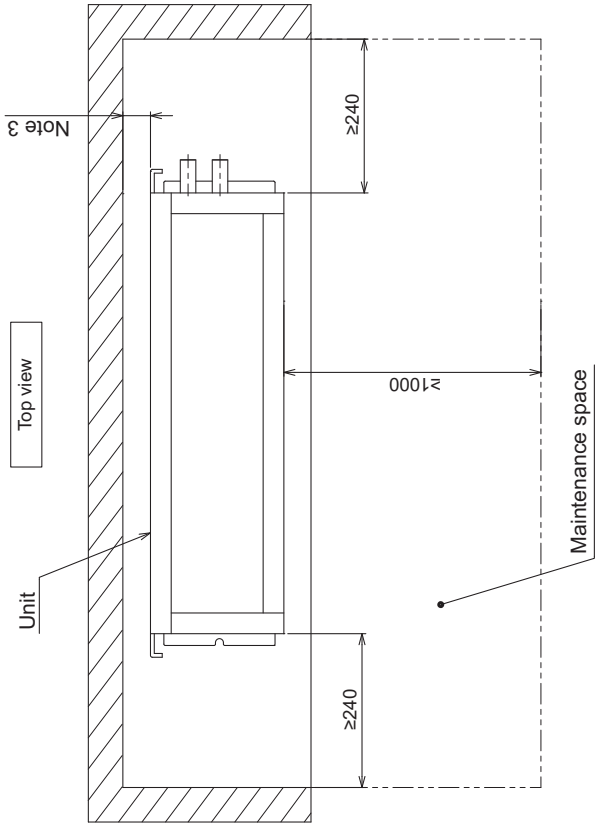
Model	A	B	C	D	E	F	G	H	J	①Water pipe (From HBC/Hydro unit)	②Water pipe (To HBC/Hydro unit)
PFFY-WL20·25·32VCM-A	700	756	802	660	7	600	730	700	750	O.D.ø22	O.D.ø22
PFFY-WL40·50VCM-A	900	956	1002	860	9	800	930	900	950		

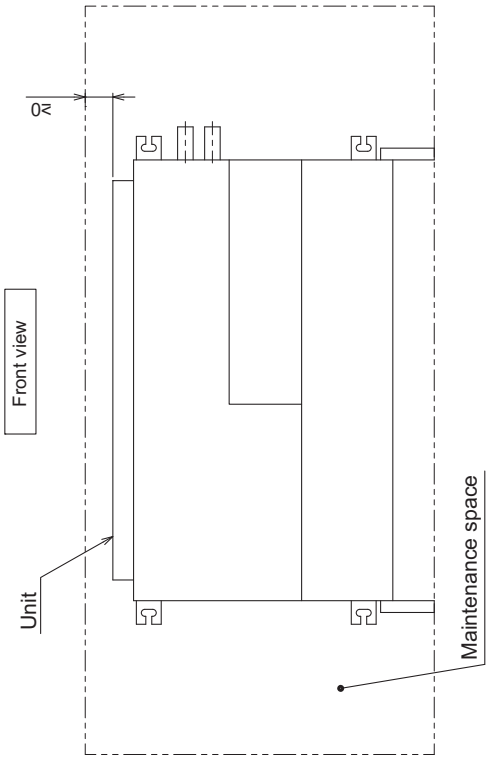
PFFY-WL20, 25, 32, 40, 50VCM-A - bottom suction - floor mounting

Unit: mm

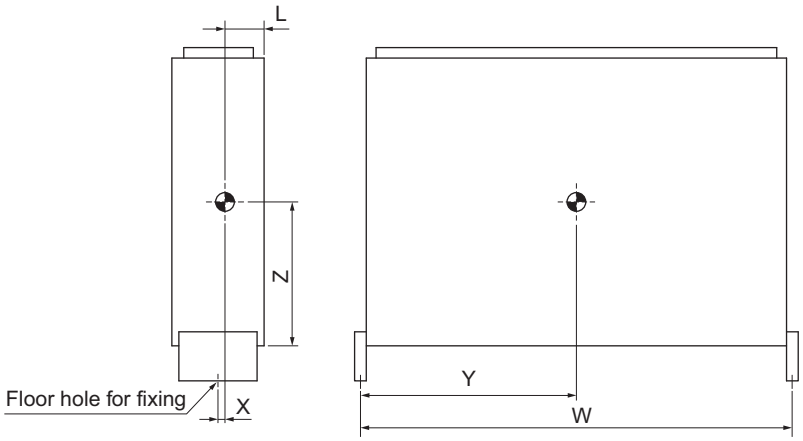
Note 3.When the unit is installed on the wall,
vibrations may be transmitted to the wall.
Take measures against vibrations as needed at the site.

[Maintenance access space]
Secure enough access space to allow for the maintenance,inspection,
and replacement of the motor,fan,heat exchanger,drain pan and control box.





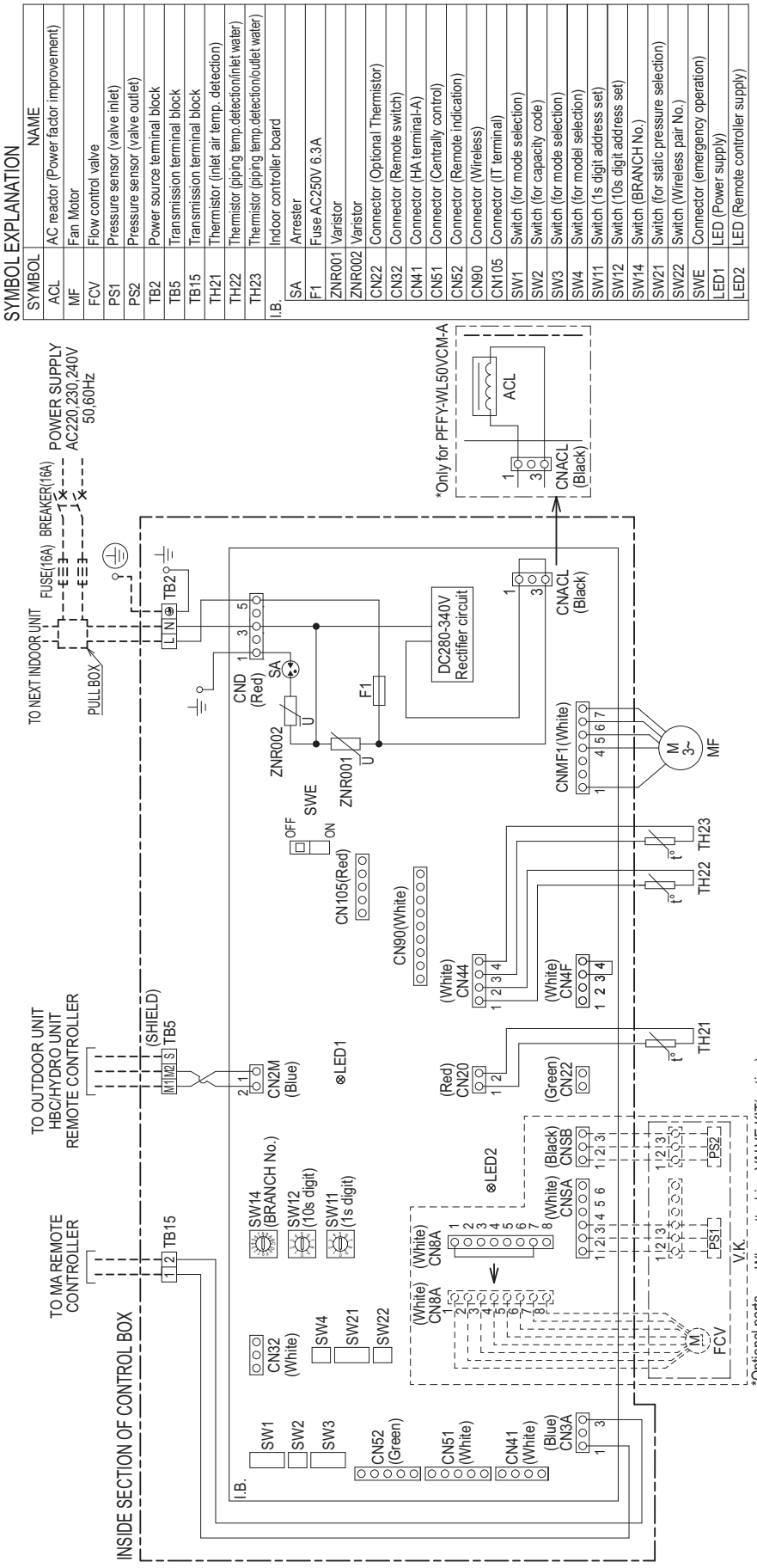
PFFY-WL20, 25, 32, 40, 50VCM-A



(mm) [in.]

Model name	W	L	X	Y	Z
PFFY-WL20VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	290 [11-7/16]
PFFY-WL25VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	290 [11-7/16]
PFFY-WL32VCM-A	730 [28-3/4]	95 [3-3/4]	5 [1/4]	365 [14-3/8]	290 [11-7/16]
PFFY-WL40VCM-A	930 [36-5/8]	95 [3-3/4]	5 [1/4]	495 [19-1/2]	300 [11-13/16]
PFFY-WL50VCM-A	930 [36-5/8]	95 [3-3/4]	5 [1/4]	495 [19-1/2]	300 [11-13/16]

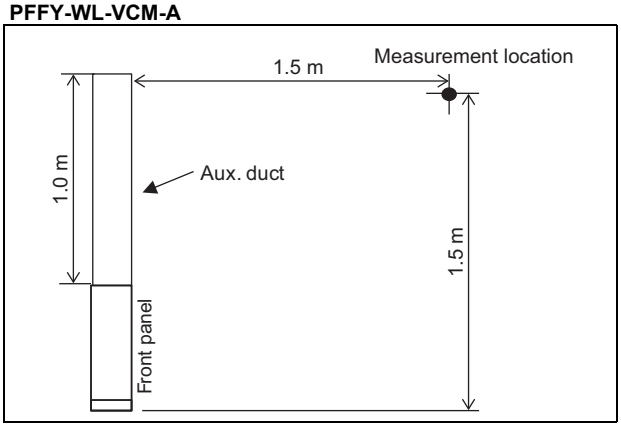
PFFY-WL20, 25, 32, 40, 50VCM-A



MODEL	SW1	SW2	SW3	SW4	SW21	SW22	SWE
PFFY-WL20VCM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL25VCM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL32VCM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL40VCM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF
PFFY-WL50VCM-A	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8 9 10	ON 1 2 3 4 5 6	ON 1 2 3 4 5 6 7 8	ON 1 2 3 4	ON OFF

5-1. Sound levels

PFFY-WL-VCM-A



* Measured in anechoic room

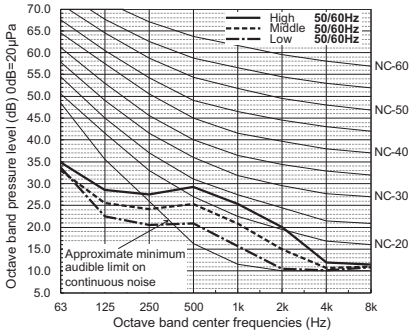
Sound level at anechoic room: Low-Middle-High

	Sound level dB (A)			
	0Pa	10Pa	40Pa	60Pa
PFFY-WL20VCM-A	22-26-30	21-23-26	22-25-29	24-28-32
PFFY-WL25VCM-A	25-31-36	22-26-30	24-29-34	25-31-36
PFFY-WL32VCM-A	29-33-38	25-28-32	28-31-36	29-33-37
PFFY-WL40VCM-A	26-30-33	25-27-30	27-30-34	28-32-35
PFFY-WL50VCM-A	33-37-41	28-32-35	30-34-38	31-35-39

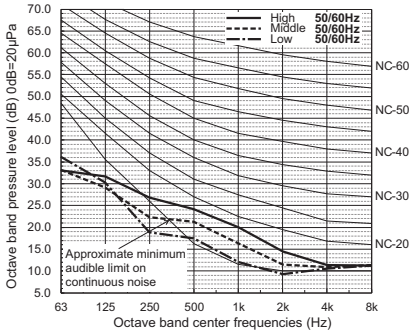
* The value for the sound pressure level 0 Pa is the value when the duct is not attached.

5-2. NC curves

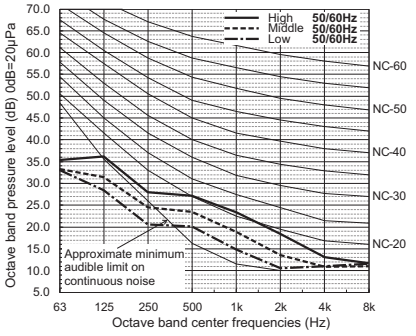
PFFY-WL20VCM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



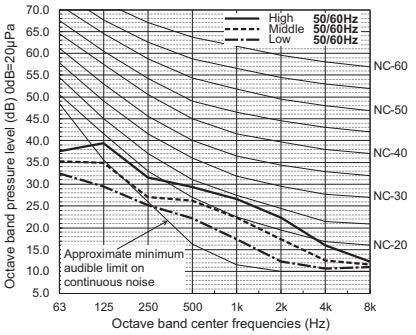
PFFY-WL20VCM-A
External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



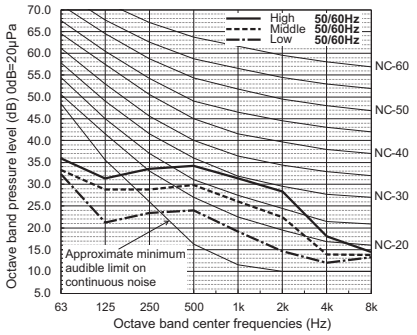
PFFY-WL20VCM-A
External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



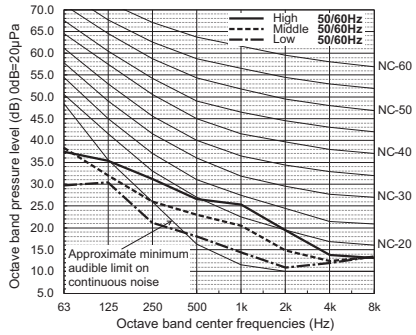
PFFY-WL20VCM-A
External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



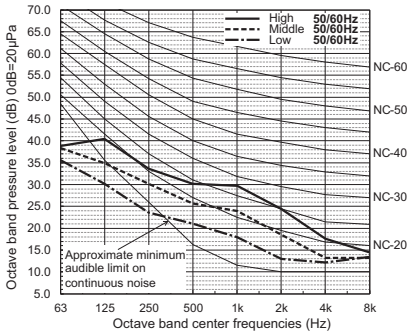
PFFY-WL25VCM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



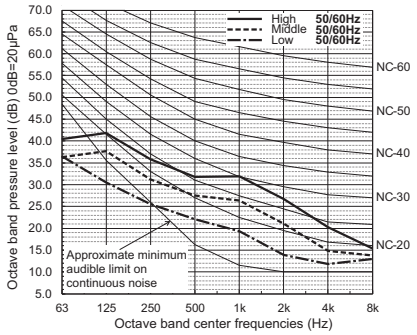
PFFY-WL25VCM-A
External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



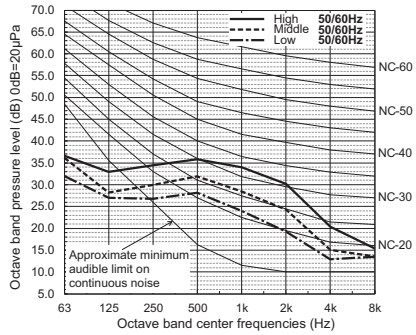
PFFY-WL25VCM-A
External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



PFFY-WL25VCM-A
External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V

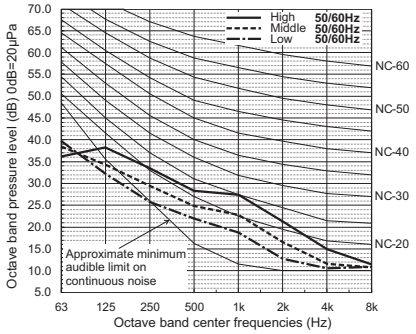


PFFY-WL32VCM-A
External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



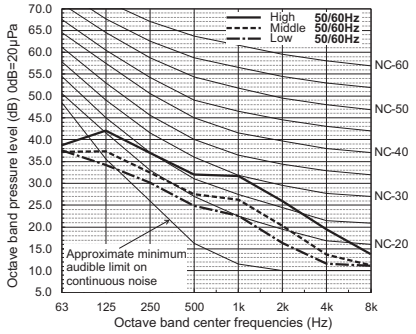
PFFY-WL32VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



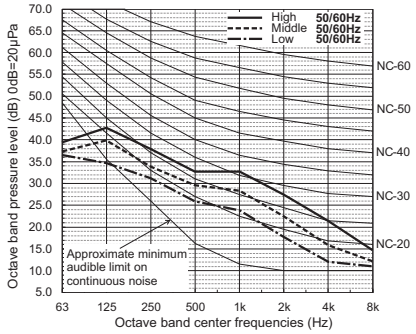
PFFY-WL32VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



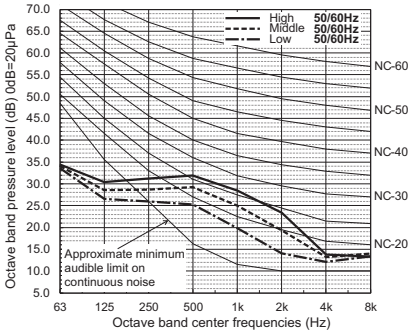
PFFY-WL32VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



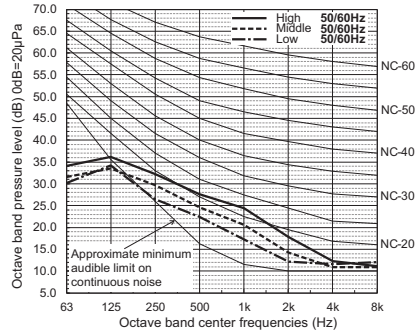
PFFY-WL40VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



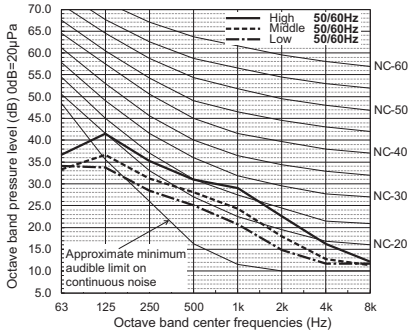
PFFY-WL40VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



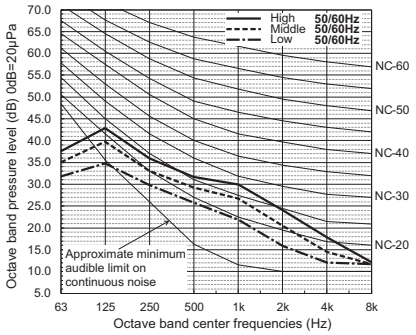
PFFY-WL40VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V



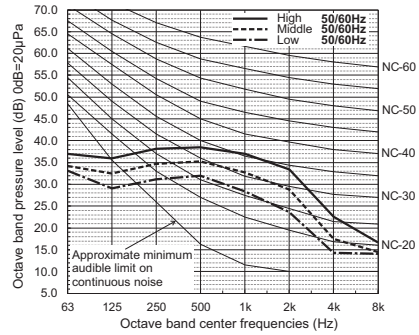
PFFY-WL40VCM-A

External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



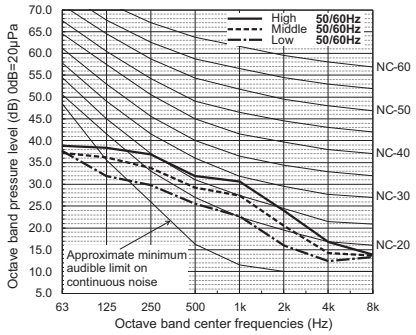
PFFY-WL50VCM-A

External Static Pressure: 0Pa [0.00in.WG]
Power Source: 220-240V



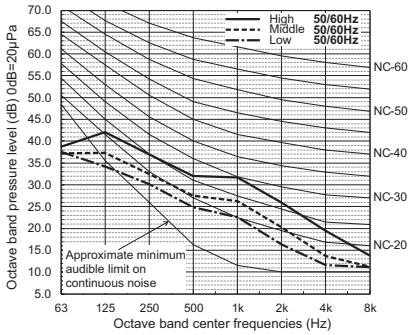
PFFY-WL50VCM-A

External Static Pressure: 10Pa [0.04in.WG]
Power Source: 220-240V



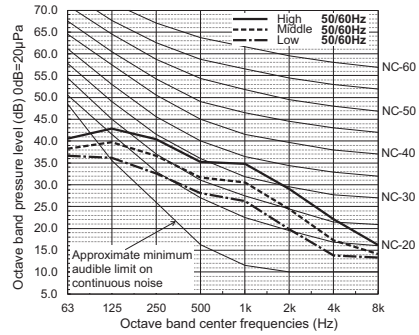
PFFY-WL50VCM-A

External Static Pressure: 40Pa [0.16in.WG]
Power Source: 220-240V

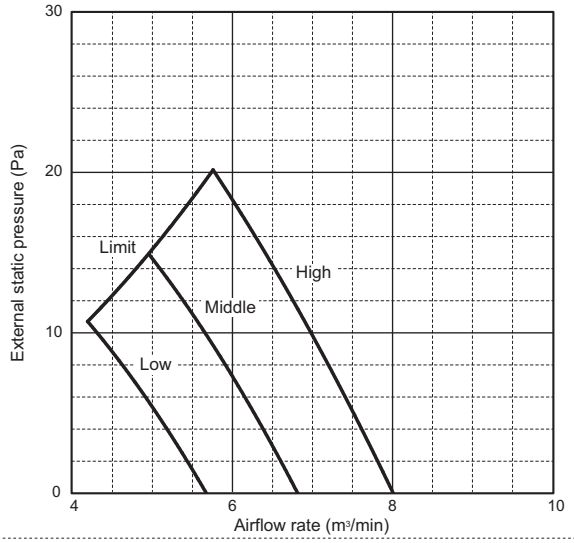


PFFY-WL50VCM-A

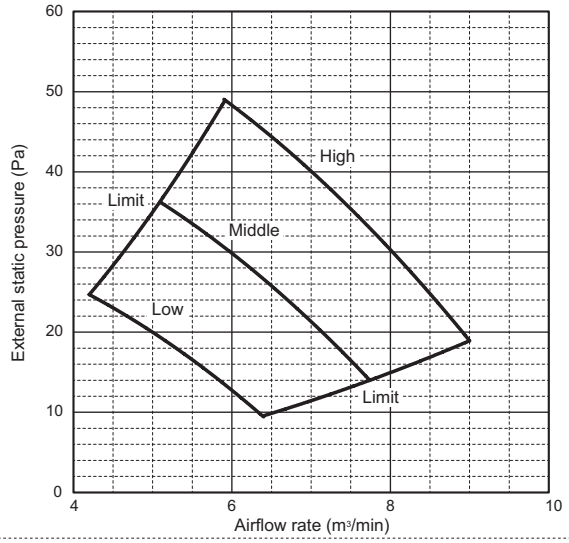
External Static Pressure: 60Pa [0.24in.WG]
Power Source: 220-240V



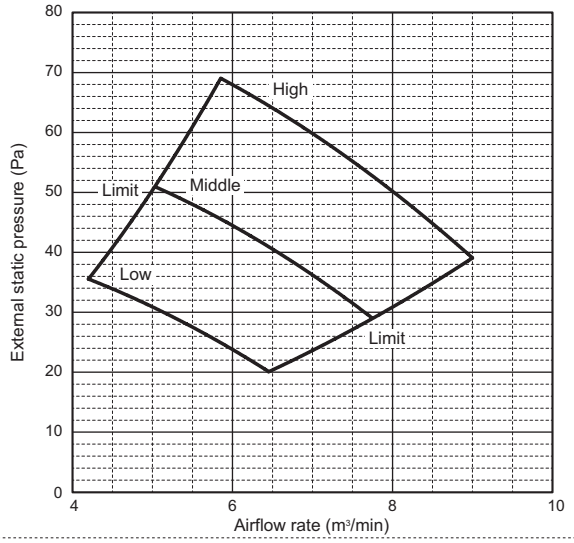
PFFY-WL20VCM-A
External static pressure : 10Pa
Power source : 220-240V



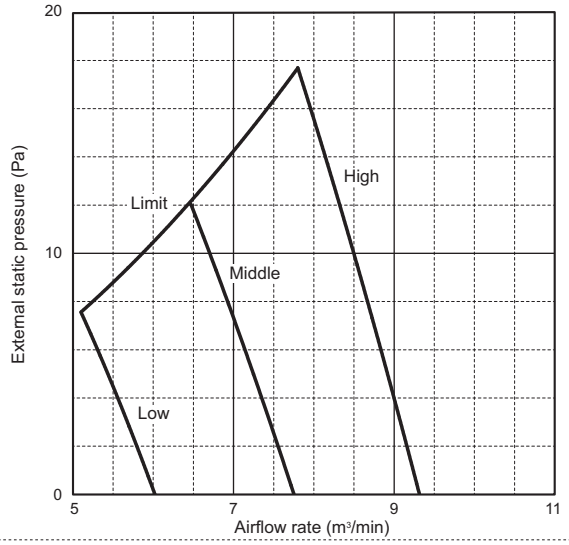
PFFY-WL20VCM-A
External static pressure : 40Pa
Power source : 220-240V



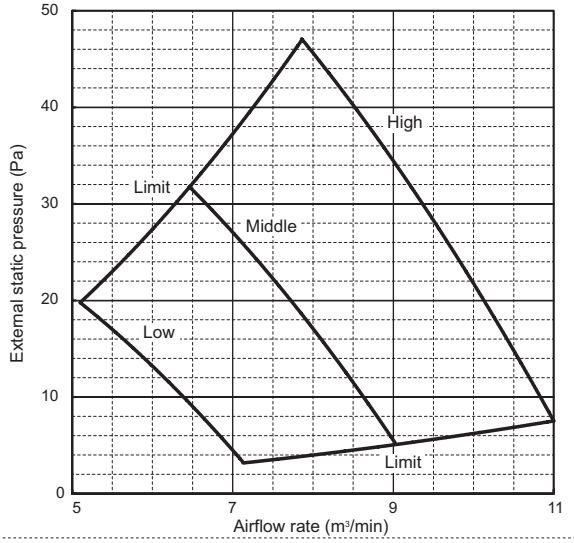
PFFY-WL20VCM-A
External static pressure : 60Pa
Power source : 220-240V



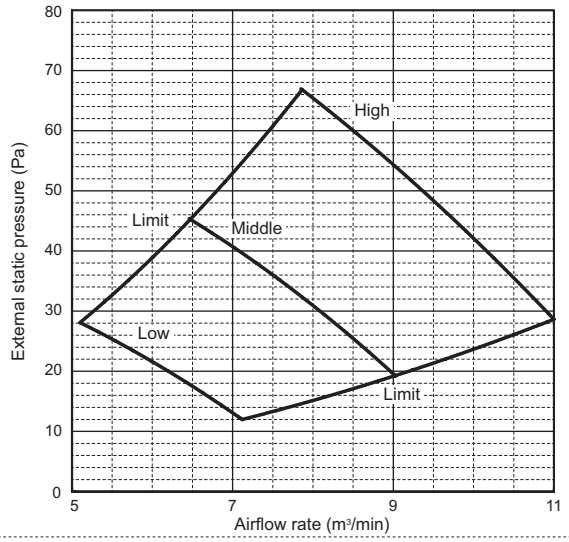
PFFY-WL25VCM-A
External static pressure : 10Pa
Power source : 220-240V



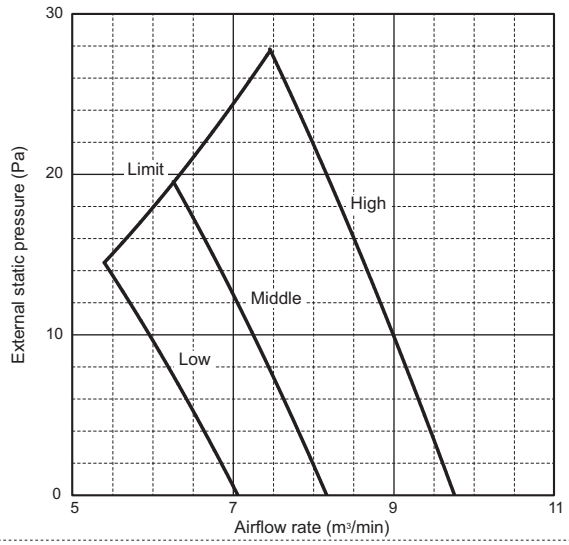
PFFY-WL25VCM-A
External static pressure : 40Pa
Power source : 220-240V



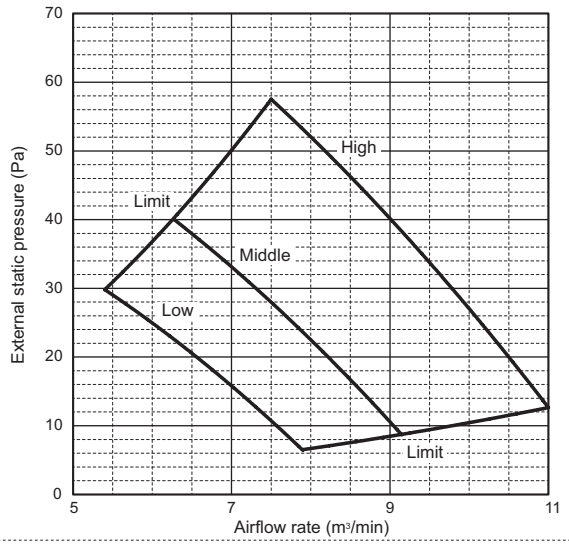
PFFY-WL25VCM-A
External static pressure : 60Pa
Power source : 220-240V



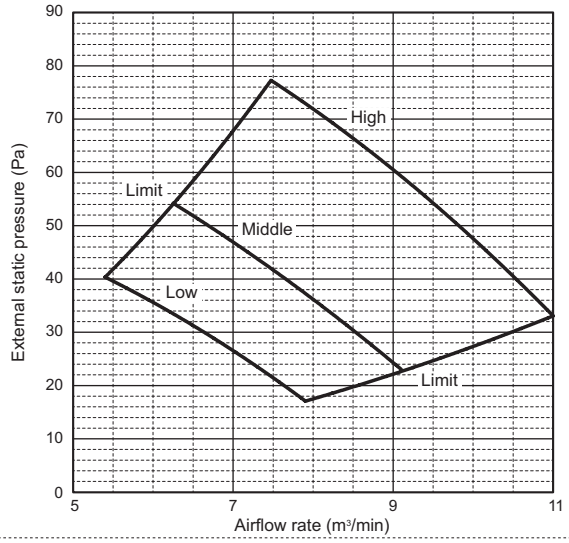
PFFY-WL32VCM-A
External static pressure : 10Pa
Power source : 220-240V



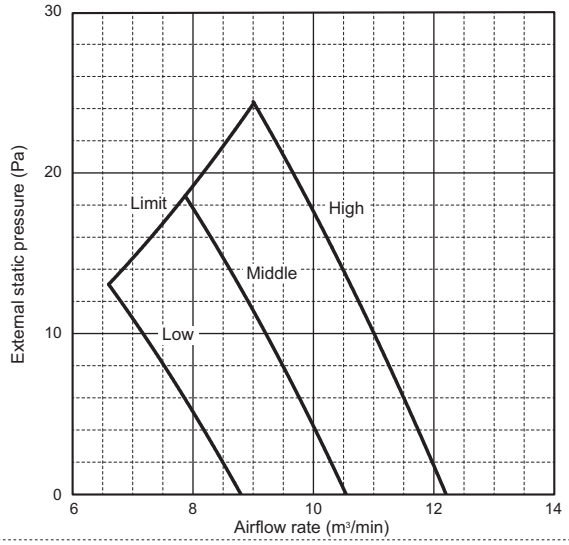
PFFY-WL32VCM-A
External static pressure : 40Pa
Power source : 220-240V



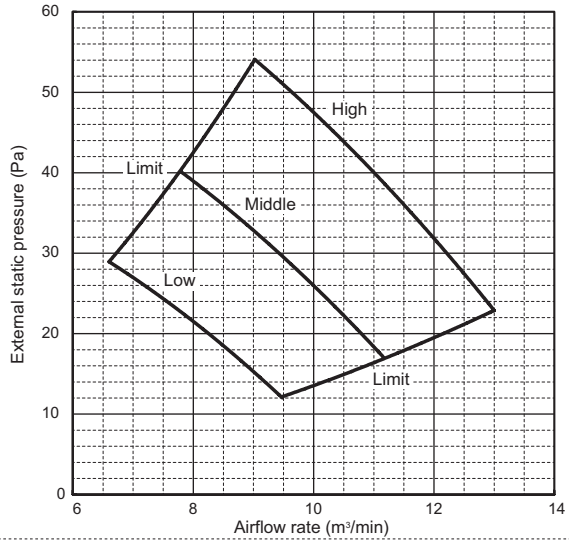
PFFY-WL32VCM-A
External static pressure : 60Pa
Power source : 220-240V



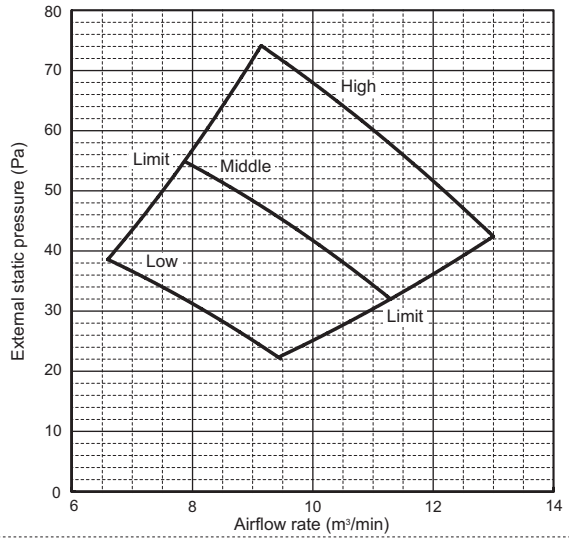
PFFY-WL40VCM-A
External static pressure : 10Pa
Power source : 220-240V



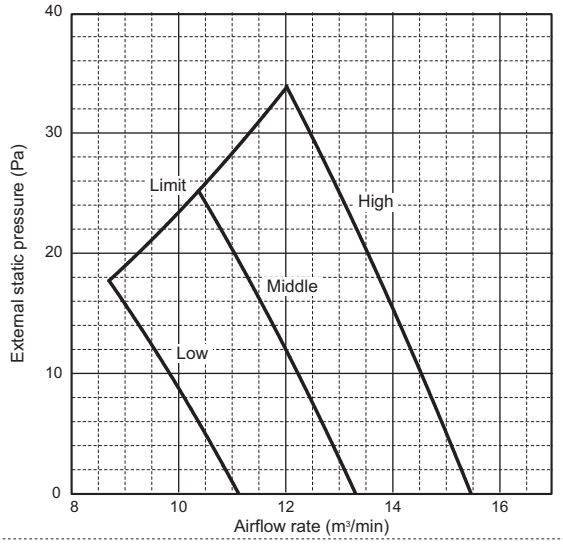
PFFY-WL40VCM-A
External static pressure : 40Pa
Power source : 220-240V



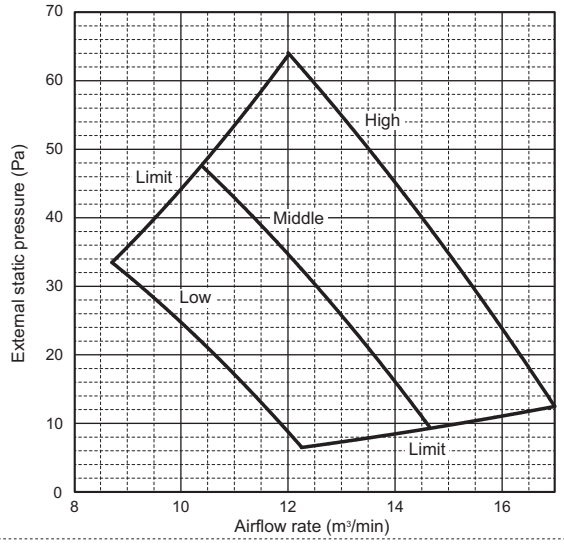
PFFY-WL40VCM-A
External static pressure : 60Pa
Power source : 220-240V



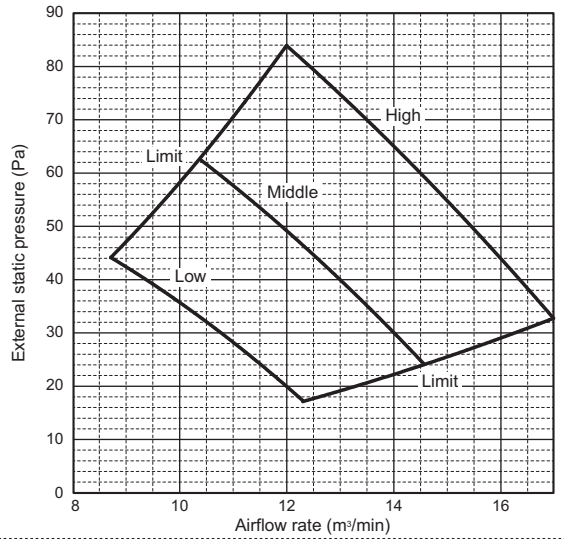
PFFY-WL50VCM-A
External static pressure : 10Pa
Power source : 220-240V



PFFY-WL50VCM-A
External static pressure : 40Pa
Power source : 220-240V



PFFY-WL50VCM-A
External static pressure : 60Pa
Power source : 220-240V



Symbols: MCA (Max.Circuit Amps =1.25xFLA), FLA (Full Load Amps)
IFM (Indoor Fan Motor), Output (Fan motor rated output)

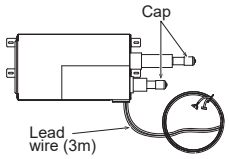
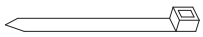
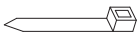
PFFY-WL-VCM-A	Power supply			IFM	
	Volts/Hz	Range +-10%	MCA(A)	Output (kW)	FLA(A)
PFFY-WL20VCM-A	220-240V/50Hz 220-240V/60Hz	Max.: 264V Min.: 198V	0.59	0.096	0.47
PFFY-WL25VCM-A			0.70	0.096	0.56
PFFY-WL32VCM-A			0.82	0.096	0.65
PFFY-WL40VCM-A			0.83	0.096	0.66
PFFY-WL50VCM-A			1.08	0.096	0.86

8-1. Optional parts line up for the Indoor unit

	Description	Model
PFFY-WL-VCM-A	Valve kit	PAC-SK35VK-E
	Attachment plate	PAC-SK39AP-E
	6m Lead wire	PAC-SK40LW-E

8-2. Valve kit

Valve kit is necessary for using HVRF-Y system
In an HVRF-R2 system, if a valve kit is connected to any of the WL indoor units, all other indoor units must also have a valve.
The table below summarizes the connectability of different combinations of indoor units.

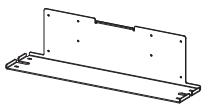
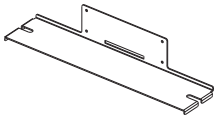
Item	VALVE KIT	Band (large)	Band (small)	Screw
Quantity	1	1	1	8
Shape				

Outdoor Unit	Indoor Unit			Connection
	A	B	C	
HVRF-R2 System	WLV	WLV	-	Connectable
	WLV	W	-	Connectable
	WLV	WL	-	Not connectable
	WLV	WP	-	Not connectable
	WLV	WL	W	Not connectable
	WLV	WL	WP	Not connectable
	WLV	W	WP	Not connectable
	WL	WL	-	Connectable
	WL	WP	-	Connectable
	WL	W	-	Not connectable
	WL	WP	W	Not connectable
	W	WP	-	Not connectable

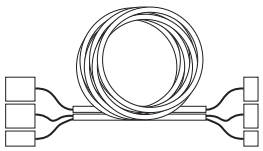
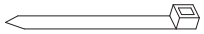
WLV = (E)WL-Type (With an optional valve kit)
WL = (E)WL-Type (Without an optional valve kit)
WP = WP-Type (Without a built-in valve and not compatible with the optional valve kit)
W = W-Type (With a built-in valve)

8-3. Attachment plate

When installing the valve kit on the ceiling plate or hanging it from the ceiling, the use of an attachment plate (PAC-SK39AP-E) is recommended.

Item	Attachment-1	Attachment-2
Quantity	1	1
Shape		

8-4. 6m Lead wire

The lead wire attached to the valve kit is 3 meters. If a longer lead wire is needed, use an optional part PAC-SK40LW-E (6m). Note that the maximum allowable piping distance between the valve kit and the indoor unit is 5 meters.		
Item	Lead wire (6m)	Band (large)
Quantity	1	
Shape		

HYBRID CITY MULTI R32/R410A Series

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1-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PEFY-W-VMS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.5	1.9	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.5	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

1-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PEFY-W-VMS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.5	1.9	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.5	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

1-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PEFY-W-VMS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.5	1.5	1.6	1.5	1.7	1.6	1.7	1.6	1.9	1.6	2.0	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.1	3.9	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

2-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.8	4.8	6.0	4.8	6.4	4.7
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.4	7.7	5.3	8.1	5.3
71 (8.0)	7.2	5.4	7.4	5.6	7.8	5.5	8.0	5.9	8.2	5.8	8.6	5.7	9.2	5.6
80 (9.0)	8.1	5.9	8.3	6.0	8.8	6.0	9.0	6.3	9.3	6.2	9.7	6.1	10.3	6.0
100 (11.2)	10.0	8.0	10.3	8.3	10.9	8.2	11.2	8.7	11.5	8.6	12.1	8.5	12.8	8.4
125 (14.0)	12.5	9.7	12.9	10.0	13.7	9.8	14.0	10.4	14.4	10.4	15.1	10.2	16.0	10.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.1	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.7	8.1	8.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.2	8.2	8.6	8.6	9.2	8.5
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.3	9.1	9.7	9.0	10.3	8.9
100 (11.2)	10.0	9.1	10.3	9.4	10.9	9.3	11.2	10.0	11.5	9.9	12.1	9.8	12.8	9.6
125 (14.0)	12.5	10.2	12.9	10.6	13.7	10.4	14.0	11.1	14.4	11.0	15.1	10.8	16.0	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.8	4.8	6.0	4.8	6.4	4.7
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.4	7.7	5.3	8.1	5.3
71 (8.0)	7.2	5.4	7.4	5.6	7.8	5.5	8.0	5.9	8.2	5.8	8.6	5.7	9.2	5.6
80 (9.0)	8.1	5.9	8.3	6.0	8.8	6.0	9.0	6.3	9.3	6.2	9.7	6.1	10.3	6.0
100 (11.2)	10.0	8.0	10.3	8.3	10.9	8.2	11.2	8.7	11.5	8.6	12.1	8.5	12.8	8.4
125 (14.0)	12.5	9.7	12.9	10.0	13.7	9.8	14.0	10.4	14.4	10.4	15.1	10.2	16.0	10.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.1	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.7	8.1	8.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.2	8.2	8.6	8.6	9.2	8.5
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.3	9.1	9.7	9.0	10.3	8.9
100 (11.2)	10.0	9.1	10.3	9.4	10.9	9.3	11.2	10.0	11.5	9.9	12.1	9.8	12.8	9.6
125 (14.0)	12.5	10.2	12.9	10.6	13.7	10.4	14.0	11.1	14.4	11.0	15.1	10.8	16.0	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	2.0	2.5	1.9
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.1	4.6	5.4	4.5	5.6	4.9	5.7	4.8	6.1	4.8	6.5	4.7
63 (7.1)	6.3	5.0	6.4	5.2	6.8	5.1	7.1	5.5	7.3	5.4	7.7	5.4	8.2	5.3
71 (8.0)	7.1	5.4	7.2	5.5	7.7	5.5	8.0	5.9	8.2	5.8	8.7	5.7	9.2	5.6
80 (9.0)	8.0	5.9	8.1	6.0	8.7	5.9	9.0	6.3	9.2	6.2	9.8	6.2	10.4	6.1
100 (11.2)	10.0	8.0	10.1	8.2	10.8	8.1	11.2	8.7	11.5	8.6	12.2	8.5	12.9	8.4
125 (14.0)	12.5	9.6	12.7	9.9	13.5	9.8	14.0	10.4	14.4	10.4	15.2	10.2	16.1	10.1

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.2	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.3	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.7	8.2	8.2
71 (8.0)	7.1	7.1	7.2	7.2	7.7	7.7	8.0	8.0	8.2	8.2	8.7	8.6	9.2	8.5
80 (9.0)	8.0	8.0	8.1	8.1	8.7	8.4	9.0	9.0	9.2	9.1	9.8	9.0	10.4	8.9
100 (11.2)	10.0	9.0	10.1	9.3	10.8	9.3	11.2	10.0	11.5	9.9	12.2	9.8	12.9	9.7
125 (14.0)	12.5	10.2	12.7	10.4	13.5	10.4	14.0	11.1	14.4	11.0	15.2	10.9	16.1	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.4
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.8	4.5	6.0	4.4	6.4	4.4
63 (7.1)	6.4	4.9	6.5	5.1	6.9	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.1	5.1
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.2	6.0	8.6	5.9	9.2	5.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.5	9.0	6.9	9.3	6.8	9.7	6.7	10.3	6.6
100 (11.2)	10.0	8.4	10.3	8.7	10.9	8.6	11.2	9.2	11.5	9.1	12.1	9.0	12.8	8.8
125 (14.0)	12.5	9.8	12.9	10.1	13.7	10.0	14.0	10.6	14.4	10.5	15.1	10.4	16.0	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.4
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.8	4.5	6.0	4.4	6.4	4.4
63 (7.1)	6.4	4.9	6.5	5.1	6.9	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.1	5.1
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.2	6.0	8.6	5.9	9.2	5.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.5	9.0	6.9	9.3	6.8	9.7	6.7	10.3	6.6
100 (11.2)	10.0	8.4	10.3	8.7	10.9	8.6	11.2	9.2	11.5	9.1	12.1	9.0	12.8	8.8
125 (14.0)	12.5	9.8	12.9	10.1	13.7	10.0	14.0	10.6	14.4	10.5	15.1	10.4	16.0	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.3	4.5	3.6	4.6	3.5	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.2	5.6	4.5	5.7	4.5	6.1	4.4	6.5	4.4
63 (7.1)	6.3	4.9	6.4	5.0	6.8	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.2	5.1
71 (8.0)	7.1	5.6	7.2	5.7	7.7	5.7	8.0	6.1	8.2	6.0	8.7	5.9	9.2	5.9
80 (9.0)	8.0	6.3	8.1	6.5	8.7	6.4	9.0	6.9	9.2	6.8	9.8	6.7	10.4	6.6
100 (11.2)	10.0	8.4	10.1	8.6	10.8	8.5	11.2	9.2	11.5	9.1	12.2	9.0	12.9	8.9
125 (14.0)	12.5	9.8	12.7	10.0	13.5	9.9	14.0	10.6	14.4	10.5	15.2	10.4	16.1	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.1	3.5
40 (4.5)	4.0	3.7	4.1	3.8	4.4	3.8	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.8	4.7	6.0	4.6	6.4	4.5
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.3	8.1	5.2
80 (9.0)	8.1	6.1	8.3	6.2	8.8	6.2	9.0	6.5	9.3	6.5	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.8	10.3	8.1	10.9	8.0	11.2	8.4	11.5	8.4	12.1	8.2	12.8	8.1
125 (14.0)	12.5	9.5	12.9	9.8	13.7	9.6	14.0	10.2	14.4	10.1	15.1	9.9	16.0	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.3	8.1	7.2
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.3	8.1	9.7	8.0	10.3	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.1	3.5
40 (4.5)	4.0	3.7	4.1	3.8	4.4	3.8	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.8	4.7	6.0	4.6	6.4	4.5
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.3	8.1	5.2
80 (9.0)	8.1	6.1	8.3	6.2	8.8	6.2	9.0	6.5	9.3	6.5	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.8	10.3	8.1	10.9	8.0	11.2	8.4	11.5	8.4	12.1	8.2	12.8	8.1
125 (14.0)	12.5	9.5	12.9	9.8	13.7	9.6	14.0	10.2	14.4	10.1	15.1	9.9	16.0	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.3	8.1	7.2
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.3	8.1	9.7	8.0	10.3	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.2	3.6
40 (4.5)	4.0	3.7	4.1	3.8	4.3	3.7	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.1	4.4	5.4	4.4	5.6	4.7	5.7	4.7	6.1	4.6	6.5	4.6
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.0	8.1	6.2	8.7	6.1	9.0	6.5	9.2	6.5	9.8	6.4	10.4	6.3
100 (11.2)	10.0	7.8	10.1	8.0	10.8	7.9	11.2	8.4	11.5	8.4	12.2	8.3	12.9	8.1
125 (14.0)	12.5	9.5	12.7	9.6	13.5	9.6	14.0	10.2	14.4	10.1	15.2	10.0	16.1	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.3	8.2	7.2
80 (9.0)	8.0	7.4	8.1	7.6	8.7	7.5	9.0	8.2	9.2	8.1	9.8	8.0	10.4	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.5	1.3	1.6	1.3	1.7	1.4	1.7	1.4	1.9	1.3	2.0	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
25 (2.8)	2.5	2.0	2.5	2.0	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.2	2.8
40 (4.5)	4.0	3.1	4.1	3.2	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.4	4.8	6.5	5.0	6.9	4.9	7.1	5.2	7.3	5.1	7.7	5.0	8.1	5.0
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.6	9.3	6.6	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.5	10.3	7.7	10.9	7.6	11.2	8.1	11.5	8.0	12.1	7.9	12.8	7.8

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.4	4.8	6.5	5.0	6.9	4.9	7.1	5.2	7.3	5.1	7.7	5.0	8.1	5.0
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.6	9.3	6.6	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.5	10.3	7.7	10.9	7.6	11.2	8.1	11.5	8.0	12.1	7.9	12.8	7.8

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.3	4.8	6.4	4.9	6.8	4.9	7.1	5.2	7.3	5.1	7.7	5.1	8.2	5.0
80 (9.0)	8.0	6.1	8.1	6.2	8.7	6.2	9.0	6.6	9.2	6.5	9.8	6.5	10.4	6.4
100 (11.2)	10.0	7.5	10.1	7.7	10.8	7.6	11.2	8.1	11.5	8.0	12.2	7.9	12.9	7.8

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

6-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.8	1.2	1.9	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.2	8.1	5.2
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.3	6.7	9.7	6.6	10.3	6.5

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.8	1.2	1.9	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.2	8.1	5.2
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.3	6.7	9.7	6.6	10.3	6.5

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.5	1.1	1.6	1.1	1.7	1.2	1.7	1.2	1.9	1.2	2.0	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.5	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	2.9	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.1	5.6	4.4	5.7	4.4	6.1	4.3	6.5	4.3
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.3	8.1	6.4	8.7	6.4	9.0	6.8	9.2	6.7	9.8	6.7	10.4	6.6

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

7-1. Cooling capacity with PUHY-(E)M200-250YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-2. Cooling capacity with PUHY-(E)M300-350YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-3. Cooling capacity with PUHY-(E)M400-500YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-1. Heating capacity with PUHY-(E)M200-250YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-2. Heating capacity with PUHY-(E)M300-350YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-3. Heating capacity with PUHY-(E)M400-500YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-4. Heating capacity with PUHY-(E)M200-250YNW-A1 “Capacity priority mode”

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.5	2.5	2.0	1.8
25 (3.2)	3.2	3.2	2.6	2.2
32 (4.0)	4.0	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.4
63 (8.0)	8.1	8.0	6.4	5.6
71 (9.0)	9.1	9.0	7.2	6.3
80 (10.0)	10.1	10.0	8.0	7.0
100 (12.5)	12.6	12.5	10.0	8.8
125 (16.0)	16.2	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-5. Heating capacity with PUHY-(E)M300-350YNW-A1 “Capacity priority mode”

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-6. Heating capacity with PUHY-(E)M400-500YNW-A1 “Capacity priority mode”

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.5	2.3
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.5
63 (8.0)	8.2	8.0	6.3	5.7
71 (9.0)	9.2	9.0	7.1	6.4
80 (10.0)	10.2	10.0	7.9	7.1
100 (12.5)	12.8	12.5	9.9	8.9
125 (16.0)	16.3	16.0	12.7	11.3

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

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1-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.6	1.9	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.1	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.5	1.9	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.5	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

1-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.6	1.9	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.1	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.5	1.9	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.5	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

1-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.5	1.5	1.6	1.5	1.7	1.6	1.7	1.6	1.9	1.6	2.0	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.2	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.3	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.1	4.1	5.4	4.1	5.6	4.4	5.7	4.4	6.1	4.3	6.5	4.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.5	1.5	1.6	1.5	1.7	1.6	1.7	1.6	1.9	1.6	2.0	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.1	3.9	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.1	3.2
40 (4.5)	4.0	3.8	4.1	3.9	4.4	3.9	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.5	7.7	5.4	8.1	5.3
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.2	7.5	8.6	7.4	9.2	7.3
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.3	7.9	9.7	7.8	10.3	7.7
100 (11.2)	10.0	8.1	10.3	8.4	10.9	8.3	11.2	8.8	11.5	8.8	12.1	8.6	12.8	8.5
125 (14.0)	12.5	10.1	12.9	10.4	13.7	10.3	14.0	10.9	14.4	10.9	15.1	10.7	16.0	10.5

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.8	4.8	6.0	4.8	6.4	4.7
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.4	7.7	5.3	8.1	5.3
71 (8.0)	7.2	5.4	7.4	5.6	7.8	5.5	8.0	5.9	8.2	5.8	8.6	5.7	9.2	5.6
80 (9.0)	8.1	5.9	8.3	6.0	8.8	6.0	9.0	6.3	9.3	6.2	9.7	6.1	10.3	6.0
100 (11.2)	10.0	8.0	10.3	8.3	10.9	8.2	11.2	8.7	11.5	8.6	12.1	8.5	12.8	8.4
125 (14.0)	12.5	9.7	12.9	10.0	13.7	9.8	14.0	10.4	14.4	10.4	15.1	10.2	16.0	10.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.1	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.7	8.1	8.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.2	8.2	8.6	8.6	9.2	8.5
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.3	9.1	9.7	9.0	10.3	8.9
100 (11.2)	10.0	9.1	10.3	9.4	10.9	9.3	11.2	10.0	11.5	9.9	12.1	9.8	12.8	9.6
125 (14.0)	12.5	10.2	12.9	10.6	13.7	10.4	14.0	11.1	14.4	11.0	15.1	10.8	16.0	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.1	3.2
40 (4.5)	4.0	3.8	4.1	3.9	4.4	3.9	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.5	7.7	5.4	8.1	5.3
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.2	7.5	8.6	7.4	9.2	7.3
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.3	7.9	9.7	7.8	10.3	7.7
100 (11.2)	10.0	8.1	10.3	8.4	10.9	8.3	11.2	8.8	11.5	8.8	12.1	8.6	12.8	8.5
125 (14.0)	12.5	10.1	12.9	10.4	13.7	10.3	14.0	10.9	14.4	10.9	15.1	10.7	16.0	10.5

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.8	4.8	6.0	4.8	6.4	4.7
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.4	7.7	5.3	8.1	5.3
71 (8.0)	7.2	5.4	7.4	5.6	7.8	5.5	8.0	5.9	8.2	5.8	8.6	5.7	9.2	5.6
80 (9.0)	8.1	5.9	8.3	6.0	8.8	6.0	9.0	6.3	9.3	6.2	9.7	6.1	10.3	6.0
100 (11.2)	10.0	8.0	10.3	8.3	10.9	8.2	11.2	8.7	11.5	8.6	12.1	8.5	12.8	8.4
125 (14.0)	12.5	9.7	12.9	10.0	13.7	9.8	14.0	10.4	14.4	10.4	15.1	10.2	16.0	10.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.1	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.7	8.1	8.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.2	8.2	8.6	8.6	9.2	8.5
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.3	9.1	9.7	9.0	10.3	8.9
100 (11.2)	10.0	9.1	10.3	9.4	10.9	9.3	11.2	10.0	11.5	9.9	12.1	9.8	12.8	9.6
125 (14.0)	12.5	10.2	12.9	10.6	13.7	10.4	14.0	11.1	14.4	11.0	15.1	10.8	16.0	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.8	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.5	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.2	3.2
40 (4.5)	4.0	3.7	4.1	3.9	4.3	3.8	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.1	4.3	5.4	4.3	5.6	4.6	5.7	4.5	6.1	4.5	6.5	4.4
63 (7.1)	6.3	5.1	6.4	5.2	6.8	5.1	7.1	5.5	7.3	5.5	7.7	5.4	8.2	5.3
71 (8.0)	7.1	6.8	7.2	7.0	7.7	7.0	8.0	7.6	8.2	7.5	8.7	7.4	9.2	7.3
80 (9.0)	8.0	7.2	8.1	7.4	8.7	7.4	9.0	7.9	9.2	7.9	9.8	7.8	10.4	7.7
100 (11.2)	10.0	8.1	10.1	8.3	10.8	8.2	11.2	8.8	11.5	8.8	12.2	8.6	12.9	8.5
125 (14.0)	12.5	10.0	12.7	10.3	13.5	10.2	14.0	10.9	14.4	10.8	15.2	10.7	16.1	10.6

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	2.0	2.5	1.9
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.1	4.6	5.4	4.5	5.6	4.9	5.7	4.8	6.1	4.8	6.5	4.7
63 (7.1)	6.3	5.0	6.4	5.2	6.8	5.1	7.1	5.5	7.3	5.4	7.7	5.4	8.2	5.3
71 (8.0)	7.1	5.4	7.2	5.5	7.7	5.5	8.0	5.9	8.2	5.8	8.7	5.7	9.2	5.6
80 (9.0)	8.0	5.9	8.1	6.0	8.7	5.9	9.0	6.3	9.2	6.2	9.8	6.2	10.4	6.1
100 (11.2)	10.0	8.0	10.1	8.2	10.8	8.1	11.2	8.7	11.5	8.6	12.2	8.5	12.9	8.4
125 (14.0)	12.5	9.6	12.7	9.9	13.5	9.8	14.0	10.4	14.4	10.4	15.2	10.2	16.1	10.1

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.2	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.3	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.7	8.2	8.2
71 (8.0)	7.1	7.1	7.2	7.2	7.7	7.7	8.0	8.0	8.2	8.2	8.7	8.6	9.2	8.5
80 (9.0)	8.0	8.0	8.1	8.1	8.7	8.4	9.0	9.0	9.2	9.1	9.8	9.0	10.4	8.9
100 (11.2)	10.0	9.0	10.1	9.3	10.8	9.3	11.2	10.0	11.5	9.9	12.2	9.8	12.9	9.7
125 (14.0)	12.5	10.2	12.7	10.4	13.5	10.4	14.0	11.1	14.4	11.0	15.2	10.9	16.1	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.4
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.8	4.5	6.0	4.4	6.4	4.4
63 (7.1)	6.4	4.9	6.5	5.1	6.9	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.1	5.1
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.2	6.0	8.6	5.9	9.2	5.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.5	9.0	6.9	9.3	6.8	9.7	6.7	10.3	6.6
100 (11.2)	10.0	8.4	10.3	8.7	10.9	8.6	11.2	9.2	11.5	9.1	12.1	9.0	12.8	8.8
125 (14.0)	12.5	9.8	12.9	10.1	13.7	10.0	14.0	10.6	14.4	10.5	15.1	10.4	16.0	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.4
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.8	4.5	6.0	4.4	6.4	4.4
63 (7.1)	6.4	4.9	6.5	5.1	6.9	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.1	5.1
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.2	6.0	8.6	5.9	9.2	5.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.5	9.0	6.9	9.3	6.8	9.7	6.7	10.3	6.6
100 (11.2)	10.0	8.4	10.3	8.7	10.9	8.6	11.2	9.2	11.5	9.1	12.1	9.0	12.8	8.8
125 (14.0)	12.5	9.8	12.9	10.1	13.7	10.0	14.0	10.6	14.4	10.5	15.1	10.4	16.0	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

3-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.3	4.5	3.6	4.6	3.5	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.2	5.6	4.5	5.7	4.5	6.1	4.4	6.5	4.4
63 (7.1)	6.3	4.9	6.4	5.0	6.8	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.2	5.1
71 (8.0)	7.1	5.6	7.2	5.7	7.7	5.7	8.0	6.1	8.2	6.0	8.7	5.9	9.2	5.9
80 (9.0)	8.0	6.3	8.1	6.5	8.7	6.4	9.0	6.9	9.2	6.8	9.8	6.7	10.4	6.6
100 (11.2)	10.0	8.4	10.1	8.6	10.8	8.5	11.2	9.2	11.5	9.1	12.2	9.0	12.9	8.9
125 (14.0)	12.5	9.8	12.7	10.0	13.5	9.9	14.0	10.6	14.4	10.5	15.2	10.4	16.1	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.1	3.5
40 (4.5)	4.0	3.7	4.1	3.8	4.4	3.8	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.8	4.7	6.0	4.6	6.4	4.5
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.3	8.1	5.2
80 (9.0)	8.1	6.1	8.3	6.2	8.8	6.2	9.0	6.5	9.3	6.5	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.8	10.3	8.1	10.9	8.0	11.2	8.4	11.5	8.4	12.1	8.2	12.8	8.1
125 (14.0)	12.5	9.5	12.9	9.8	13.7	9.6	14.0	10.2	14.4	10.1	15.1	9.9	16.0	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.3	8.1	7.2
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.3	8.1	9.7	8.0	10.3	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

CAPACITY TABLES

4-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.1	3.5
40 (4.5)	4.0	3.7	4.1	3.8	4.4	3.8	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.8	4.7	6.0	4.6	6.4	4.5
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.3	8.1	5.2
80 (9.0)	8.1	6.1	8.3	6.2	8.8	6.2	9.0	6.5	9.3	6.5	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.8	10.3	8.1	10.9	8.0	11.2	8.4	11.5	8.4	12.1	8.2	12.8	8.1
125 (14.0)	12.5	9.5	12.9	9.8	13.7	9.6	14.0	10.2	14.4	10.1	15.1	9.9	16.0	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.3	8.1	7.2
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.3	8.1	9.7	8.0	10.3	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.2	3.6
40 (4.5)	4.0	3.7	4.1	3.8	4.3	3.7	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.1	4.4	5.4	4.4	5.6	4.7	5.7	4.7	6.1	4.6	6.5	4.6
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.0	8.1	6.2	8.7	6.1	9.0	6.5	9.2	6.5	9.8	6.4	10.4	6.3
100 (11.2)	10.0	7.8	10.1	8.0	10.8	7.9	11.2	8.4	11.5	8.4	12.2	8.3	12.9	8.1
125 (14.0)	12.5	9.5	12.7	9.6	13.5	9.6	14.0	10.2	14.4	10.1	15.2	10.0	16.1	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.3	8.2	7.2
80 (9.0)	8.0	7.4	8.1	7.6	8.7	7.5	9.0	8.2	9.2	8.1	9.8	8.0	10.4	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.5	1.3	1.6	1.3	1.7	1.4	1.7	1.4	1.9	1.3	2.0	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
25 (2.8)	2.5	2.0	2.5	2.0	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.2	2.8
40 (4.5)	4.0	3.1	4.1	3.2	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PCFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.4	4.8	6.5	5.0	6.9	4.9	7.1	5.2	7.3	5.1	7.7	5.0	8.1	5.0
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.6	9.3	6.6	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.5	10.3	7.7	10.9	7.6	11.2	8.1	11.5	8.0	12.1	7.9	12.8	7.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PCFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.4	4.8	6.5	5.0	6.9	4.9	7.1	5.2	7.3	5.1	7.7	5.0	8.1	5.0
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.6	9.3	6.6	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.5	10.3	7.7	10.9	7.6	11.2	8.1	11.5	8.0	12.1	7.9	12.8	7.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

5-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PCFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.3	4.8	6.4	4.9	6.8	4.9	7.1	5.2	7.3	5.1	7.7	5.1	8.2	5.0
80 (9.0)	8.0	6.1	8.1	6.2	8.7	6.2	9.0	6.6	9.2	6.5	9.8	6.5	10.4	6.4
100 (11.2)	10.0	7.5	10.1	7.7	10.8	7.6	11.2	8.1	11.5	8.0	12.2	7.9	12.9	7.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PKFY-WL-VLM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.8	1.2	1.9	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.2	8.1	5.2
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.3	6.7	9.7	6.6	10.3	6.5

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

6-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PKFY-WL-VLM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.8	1.2	1.9	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.2	8.1	5.2
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.3	6.7	9.7	6.6	10.3	6.5

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

6-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PKFY-WL-VLM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.5	1.1	1.6	1.1	1.7	1.2	1.7	1.2	1.9	1.2	2.0	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.5	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	2.9	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.1	5.6	4.4	5.7	4.4	6.1	4.3	6.5	4.3
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.3	8.1	6.4	8.7	6.4	9.0	6.8	9.2	6.7	9.8	6.7	10.4	6.6

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

7-1. Cooling capacity with PURY-(E)M200-250YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-2. Cooling capacity with PURY-(E)M300-350YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-3. Cooling capacity with PURY-(E)M400-500YNW-A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-1. Heating capacity with PURY-(E)M200-250YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.5	2.5	2.0	1.8
25 (3.2)	3.2	3.2	2.6	2.2
32 (4.0)	4.0	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.4
63 (8.0)	8.1	8.0	6.4	5.6
71 (9.0)	9.1	9.0	7.2	6.3
80 (10.0)	10.1	10.0	8.0	7.0
100 (12.5)	12.6	12.5	10.0	8.8
125 (16.0)	16.2	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-2. Heating capacity with PURY-(E)M300-350YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-3. Heating capacity with PURY-(E)M400-500YNW-A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.5	2.3
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.5
63 (8.0)	8.2	8.0	6.3	5.7
71 (9.0)	9.2	9.0	7.1	6.4
80 (10.0)	10.2	10.0	7.9	7.1
100 (12.5)	12.8	12.5	9.9	8.9
125 (16.0)	16.3	16.0	12.7	11.3

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-4. Heating capacity with PURY-(E)M200-250YNW-A1 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-5. Heating capacity with PURY-(E)M300-350YNW-A1 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.5	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.2	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.4
63 (8.0)	8.3	8.0	6.4	5.6
71 (9.0)	9.3	9.0	7.2	6.3
80 (10.0)	10.4	10.0	8.0	7.0
100 (12.5)	12.9	12.5	10.0	8.8
125 (16.0)	16.6	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-6. Heating capacity with PURY-(E)M400-500YNW-A1 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

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1-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.6	1.9	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.1	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.8	1.5	1.9	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.5	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

1-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.5	1.5	1.6	1.5	1.7	1.6	1.7	1.6	1.9	1.6	2.0	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.4	1.9	2.5	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.9	3.9	2.8	4.2	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.3	3.3	4.5	3.5	4.6	3.5	4.9	3.4	5.2	3.4
50 (5.6)	5.0	4.0	5.1	4.1	5.4	4.1	5.6	4.4	5.7	4.4	6.1	4.3	6.5	4.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.5	1.5	1.6	1.5	1.7	1.6	1.7	1.6	1.9	1.6	2.0	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.2	4.6	3.2	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.1	3.9	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

1-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.5	1.5	1.5	1.7	1.5	1.7	1.6	1.8	1.6	1.9	1.6	2.0	1.6
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.3	1.9	2.5	1.9	2.6	1.9
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.1	2.2	3.3	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.8	2.9	4.0	2.9	4.3	2.8
40 (4.5)	4.0	3.2	4.1	3.3	4.4	3.3	4.5	3.5	4.7	3.5	5.0	3.5	5.4	3.4
50 (5.6)	5.0	4.0	5.1	4.1	5.4	4.1	5.6	4.4	5.8	4.4	6.2	4.4	6.7	4.3

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	1.0	1.2	1.0	1.2	1.0	1.3	1.0	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.4	1.5	1.5	1.7	1.5	1.7	1.6	1.8	1.6	1.9	1.6	2.0	1.6
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.5	1.8	2.6	1.8
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.1	2.2	3.3	2.2
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.8	2.6	4.0	2.6	4.3	2.6
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.2	4.7	3.3	5.0	3.2	5.4	3.2
50 (5.6)	5.0	3.8	5.1	3.9	5.4	3.9	5.6	4.1	5.8	4.1	6.2	4.0	6.7	4.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

1-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PEFY-WP-VMS1-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0
15 (1.7)	1.5	1.5	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.7	1.5	1.7	1.5
20 (2.2)	2.0	1.7	2.0	1.8	2.1	1.8	2.2	1.9	2.2	1.9	2.2	1.8	2.2	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.8	2.1	2.8	2.0	2.8	2.0
32 (3.6)	3.2	2.7	3.3	2.7	3.5	2.7	3.6	2.9	3.6	2.8	3.6	2.7	3.6	2.6
40 (4.5)	4.1	3.2	4.2	3.3	4.4	3.3	4.5	3.5	4.5	3.4	4.5	3.3	4.5	3.1
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.6	4.3	5.6	4.1	5.6	4.0

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMS-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0	1.2	1.0
15 (1.7)	1.5	1.4	1.6	1.5	1.7	1.5	1.7	1.6	1.7	1.6	1.7	1.5	1.7	1.5
20 (2.2)	2.0	1.7	2.0	1.7	2.1	1.7	2.2	1.8	2.2	1.8	2.2	1.7	2.2	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.8	2.2	2.8	2.1	2.8	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.6	2.5	3.6	2.4	3.6	2.3
40 (4.5)	4.1	3.0	4.2	3.1	4.4	3.1	4.5	3.2	4.5	3.2	4.5	3.0	4.5	2.9
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.9	5.6	4.1	5.6	4.0	5.6	3.8	5.6	3.6

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.1	3.2
40 (4.5)	4.0	3.8	4.1	3.9	4.4	3.9	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.3	5.6	4.6	5.8	4.6	6.0	4.5	6.4	4.4
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.5	7.7	5.4	8.1	5.3
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.2	7.5	8.6	7.4	9.2	7.3
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.3	7.9	9.7	7.8	10.3	7.7
100 (11.2)	10.0	8.1	10.3	8.4	10.9	8.3	11.2	8.8	11.5	8.8	12.1	8.6	12.8	8.5
125 (14.0)	12.5	10.1	12.9	10.4	13.7	10.3	14.0	10.9	14.4	10.9	15.1	10.7	16.0	10.5

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.8	4.8	6.0	4.8	6.4	4.7
63 (7.1)	6.4	5.1	6.5	5.2	6.9	5.2	7.1	5.5	7.3	5.4	7.7	5.3	8.1	5.3
71 (8.0)	7.2	5.4	7.4	5.6	7.8	5.5	8.0	5.9	8.2	5.8	8.6	5.7	9.2	5.6
80 (9.0)	8.1	5.9	8.3	6.0	8.8	6.0	9.0	6.3	9.3	6.2	9.7	6.1	10.3	6.0
100 (11.2)	10.0	8.0	10.3	8.3	10.9	8.2	11.2	8.7	11.5	8.6	12.1	8.5	12.8	8.4
125 (14.0)	12.5	9.7	12.9	10.0	13.7	9.8	14.0	10.4	14.4	10.4	15.1	10.2	16.0	10.0

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.1	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.7	8.1	8.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.2	8.2	8.6	8.6	9.2	8.5
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.3	9.1	9.7	9.0	10.3	8.9
100 (11.2)	10.0	9.1	10.3	9.4	10.9	9.3	11.2	10.0	11.5	9.9	12.1	9.8	12.8	9.6
125 (14.0)	12.5	10.2	12.9	10.6	13.7	10.4	14.0	11.1	14.4	11.0	15.1	10.8	16.0	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.8	2.1	1.8	2.2	2.0	2.3	2.0	2.4	1.9	2.5	1.9
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.5	2.8	2.8	2.9	2.7	3.0	2.7	3.2	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.7	3.3	3.9	3.3	4.2	3.2
40 (4.5)	4.0	3.7	4.1	3.9	4.3	3.8	4.5	4.2	4.6	4.1	4.9	4.1	5.2	4.0
50 (5.6)	5.0	4.2	5.1	4.3	5.4	4.3	5.6	4.6	5.7	4.5	6.1	4.5	6.5	4.4
63 (7.1)	6.3	5.1	6.4	5.2	6.8	5.1	7.1	5.5	7.3	5.5	7.7	5.4	8.2	5.3
71 (8.0)	7.1	6.8	7.2	7.0	7.7	7.0	8.0	7.6	8.2	7.5	8.7	7.4	9.2	7.3
80 (9.0)	8.0	7.2	8.1	7.4	8.7	7.4	9.0	7.9	9.2	7.9	9.8	7.8	10.4	7.7
100 (11.2)	10.0	8.1	10.1	8.3	10.8	8.2	11.2	8.8	11.5	8.8	12.2	8.6	12.9	8.5
125 (14.0)	12.5	10.0	12.7	10.3	13.5	10.2	14.0	10.9	14.4	10.8	15.2	10.7	16.1	10.6

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.4	2.0	2.5	1.9
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.0	2.2	3.2	2.1
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.4	5.1	4.6	5.4	4.5	5.6	4.9	5.7	4.8	6.1	4.8	6.5	4.7
63 (7.1)	6.3	5.0	6.4	5.2	6.8	5.1	7.1	5.5	7.3	5.4	7.7	5.4	8.2	5.3
71 (8.0)	7.1	5.4	7.2	5.5	7.7	5.5	8.0	5.9	8.2	5.8	8.7	5.7	9.2	5.6
80 (9.0)	8.0	5.9	8.1	6.0	8.7	5.9	9.0	6.3	9.2	6.2	9.8	6.2	10.4	6.1
100 (11.2)	10.0	8.0	10.1	8.2	10.8	8.1	11.2	8.7	11.5	8.6	12.2	8.5	12.9	8.4
125 (14.0)	12.5	9.6	12.7	9.9	13.5	9.8	14.0	10.4	14.4	10.4	15.2	10.2	16.2	10.1

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.5
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.2
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.7	3.7	3.9	3.9	4.2	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.3	4.1	4.5	4.5	4.6	4.4	4.9	4.4	5.2	4.3
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.7	8.2	8.2
71 (8.0)	7.1	7.1	7.2	7.2	7.7	7.7	8.0	8.0	8.2	8.2	8.7	8.6	9.2	8.5
80 (9.0)	8.0	8.0	8.1	8.1	8.7	8.4	9.0	9.0	9.2	9.1	9.8	9.0	10.4	8.9
100 (11.2)	10.0	9.0	10.1	9.3	10.8	9.3	11.2	10.0	11.5	9.9	12.2	9.8	12.9	9.7
125 (14.0)	12.5	10.2	12.7	10.4	13.5	10.4	14.0	11.1	14.4	11.0	15.2	10.9	16.2	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.8	2.1	1.8	2.2	2.0	2.3	2.0	2.5	2.0	2.6	1.9
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.6	2.8	2.8	2.9	2.8	3.1	2.7	3.3	2.7
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.8	3.3	4.0	3.3	4.3	3.3
40 (4.5)	4.0	3.7	4.1	3.9	4.4	3.9	4.5	4.2	4.7	4.2	5.0	4.1	5.4	4.1
50 (5.6)	5.0	4.2	5.1	4.3	5.4	4.3	5.6	4.6	5.8	4.6	6.2	4.5	6.7	4.5
63 (7.1)	6.3	5.1	6.4	5.2	6.9	5.2	7.1	5.5	7.4	5.5	7.9	5.5	8.5	5.4
71 (8.0)	7.1	6.8	7.2	7.0	7.8	7.0	8.0	7.6	8.3	7.6	8.9	7.5	9.5	7.4
80 (9.0)	8.0	7.2	8.2	7.4	8.8	7.4	9.0	7.9	9.4	7.9	10.0	7.9	10.7	7.8
100 (11.2)	9.9	8.1	10.1	8.3	10.9	8.3	11.2	8.8	11.7	8.8	12.5	8.8	13.3	8.7
125 (14.0)	12.4	10.0	12.7	10.3	13.6	10.3	14.0	10.9	14.6	10.9	15.6	10.8	16.7	10.7

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.3	2.0	2.5	2.0	2.6	1.9
25 (2.8)	2.5	2.0	2.5	2.1	2.7	2.1	2.8	2.2	2.9	2.2	3.1	2.2	3.3	2.2
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.8	2.6	4.0	2.6	4.3	2.6
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.7	3.6	5.0	3.6	5.4	3.5
50 (5.6)	5.0	4.4	5.1	4.6	5.4	4.5	5.6	4.9	5.8	4.9	6.2	4.8	6.7	4.8
63 (7.1)	6.3	5.0	6.4	5.2	6.9	5.1	7.1	5.5	7.4	5.5	7.9	5.4	8.4	5.4
71 (8.0)	7.1	5.4	7.2	5.5	7.8	5.5	8.0	5.9	8.3	5.9	8.9	5.8	9.5	5.8
80 (9.0)	8.0	5.9	8.2	6.0	8.8	6.0	9.0	6.3	9.4	6.3	10.0	6.3	10.7	6.2
100 (11.2)	9.9	8.0	10.1	8.2	10.9	8.2	11.2	8.7	11.7	8.7	12.5	8.6	13.3	8.5
125 (14.0)	12.4	9.6	12.7	9.9	13.6	9.8	14.0	10.4	14.6	10.5	15.6	10.4	16.7	10.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.5	2.6	2.6
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.1	3.1	3.3	3.3
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.8	3.8	4.0	4.0	4.3	4.0
40 (4.5)	4.0	4.0	4.1	4.1	4.4	4.1	4.5	4.5	4.7	4.5	5.0	4.4	5.4	4.4
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.8	5.8	6.2	6.2	6.7	6.7
63 (7.1)	6.3	6.3	6.4	6.4	6.9	6.9	7.1	7.1	7.4	7.4	7.9	7.9	8.4	8.3
71 (8.0)	7.1	7.1	7.2	7.2	7.8	7.8	8.0	8.0	8.3	8.3	8.9	8.7	9.5	8.6
80 (9.0)	8.0	8.0	8.2	8.2	8.8	8.4	9.0	9.0	9.4	9.2	10.0	9.1	10.7	9.0
100 (11.2)	9.9	9.0	10.1	9.3	10.9	9.3	11.2	10.0	11.7	10.0	12.5	9.9	13.3	9.8
125 (14.0)	12.4	10.2	12.7	10.5	13.6	10.4	14.0	11.1	14.6	11.1	15.6	11.0	16.7	10.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

2-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PEFY-WP-VMA-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.2	1.9	2.2	1.9	2.2	1.8
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.6	2.8	2.8	2.8	2.7	2.8	2.6	2.8	2.5
32 (3.6)	3.2	3.0	3.3	3.1	3.5	3.1	3.6	3.3	3.6	3.3	3.6	3.2	3.6	3.1
40 (4.5)	4.1	3.8	4.2	3.9	4.4	3.9	4.5	4.2	4.5	4.1	4.5	3.9	4.5	3.8
50 (5.6)	5.0	4.2	5.2	4.4	5.5	4.3	5.6	4.6	5.6	4.5	5.6	4.3	5.6	4.2
63 (7.1)	6.4	5.1	6.6	5.3	6.9	5.2	7.1	5.5	7.1	5.4	7.1	5.2	7.1	5.0
71 (8.0)	7.2	6.8	7.4	7.1	7.8	7.0	8.0	7.6	8.0	7.4	8.0	7.2	8.0	6.9
80 (9.0)	8.1	7.2	8.3	7.5	8.8	7.4	9.0	7.9	9.0	7.8	9.0	7.5	9.0	7.3
100 (11.2)	10.1	8.1	10.4	8.4	10.9	8.3	11.2	8.8	11.2	8.6	11.2	8.3	11.2	8.0
125 (14.0)	12.6	10.1	13.0	10.4	13.7	10.3	14.0	10.9	14.0	10.7	14.0	10.3	14.0	9.8

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA(L)-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.8	2.0	1.9	2.1	1.8	2.2	2.0	2.2	2.0	2.2	1.9	2.2	1.8
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.1	2.8	2.2	2.8	2.2	2.8	2.1	2.8	2.0
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.6	2.6	3.6	2.5	3.6	2.4
40 (4.5)	4.1	3.3	4.2	3.4	4.4	3.4	4.5	3.6	4.5	3.5	4.5	3.4	4.5	3.2
50 (5.6)	5.0	4.4	5.2	4.6	5.5	4.5	5.6	4.9	5.6	4.8	5.6	4.6	5.6	4.4
63 (7.1)	6.4	5.1	6.6	5.2	6.9	5.2	7.1	5.5	7.1	5.4	7.1	5.1	7.1	4.9
71 (8.0)	7.2	5.5	7.4	5.6	7.8	5.5	8.0	5.9	8.0	5.7	8.0	5.5	8.0	5.2
80 (9.0)	8.1	5.9	8.3	6.1	8.8	6.0	9.0	6.3	9.0	6.1	9.0	5.8	9.0	5.6
100 (11.2)	10.1	8.0	10.4	8.3	10.9	8.2	11.2	8.7	11.2	8.5	11.2	8.2	11.2	7.8
125 (14.0)	12.6	9.7	13.0	10.0	13.7	9.8	14.0	10.4	14.0	10.2	14.0	9.8	14.0	9.3

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PEFY-W-VMA2-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
40 (4.5)	4.1	4.0	4.2	4.2	4.4	4.1	4.5	4.5	4.5	4.4	4.5	4.2	4.5	4.1
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
63 (7.1)	6.4	6.4	6.6	6.6	6.9	6.9	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
71 (8.0)	7.2	7.2	7.4	7.4	7.8	7.8	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
80 (9.0)	8.1	8.1	8.3	8.3	8.8	8.5	9.0	9.0	9.0	9.0	9.0	8.7	9.0	8.5
100 (11.2)	10.1	9.1	10.4	9.4	10.9	9.3	11.2	10.0	11.2	9.8	11.2	9.5	11.2	9.1
125 (14.0)	12.6	10.2	13.0	10.6	13.7	10.4	14.0	11.1	14.0	10.9	14.0	10.4	14.0	10.0

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.4
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.8	4.5	6.0	4.4	6.4	4.4
63 (7.1)	6.4	4.9	6.5	5.1	6.9	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.1	5.1
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.2	6.0	8.6	5.9	9.2	5.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.5	9.0	6.9	9.3	6.8	9.7	6.7	10.3	6.6
100 (11.2)	10.0	8.4	10.3	8.7	10.9	8.6	11.2	9.2	11.5	9.1	12.1	9.0	12.8	8.8
125 (14.0)	12.5	9.8	12.9	10.1	13.7	10.0	14.0	10.6	14.4	10.5	15.1	10.4	16.0	10.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.3	3.3	4.5	3.6	4.6	3.6	4.9	3.5	5.2	3.5
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.2	5.6	4.5	5.7	4.5	6.1	4.4	6.5	4.4
63 (7.1)	6.3	4.9	6.4	5.0	6.8	5.0	7.1	5.3	7.3	5.3	7.7	5.2	8.2	5.1
71 (8.0)	7.1	5.6	7.2	5.7	7.7	5.7	8.0	6.1	8.2	6.0	8.7	5.9	9.2	5.9
80 (9.0)	8.0	6.3	8.1	6.5	8.7	6.4	9.0	6.9	9.2	6.8	9.8	6.7	10.4	6.6
100 (11.2)	10.0	8.4	10.1	8.6	10.8	8.5	11.2	9.2	11.5	9.1	12.2	9.0	12.9	8.9
125 (14.0)	12.5	9.8	12.7	10.0	13.5	9.9	14.0	10.6	14.4	10.5	15.2	10.4	16.2	10.2

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.3	4.1	3.4	4.4	3.4	4.5	3.6	4.7	3.6	5.0	3.5	5.4	3.5
50 (5.6)	5.0	4.1	5.1	4.3	5.4	4.2	5.6	4.5	5.8	4.5	6.2	4.5	6.7	4.4
63 (7.1)	6.3	4.9	6.4	5.0	6.9	5.0	7.1	5.3	7.4	5.3	7.9	5.3	8.4	5.2
71 (8.0)	7.1	5.6	7.2	5.7	7.8	5.7	8.0	6.1	8.3	6.1	8.9	6.0	9.5	6.0
80 (9.0)	8.0	6.3	8.2	6.5	8.8	6.5	9.0	6.9	9.4	6.9	10.0	6.8	10.7	6.7
100 (11.2)	9.9	8.4	10.1	8.6	10.9	8.6	11.2	9.2	11.7	9.2	12.5	9.1	13.3	9.0
125 (14.0)	12.4	9.8	12.7	10.0	13.6	10.0	14.0	10.6	14.6	10.6	15.6	10.5	16.7	10.4

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

3-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PEFY-WL-VMHS-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.1	3.3	4.2	3.4	4.4	3.4	4.5	3.6	4.5	3.5	4.5	3.4	4.5	3.2
50 (5.6)	5.0	4.2	5.2	4.3	5.5	4.2	5.6	4.5	5.6	4.4	5.6	4.3	5.6	4.1
63 (7.1)	6.4	4.9	6.6	5.1	6.9	5.0	7.1	5.3	7.1	5.2	7.1	5.0	7.1	4.7
71 (8.0)	7.2	5.6	7.4	5.8	7.8	5.7	8.0	6.1	8.0	5.9	8.0	5.7	8.0	5.4
80 (9.0)	8.1	6.4	8.3	6.6	8.8	6.5	9.0	6.9	9.0	6.7	9.0	6.4	9.0	6.2
100 (11.2)	10.1	8.4	10.4	8.7	10.9	8.6	11.2	9.2	11.2	9.0	11.2	8.7	11.2	8.3
125 (14.0)	12.6	9.9	13.0	10.1	13.7	10.0	14.0	10.6	14.0	10.4	14.0	9.9	14.0	9.5

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

4-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.1	3.5
40 (4.5)	4.0	3.7	4.1	3.8	4.4	3.8	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.8	4.7	6.0	4.6	6.4	4.5
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.3	8.1	5.2
80 (9.0)	8.1	6.1	8.3	6.2	8.8	6.2	9.0	6.5	9.3	6.5	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.8	10.3	8.1	10.9	8.0	11.2	8.4	11.5	8.4	12.1	8.2	12.8	8.1
125 (14.0)	12.5	9.5	12.9	9.8	13.7	9.6	14.0	10.2	14.4	10.1	15.1	9.9	16.0	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.8	5.8	6.0	6.0	6.4	6.4
63 (7.1)	6.4	6.4	6.5	6.5	6.9	6.9	7.1	7.1	7.3	7.3	7.7	7.3	8.1	7.2
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.3	8.1	9.7	8.0	10.3	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.4	1.8	1.3	1.9	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.7	2.5	1.7
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.1	2.7
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.2	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.4	2.4	2.5	2.4
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.0	3.0	3.2	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.7	3.6	3.9	3.6	4.2	3.6
40 (4.5)	4.0	3.7	4.1	3.8	4.3	3.7	4.5	4.0	4.6	4.0	4.9	4.0	5.2	3.9
50 (5.6)	5.0	4.3	5.1	4.4	5.4	4.4	5.6	4.7	5.7	4.7	6.1	4.6	6.5	4.6
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.0	8.1	6.2	8.7	6.1	9.0	6.5	9.2	6.5	9.8	6.4	10.4	6.3
100 (11.2)	10.0	7.8	10.1	8.0	10.8	7.9	11.2	8.4	11.5	8.4	12.2	8.3	12.9	8.1
125 (14.0)	12.5	9.5	12.7	9.6	13.5	9.6	14.0	10.2	14.4	10.1	15.2	10.0	16.2	9.8

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.7	5.7	6.1	6.1	6.5	6.5
63 (7.1)	6.3	6.3	6.4	6.4	6.8	6.8	7.1	7.1	7.3	7.3	7.7	7.3	8.2	7.2
80 (9.0)	8.0	7.4	8.1	7.6	8.7	7.5	9.0	8.2	9.2	8.1	9.8	8.0	10.4	7.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.1	1.3	1.0	1.4	1.0
15 (1.7)	1.5	1.3	1.5	1.3	1.6	1.3	1.7	1.4	1.7	1.4	1.9	1.3	2.0	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.4	1.8	2.5	1.7
25 (2.8)	2.5	2.0	2.5	2.0	2.7	2.0	2.8	2.2	2.9	2.2	3.0	2.1	3.2	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.7	2.8	3.9	2.8	4.2	2.8
40 (4.5)	4.0	3.1	4.1	3.2	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.3	5.2	3.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.3	2.3	2.5	2.5	2.6	2.5
25 (2.8)	2.5	2.5	2.5	2.5	2.7	2.7	2.8	2.8	2.9	2.9	3.1	3.0	3.3	3.0
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.8	3.7	4.0	3.6	4.3	3.6
40 (4.5)	4.0	3.6	4.1	3.8	4.4	3.8	4.5	4.0	4.7	4.0	5.0	4.0	5.4	4.0
50 (5.6)	5.0	4.3	5.1	4.4	5.4	4.4	5.6	4.7	5.8	4.7	6.2	4.7	6.7	4.6
63 (7.1)	6.3	5.0	6.4	5.1	6.9	5.1	7.1	5.4	7.4	5.4	7.9	5.3	8.4	5.3
80 (9.0)	8.0	6.0	8.2	6.2	8.8	6.2	9.0	6.5	9.4	6.5	10.0	6.5	10.7	6.4
100 (11.2)	9.9	7.8	10.1	8.0	10.9	7.9	11.2	8.4	11.7	8.5	12.5	8.4	13.3	8.3
125 (14.0)	12.4	9.4	12.7	9.7	13.6	9.6	14.0	10.2	14.6	10.2	15.6	10.1	16.7	10.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.1	5.1	5.4	5.4	5.6	5.6	5.8	5.8	6.2	6.2	6.7	6.7
63 (7.1)	6.3	6.3	6.4	6.4	6.9	6.9	7.1	7.1	7.4	7.4	7.9	7.4	8.4	7.3
80 (9.0)	8.0	7.4	8.2	7.6	8.8	7.6	9.0	8.2	9.4	8.2	10.0	8.1	10.7	8.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.3	1.1	1.3	1.1	1.4	1.0
15 (1.7)	1.5	1.3	1.5	1.3	1.7	1.3	1.7	1.4	1.8	1.4	1.9	1.4	2.0	1.3
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.3	1.8	2.5	1.8	2.6	1.8
25 (2.8)	2.5	2.0	2.5	2.0	2.7	2.0	2.8	2.2	2.9	2.2	3.1	2.2	3.3	2.1
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.8	2.9	4.0	2.8	4.3	2.8
40 (4.5)	4.0	3.1	4.1	3.2	4.4	3.1	4.5	3.3	4.7	3.3	5.0	3.3	5.4	3.3

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

4-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PLFY-WL-VEM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	2.0	2.0	2.0	2.1	2.1	2.2	2.2	2.2	2.2	2.2	2.2	2.2	2.2
25 (2.8)	2.5	2.5	2.6	2.6	2.7	2.7	2.8	2.8	2.8	2.8	2.8	2.8	2.8	2.8
32 (3.6)	3.2	3.2	3.3	3.3	3.5	3.4	3.6	3.6	3.6	3.6	3.6	3.5	3.6	3.4
40 (4.5)	4.1	3.7	4.2	3.8	4.4	3.8	4.5	4.0	4.5	4.0	4.5	3.8	4.5	3.7
50 (5.6)	5.0	4.3	5.2	4.5	5.5	4.4	5.6	4.7	5.6	4.6	5.6	4.5	5.6	4.3
63 (7.1)	6.4	5.0	6.6	5.1	6.9	5.1	7.1	5.4	7.1	5.3	7.1	5.0	7.1	4.8
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.5	9.0	6.4	9.0	6.1	9.0	5.8
100 (11.2)	10.1	7.8	10.4	8.1	10.9	8.0	11.2	8.4	11.2	8.3	11.2	7.9	11.2	7.6
125 (14.0)	12.6	9.5	13.0	9.8	13.7	9.6	14.0	10.2	14.0	10.0	14.0	9.5	14.0	9.1

* The capacity does not depend on the inlet-water temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-EWL-VEM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	5.0	5.2	5.2	5.5	5.5	5.6	5.6	5.6	5.6	5.6	5.6	5.6	5.6
63 (7.1)	6.4	6.4	6.6	6.6	6.9	6.9	7.1	7.1	7.1	7.1	7.1	7.1	7.1	6.9
80 (9.0)	8.1	7.4	8.3	7.7	8.8	7.6	9.0	8.2	9.0	8.0	9.0	7.7	9.0	7.5

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PLFY-WL-VFM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	1.0	1.1	1.0	1.2	1.0	1.2	1.1	1.2	1.0	1.2	1.0	1.2	1.0
15 (1.7)	1.5	1.3	1.6	1.3	1.7	1.3	1.7	1.4	1.7	1.3	1.7	1.3	1.7	1.2
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.7	2.2	1.8	2.2	1.7	2.2	1.7	2.2	1.6
25 (2.8)	2.5	2.0	2.6	2.1	2.7	2.0	2.8	2.2	2.8	2.1	2.8	2.0	2.8	1.9
32 (3.6)	3.2	2.6	3.3	2.7	3.5	2.7	3.6	2.9	3.6	2.8	3.6	2.7	3.6	2.6
40 (4.5)	4.1	3.1	4.2	3.2	4.4	3.2	4.5	3.3	4.5	3.3	4.5	3.1	4.5	3.0

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.4	4.8	6.5	5.0	6.9	4.9	7.1	5.2	7.3	5.1	7.7	5.0	8.1	5.0
80 (9.0)	8.1	6.1	8.3	6.3	8.8	6.2	9.0	6.6	9.3	6.6	9.7	6.4	10.3	6.3
100 (11.2)	10.0	7.5	10.3	7.7	10.9	7.6	11.2	8.1	11.5	8.0	12.1	7.9	12.8	7.8

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.2	4.9	3.1	5.2	3.1
63 (7.1)	6.3	4.8	6.4	4.9	6.8	4.9	7.1	5.2	7.3	5.1	7.7	5.1	8.2	5.0
80 (9.0)	8.0	6.1	8.1	6.2	8.7	6.2	9.0	6.6	9.2	6.5	9.8	6.5	10.4	6.4
100 (11.2)	10.0	7.5	10.1	7.7	10.8	7.6	11.2	8.1	11.5	8.0	12.2	7.9	12.9	7.8

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.7	3.2	5.0	3.2	5.4	3.2
63 (7.1)	6.3	4.8	6.4	4.9	6.9	4.9	7.1	5.2	7.4	5.2	7.9	5.1	8.4	5.1
80 (9.0)	8.0	6.1	8.2	6.2	8.8	6.2	9.0	6.6	9.4	6.6	10.0	6.6	10.7	6.5
100 (11.2)	9.9	7.5	10.1	7.7	10.9	7.6	11.2	8.1	11.7	8.1	12.5	8.0	13.3	7.9

* The capacity does not depend on the outdoor temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

5-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PCFY-WL-VKM-E

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
40 (4.5)	4.1	3.0	4.2	3.1	4.4	3.0	4.5	3.2	4.5	3.1	4.5	3.0	4.5	2.9
63 (7.1)	6.4	4.8	6.6	5.0	6.9	4.9	7.1	5.2	7.1	5.1	7.1	4.8	7.1	4.6
80 (9.0)	8.1	6.2	8.3	6.3	8.8	6.2	9.0	6.6	9.0	6.5	9.0	6.2	9.0	5.9
100 (11.2)	10.1	7.6	10.4	7.8	10.9	7.6	11.2	8.1	11.2	7.9	11.2	7.5	11.2	7.2

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

6-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.8	1.2	1.9	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.1	2.5
40 (4.5)	4.0	3.0	4.1	3.0	4.4	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.8	4.4	6.0	4.3	6.4	4.2
63 (7.1)	6.4	5.0	6.5	5.1	6.9	5.1	7.1	5.4	7.3	5.3	7.7	5.2	8.1	5.2
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.3	6.7	9.7	6.6	10.3	6.5

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.5	1.1	1.6	1.1	1.7	1.2	1.7	1.2	1.9	1.2	2.0	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.5	2.2	1.6	2.3	1.6	2.4	1.6	2.5	1.6
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.0	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.7	2.6	3.9	2.6	4.2	2.5
40 (4.5)	4.0	2.9	4.1	3.0	4.3	3.0	4.5	3.2	4.6	3.1	4.9	3.1	5.2	3.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.1	4.2	5.4	4.1	5.6	4.4	5.7	4.4	6.1	4.3	6.5	4.3
63 (7.1)	6.3	5.0	6.4	5.1	6.8	5.0	7.1	5.4	7.3	5.3	7.7	5.3	8.2	5.2
80 (9.0)	8.0	6.3	8.1	6.4	8.7	6.4	9.0	6.8	9.2	6.7	9.8	6.7	10.4	6.6

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.3	0.9	1.3	0.9	1.4	0.9
15 (1.7)	1.5	1.1	1.5	1.2	1.7	1.1	1.7	1.2	1.8	1.2	1.9	1.2	2.0	1.2
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.5	2.2	1.6	2.3	1.6	2.5	1.6	2.6	1.6
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.0	2.9	2.0	3.1	2.0	3.3	2.0
32 (3.6)	3.2	2.4	3.3	2.5	3.5	2.5	3.6	2.6	3.8	2.6	4.0	2.6	4.3	2.6
40 (4.5)	4.0	2.9	4.1	3.0	4.4	3.0	4.5	3.2	4.7	3.2	5.0	3.1	5.4	3.1

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.0	5.1	4.2	5.4	4.1	5.6	4.4	5.8	4.4	6.2	4.4	6.7	4.3
63 (7.1)	6.3	4.9	6.4	5.1	6.9	5.1	7.1	5.4	7.4	5.4	7.9	5.3	8.4	5.3
80 (9.0)	8.0	6.3	8.2	6.4	8.8	6.4	9.0	6.8	9.4	6.8	10.0	6.7	10.7	6.7

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

6-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PKFY-WL-VLM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
10 (1.2)	1.1	0.9	1.1	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.2	0.9	1.2	0.8
15 (1.7)	1.5	1.1	1.6	1.2	1.7	1.1	1.7	1.2	1.7	1.2	1.7	1.1	1.7	1.1
20 (2.2)	2.0	1.5	2.0	1.6	2.1	1.6	2.2	1.6	2.2	1.6	2.2	1.5	2.2	1.5
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.0	2.8	2.0	2.8	1.9	2.8	1.8
32 (3.6)	3.2	2.5	3.3	2.5	3.5	2.5	3.6	2.6	3.6	2.6	3.6	2.5	3.6	2.3
40 (4.5)	4.1	3.0	4.2	3.0	4.4	3.0	4.5	3.2	4.5	3.1	4.5	2.9	4.5	2.8

* The capacity does not depend on the inlet-water temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PKFY-WL-VKM-E CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
50 (5.6)	5.0	4.1	5.2	4.2	5.5	4.1	5.6	4.4	5.6	4.3	5.6	4.1	5.6	4.0
63 (7.1)	6.4	5.0	6.6	5.1	6.9	5.1	7.1	5.4	7.1	5.3	7.1	5.0	7.1	4.8
80 (9.0)	8.1	6.3	8.3	6.5	8.8	6.4	9.0	6.8	9.0	6.6	9.0	6.4	9.0	6.1

* The capacity does not depend on the inlet-water temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-1. Cooling capacity with PURY-(E)P200-250YNW-A2/TR2

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.1	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.1
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.8	4.0	6.0	4.0	6.4	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-2. Cooling capacity with PURY-(E)P300-400YNW-A2/TR2

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.4	1.7	2.5	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.0	3.0	2.0	3.2	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.7	2.5	3.9	2.5	4.2	2.4
40 (4.5)	4.0	3.0	4.1	3.1	4.3	3.1	4.5	3.3	4.6	3.3	4.9	3.2	5.2	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.7	4.0	6.1	4.0	6.5	3.9

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-3. Cooling capacity with PURY-(E)P450-500YNW-A2/TR2

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.5	1.7	2.6	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.1	3.1	2.0	3.3	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.8	2.5	4.0	2.5	4.3	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.7	3.3	5.0	3.3	5.4	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.8	4.1	6.2	4.0	6.7	4.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.5	1.7	2.6	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.1	3.1	2.0	3.3	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.8	2.5	4.0	2.5	4.3	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.7	3.3	5.0	3.3	5.4	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.8	4.1	6.2	4.0	6.7	4.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.6	2.1	1.6	2.2	1.7	2.3	1.7	2.5	1.7	2.6	1.7
25 (2.8)	2.5	1.9	2.5	1.9	2.7	1.9	2.8	2.1	2.9	2.1	3.1	2.0	3.3	2.0
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.8	2.5	4.0	2.5	4.3	2.5
40 (4.5)	4.0	3.0	4.1	3.1	4.4	3.1	4.5	3.3	4.7	3.3	5.0	3.3	5.4	3.2
50 (5.6)	5.0	3.8	5.1	3.8	5.4	3.8	5.6	4.1	5.8	4.1	6.2	4.0	6.7	4.0

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

7-4. Cooling capacity with PQRY-P200-500YLM-A2/A1

PFFY-WL-VEM-A CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.2	1.7	2.2	1.6	2.2	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.8	2.0	2.8	1.9	2.8	1.8
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.6	2.5	3.6	2.4	3.6	2.2
40 (4.5)	4.1	3.1	4.2	3.1	4.4	3.1	4.5	3.3	4.5	3.2	4.5	3.1	4.5	2.9
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.6	4.0	5.6	3.8	5.6	3.6

* The capacity does not depend on the inlet-water temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-W-VCM-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.2	1.7	2.2	1.6	2.2	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.8	2.0	2.8	1.9	2.8	1.8
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.6	2.5	3.6	2.4	3.6	2.2
40 (4.5)	4.1	3.1	4.2	3.1	4.4	3.1	4.5	3.3	4.5	3.2	4.5	3.1	4.5	2.9
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.6	4.0	5.6	3.8	5.6	3.6

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

PFFY-WL-VCM-A

CA: Capacity (kW), SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.													
	21.5°C D.B. 15°C W.B.		23°C D.B. 16°C W.B.		25°C D.B. 18°C W.B.		27°C D.B. 19°C W.B.		28°C D.B. 20°C W.B.		30°C D.B. 22°C W.B.		32°C D.B. 24°C W.B.	
	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC	CA	SHC
20 (2.2)	2.0	1.6	2.0	1.7	2.1	1.6	2.2	1.7	2.2	1.7	2.2	1.6	2.2	1.6
25 (2.8)	2.5	1.9	2.6	2.0	2.7	1.9	2.8	2.1	2.8	2.0	2.8	1.9	2.8	1.8
32 (3.6)	3.2	2.4	3.3	2.4	3.5	2.4	3.6	2.5	3.6	2.5	3.6	2.4	3.6	2.2
40 (4.5)	4.1	3.1	4.2	3.1	4.4	3.1	4.5	3.3	4.5	3.2	4.5	3.1	4.5	2.9
50 (5.6)	5.0	3.8	5.2	3.9	5.5	3.8	5.6	4.1	5.6	4.0	5.6	3.8	5.6	3.6

* The capacity does not depend on the inlet-water temperature.

kcal/h = kW x 860, BTU/h = kW x 3,412

8-1. Heating capacity with PURY-(E)P200-250YNW-A2/TR2

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.5	2.5	2.0	1.8
25 (3.2)	3.2	3.2	2.6	2.2
32 (4.0)	4.0	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.4
63 (8.0)	8.1	8.0	6.4	5.6
71 (9.0)	9.1	9.0	7.2	6.3
80 (10.0)	10.1	10.0	8.0	7.0
100 (12.5)	12.6	12.5	10.0	8.8
125 (16.0)	16.2	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-2. Heating capacity with PURY-(E)P300-400YNW-A2/TR2

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-3. Heating capacity with PURY-(E)P450-500YNW-A2/TR2

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.5	2.3
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.5
63 (8.0)	8.2	8.0	6.3	5.7
71 (9.0)	9.2	9.0	7.1	6.4
80 (10.0)	10.2	10.0	7.9	7.1
100 (12.5)	12.8	12.5	9.9	8.9
125 (16.0)	16.3	16.0	12.7	11.3

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-4. Heating capacity with PURY-(E)P200-250YNW-A2/TR2 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	1.9	1.9	1.5	1.3
20 (2.5)	2.5	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.6	2.2
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.4	6.3	5.0	4.4
63 (8.0)	8.1	8.0	6.4	5.6
71 (9.0)	9.2	9.0	7.2	6.3
80 (10.0)	10.2	10.0	8.0	7.0
100 (12.5)	12.7	12.5	10.0	8.8
125 (16.0)	16.3	16.0	12.8	11.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-5. Heating capacity with PURY-(E)P300-400YNW-A2/TR2 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.0	0.9
15 (1.9)	1.9	1.9	1.4	1.2
20 (2.5)	2.6	2.5	1.9	1.6
25 (3.2)	3.3	3.2	2.4	2.0
32 (4.0)	4.1	4.0	3.0	2.6
40 (5.0)	5.1	5.0	3.7	3.2
50 (6.3)	6.5	6.3	4.7	4.0
63 (8.0)	8.2	8.0	6.0	5.1
71 (9.0)	9.2	9.0	6.7	5.8
80 (10.0)	10.2	10.0	7.5	6.4
100 (12.5)	12.8	12.5	9.3	8.0
125 (16.0)	16.4	16.0	11.9	10.2

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-6. Heating capacity with PURY-(E)P450-500YNW-A2/TR2 "COP priority mode"

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp. 15°C D.B. SHC	20°C D.B. SHC	25°C D.B. SHC	27°C D.B. SHC
10 (1.4)	1.4	1.4	1.1	1.0
15 (1.9)	2.0	1.9	1.5	1.3
20 (2.5)	2.6	2.5	2.0	1.8
25 (3.2)	3.3	3.2	2.5	2.3
32 (4.0)	4.1	4.0	3.2	2.8
40 (5.0)	5.1	5.0	4.0	3.5
50 (6.3)	6.5	6.3	5.0	4.5
63 (8.0)	8.2	8.0	6.3	5.7
71 (9.0)	9.3	9.0	7.1	6.4
80 (10.0)	10.3	10.0	7.9	7.1
100 (12.5)	12.9	12.5	9.9	8.9
125 (16.0)	16.5	16.0	12.7	11.3

* The capacity does not depend on the outdoor temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

8-7. Heating capacity with PQRY-P200-500YLM-A2/A1

All Indoor units SHC: Sensible Heat Capacity (kW)

Model size (Rated kW)	Indoor air temp.			
	15°C D.B.	20°C D.B.	25°C D.B.	27°C D.B.
	SHC	SHC	SHC	SHC
10 (1.4)	1.4	1.4	1.2	1.1
15 (1.9)	1.9	1.9	1.6	1.4
20 (2.5)	2.5	2.5	2.1	1.9
25 (3.2)	3.2	3.2	2.6	2.4
32 (4.0)	4.0	4.0	3.3	3.0
40 (5.0)	5.0	5.0	4.1	3.8
50 (6.3)	6.3	6.3	5.2	4.7
63 (8.0)	8.0	8.0	6.6	6.0
71 (9.0)	9.0	9.0	7.4	6.8
80 (10.0)	10.0	10.0	8.2	7.5
100 (12.5)	12.5	12.5	10.3	9.4
125 (16.0)	16.0	16.0	13.2	12.0

* The capacity does not depend on the inlet-water temperature. kcal/h = kW x 860, BTU/h = kW x 3,412

HYBRID CITY MULTI R32/R410A Series

4. CONTROLLER

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Controller

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System Controller

MITSUBISHI ELECTRIC's Air-conditioner Network System (MELANS) leads air conditioner management a PC browser and Network era.

▶MELANS

Use of our MELANS products enhances EFFICIENCY and QUALITY of air-conditioning, contributing to ENERGY SAVING and reduction in running cost. We offer a wide variety of MELANS products to meet all requirements - from the smallest and simplest to the largest and most complex.
We have local remote controllers and various system controllers, as well as BMS interface etc. Above all, with AE-C400E/EW-C50E, PC browser and long distance remote control (monitoring and operating) via communication Network is possible and easy.

Local Remote Controller

All of the local remote controllers feature liquid crystal and LED displays and easy to operate.

Remote Controller


PAR-41MAA


PAR-U02MEDA


PAR-CT01MA

Simple Remote Controller


PAC-YT52CRA

Wireless Remote Controller

Receiver


PAR-FA32MA
PAR-SA9CA-E


PAR-SF9FA-E


PAR-SE9FA-E


PAR-SL94B-E

Transmitter


PAR-FL32MA


PAR-SL101A-E

* For the combinations of the receiver, transmitter, and indoor unit, refer to the compatibility table on the page describing the wireless remote controller.

System Controller

Advanced Touch Controller


AT-50B

ON/OFF Remote Controller


PAC-YT40ANRA


AE-C400E


EW-C50E

AHC ADAPTER *1


PAC-IF01AHC-J

PI Controller


PAC-YG60MCA

DIDO Controller


PAC-YG66DCA

AI Controller


PAC-YG63MCA

*1 Advanced HVAC CONTROLLER

CITY MULTI

OUTDOOR UNIT

- ●S :PUMY
- ●Y :PUHY
- ●HP :PUHY-HP
- ●R2 :PURY
- ●WY :PQHY
- ●WR2 :PQRY

INDOOR UNIT

- ●PEFY ●PCFY
- ●PMFY ●PKFY
- ●PLFY ●PFFY

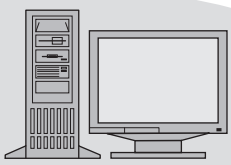
Interface

BACnet® transmission line (Ethernet)

Ethernet

MITSUBISHI ELECTRIC's CITY MULTI can be easily connected to the building management system through BACnet®.

BUILDING MANAGEMENT SYSTEM



*Some controllers cannot be used in combination with certain models of devices.

CONTROLLER

1-1. Function table of controllers

Model	Local remote controller *5						System controller *5				
	PAR-CT01MA	PAR-41MAA	PAR-U02MEDA	PAC-YT52CRA	PAR-FL32MA	PAR-SL101A-E	PAC-YT40ANRA	AT-50B	AE-C400E		EW-C50E
Controllable Groups/Indoors (Group/Indoor) *4	1/16	1/16	1/16	1/16	1/16	1/1	16/50	50/50	50/50*9		50/50*9
									AE-C400E	Browser	Browser
■Operation											
ON/OFF	○	○	○	○	○	○	◎	◎	◎ ■	◎ ■	◎ ■
Mode (cool/heat/dry/fan)	○	○	○	○	○	○	N	◎	◎ ■	◎ ■	◎ ■
Temperature setting	○	○	○	○	○	○	N	◎	◎ ■	◎ ■	◎ ■
Dual set point *6	○	○	○	○	N	○ *7	○ *8	◎	◎ ■	◎ ■	◎ ■
Local Permit/Prohibit	N	N	N	N	N	N	N	◎	◎ ■	◎ ■	◎ ■
Fan speed	○	○	○	○	○	○	N	◎	◎ ■	◎ ■	◎ ■
Air flow direction	○	○	○	○	○	○	N	◎	◎ ■	◎ ■	◎ ■
■Status monitoring											
ON/OFF	○	○	○	○	○	○	◎	◎	◎	○	○
Mode (cool/heat/dry/fan)	○	○	○	○	○	○	N	○	○	○	○
Temperature setting	○	○	○	○	○	○	N	○	○	○	○
Local Permit/Prohibit	○	○	○	○	N	N	○	○	○	○	○
Fan speed	○	○	○	○	○	○	N	○	○	○	○
Air flow direction	○	○	○	○	○	○	N	○	○	○	○
Indoor temperature	○	○	○	○	N	N	N	○	○	○	○
Filter sign	○	○	○	N	N	N	N	◎	○	○	○
Error flashing	○	○	○	○	N	N	○	◎	○	○	○
Error code	○	○	○	○	N	N	○	○	○	○	○
Operation hour	N	N	N	N	N	N	N	N	N	N	N
■Scheduling											
One day	○	○	○	N	N	N	N	○	◎ ■	◎ ■	◎ ■
ON/OFF times per day	1	1	1	N	1	1	N	16	24	24	24
Weekly	○	○	○	N	N	N	N	○	◎ ■	◎ ■	◎ ■
ON/OFF times per week	8 x 7	8 x 7	8 x 7	N	N	N	N	16 x 7	24 x 7	24 x 7	24 x 7
Annual	N	N	N	N	N	N	N	N	◎ ■	◎ ■	◎ ■
Optimized start-up	N	N	N	N	N	N	N	N	○	○	○
Auto-OFF timer	○	○	○	N	N	N	N	N	N	N	N
Min. timer setting unit (minute)	5	5	5	N	10	10	N	5	1	1	1
■Recording											
Error log	○	○	N	N	N	N	N	○	○	○	○
Daily/monthly report	N	N	N	N	N	N	N	N	N	N	N
Energy management data	N	N	N	N	N	N	N	N	○	○	○
■Other											
Temp-set limitation by Local R/C	○	○	○	○	N	N	N	N	N	N	N
Temp-set limitation by System controller	○ *2	○ *2	○	○ *2	N	N	N	○ *2	○	○	○
Operation lock	○	○	○	○	N	N	N	◎	N	N	N
Night setback	○	○	○	N	N	N	N	◎	○	○	○
Sliding temperature control	N	N	N	N	N	N	N	N	○	○	○
BACnet® connection	N	N	N	N	N	N	N	N	●	●	●
■Operating on LOSSNAY (Group/Interlocked)											
ON/OFF	N /○	N /○	N /○	N /○	N /○ *3	N /○ *3	◎/◎ *1	◎/◎	◎/◎	◎/◎	◎/◎
Fan speed	N /○	N /○	N /○	N	N	N	N	◎/◎	◎/◎	◎/◎	◎/◎
Ventilation mode	N / N	N / N	N	N	N	N	N	◎/ N	◎/ N	◎/ N	◎/ N
■Status monitoring on LOSSNAY (Group/Interlocked)											
ON/OFF	N /○	N /○	N /○	N /○	N	N	N	○/○	◎/◎	◎/◎	◎/◎
Fan speed	N /○	N /○	N /○	N	N	N	N	○/○	○/○	○/○	○/○
Ventilation mode	N	N	N	N	N	N	N	○/ N	○/ N	○/ N	○/ N
CO_2 indication	N	N	N	N	N	N	N	N	○/ N	○/ N	○/ N

◎: Each group/Batched ; ○: Each group ; ●: AE-C400E/EW-C50E license registration possible.
N : Not Available (Not Used.) ■: Block

*1. Interlock is set at Local remote controller.
*2. This function can only be set on the ME remote controller.
This function cannot be used with the MA/Simple MA remote controller.
(However, the validity of this function with the MA/Simple MA remote controller depends on the indoor unit model, and it is possible to use this function with them.)
*3. Interlock is set from system controllers (Except PAC-YT40ANRA) or local remote controllers.
*4. The maximum number of controllable units decreases depending on the indoor unit model.
*5. For indoor use only.
*6. This function is supported only when all of the indoor units, remote controllers, and system controllers that are connected to a given group features said function.
*7. Function setting of this remote controller is necessary.
*8. Please contact your local distributor regarding the availability of this function.
*9. The maximum number of connectable units depends on the model. Refer to the Technical Manual.

2-1. MA Touch Remote Controller [PAR-CT01MAA-S]



Dual Set Point

- Backlit LCD
- Color LCD
- Can be set and shown by 0.5°C/1°F.

■ Functions

1. Operation/Display

○:Available ×:Not available

Item	Description	Setting	Display
ON/OFF	Switches between ON and OFF.	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Auto/Heat.	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes fan speed. * Available fan speeds vary depending on the model.	○	○
Air flow direction setting	Changes airflow direction. * Available airflow directions vary depending on the model.	○	○
Louver setting	Switches between louver ON/OFF.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Auto descending panel *1	Raises and lowers the automatic elevating panel.	○	○
Touch panel & Backlit full color LCD	Pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen. The color of the background can be changed.	○	○
Main display mode setting	The Main display can be displayed in two different modes: "Full" and "Basic." The icon explanation setting can be enabled or disabled.	○	○
Clock *2	Date (year/month/day) and time (hour/minute) can be set. The set time as well as the day of the week will be displayed on the Main display. It is also possible to set not to display the time on the Main display. The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.	○	○
Daylight saving time	The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the settings.	○	×
Room temp. display	The room temperature display can be enabled or disabled.	—	○
Error information	When an error occurs, an error code and the unit address appear. The air-conditioning unit model, serial number, and contact number can be set to appear when an error occurs. (The above information needs to be entered in advance.) * An error code may not appear depending on the error.	—	○
Filter information	A filter sign will appear when it is time to clean the filter.	—	○
Touch panel	The touch panel can be cleaned and calibrated.	○	—
Remote controller information	The version of the remote controller can be checked.	—	○

2. Schedule and timer setting

○: Available ×: Not available

Item	Description	Setting	Display
Timer	ON/OFF timer Turns ON and OFF daily at a set time. • Time can be set in 5-minute increments. • It is also possible to set the ON time only or the OFF time only. Auto-OFF timer Turns off the unit after a certain period of operation. • Operation time can be set to a value from 30 to 240 minutes in 10-minute increments.	○	○
Weekly timer	Weekly ON/OFF times and set temperatures can be set. • Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week. * Not valid when the ON/OFF timer is set.	○	○
Night setback	The temperature range and the start/stop times can be set.	○	○

3. Restriction settings

○: Available ×: Not available

Item	Description	Setting	Display
Allows/disallows local operation	The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode setting, temperature setting, and filter sign reset. * While an operation is prohibited, the operation icon lights up (only on the Main display in "Full" mode).	×	○
Operation lock	The following operations can be prohibited: "Location," "On/Off," "Mode," "Set temp.," "Menu," "Fan," "Louver," or "Vane."	○	○
Temperature range restriction	The room temperature range for each operation mode can be restricted.	○	○
Auto return	The units operate at the preset temperature after a designated period. (Time can be set to a value from 30 to 120 minutes in 10-minute increments.) * Not valid when the temperature setting range is restricted.	○	×
Password	Administrator password (required for schedule setting etc.) and Maintenance password (required for test run and function setting etc.) can be set.	○	×

4. Miscellaneous items

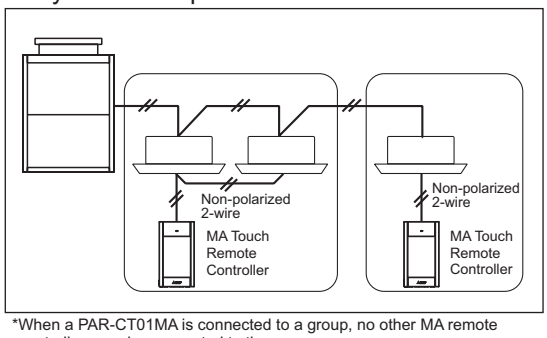
○: Available ×: Not available

Item	Description	Setting	Display
Language Selection	English, French, Spanish, Italian, Portuguese, Greek, Turkish, Swedish, German, Dutch, Russian, Czech, Hungarian, Polish	○	○
Brightness	The brightness of the LCD can be adjusted. The "Stay lit" setting can be enabled or disabled.	○	○
Manual vane Angle *1	Fixes the vane position for each air outlet.	○	×
Service *1	Contains Test run, Function setting, Request code, and Error history.	○	○
3D i-see Sensor	Settings for 3D i-see Sensor can be made.	○	○
Design	The color of the background or character can be changed.	○	○

*1 This function is active only for the units that support the function.

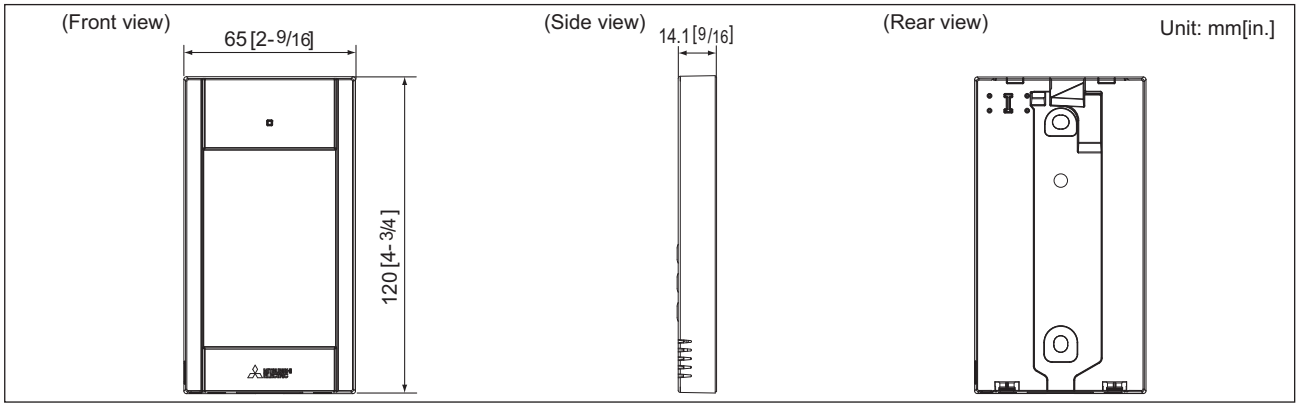
*2 The clock is accurate within 50 seconds per month (at the temperature of 25ºC [77°F]). The clock is backed up for 7 days.

■ System example



*When a PAR-CT01MA is connected to a group, no other MA remote controllers can be connected to the same group.

■ External dimension



CONTROLLER

2-2. MA Touch Remote Controller [PAR-CT01MAA-SB/PAR-CT01MAR-SB]



Dual Set Point

- Backlit LCD
- Color LCD
- Can be set and shown by 0.5°C/1°F.

■ Functions

1. Operation/Display

○:Available ×:Not available

Item	Description	Setting	Display
ON/OFF	Switches between ON and OFF.	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Auto/Heat.	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes fan speed. * Available fan speeds vary depending on the model.	○	○
Air flow direction setting	Changes airflow direction. * Available airflow directions vary depending on the model.	○	○
Louver setting	Switches between louver ON/OFF.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Auto descending panel *1	Raises and lowers the automatic elevating panel.	○	○
Touch panel & Backlit full color LCD	Pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen. The color of the background can be changed.	○	○
Main display mode setting	The Main display can be displayed in two different modes: "Full" and "Basic." The icon explanation setting can be enabled or disabled.	○	○
Clock *2	Date (year/month/day) and time (hour/minute) can be set. The set time as well as the day of the week will be displayed on the Main display. It is also possible to set not to display the time on the Main display. The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.	○	○
Daylight saving time	The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the settings.	○	×
Room temp. display	The room temperature display can be enabled or disabled.	—	○
Error information	When an error occurs, an error code and the unit address appear. Air conditioning unit model, serial number, and contact number can be set to appear when an error occurs. (The information above needs to be entered in advance.) * An error code may not appear depending on the error.	—	○
Filter information	A filter sign will appear when it is time to clean the filter.	—	○
Touch panel	The touch panel can be cleaned and calibrated.	○	—
Bluetooth connection, Bluetooth, Screen update	The Bluetooth connection information can be acquired. Using an Application, a logo image as well as settings data can be sent to the remote controller.	○	○
Remote controller information	The version of the remote controller can be checked.	—	○

2. Schedule and timer setting

○: Available ×: Not available

Item	Description	Setting	Display
Timer	ON/OFF timer Turns ON and OFF daily at a set time. • Time can be set in 5-minute increments. • It is also possible to set the ON time only or the OFF time only. Auto-OFF timer Turns off the unit after a certain period of operation. • Operation time can be set to a value from 30 to 240 minutes in 10-minute increments.	○	○
Weekly timer	Weekly ON/OFF times and set temperatures can be set. • Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week. * Not valid when the ON/OFF timer is set.	○	○
Night setback	The temperature range and the start/stop times can be set.	○	○

3. Restriction settings

○: Available ×: Not available

Item	Description	Setting	Display
Allows/disallows local operation	The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode setting, temperature setting, and filter sign reset. * While an operation is prohibited, the operation icon lights up (only on the Main display in "Full" mode).	×	○
Operation lock	The following operations can be prohibited: "Location," "On/Off," "Mode," "Set temp.," "Menu," "Fan," "Louver," or "Vane."	○	○
Temperature range restriction	The room temperature range for each operation mode can be restricted.	○	○
Auto return	The units operate at the preset temperature after a designated period. (Time can be set to a value from 30 to 120 minutes in 10-minute increments.) * Not valid when the temperature setting range is restricted.	○	×
Password	Administrator password (required for schedule setting etc.) and Maintenance password (required for test run and function setting etc.) can be set.	○	×

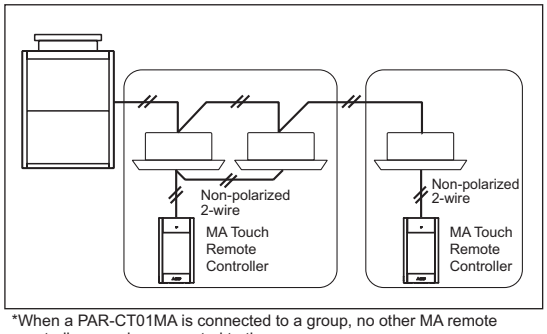
4. Miscellaneous items

○: Available ×: Not available

Item	Description	Setting	Display
Language Selection	English, French, Spanish, Italian, Portuguese, Greek, Turkish, Swedish, German, Dutch, Russian, Czech, Hungarian, Polish	○	○
Brightness	The brightness of the LCD can be adjusted. The "Stay lit" setting can be enabled or disabled.	○	○
Manual vane Angle *1	Fixes the vane position for each air outlet.	○	×
Service *1	Contains Test run, Function setting, Request code, and Error history.	○	○
3D i-see Sensor	Settings for 3D i-see Sensor can be made.	○	○
Design	The color of the background or character can be changed.	○	○

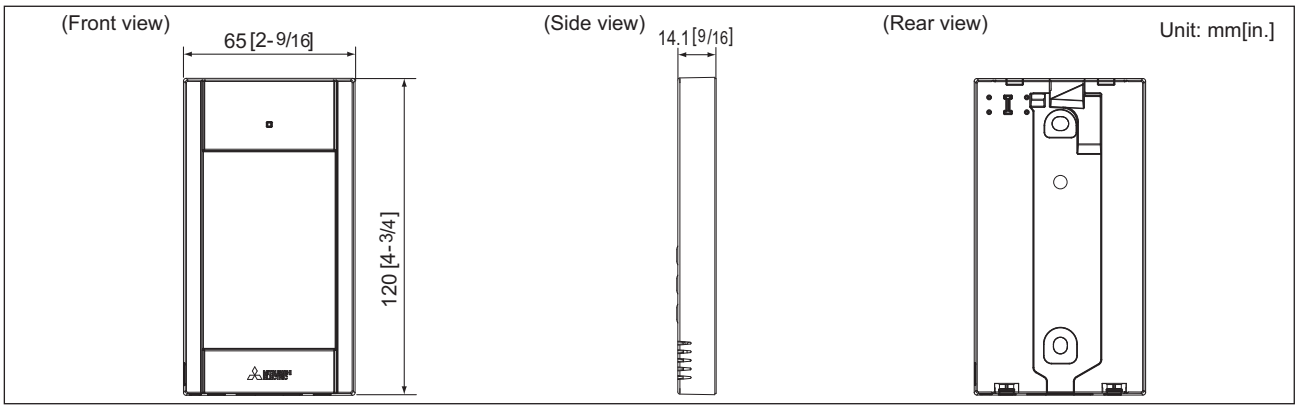
*1 This function is active only for the units that support the function.
*2 The clock is accurate within 50 seconds per month (at the temperature of 25ºC [77°F]). The clock is backed up for 7 days.

■ System example



*When a PAR-CT01MA is connected to a group, no other MA remote controllers can be connected to the same group.

■ External dimension



CONTROLLER

2-3. MA Touch Remote Controller [PAR-CT01MAA-PB/PAR-CT01MAR-PB]



Dual Set Point

- Backlit LCD
- Color LCD
- Can be set and shown by 0.5°C/1°F.

■ Functions

1. Operation/Display

○:Available ×:Not available

Item	Description	Setting	Display
ON/OFF	Switches between ON and OFF.	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Auto/Heat.	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes fan speed. * Available fan speeds vary depending on the model.	○	○
Air flow direction setting	Changes airflow direction. * Available airflow directions vary depending on the model.	○	○
Louver setting	Switches between louver ON/OFF.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Auto descending panel *1	Raises and lowers the automatic elevating panel.	○	○
Touch panel & Backlit full color LCD	Pressing any button turns the backlight on and it will stay lit for a certain period of time depending on the screen. The color of the background can be changed.	○	○
Main display mode setting	The Main display can be displayed in two different modes: "Full" and "Basic." The icon explanation setting can be enabled or disabled.	○	○
Clock *2	Date (year/month/day) and time (hour/minute) can be set. The set time as well as the day of the week will be displayed on the Main display. It is also possible to set not to display the time on the Main display. The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.	○	○
Daylight saving time	The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the settings.	○	×
Room temp. display	The room temperature display can be enabled or disabled.	—	○
Error information	When an error occurs, an error code and the unit address appear. Air conditioning unit model, serial number, and contact number can be set to appear when an error occurs. (The information above needs to be entered in advance.) * An error code may not appear depending on the error.	—	○
Filter information	A filter sign will appear when it is time to clean the filter.	—	○
Touch panel	The touch panel can be cleaned and calibrated.	○	—
Bluetooth connection, Bluetooth, Screen update	The Bluetooth connection information can be acquired. Using an Application, a logo image as well as settings data can be sent to the remote controller.	○	○
Remote controller information	The version of the remote controller can be checked.	—	○

2. Schedule and timer setting

○: Available ×: Not available

Item	Description	Setting	Display
Timer	ON/OFF timer Turns ON and OFF daily at a set time. • Time can be set in 5-minute increments. • It is also possible to set the ON time only or the OFF time only. Auto-OFF timer Turns off the unit after a certain period of operation. • Operation time can be set to a value from 30 to 240 minutes in 10-minute increments.	○	○
Weekly timer	Weekly ON/OFF times and set temperatures can be set. • Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week. * Not valid when the ON/OFF timer is set.	○	○
Night setback	The temperature range and the start/stop times can be set.	○	○

3. Restriction settings

○: Available ×: Not available

Item	Description	Setting	Display
Allows/disallows local operation	The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode setting, temperature setting, and filter sign reset. * While an operation is prohibited, the operation icon lights up (only on the Main display in "Full" mode).	×	○
Operation lock	The following operations can be prohibited: "Location," "On/Off," "Mode," "Set temp.," "Menu," "Fan," "Louver," or "Vane."	○	○
Temperature range restriction	The room temperature range for each operation mode can be restricted.	○	○
Auto return	The units operate at the preset temperature after a designated period. (Time can be set to a value from 30 to 120 minutes in 10-minute increments.) * Not valid when the temperature setting range is restricted.	○	×
Password	Administrator password (required for schedule setting etc.) and Maintenance password (required for test run and function setting etc.) can be set.	○	×

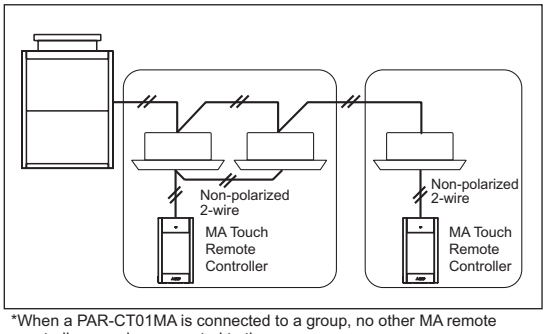
4. Miscellaneous items

○: Available ×: Not available

Item	Description	Setting	Display
Language Selection	English, French, Spanish, Italian, Portuguese, Greek, Turkish, Swedish, German, Dutch, Russian, Czech, Hungarian, Polish	○	○
Brightness	The brightness of the LCD can be adjusted. The "Stay lit" setting can be enabled or disabled.	○	○
Manual vane Angle *1	Fixes the vane position for each air outlet.	○	×
Service *1	Contains Test run, Function setting, Request code, and Error history.	○	○
3D i-see Sensor	Settings for 3D i-see Sensor can be made.	○	○
Design	The color of the background or character can be changed.	○	○

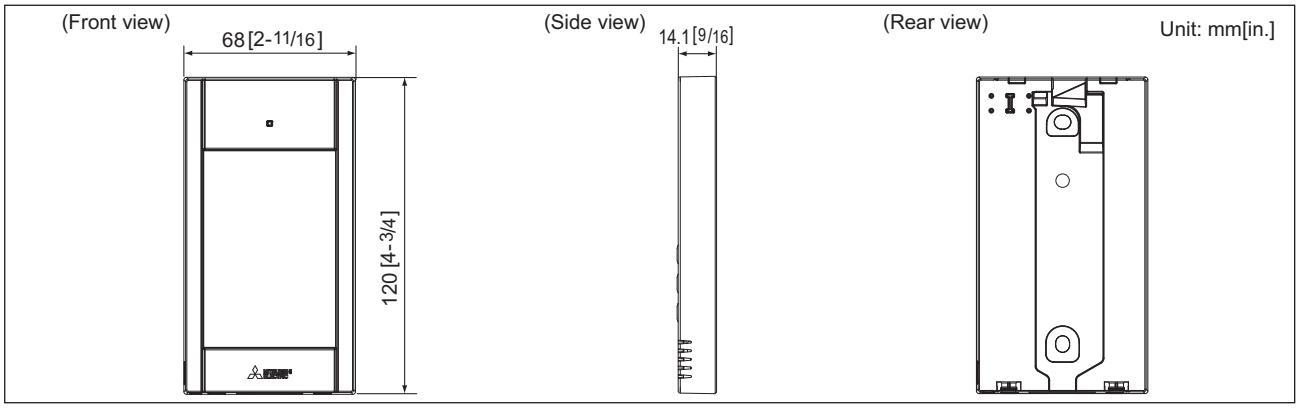
*1 This function is active only for the units that support the function.
*2 The clock is accurate within 50 seconds per month (at the temperature of 25ºC [77°F]). The clock is backed up for 7 days.

■ System example



*When a PAR-CT01MA is connected to a group, no other MA remote controllers can be connected to the same group.

■ External dimension



CONTROLLER

2-4. MA remote controller [PAR-41MAA]



Dual Set Point

- Backlit LCD
- Can be set and shown by 0.5°C/1°F.

■ Functions

1. Operation/Display

○:Available ×:Not available

Item	Description	Setting	Display
ON/OFF	Switches between ON and OFF.	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Auto/Heat.	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes fan speed. * Available fan speeds vary depending on the model.	○	○
Air flow direction setting	Changes airflow direction. * Available airflow directions vary depending on the model.	○	○
Louver setting	Switches between louver ON/OFF.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Auto descending panel *1	Raises and lowers the automatic elevating panel.	○	×
Main display mode setting	The Main display can be displayed in two different modes: "Full" and "Basic."	○	○
B&W inversion	The colors of the display can be inverted, turning white background to black and black characters to white.	○	○
Clock *2	Date (year/month/day) and time (hour/minute) can be set. The set time as well as the day of the week will be displayed on the Main display. It is also possible to set not to display the time on the Main display.	○	○
Daylight saving time	The start/end time for daylight saving time can be set. The daylight saving time function will be activated based on the setting contents.	○	×
Clock display	The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.	○	○
Room temp. display	The room temperature display can be enabled or disabled.	—	○
Error information	When an error occurs, an error code and the unit address appear. The air-conditioning unit model, serial number, and contact number can be set to appear when an error occurs. (The above information needs to be entered in advance.) * An error code may not appear depending on the error.	—	○
Filter information	A filter sign will appear when it is time to clean the filter.	—	○
Remote controller information	The version of the remote controller can be checked.	—	○

2. Schedule and timer setting

○: Available ×: Not available

Item	Description	Setting	Display
Timer	ON/OFF timer Turns ON and OFF daily at a set time. • Time can be set in 5-minute increments. • It is also possible to set the ON time only or the OFF time only. Auto-OFF timer Turns off the unit after a certain period of operation. • Operation time can be set to a value from 30 to 240 minutes in 10-minute increments.	○	○
Weekly timer	Weekly ON/OFF times and set temperatures can be set. • Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week. * Not valid when the ON/OFF timer is set.	○	○
Night setback	The temperature range and the start/stop times can be set.	○	○

3. Restriction settings

○: Available ×: Not available

Item	Description	Setting	Display
Allows/disallows local operation	The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode, set temperature, filter sign reset, air direction, fan speed and timer. * While an operation is prohibited, the operation icon lights up (only on the Main display in the "Full" mode).	×	○
Operation lock	The following operations can be prohibited: "Location," "On/Off," "Mode," "Set temp.," "Menu," "Fan," "Louver," or "Vane."	○	○
Temperature range restriction	The room temperature range for each operation mode can be restricted.	○	○
Auto return	The units operate at the preset temperature after a designated period. (Time can be set to a value from 30 to 120 minutes in 10-minute increments.) * Not valid when the temperature setting range is restricted.	○	×
Password	Administrator password (required for schedule setting etc.) and Maintenance password (required for test run and function setting etc.) can be set.	○	×

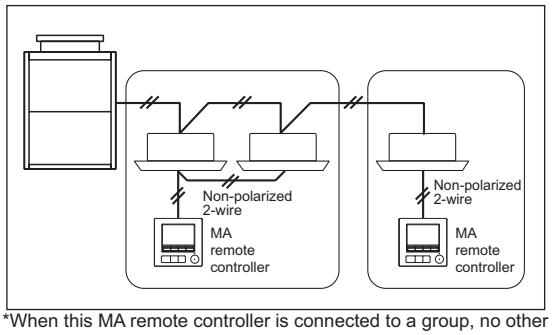
4. Miscellaneous items

○: Available ×: Not available

Item	Description	Setting	Display
Language Selection	Select the display language from the following 14 languages. English, French, Spanish, German, Italian, Dutch, Portuguese, Greek, Russian, Turkish, Czech, Hungarian, Polish, Swedish	○	○
Brightness Contrast	The brightness of the LCD can be adjusted. The contrast of the LCD can be adjusted.	○	○
Manual vane Angle *1	Fixes the vane position for each air outlet.	○	×
Service *1	Contains Test run, Function setting, Request code, and Error history.	○	○
3D i-see Sensor	Settings for 3D i-see Sensor can be made.	○	○

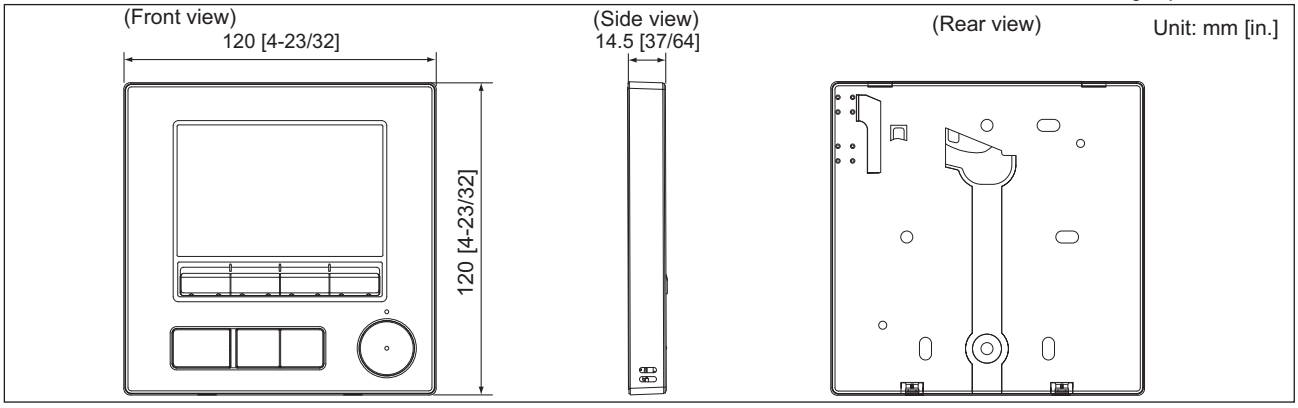
*1 This function is active only for the units that support the function.
*2 The clock is accurate within 45 seconds per month (at the temperature of 25ºC [77°F]). The clock is backed up for 3 days.

■ System example



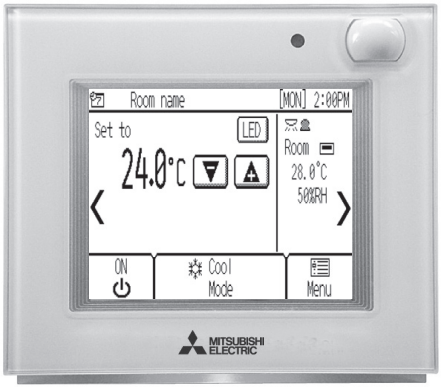
*When this MA remote controller is connected to a group, no other MA remote controllers can be connected to the same group.

■ External dimension



CONTROLLER

2-5. ME remote controller [PAR-U02MEDA]



- ME remote controller is a remote controller designed to control Mitsubishi Electric's air conditioning units and also allows for the control of other manufacturer's products connected via Mitsubishi Electric's AHC (Advanced HVAC CONTROLLER).
- It can control up to sixteen indoor units and one AHC.
- ME remote controller features such basic functions as operations and monitoring of air conditioning units and schedule-control functions and is equipped with four built-in sensors (temperature, humidity, occupancy, brightness), which enable an integrated control of the system, including the humidifiers and ventilation units connected to the system via AHC, to help create a comfortable environment.
  When the built-in occupancy sensor detects vacancy in a specific zone, the controller uses its internal function to reduce energy-consumption.

■ Functions

1. Operation/Display

○:Available ×:Not available

Item	Description	Setting	Display
ON/OFF	Switches between ON and OFF.	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Auto/Heat. *Available operation mode varies depending on the model.	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes fan speed. * Available fan speeds vary depending on the model.	○	○
Air flow direction setting	Changes airflow direction. * Available airflow directions vary depending on the model.	○	○
Louver setting	Switches between louver ON/OFF. * Available Louver setting vary depending on the model.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Backlight	Touching the screen turns the backlight on. It will stay lit for the amount of time that was specified on the MENU screen.	○	○
Clock display	Date (year/month/day) and time (hour/minute) can be set. The set time as well as the day of the week will be displayed on the Home display. The clock can be displayed in 12-hour format (AM/PM before or after the time) and 24-hour format.	○	○
Daylight saving	Sets the daylight saving time period.	○	×
Room temp. / humidity display	Displays the room temperature and humidity on the Home display.	—	○
Error information	When an error occurs, an error code and the unit address appear. A contact number can be set to appear when an error occurs. (The above information needs to be entered in the Service menu.)	—	○
Filter information	A filter sign will appear when it is time to clean the filter.	—	○

2. Schedule and timer setting

○:Available ×:Not available

Item	Description	Setting	Display
Schedule (Weekly timer)	Weekly ON/OFF times, operation mode, and set temperatures can be set. • Time can be set in 5-minute increments. Up to 8 schedule patterns can be set per day of the week. * Not valid when the ON/OFF timer is set.	○	○
Timer	ON/OFF timer Turns ON and OFF daily at a set time. • Time can be set in 5-minute increments. • It is also possible to set the ON time only or the OFF time only. Auto-OFF timer Turns off the unit after a certain period of operation. • Operation time can be set to a value from 30 to 240 in 10-minute increments.	○	○
Night setback	The temperature range and the start/stop times can be set.	○	○

3. Energy-save control assist function

○:Available ×:Not available

Item	Description	Setting	Display
Energy-save control during vacancy	When vacancy is detected by the occupancy sensor, the energy-save control assist function is activated. Four control types are available for selection: ON/OFF/Set temperature/Fan speed/Thermo-off. The brightness sensor can be used in conjunction with the occupancy sensor to detect the occupancy/vacancy status more accurately.	○	○

4. Restriction settings

○:Available ×:Not available

Item	Description	Setting	Display
Allows/disallows local operation	The following operation can be prohibited by applying certain settings on the centralized controller: ON/OFF, operation mode setting, temperature setting, fan speed, air direction, and filter sign reset. * While an operation is prohibited, the operation icon lights up.	×	○
Operation lock	The following operation can be prohibited respectively: ON/OFF, operation mode setting, temperature setting, and airflow direction setting.	○	○
Temperature range restriction	The room temperature range for each operation mode can be restricted.	○	○
Auto return	The units operate at the preset temperature after a designated period. (Time can be set to a value from 10 to 120 in 10-minute increments.) * Not valid when the temperature setting range is restricted.	○	×
Password	User password (required for schedule setting etc.) and Service password (required for test run and function setting etc.) can be set.	○	×

5. AHC control functions

○:Available ×:Not available

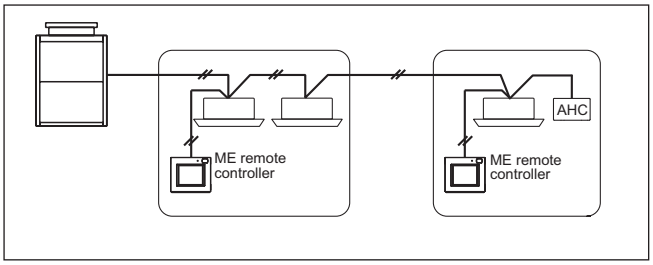
Item	Description	Setting	Display
Status monitor	Displays the status of general equipments connected to the AHC.	×	○
Humidity setting	Sets the humidity level in 1% increments for the humidifier connected to the AHC, if any.	○	○

6. Miscellaneous items

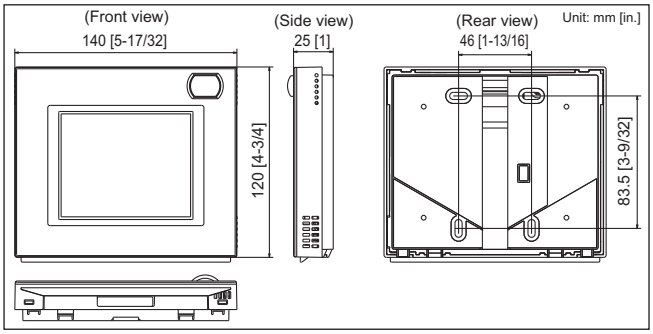
○:Available ×:Not available

Item	Description	Setting	Display
Language Selection	Select the display language from the following 9 languages. English, French, Spanish, German, Italian, Russian, Portuguese, Swedish, and Turkish.	○	○
Service	Contains Set up and Test run.	○	○

■ System example

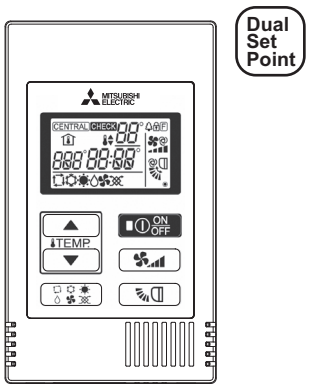


■ External dimension



CONTROLLER

2-6. Simple MA remote controller [PAC-YT52CRA]



- Control: ON/OFF, room temperature, vane, fan speed, and operation mode
- The only wiring required is cross-over wiring based on two-wire signal lines.
- Room temperature sensors are built-in.
- Set temperature range limit
- Can operate all types of indoor units

  ∗: Since this controller has limited functions, it should always be used in conjunction with standard controller or centralized controller.
- Backlit LCD
- Flat back

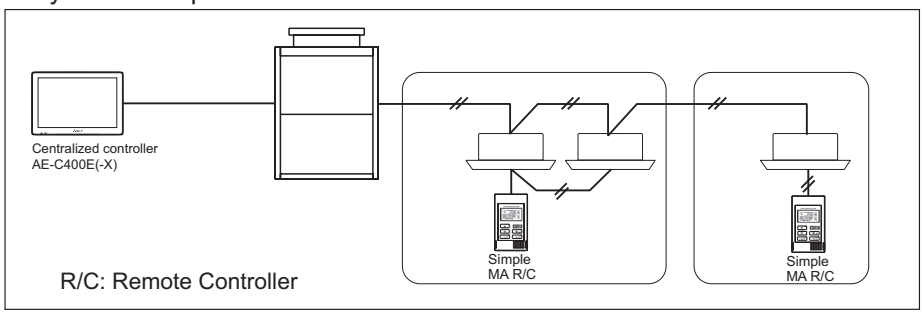
■ Functions

○:Available ×:Not available

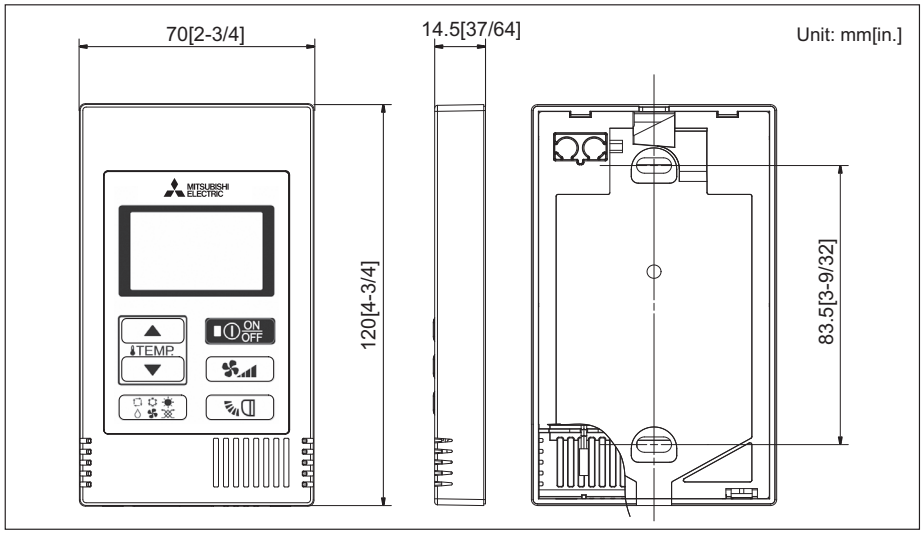
Item	Description	Setting	Display
ON/OFF	Changes between ON and OFF.	○	○
Operation mode switching *1	Select from COOL, DRYING, FAN, AUTO, and HEAT.	○	○
Temperature setting *1	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Changes the fan speed. *The settable fan speed varies depending on the indoor unit model to be connected.	○	○
Vane setting	Switches the vane directions. *The settable vane direction varies depending on the indoor unit model to be connected.	○	○
Ventilation equipment control	Interlocked setting and interlocked operation setting with City Multi LOSSNAY units can be performed. The Stop/Low/High settings of the ventilation equipment can be controlled.	○	○
Backlight	Pressing the button lights up a backlight. The light automatically turns off after a certain period of time. (The brightness settings can be selected from Bright, Dark, and Light off.)	○	○
Error information	Displays the current error status with the address. *The address may not be displayed depending on the error status.	—	○
Allows/disallows local operation	By setting a centralized controller, the following local operations can be prohibited: ON/OFF, operation mode, preset temperature; *The CENTRAL icon appears while local operations are prohibited.	×	○
Operation lock	Locks all buttons.	○	○
Temperature range restriction	The preset temperature range can be restricted for each operation mode (COOL/HEAT/AUTO).	○	○
Room temperature detection	The temperature sensor is built-in on the remote controller.	—	—
Various settings	The following settings can be made by setting the dip switches. • Remote controller Main/Sub setting • Temperature display unit setting (Celsius/Fahrenheit) • Cooling/heating display in AUTO mode • Indoor temperature display	—	—

*1 AUTO mode is settable only when those functions are available on the indoor unit.

■ System example



■ External dimension



2-7. Wireless remote controller [PAR-FL32MA/PAR-FA32MA/PAR-SA9CA-E/PAR-SL101A-E/ PAR-SE9FA-E/PAR-SF9FA-E/PAR-SL94B-E]



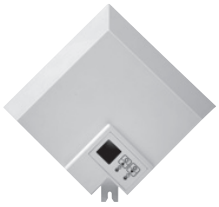
PAR-FL32MA



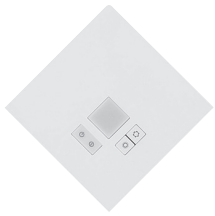
PAR-SL101A-E



PAR-FA32MA/PAR-SA9CA-E



PAR-SE9FA-E
(4-way Cassette signal receiver)



PAR-SF9FA-E
(2×2 Cassette signal receiver)



PAR-SL94B-E
(Wireless remote controller kit for ceiling-suspended type)

■ Functions (PAR-FL32MA)

○: Available ×: Not available

Item	Description	Setting	Display
ON/OFF	ON and OFF operation for a single group	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Heat/Auto. *1	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Models with 4 air flow speed settings: Hi/Mid-1/Mid-2/Low Models with 3 air flow speed settings: Hi/Mid/Low Models with 2 air flow speed settings: Hi/Low Auto setting varies depending on the model.	○*3	○*3
Air flow direction setting	Air flow direction angles (4-angle, Swing) Auto Louver ON/OFF. Air flow direction settings vary depending on the model.	○*3	○*3
Timer operation	One ON/OFF setting can be set per day.	○	○
Permit/Prohibit local operation	Individually prohibit operation of each local remote control function (ON/OFF, Change operation mode, Set temperature, Reset filter).	×	○*2
Indoor unit intake temperature	Measures the intake temperature of the indoor unit when the indoor unit is operating.	×	×
Error	When an error occurs on the air conditioner unit, the operation lamp on the signal receiving unit will flash.	×	○
Test run	This operates air conditioner units in test run mode.	○	○

■ Functions (PAR-SL101A-E)

Item	Description	Setting	Display
OFF/ON	OFF and ON operation for a single group	○	○
Operation mode switching	Switches between Cool/Dry/Fan/Heat/Auto *1/Dual set point *1	○	○
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	○	○
Fan speed setting	Models with 4 air flow speed settings: Hi/Mid-1/Mid-2/Low Models with 3 air flow speed settings: Hi/Mid/Low Models with 2 air flow speed settings: Hi/Low Auto setting varies depending on the model.	○*3	○*3
Air flow direction setting	Air flow direction angles (4-angle, Swing) Auto Louver ON/OFF. Air flow direction settings vary depending on the model.	○*3	○*3
Timer operation	One OFF/ON setting can be set for one day.	○	○
Permit/Prohibit local operation	Individually prohibit operation of each local remote control function (OFF/ON, Change operation mode, Set temperature, Reset filter).	×	○*2
Indoor unit intake	Measures the intake temperature of the indoor unit when the indoor unit is operating.	×	×
Error	When an error occurs on the air conditioner unit, the operation lamp on the signal receiving unit will flash.	×	○
Test run	This operates air conditioner units in test run mode.	○	○
Individual vane settings	The airflow directions of the four vanes can each be adjusted independently. Easily set the optimum airflow according to the room setting.	○	×
3D i-see Sensor (Direct/Indirect Airflow)	Pressing the i-see button enables direct or indirect setting of all vanes.	○	×

*1. Auto only supported for the CITY MULTI R2- and WR2-Series.
Operation modes vary depending on the air conditioner unit.
*2. If operation is performed when the local remote controller inactivation command is received from the main system controller, a buzzer will sound an LED will flash.
*3. Some models will have different display for the air flow direction and fan speed.
Set the flow direction and fan speed when performing initial setting.

2. Local remote controller

■Compatibility table

Indoor unit model	Receiver model	Transmitter model
PLFY-P VMMD-E	PAR-FA32MA	PAR-FL32MA
PEFY-P VMR-E-L/R		
PEFY-P VMS1(L)-E		
PEFY-P VMA3-E		
PEFY-P VMA(L)-E3		
PEFY-M VMA(L)-A1		
PEFY-M VMA2-A		
PEFY-P VMHS-E		
PEFY-P VMHS2-E		
PEFY-P VMHS-E-F		
PEFY-W VMS-A		
PEFY-WP VMS1-E		
PEFY-W VMA(L)-A		
PEFY-W VMA2-A		
PEFY-WP VMA-E		
PEFY-WL VMHS-A		
PFFY-P VKM-E2		
PFFY-P VLEM-E		
PFFY-P-VEM-E		
PFFY-P VCM-E		
PFFY-W VCM-A		
PFFY-WL-VCM-A		
PFFY-WL-VEM-A		

Indoor unit model	Receiver model	Transmitter model
PLFY-P VFM-E1	PAR-SF9FA-E	*1 *2 PAR-SL101A-E (PAR-FL32MA)
PLFY-WL VFM-E		
PLFY-P VEM-E	PAR-SE9FA-E	*1 *2 PAR-SL101A-E (PAR-FL32MA)
PLFY-EP VEM-E		
PLFY-M VEM6-E		
PLFY-WL VEM-E		
PLFY-EWL VEM-E		
PEFY-P VMA(L)-E4	PAR-SA9CA-E	*1 *2 PAR-SL101A-E (PAR-FL32MA)
PCFY-P VKM-E	PAR-SL94B-E(PAR-SL94B-E includes a receiver and a transmitter.)	
PMFY-P VBM-E	Built-in	PAR-FL32MA
PKFY-P VKM-E		
PKFY-P VLM-E	Built-in	*1 *2 PAR-SL101A-E (PAR-FL32MA)
PKFY-WL VLM-E		
PKFY-WL VKM-E		

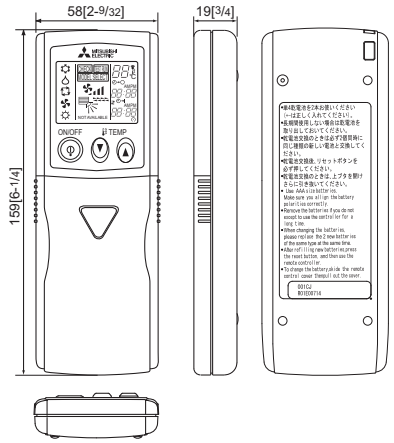
*1 Use either PAR-SL101A-E or PAR-FL32MA to control each indoor unit, not both.

*2 Multiple indoor units cannot be controlled with the PAR-SL101A-E.
Only one indoor unit can be used in each group.

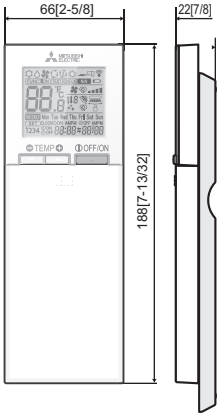
■External dimension

Unit: mm [in.]

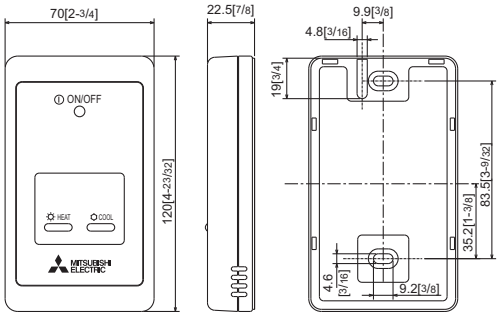
PAR-FL32MA



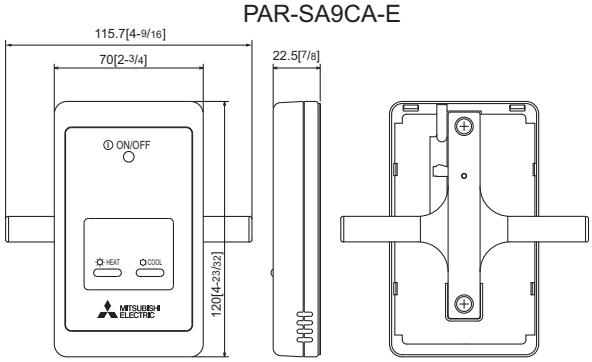
PAR-SL101A-E



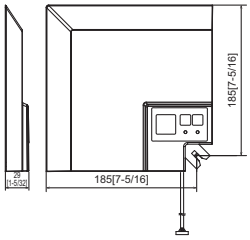
PAR-FA32MA



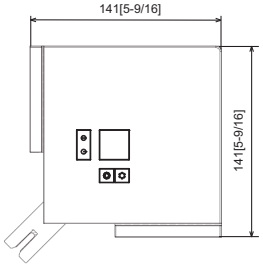
PAR-SA9CA-E



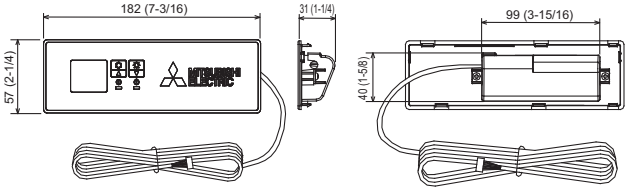
PAR-SE9FA-E



PAR-SF9FA-E



PAR-SL94B-E



2-8. LOSSNAY remote controller for LGH-RVX3-E/RVXT3-E/RVS-E [PZ-62DR-EA/EB]

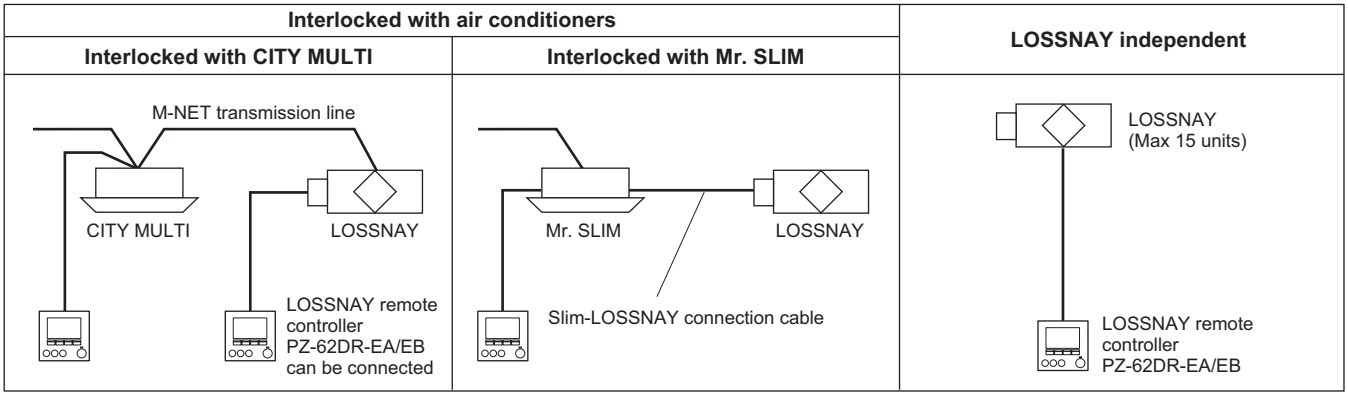


■ Functions

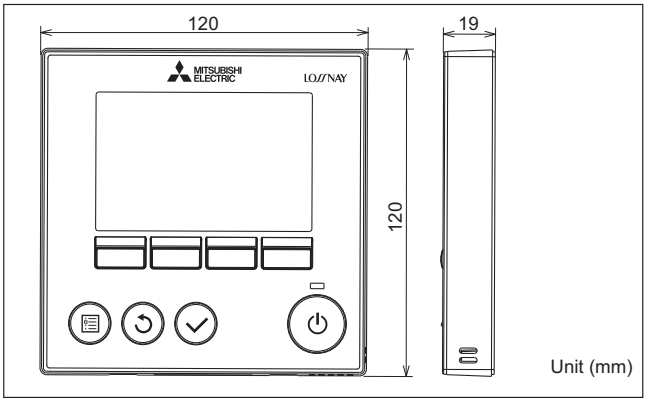
Model name	PZ-62DR-EA/EB
Compatible series	LGH-RVX3/RVXT3/RVS
Fan speed selection	4 fan speeds and Auto (Auto is available when using a CO_2 sensor)
Control with a CO_2 sensor (Mitsubishi Electric and field supply)	Yes (Fan speed automatically changes from 25% to 100% depending on the CO_2 concentration*)
Ventilation mode selection	Energy recovery/Bypass/Auto
Night-purge	Yes
Function setting from remote controller	Yes
Bypass temp. free setting	Yes
Flexible air flow setting	Yes (Both supply and exhaust fan speeds can be set separately from 25% to 100% in 5% pitches)
ON/OFF timer	Yes
Auto-off timer	Yes
Weekly timer	Yes
Fan speed timer	Yes
Operation restrictions (ON/OFF, ventilation mode, fan speed)	Yes
Operation restrictions (fan speed skip setting)	Yes
Screen contrast adjustment	Yes
Language selection	Yes (17 languages)
CO_2 concentration indication (Mitsubishi Electric and field supply)	Yes
Filter cleaning sign	Yes (Maintenance interval can be changed)
LOSSNAY core cleaning sign	Yes/No (RVS Series)
Error indication	Yes (Displays model name, serial number, contact information)
Error history	Yes
OA/RA/SA temp. display	Yes

*When using a CO_2 sensor. Upper and lower limits may differ.

■ System example



■ External dimension

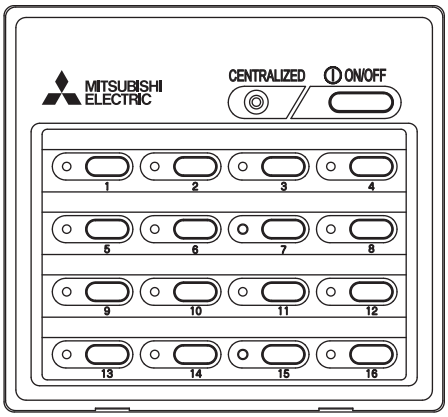


■ Remote Control Language Table

Language	English	German	Spanish	French	Italian	Russian	Portuguese	Swedish	Dutch	Turkish	Polish	Greek	Czech	Hungarian	Slovenian	Bulgarian	Danish
-EA	●	●	●	●		●			●	●	●		●	●		●	
-EB	●	●	●	●	●		●	●				●			●		●

CONTROLLER

3-1. ON/OFF remote controller [PAC-YT40ANRA]



Dual Set Point

- Control of up to 16 groups/50 indoor units is possible.
  - Up to 16 groups/50 units can be operated with one ON/OFF remote controller.
  - A general-purpose interface is available for control, allowing general devices to also be turned ON and OFF.
- Just press a switch to start.
  - All of the units can be started and stopped by pressing the main switch, and each unit in the group can be started and stopped with individual switches.
- LED flashing during failure.
  - If any error should occur in the air conditioner, its details can be confirmed easily with the flashing LED.The LED also indicates whether each group is running or stopped.
- Interlock operation with external system is possible.
  - It can be flexibly interlocked with a card reader, fire alarm system, or building management system, etc., using the incorporated external input/output function.
- Flexible group setting.
  - Groups can be easily configured, allowing the group pattern to be freely set according to the layout.
  - The ON/OFF remote controller can be connected at the indoor/outdoor transmission line without the power supply unit.

■ Functions

○: Each group △: Each floor
◎: Group or collective ×: Not available

Item	Description	Operations	Display
ON/OFF	ON and OFF operation for the air conditioner units	◎	◎
Operation mode switching	Not available	×	×
Temperature setting	Not available	×	×
Fan speed setting	Not available	×	×
Air flow direction setting	Not available	×	×
Manual operation prohibit/permit (ON/OFF, operation mode, setting temperature, filter reset)	Compatible only with external input.	×	×
Specific mode operation prohibit (Cooling prohibit, heating prohibit, cooling/heating prohibit)	Not available	×	×
Room temperature display	Not available	—	×
Error display	LED flashes during failure. (The error code can be confirmed by removing the cover.)	—	△
Schedule operation	Not available	×	×
Ventilation operation (independent)	Group operation is only possible with LOSSNAY units. ※ Only ON/OFF of group.	○	○
Ventilation operation (interlocked)	The LOSSNAY will run in interlock with the operation of the indoor unit. ※ The fan rate and mode cannot be changed. The LED will turn ON only during operation after interlocking.	△	△
External input (Timer connection, emergency stop input, etc.)	The following can be input with the level signals or pulse signals. Level signal: "Emergency stop input" or "Collective ON/OFF" Pulse signal: "Collective ON/OFF" or "Local remote controller prohibit/permit" One input can be selected from those above.	◎ *1	—
External output (Error output, operation output)	"ON/OFF" and "error/normal" are output with the level signal. ※ The optional output cable is required.	—	◎ *1

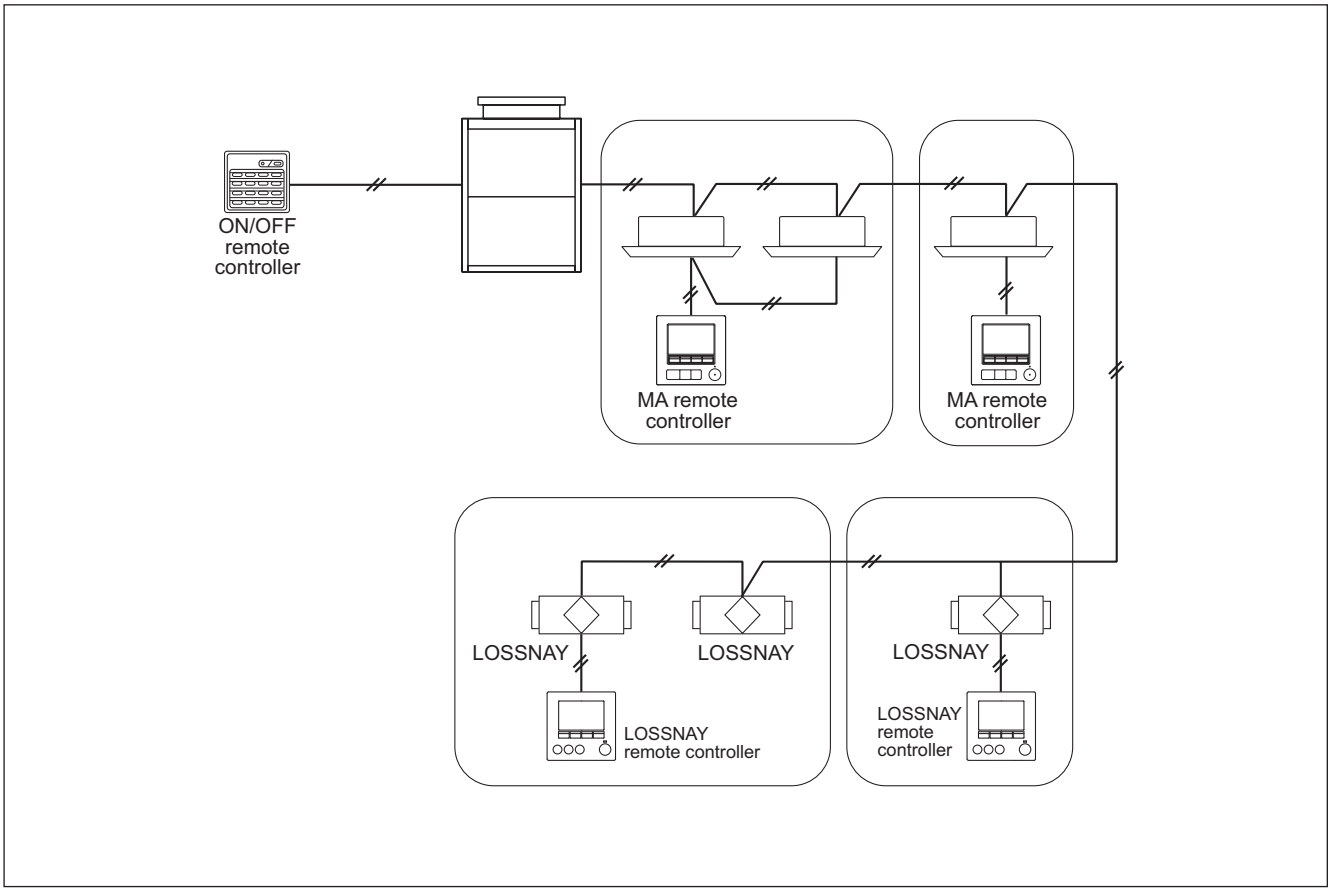
*1 Not applicable to groups

NOTE

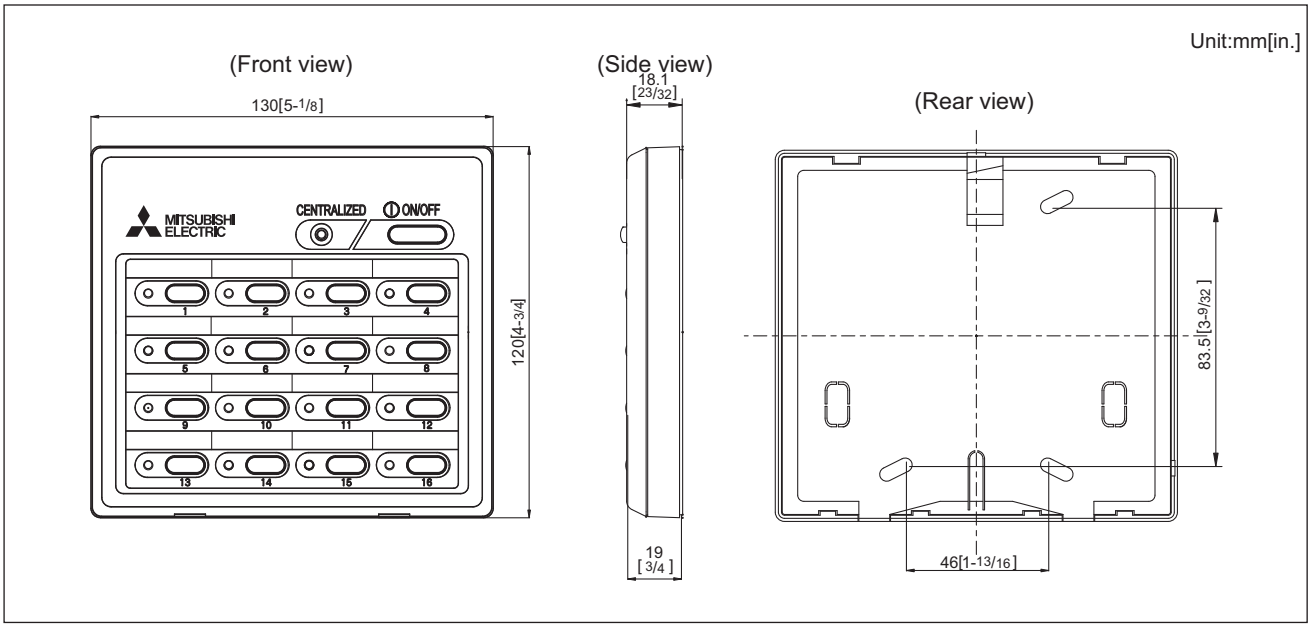
The dual set point function is available depending on the controller version.
Please contact your local distributor regarding the availability of this function.

CONTROLLER

■ System example



■ External dimension



CONTROLLER

3-2. Advanced touch controller [AT-50B]





Dual Set Point

- AT-50B features a 5 inch color LCD touch panel. The settings for air conditioning units can be changed by touching the corresponding icons on the display.
  On the panel of AT-50B are 3 buttons; ON/OFF, F1 and F2 enabling simple and quick operation.
- One AT-50B can control up to 50 groups/units of air conditioners.

Item	Description	Operations	Display
External input (Emergency stop input, etc.)	The following input with level signals or pulse signals are available. Level signal: "Emergency stop input" or "Collective ON/OFF" Pulse signal: "Collective ON/OFF" or "Local remote controller prohibit/permit" One input can be selected from those above. * An external input/output adapter (PAC-YT51HAA (sold separately)) is required. Relays and DC power supply or other devices must be prepared at the site.	◎	◎
External output (Error output, operation output)	"ON/OFF" and "error/normal" are output with the level signal. * An external input/output adapter (PAC-YT51HAA (sold separately)) is required. Relays and DC power supply or other devices must be prepared at the site.	◎	◎
Checking the Gas Amount	Use this function to check for a refrigerant leak from the outdoor unit. * When this function is used, the gas amount checking function of the outdoor unit cannot be used. This function is for CITY MULTI R2 and Y(PUMY is excluded.) Series only.	□	□
Main system controller /Sub system controller	AT-50B can be set to Sub System controller. When connecting multiple system controllers, designate the system controller with many functions as the "Main", and set the system controllers with few functions as the "Sub".	✓	–
Function Buttons (F1 Button, F2 Button)	The F1 button and the F2 button can be set as a run button of the following collective operation. (Setback/Schedule/Operation Mode/Temperture Correction/Remote Controller Prohibition)	◎	◎

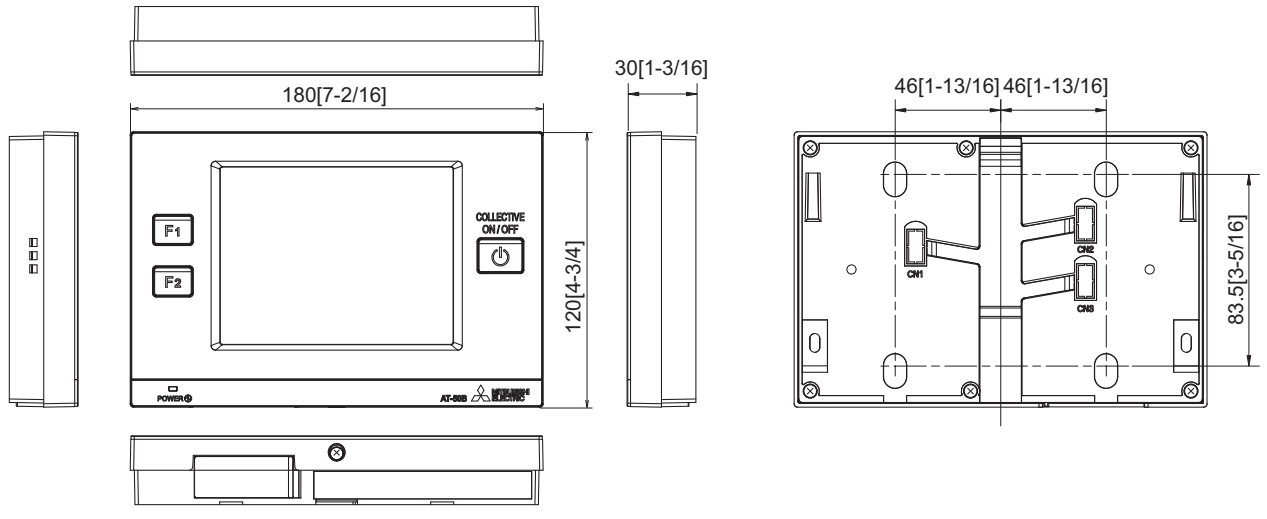
■ Functions

□: Each unit ○: Each group ●: Each block
✓: Available ◎: Group or collective ×: Not available

Item	Description	Operations	Display
ON/OFF	ON and OFF operation for the air conditioner units. The Batch Operation ON/OFF button will light up when one or more air conditioning units are operated.	◎	◎
Operation mode switching	Switches between Cool/Dry/Auto/Fan/Heat Operation modes vary depending on the air conditioner unit. Auto mode is for CITY MULTI R2- and WR2-Series only.	◎	◎
Temperature setting	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.	◎	◎
Fan speed setting	Models with 5 air flow speed settings: Hi/Mid-1/Mid-2/Low, Auto Models with 4 air flow speed settings: Hi/Mid-1/Mid-2/Low Models with 3 air flow speed settings: Hi/Mid/Low Models with 2 air flow speed settings: Hi/Low * Fan speed setting (including Auto) varies depending on the model.	◎	○
Air flow direction setting	Air flow direction angles 4-angle or 5-angle, Swing, Auto Louver ON/OFF * Air flow direction settings vary depending on the model.	◎	○
Permit/Prohibit	The ON/OFF, operation mode, setting temperature, fan speed, air direction, filter sign reset operations, and timer using the local remote controllers can be prohibited. Only ON/OFF and filter reset can be prohibited for the LOSSNAY group. * The settable items vary depending on the models.	◎	◎
Operation lock	The operation lock can be set to the input operation of the AT-50B. Each button can be set. (Function Button 1, Function Button2, Collective ON/OFF,Touch Panel) Each function can be set. (Operation mode, Setting temperature, Fan speed, Menu button) The password for the lock release can be set.	◎	◎
Error display	When an error is occurring on an air conditioner unit, the affected unit and the error code are displayed. * When an error occurs, the "ON/OFF" LED flashes. The operation monitor screen shows an abnormal icon over the unit. The error monitor screen shows the abnormal unit address and error code. The error log monitor screen shows the time and date, the abnormal unit address, error code, and source of detection.	×	□◎
Schedule operation	Weekly schedule setting of up to 12 patterns is available. In one pattern, up to 16 settings of "ON/OFF", "Operation mode", "Set Temperature", "Fan speed", "Air flow direction", and "Permit / Prohibit local operation" can be scheduled. Two types of weekly schedules (Summer/Winter) can be set. Today's schedule allows setting of up to 5 patterns. * Time setting unit: 5 minute /unit	○	○
Night setback setting	This function helps keep the indoor temperature in the temperature range while the units are stopped and during the time this function is effective.	◎	◎
Ventilation (independent)	Switches the mode "Bypass/Heat recovery/Auto" for LOSSNAY groups.	◎	◎
Ventilation (interlocked)	The LOSSNAY will run in interlock with the operation of the indoor unit. The mode cannot be changed. The LED will turn ON during operation after interlocking.	◎	◎
Temperature set limitation	Batch-setting to temperature range limit in cooling, heating, and auto modes. This function cannot be used with the MA remote controller. (Depends on the indoor unit model.)	◎	◎
Specific mode operation prohibit (Cooling prohibit, heating prohibit, cooling/heating prohibit)	When set as the main controller, operation of the following modes with the local remote controllers can be prohibited: When cooling is prohibited: Cooling, dry, automatic can not be chosen. When heating is prohibited: Heating, automatic can not be chosen. When cooling/heating is prohibited: Cooling, dry, heating, automatic can not be chosen.	◎	◎
System changeover	Operation mode can be switched to an optimal mode depending on indoor temperature setting and target temperature of each group or a representative indoor unit. * When this function is used, the system changeover function of the outdoor unit cannot be used.	●	–

■ External dimension

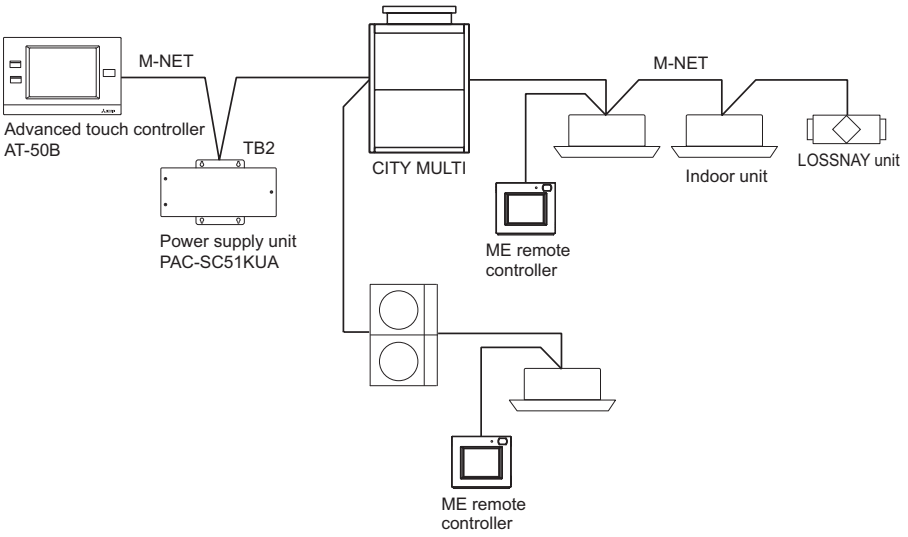
Unit: mm[in.]



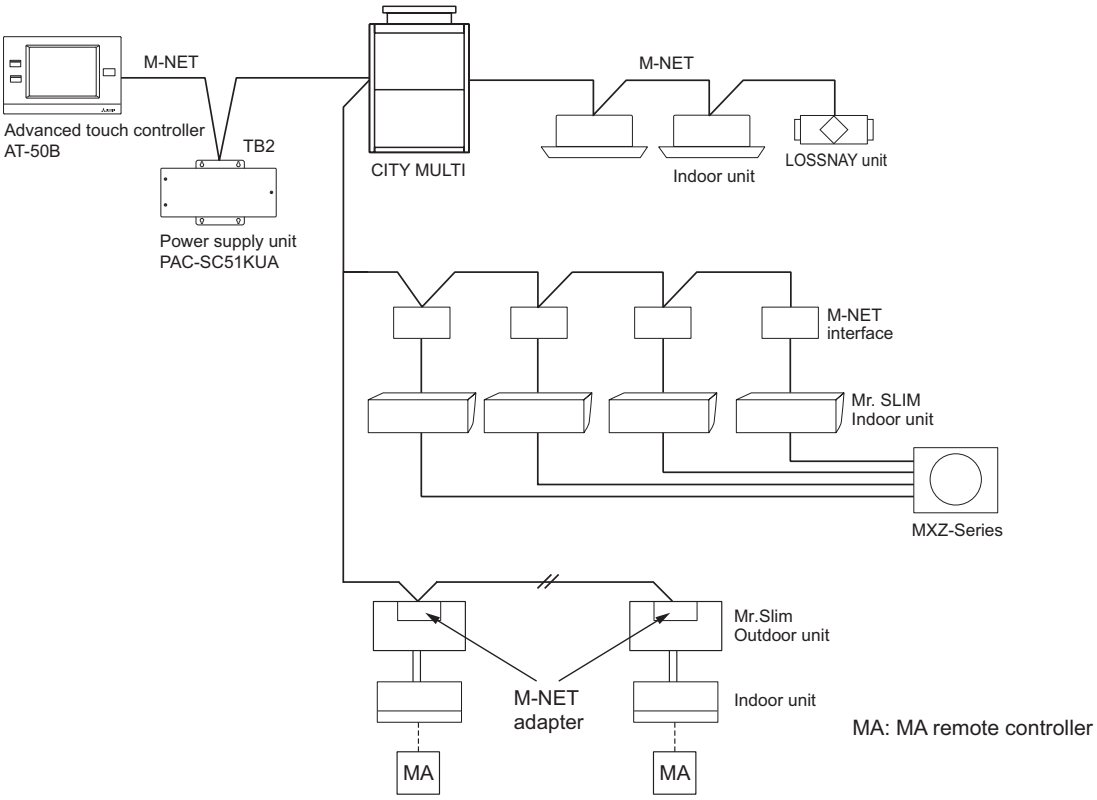
CONTROLLER

■ System example

(1) Connection with CITY MULTI units



(2) Connection with CITY MULTI and Mr.SLIM units



CONTROLLER

1. Power supply to AT-50B

AT-50B needs DC power supply of M-NET (24~32VDC) for centralized control transmission use, operation.

(1). Power supply of M-NET from power supply unit PAC-SC51KUA.
Power supply unit PAC-SC51KUA is recommended for AT-50B. See the diagram below ; for details, please refer to the installation manual of Power supply unit PAC-SC51KUA

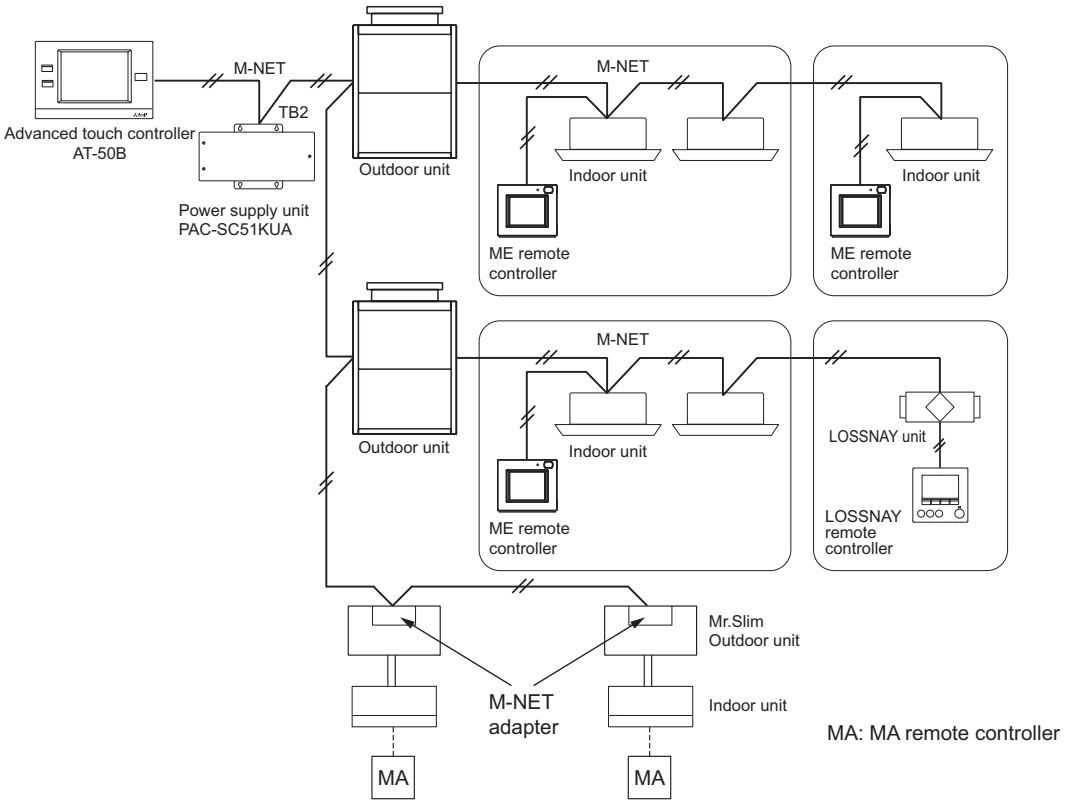


Fig. 1 Basic structure of AT-50B and PAC-SC51KUA

(2). Power supply of M-NET from outdoor unit connector TB7.
As shown on Fig. 2, AT-50B receives power supply of M-NET from R410A outdoor unit connector TB7.
In case one of the outdoor units should change its power supply, switch CN41 to CN40.
*NOTE: This method applies to R410A CITY MULTI outdoor unit except PUMY (S-Series)

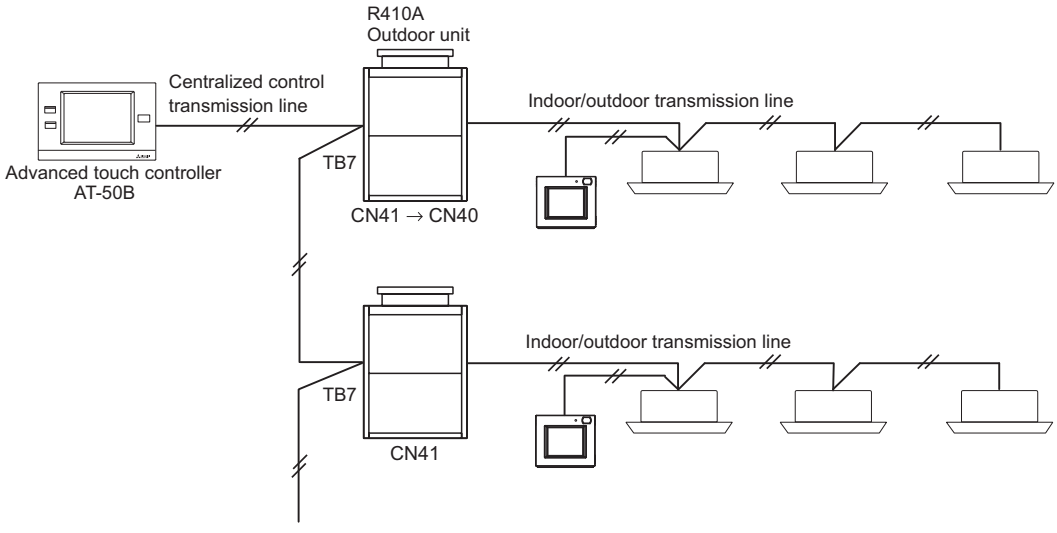


Fig. 2 AT-50B, TB7 scheme

(3) Power supply of M-NET from outdoor unit connector TB3.
AT-50B can also receive power supply from R410A/R407C/R22 outdoor unit connector TB3. However, if the outdoor unit shuts down, AT-50B will also automatically shut down. Therefore, this scheme is not recommended for air conditioning system consisting of multiple outdoor units.

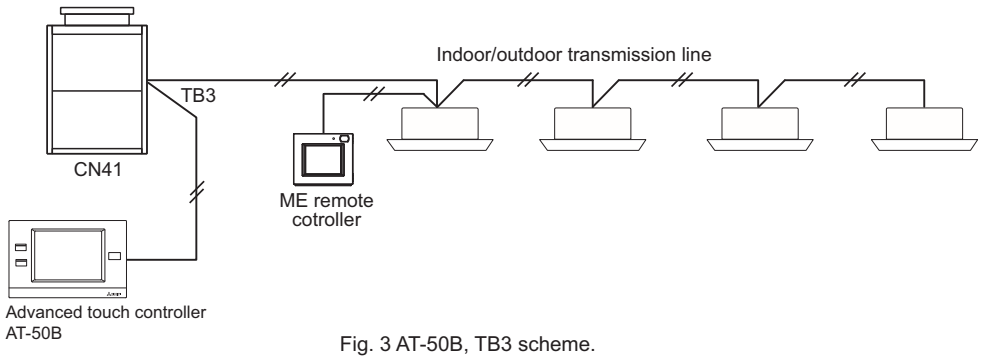
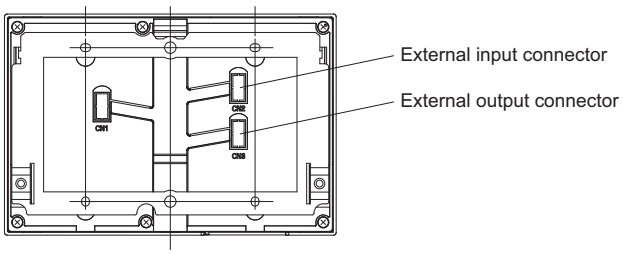


Fig. 3 AT-50B, TB3 scheme.

2. External input/output usage



(1). External signal input function

※ External signal input requires the external I/O adapter (Model: PAC-YT51HAA) sold separately.

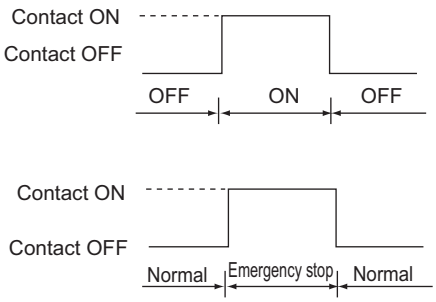
1). External input

External no-voltage contact signal can be used to send signals indicating the following status of all air conditioning units that are controlled : Emergency stop/Normal, ON/OFF, and local remote controller operation Prohibit/Permit.
The above settings can be made using the external input setting on the Initial Setting screen accessed from the Service Menu screen.

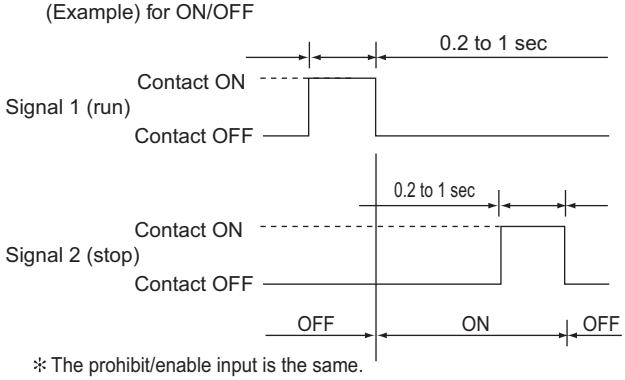
No	External signal input function	Remarks
1	Do not use external input signal (factory setting)	———
2	Execute emergency stop/normal with level signal	The local remote controller ON/OFF operations, and the controller ON/OFF operation and prohibit/enable change operations will be prohibited during emergency stop.
3	Perform ON/OFF with level signal	The local remote controller ON/OFF operations, and the controller ON/OFF operations and prohibit/enable change operations will be prohibited.
4	Perform ON/OFF, prohibit/enable with pulse signals.	Set the pulse width while the contact is ON to 0.2 to 1 sec.

2). Level signal and pulse signal

(A) Level signal



(B) Pulse signal
(Example) for ON/OFF



※ The prohibit/enable input is the same.

3). External input specifications

CN2	Lead wire	Emergency stop/normal level signal	ON/OFF, level signal	ON/OFF, prohibit/enable pulse signal
No.1	Green	Built-in power supply for external input (DC5V)		
No.2	Yellow	Emergency stop/normal input	ON/OFF input	ON input
No.3	Orange	Not used	Not used	OFF input
No.4	Red	Not used	Not used	Local remote controller operation prohibit input
No.5	Brown	Not used	Not used	Local remote controller operation enable input

(A) For level signal

① When the emergency stop/normal signal is selected, the status will change from normal to emergency stop when the external input signal contact changes from OFF to ON, and will change from emergency stop to normal when the contact changes from ON to OFF. Emergency stop signal will bring the air conditioners to stop, and canceling the emergency stop will not automatically reset these units. To go back to the previous operation status, they must be manually turned back on.

② When the ON/OFF signal is selected, the status will change from OFF to ON when the external input signal contact changes from OFF to ON, and will change from ON to OFF when the contact changes from ON to OFF.

(B) For pulse signal

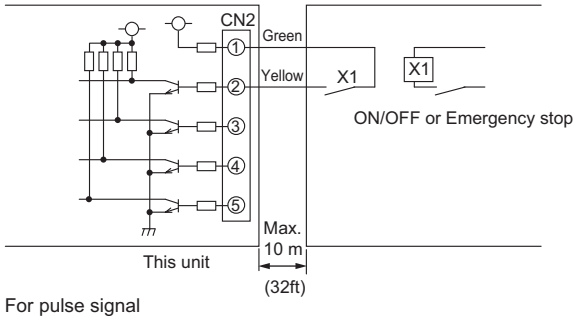
① Even if the ON signal is input during ON, the status will remain ON.

② If local remote controller operation is prohibited, ON/OFF, operation mode, set temperature, filter sign reset, fan speed, and air direction settings will be prohibited, and also timer (schedule) settings from the local remote controllers will be deactivated. Depending on the models of the connected air conditioning units and remote controllers, operation of some of the items above may not be disabled.

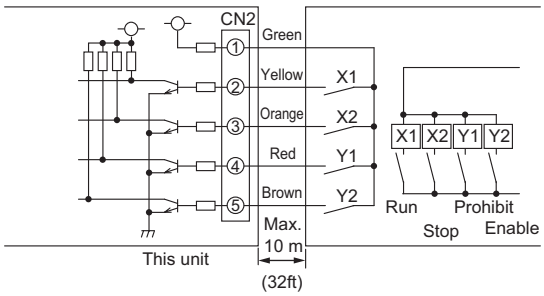
③ Set the pulse width (contact ON time) to 0.2 to 1 sec.

4). Recommended circuit example

(A) For level signal



(B) For pulse signal



① The relays and extension cables, etc. must be prepared separately at the site.
② Use a no-voltage contact and minute load relay (minimum application load 5VDC-1mA).
③ The length of the connection cable extension should not exceed 10 m (32 ft). (Use a cable of 0.3 mm^2 (22 AWG) or thicker.)
④ Cut of the cable not being used close the connector and properly insulate the cut off ends with tape or the like.

(2). External signal output function

※ External signal output requires the external I/o adapter (Model: PAC-YT51HAA) sold separately.

1). External output

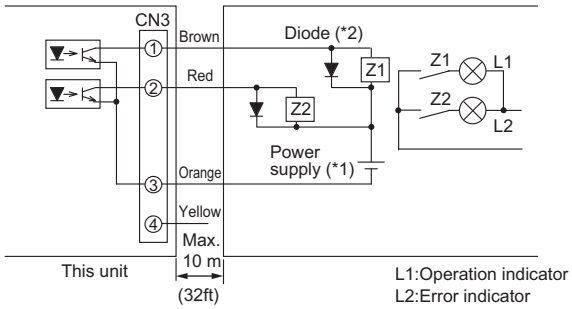
When one or more air conditioners are running, the “ON” signal will be output and if a malfunction occurs in one or more air conditioners, the “Malfunction” signal will be shown.

2). External output specifications

CN 3	Lead wire	Details of each terminal
No.1	Brown	ON/OFF
No.2	Red	Malfunction/normal
No.3	Orange	Common (External ground)
No.4	Yellow	

① " ON" signal and " Malfunction" signal will both be output.

3). Recommended circuit example

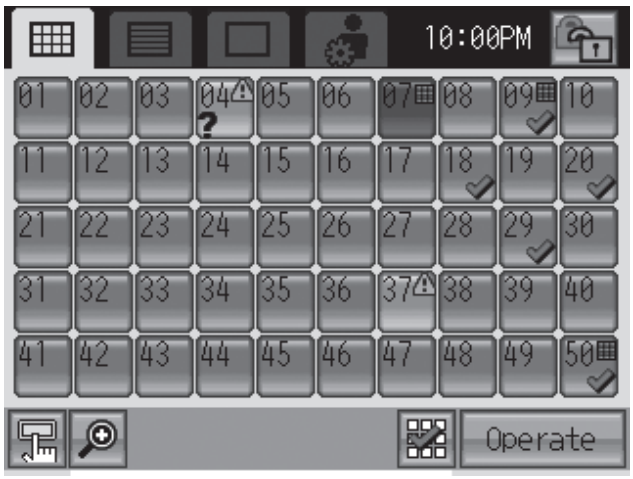


Use Z1 and Z2 relays having the following specifications.
Operation coil
Rated voltage :12VDC, 24VDC
Power Consumption : 0.9W or less
(*1)Prepare a power supply separately according to the relay being used. (12VDC or 24VDC)
(*2)Always insert a diode on both ends of the relay coil.

① Each element will turn on while ON operation or a malfunction occurs.
② The connection cable can be extended up to 10m (32ft).
③ The relays, lamps, diodes and extension cables, etc, must be prepared separately at the site.

CONTROLLER

3. Screens of AT-50B



GRID (S)



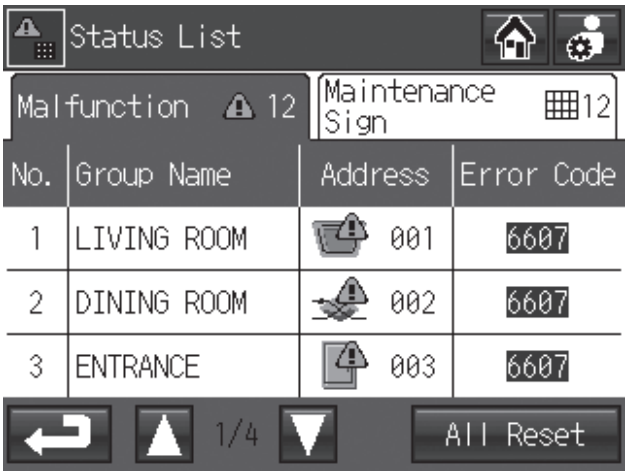
GRID (L)



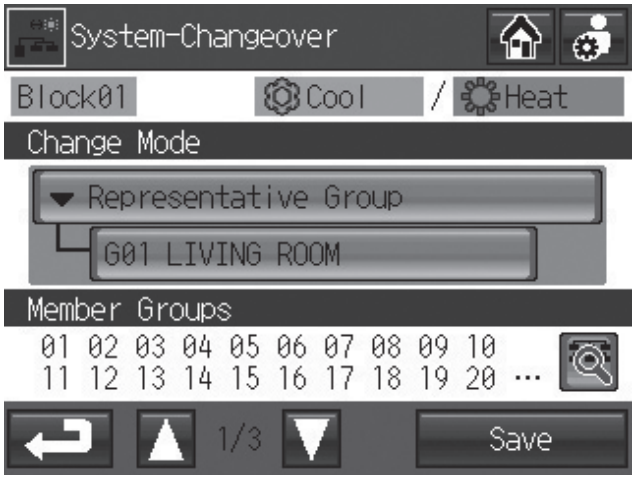
LIST



GROUP

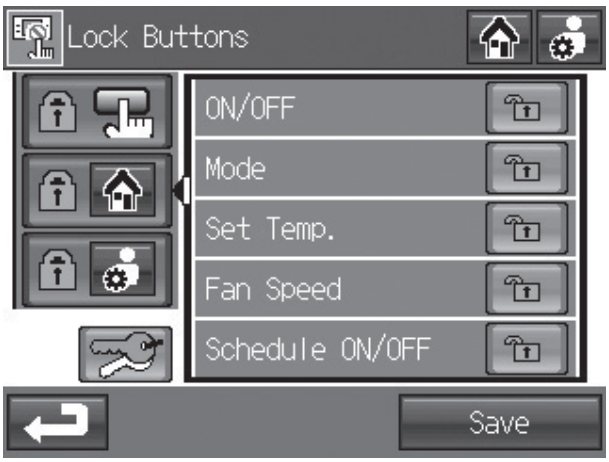


Status List

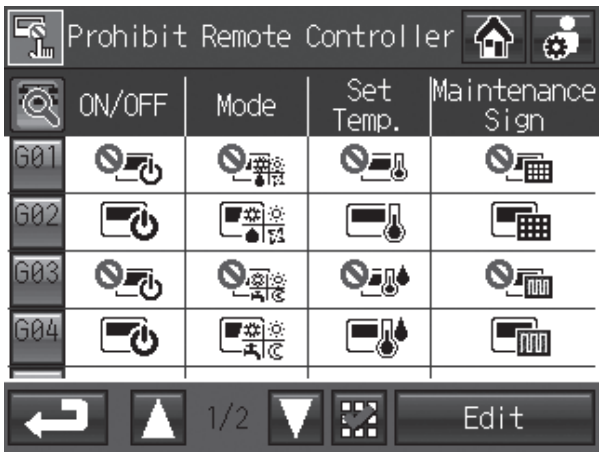


System-Changeover

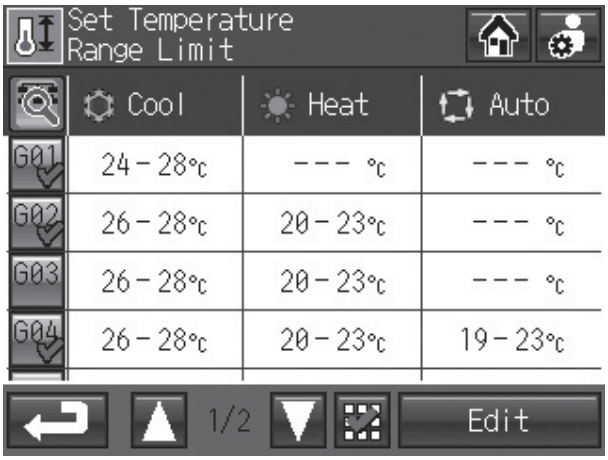
CONTROLLER



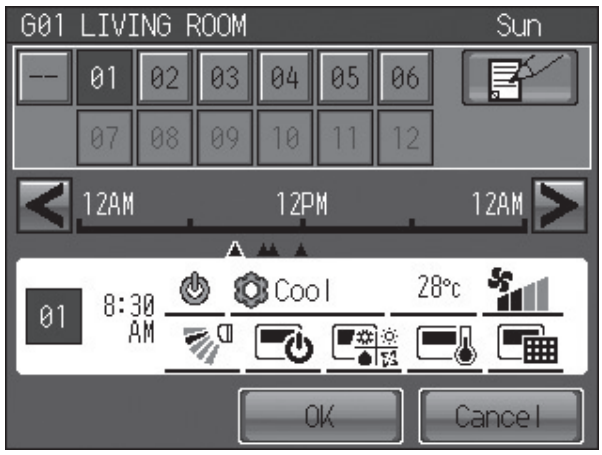
Operation Lock



Prohibit Remote Controller



Set Temperature Range Limit



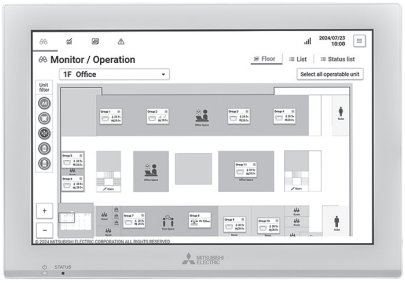
Set Schedule



Display Format

CONTROLLER

3-3. Centralized controller with LCD [AE-C400E(-X)]



A. The centralized controller of AE-C400E(-X) combines Web function, which enable the air conditioner system management on a PC browser screen. *1
The management even carried out at a long distance place via the internet.
*1 Operating system requirement: Microsoft® Windows 11® (64bit), Microsoft® Windows 10® (64bit), MacOS®
Browser requirement: Microsoft® Edge®, Google Chrome™, Safari®

B. Together with PI controller, DIDO controller, or Modbus*2, many optional functions like "Peak-cut", "Energy saving", "General equipment management", "Scheduling" etc, can be carried out. Refer to section of PI and/or DIDO controller for details on these controllers.
*2 For connectable unit models, refer to the Instruction Book (Detailed Operations) for AE-C400E(-X)/EW-C50E(-X).

C. One AE-C400E(-X) can control up to 50 units (including LOSSNAY). Up to 400 units (including LOSSNAY) can be controlled from one AE-C400E(-X) connected with seven AE-C400E(-X)/EW-C50E(-X) units.
*The maximum number of connectable units depends on the model. Refer to the Technical Manual.

D. Taking advantage of AE-C400E(-X)'s Web functions, alarming E-mail containing address and error code can be sent to appointed E-mail address upon any fault happen at the air conditioner system.
This could release standby personnel and save operation cost.

E. The interlock-control option enables interlocked operations of air conditioning unit groups and the general equipment groups, based on the changes of status in the ON/OFF, Mode, or Error signals. (Can be set from the Initial Setting Tool only)

F. CO_2 level can be indicated on AE-C400E(-X)'s LCD by connecting CO_2 sensor to LOSSNAY.

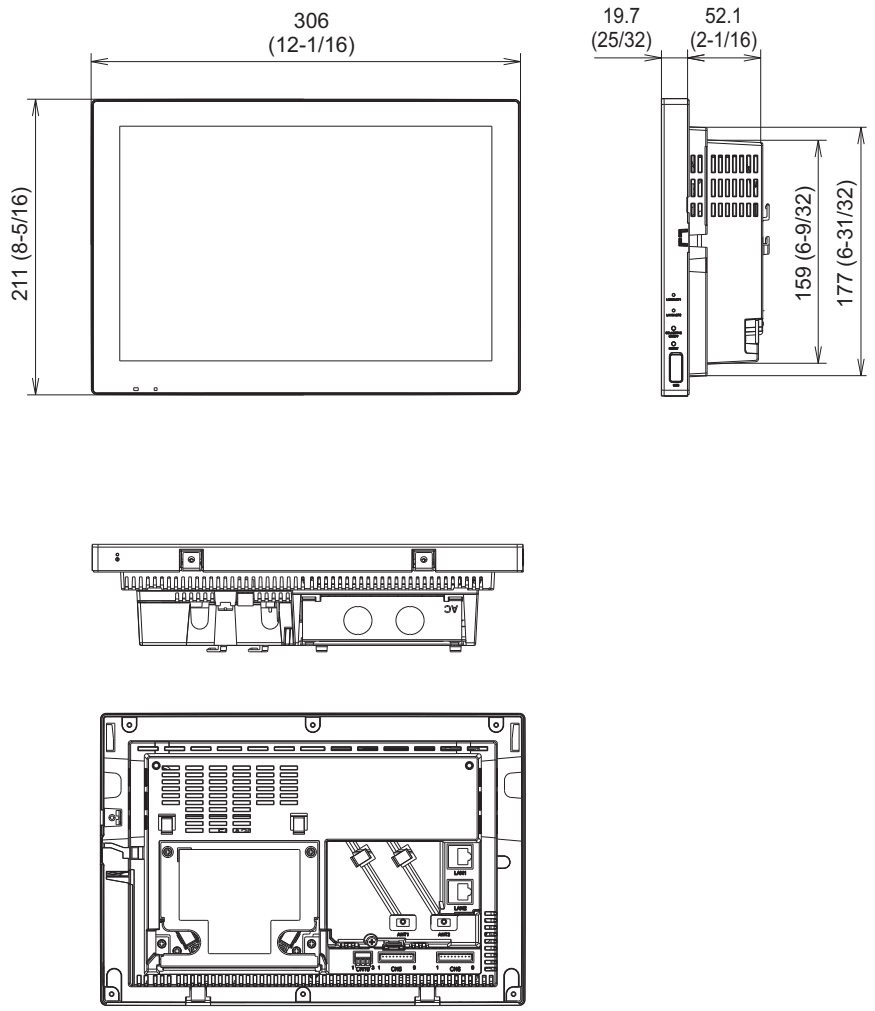
○: Available, ×: Not available

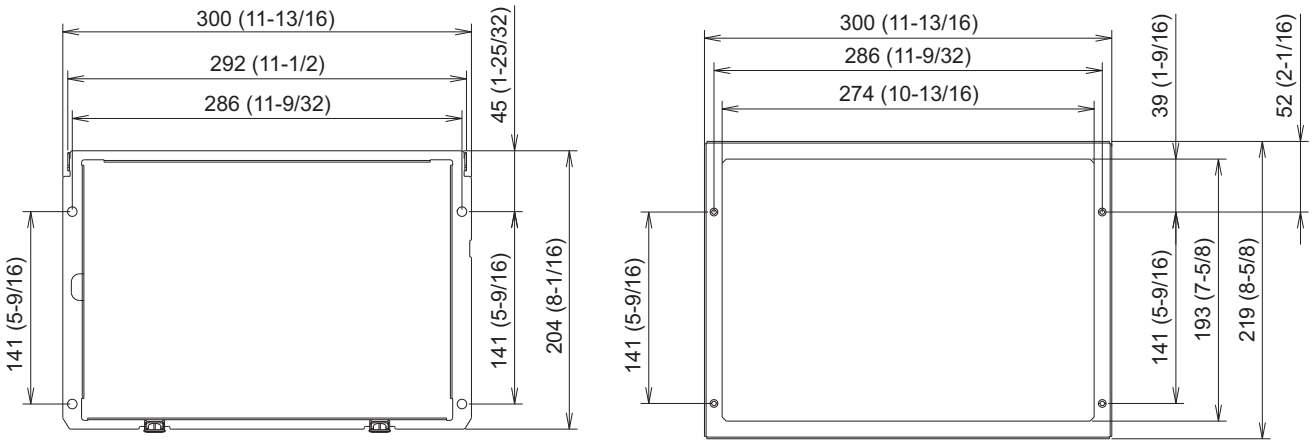
Model				Common functions			Basic functions				Schedule functions	Other functions			
				Display screen (LCD/Web)	Floor layout screen (LCD/Web)	Error display	ON/ OFF	Mode selection	Temperature setting	Temperature display	Schedule	External Input/ Output	Demand function	Charge function	Energy management
Air conditioning units		City Multi (including ZUBADAN series and Replace Multi series)		○	○	○	○	○	○	○	○	○	○	○	○
		City Multi (excluding ZUBADAN Multi-S series)	S-series	○	○	○	○	○	○	○	○	○	○	○	○
		HYBRID City Multi (HVRF)		○	○	○	○	○	○	○	○	○	○	○	○
		Air To Water (PWFY)		○	○	○	○	○	○	○	○	○	○	○	○
		Commercial PAC (PFAV, PFV/PEV)		○	○	○	○	○	○	○	○	○	○	○	○
		Mr. SLIM	P-series	○	○	○	○	○	○	○	○	○	○	○	○
			S-series	○	○	○	○	○	○	○	○	○	○	○	○
		RAC	M-series	○	○	○	○	○	○	○	○	○	○	○	○
LOSSNAY		LOSSNAY (with M-NET)		○	○	○	○	×	×	×	○	○	○	×	○
		OA processing unit [Group]		○	○	○	○	○	○	○	○	○	○	○	○
		OA processing unit [Interlocked LOSSNAY]		×	×	○	×	×	×	×	×	×	×	○	×
Refrigerant equipment	e-series	EACV/EAHV-P/M1500 (50HP)/P/M1800 (60HP)		○	○	○	○	○	○	○	○	○	×	×	○
		ERCV-M900 (30HP)		○	○	○	○	○	○	○	○	○	×	×	○
		EACV/EAHV-P900 (30HP)		○	○	○	○	○	○	○	○	○	×	×	○
	Hot Water Heat Pump	HWHP (QAHV)		○	○	○	○	○	○	○	○	○	×	×	×
		HWHP	HWHP (CAHV)	○	○	○	○	○	○	○	○	○	×	×	×
			HWHP (CRHV)	○	○	○	○	○	○	○	○	○	×	×	×
System component		PI controller (60) [PAC-YG60MCA]		○	○	○	×	×	×	×	×	×	×	×	○
		DIDO controller (66) [PAC-YG66DCA]		○	○	○	○	×	×	×	○	○	×	×	×
		AI controller (63) [PAC-YG63MCA]		○	○	○	×	×	×	○	×	×	×	×	○

CONTROLLER

External dimension

Unit: mm (in)





Front frame

Rear frame

CONTROLLER

1. Power supply to AE-C400E(-X)

AE-C400E(-X) needs AC power (100-240VAC) and M-NET; the former is for centralized control transmission use and the latter is for AE-C400E(-X)'s operating and LAN function use.
Except when the equivalent power consumption exceeds 0.75, the power supply unit, the power supply unit PAC-SC51KUA or the power supply from the outdoor unit to M-NET is not necessary.
For more details, please refer to the Installation Manual of AE-C400E(-X).

(1) The basic scheme is as follows.

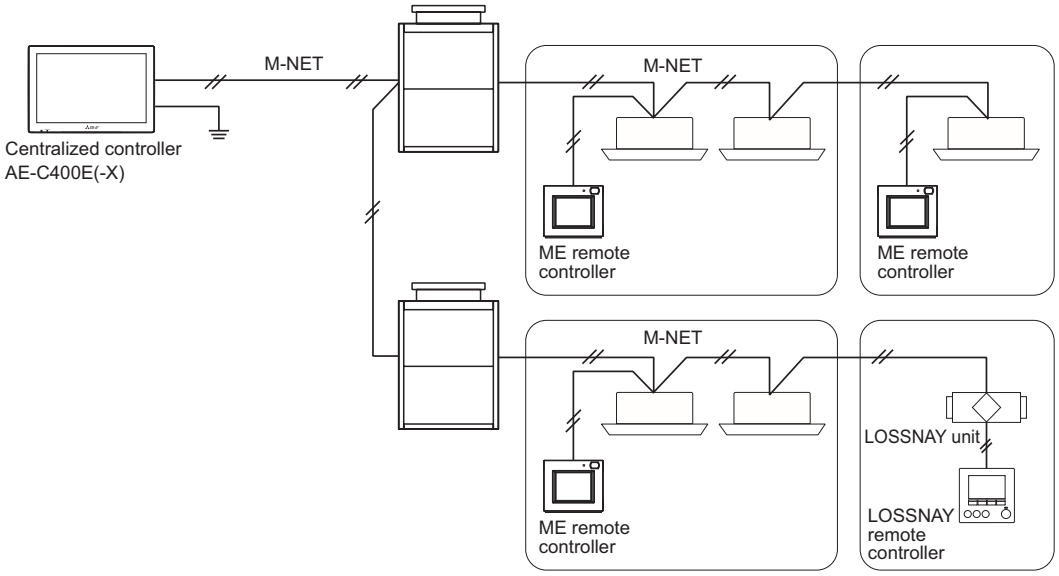


Fig.1 AE-C400E(-X) basic scheme.

2. M-NET power supply

AE-C400E(-X) has a built-in function to supply power to the M-NET transmission line.
The power supply coefficient of AE-C400E(-X)/EW-C50E(-X) is 0.75. For power supply coefficient and power consumption coefficient, refer to section 3-7. Transmission booster [PAC-SF46EPA-G].

Note:	When supplying power from the power supply units that are connected to the same centralized control transmission cable, make sure to disconnect CN21 to prevent supplying power from AE-C400E(-X)/EW-C50E(-X).

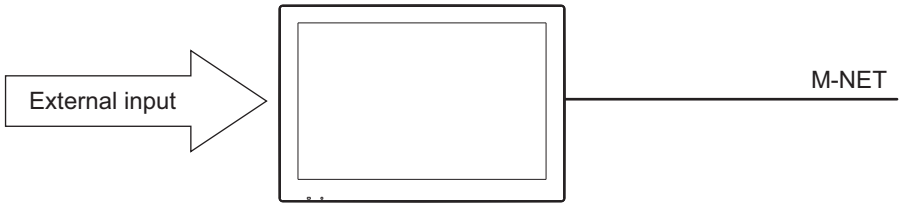
3. External input/output usage

To use external inputs, external outputs, and RS-485 input, initial settings are required.
For details, refer to the Instruction Book (Detailed Operations) for AE-C400E(-X)/EW-C50E(-X).

- To use the external signal input, an external I/O adapter (PAC-YG10HA-E; sold separately) and an external power supply are required.

Note:	When using EW-C50E(-X), connect the external input/output adapter to each AE-C400E(-X)/EW-C50E(-X). (External input signal to AE-C400E(-X) cannot perform the collective operations (e.g., emergency stop) for EW-C50E(-X) systems.)

[External input]
The external input function of the controller controls the connected units according to the external contact signals (12 V or 24 V DC) that are input to the controller.)
An external input/output adapter is required for each controller to use the external input function.



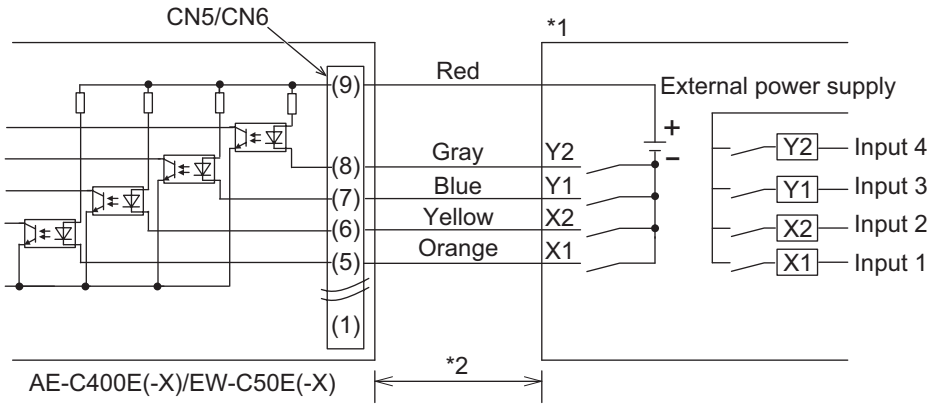
(1) Recommended circuit examples (external input)

Follow the conditions below when connecting an external input circuit.

- Because the controller uses photocoupler input, an external power supply (12 V or 24 V DC) is required. Because no external power supply is supplied with the controller, procure it locally.
- Procure relays and extension cables locally.

Note:
- To prevent malfunction, connect the external power supply to the input circuit with the correct polarity.
- Connect terminals (5) to (8) of the connector to the negative side of the external power supply. (See the figure below.)
- Cut unused cables near the connector, and insulate the cut end of the cables with tape.

1) Level signal (relay driving)



*1 Unsupplied parts

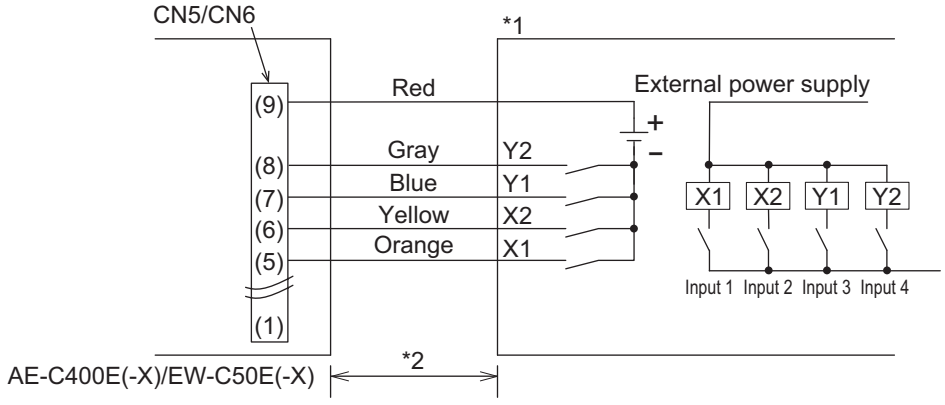
*2 External input/output adapter

The total wiring length of the external input/output adapter and an extension cable must be 100 m (328-1/16 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

As the cable length increases, the cable will be more affected by electrical noise interference.

Take appropriate measures against electrical noise interference depending on the cable length.

2) Pulse signal (relay driving)



*1 Unsupplied parts

*2 External input/output adapter

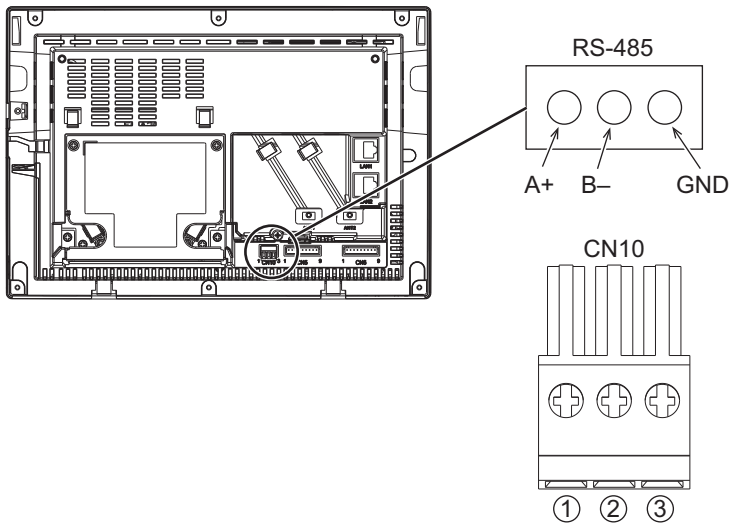
The total wiring length of the external input/output adapter and an extension cable must be 100 m (328-1/16 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

As the cable length increases, the cable will be more affected by electrical noise interference.

Take appropriate measures against electrical noise interference depending on the cable length.

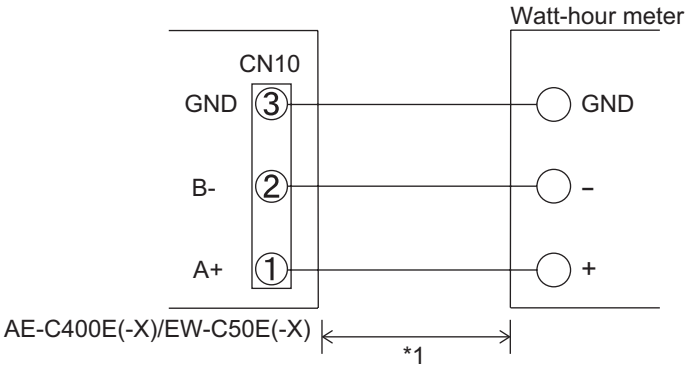
[RS-485 input (CN10)]

Watt-hour meters that support RS-485 (Modbus RTU) communication can be connected to this connector to capture watt-hour data. For details on watt-hour meter settings, refer to the manual for the watt-hour meter.



(1) Recommended circuit examples (RS-485 input)

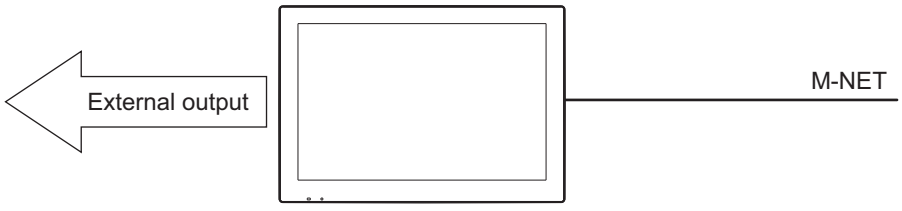
Note: ▪ To connect the watt-hour meter cable to the connector, use a precision Phillips screwdriver (#0). (Specified torque: 0.25 N·m).
▪ Be sure to check the polarity of the terminals before connecting the cables.



*1 External input/output adapter
For the maximum wiring length between the controller and the watt-hour meter, see the AE-C400E(-X)/EW-C50E(-X) Technical Manual.
Connect both GND twisted-pair wires to the GND.
When using a shielded cable, connect the shield to the GND.

[External output]

The external output function of the controller outputs the statuses of the units that are controlled by the controller and those controlled by other controllers (AE-C400E(-X)/EW-C50E(-X)).
An external input/output adapter is required for each of the controller and other controllers (AE-C400E(-X)/EW-C50E(-X)) to use the external output function.



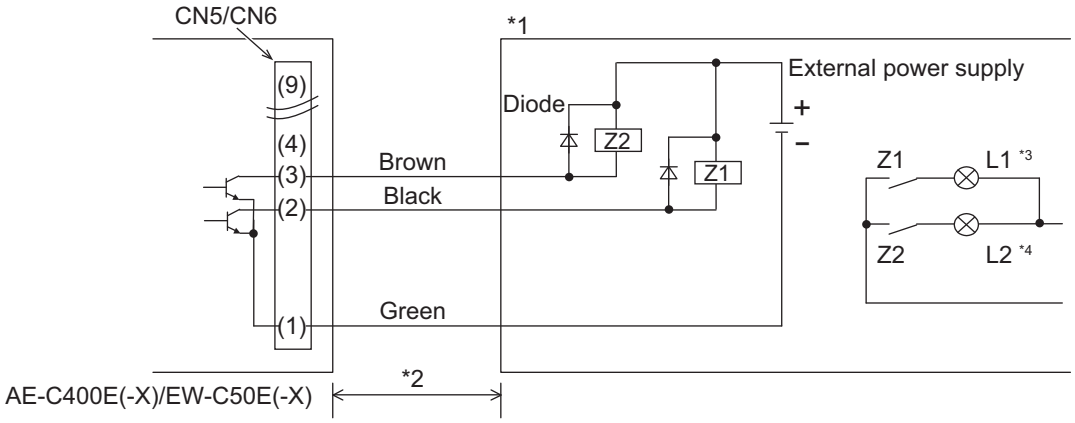
(1) Recommended circuit examples (external output)

Follow the conditions below when connecting an external output circuit.

- Because the controller uses transistor output (sink type), an external power supply (12 V or 24 V DC) is required. Because no external power supply is supplied with the controller, procure it locally.
- Procure relays, indicator lamps, diodes, and extension cables locally.

Note:
- To prevent malfunction, connect the external power supply to the output circuit with the correct polarity. Especially when using a relay with a built-in surge-protection diode, be sure to connect the external power supply with the correct polarity.
- Connect terminal (1) of the connector to the negative side of the external power supply. (See the figure below.)
- Do not connect the external power supply with no relays (no load) connected.
- Install a diode at both ends of the relay coil. (Relays with built-in diode are recommended.)
- Cut unused cables near the connector, and insulate the cut end of the cables with tape.

1) Relay driving



*1 Unsupplied parts

*2 External input/output adapter

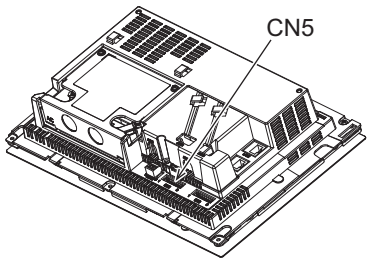
The total wiring length of the external input/output adapter and an extension cable must be 10 m (32-3/4 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

*3 Output 1 (L1: Indicator lamp)

*4 Output 2 (L2: Indicator lamp)

Note: Each element turns on when a signal is output.

Note: When connecting the external input/output cables to connector CN5 on the controller, punch out the knockout hole.



4. Connecting network cables

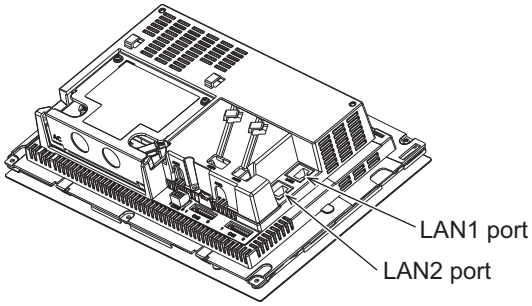
Before installing the controller, complete LAN wiring work so that LAN cables can be connected to the controller.

Note: When monitoring air-conditioning units and other equipment via the Internet, ensure security by using security devices such as VPN router to prevent unauthorized access and tampering.

(1) Connecting LAN cables

1) Connect a LAN cable to the LAN1 or LAN2 port of the controller.

- When the LAN cable exceeds 100 m (328-1/16 ft), relay the LAN cables, using a switching HUB.



CONTROLLER

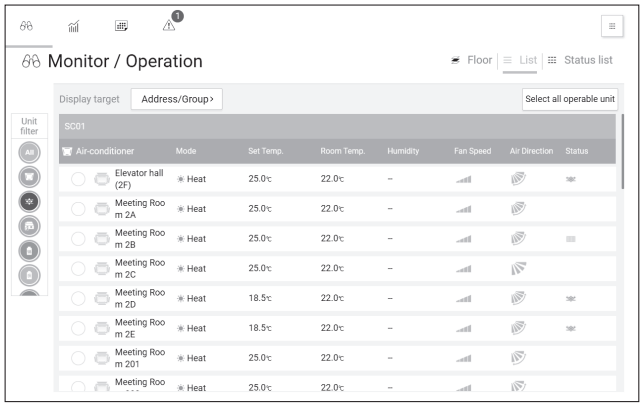
5. Liquid crystal displays of AE-C400E(-X)



Floor Layout Screen



Floor Layout Screen (Zoom-In Display)



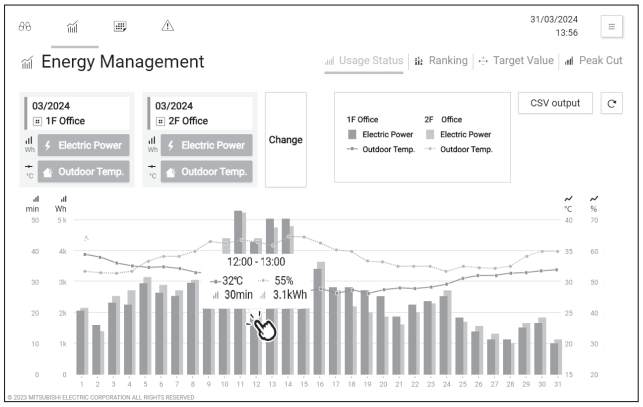
List Screen



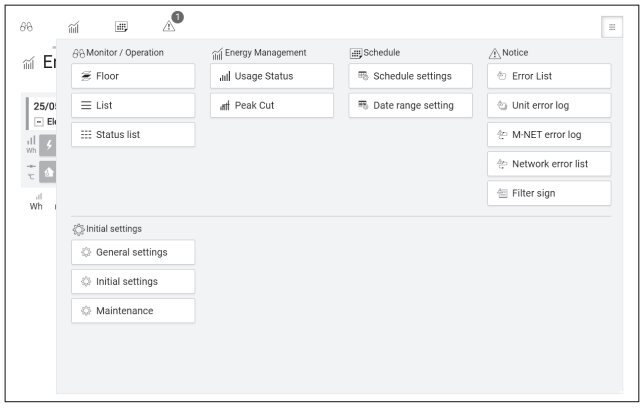
Operation Screen



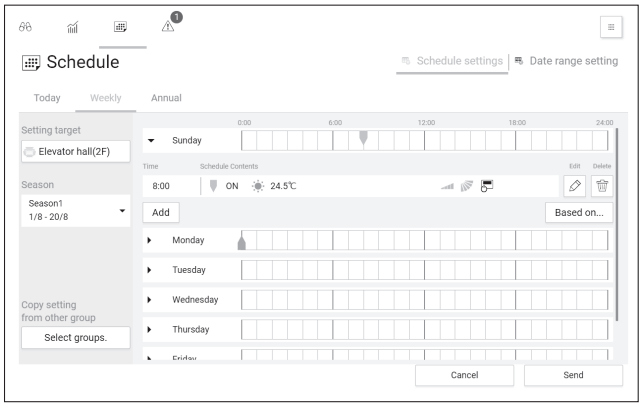
Outdoor Unit Display Screen



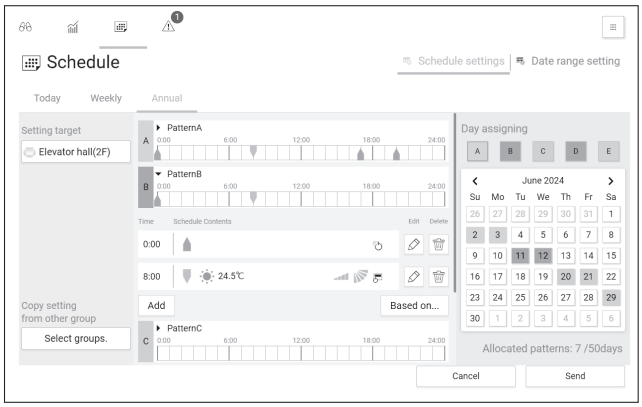
Usage Status Screen



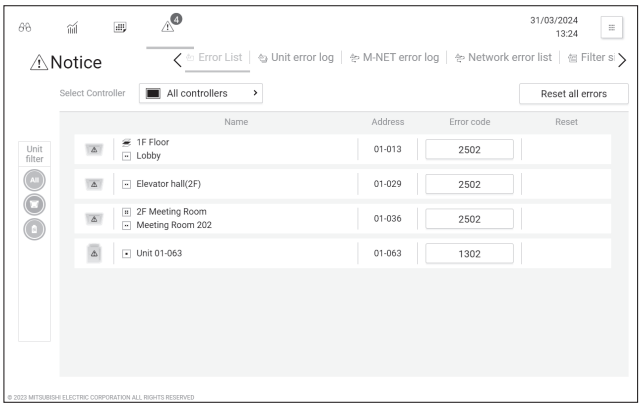
Panorama View Screen



Weekly Schedule Screen



Annual Schedule Screen



Error List Screen

6. Option

AE-C400E(-X)

Item		Model	Quantity	Remarks
Electrical box		PAC-YK94UTB-J	1	Required to install the controller.
Mounting kit for control panel	Mounting bracket	PAC-YK96TK-J	1	
	DIN rail attachment			
Mounting attachment for wall-surface installation		PAC-YK92TB-J	1	
Replacement attachment		PAC-YK91RF-J	1	
External input/output adapter		PAC-YG10HA-E	1 or 2	Required to use the external input/output function. Prepare one adapter when using either of the external input/output connectors (CN5 and CN6), or two adapters when using both.

EW-C50E(-X)

Item	Model	Quantity	Remarks
External input/output adapter	PAC-YG10HA-E	1 or 2	Required to use the external input/output function. Prepare one adapter when using either of the external input/output connectors (CN5 and CN6), or two adapters when using both.

CONTROLLER

3-4. Centralized controller without LCD [EW-C50E(-X)]



A. The centralized controller of EW-C50E(-X) combines Web function, which enable the air conditioner system management on a PC browser screen. *1
The management even carried out at a long distance place via the internet.
*1 Operating system requirement: Microsoft® Windows 11® (64bit), Microsoft® Windows 10® (64bit), MacOS®
Browser requirement: Microsoft® Edge®, Google Chrome™, Safari®

B. Together with PI controller, DIDO controller, or Modbus, many optional functions like "Peak-cut", "Energy saving", "General equipment management", "Scheduling" etc, can be carried out. Refer to section of PI and/or DIDO controller for details on these controllers.
*2 For connectable unit models, refer to the Instruction Book (Detailed Operations) for AE-C400E(-X)/EW-C50E(-X).

C. One EW-C50E(-X) can control up to 50 units (including LOSSNAY).
*The maximum number of connectable units depends on the model. Refer to the Technical Manual.

D. Taking advantage of EW-C50E(-X)'s Web functions, alarming E-mail containing address and error code can be sent to appointed E-mail address upon any fault happen at the air conditioner system.
This could release standby personnel and save operation cost.

E. The interlock-control option enables interlocked operations of air conditioning unit groups and the general equipment groups, based on the changes of status in the ON/OFF, Mode, or Error signals. (Can be set from the Initial Setting Tool only)

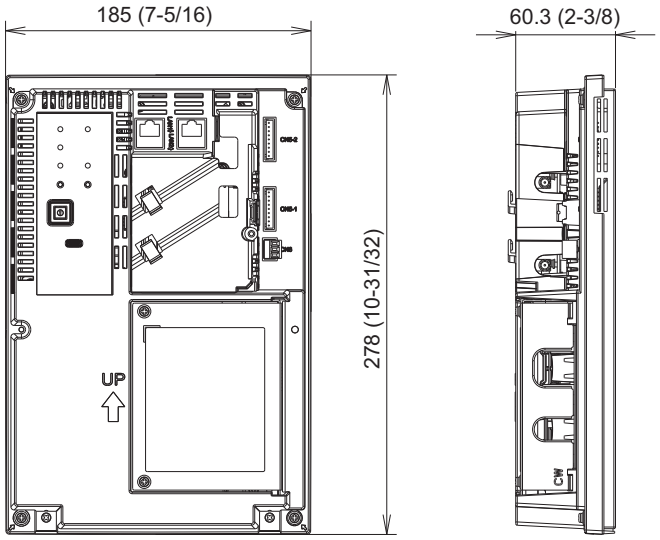
F. CO_2 level can be indicated on EW-C50E(-X)'s Web browser by connecting CO_2 sensor to LOSSNAY.

Refer to 3-3. Centralized controller with LCD [AE-C400E(-X)] for connectable units and functions.

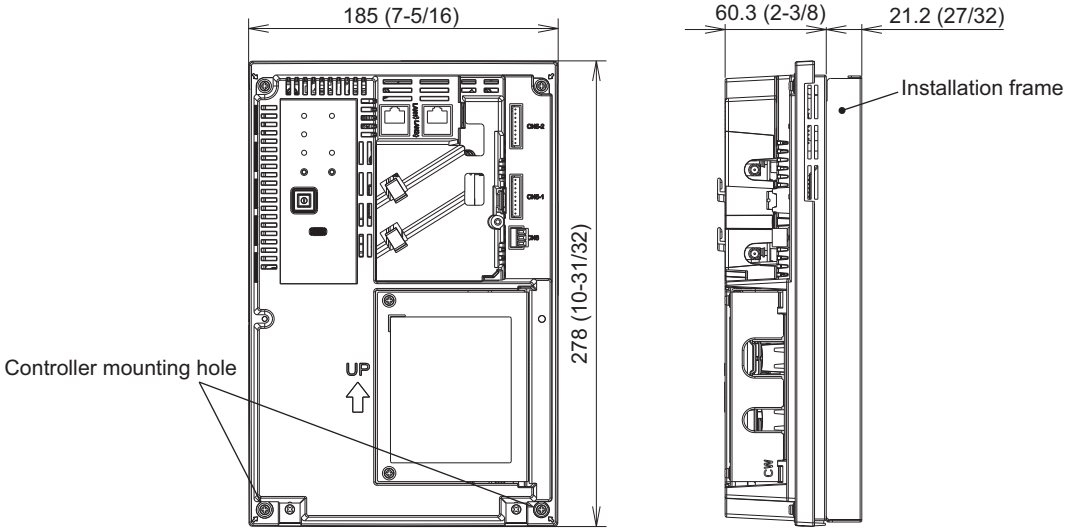
External dimension

Controller

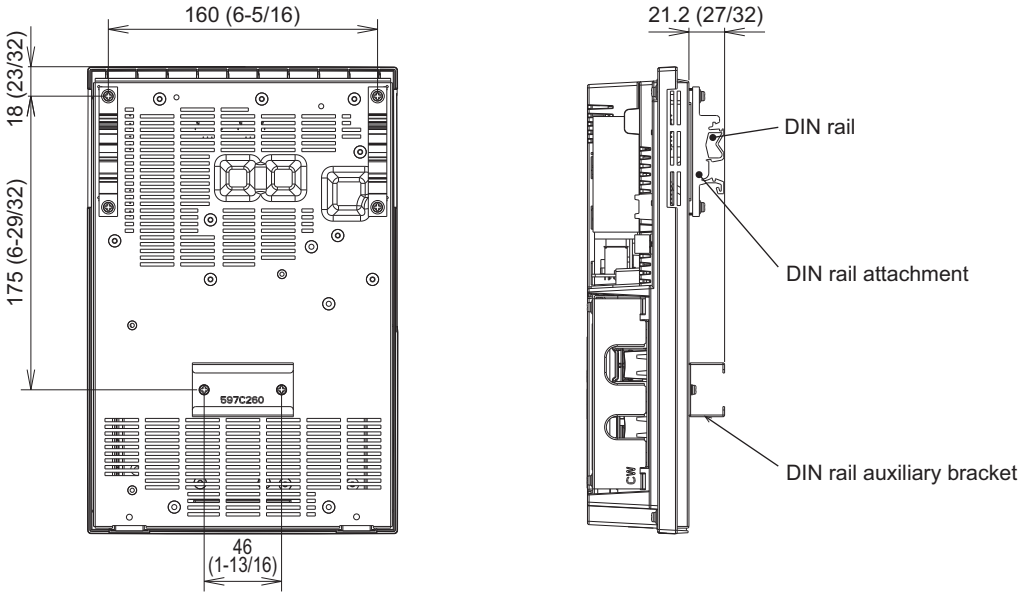
Unit: mm (in)



Installation on a panel inside a metal control box



Installation on a DIN rail



CONTROLLER

1. Power supply to EW-C50E(-X)

EW-C50E(-X) needs AC power (100-240VAC) and M-NET; the former is for centralized control transmission use and the latter is for EW-C50E(-X)'s operating and LAN function use.
Except when the equivalent power consumption exceeds 0.75, the power supply unit, the power supply unit PAC-SC51KUA or the power supply from the outdoor unit to M-NET is not necessary.
For more details, please refer to the Installation Manual of EW-C50E(-X).

(1) The basic scheme is as follows.

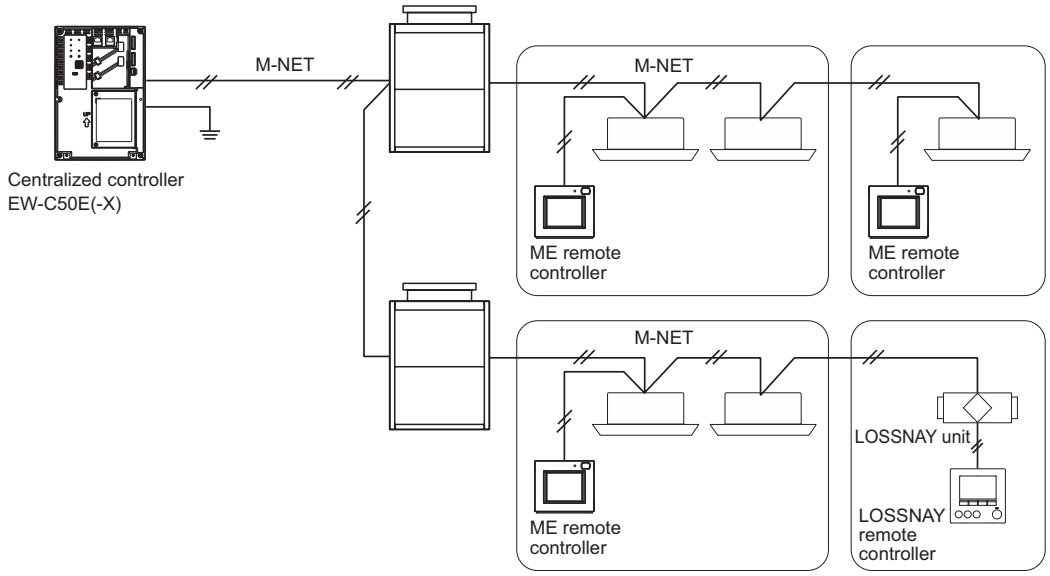


Fig.1 EW-C50E(-X) basic scheme.

2. M-NET power supply

EW-C50E(-X) has a built-in function to supply power to the M-NET transmission line.
The power supply coefficient of AE-C400E(-X)/EW-C50E(-X) is 0.75. For power supply coefficient and power consumption coefficient, refer to section 3-7. Transmission booster [PAC-SF46EPA-G].

Note:	When supplying power from the power supply units that are connected to the same centralized control transmission cable, make sure to disconnect CN21 to prevent supplying power from AE-C400E(-X)/EW-C50E(-X).

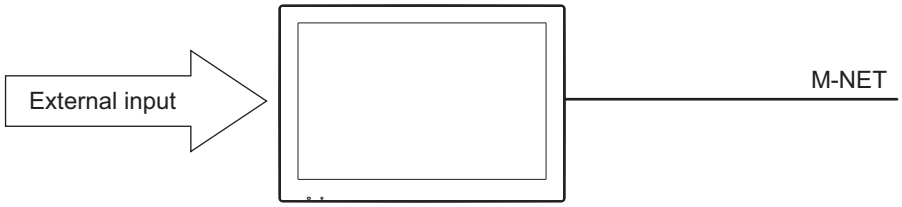
3. External input/output usage

To use external inputs, external outputs, and RS-485 input, initial settings are required.
For details, refer to the Instruction Book (Detailed Operations) for AE-C400E(-X)/EW-C50E(-X).

- To use the external signal input, an external I/O adapter (PAC-YG10HA-E; sold separately) and an external power supply are required.

Note:	When using EW-C50E(-X), connect the external input/output adapter to each AE-C400E(-X)/EW-C50E(-X). (External input signal to AE-C400E(-X) cannot perform the collective operations (e.g., emergency stop) for EW-C50E(-X) systems.)

[External input]
The external input function of the controller controls the connected units according to the external contact signals (12 V or 24 V DC) that are input to the controller.)
An external input/output adapter is required for each controller to use the external input function.



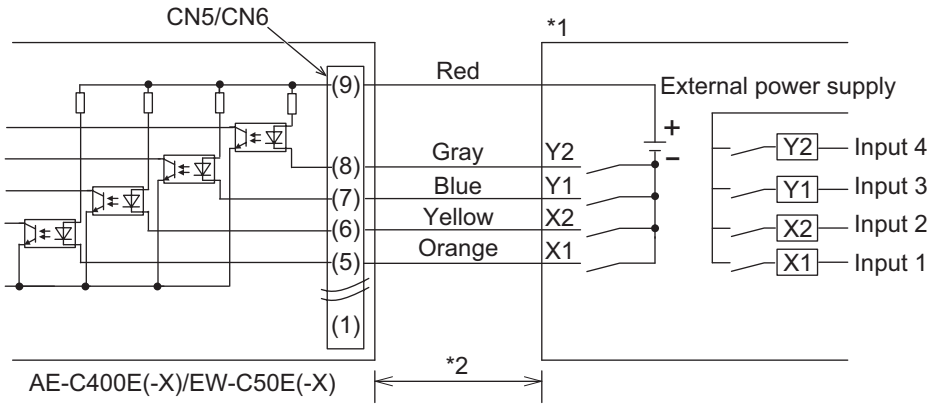
(1) Recommended circuit examples (external input)

Follow the conditions below when connecting an external input circuit.

- Because the controller uses photocoupler input, an external power supply (12 V or 24 V DC) is required. Because no external power supply is supplied with the controller, procure it locally.
- Procure relays and extension cables locally.

Note:
- To prevent malfunction, connect the external power supply to the input circuit with the correct polarity.
- Connect terminals (5) to (8) of the connector to the negative side of the external power supply. (See the figure below.)
- Cut unused cables near the connector, and insulate the cut end of the cables with tape.

1) Level signal (relay driving)



*1 Unsupplied parts

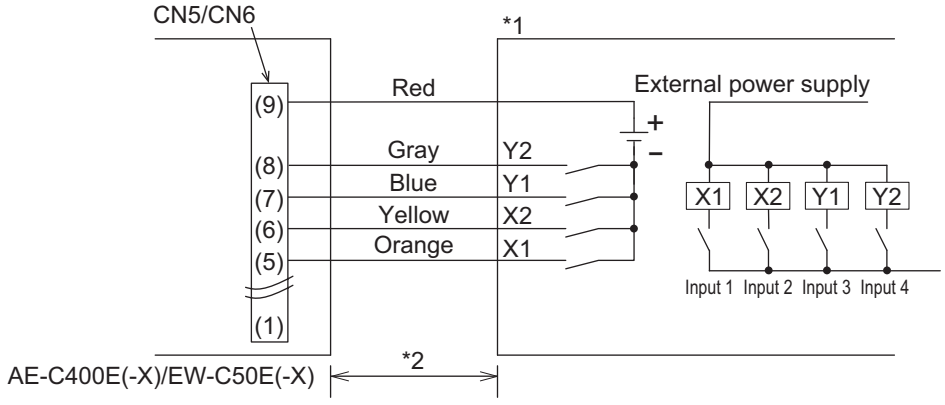
*2 External input/output adapter

The total wiring length of the external input/output adapter and an extension cable must be 100 m (328-1/16 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

As the cable length increases, the cable will be more affected by electrical noise interference.

Take appropriate measures against electrical noise interference depending on the cable length.

2) Pulse signal (relay driving)



*1 Unsupplied parts

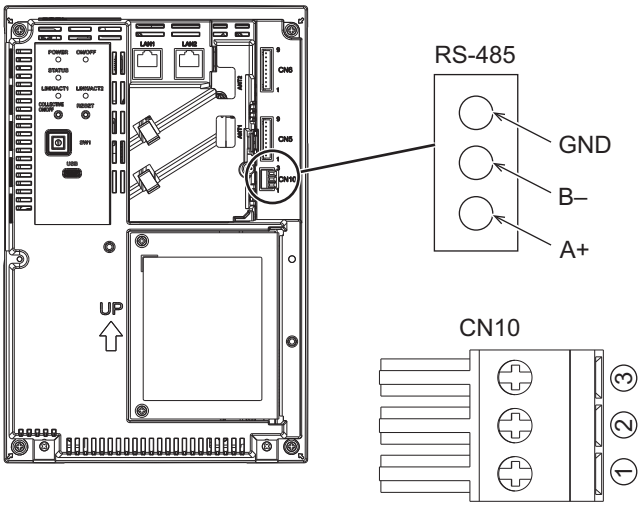
*2 External input/output adapter

The total wiring length of the external input/output adapter and an extension cable must be 100 m (328-1/16 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

As the cable length increases, the cable will be more affected by electrical noise interference.

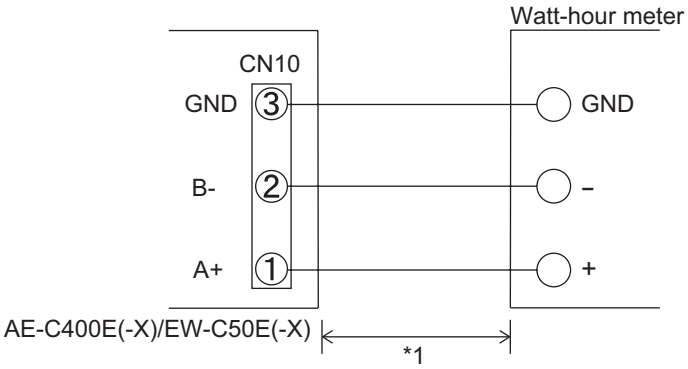
Take appropriate measures against electrical noise interference depending on the cable length.

[RS-485 input (CN10)]
Watt-hour meters that support RS-485 (Modbus RTU) communication can be connected to this connector to capture watt-hour data. For details on watt-hour meter settings, refer to the manual for the watt-hour meter.



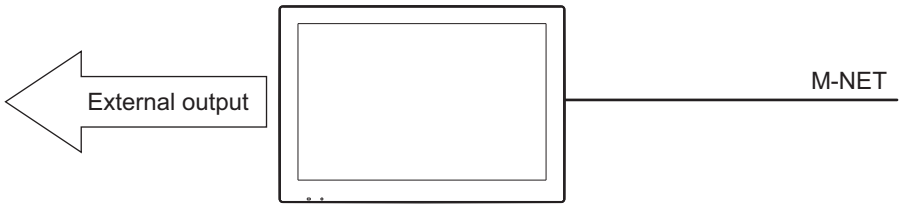
(1) Recommended circuit examples (RS-485 input)

Note: ▪ To connect the watt-hour meter cable to the connector, use a precision Phillips screwdriver (#0). (Specified torque: 0.25 N·m).
▪ Be sure to check the polarity of the terminals before connecting the cables.



*1 External input/output adapter
For the maximum wiring length between the controller and the watt-hour meter, see the AE-C400E(-X)/EW-C50E(-X) Technical Manual.
Connect both GND twisted-pair wires to the GND.
When using a shielded cable, connect the shield to the GND.

[External output]
The external output function of the controller outputs the statuses of the units that are controlled by the controller and those controlled by other controllers (AE-C400E(-X)/EW-C50E(-X)).
An external input/output adapter is required for each of the controller and other controllers (AE-C400E(-X)/EW-C50E(-X)) to use the external output function.



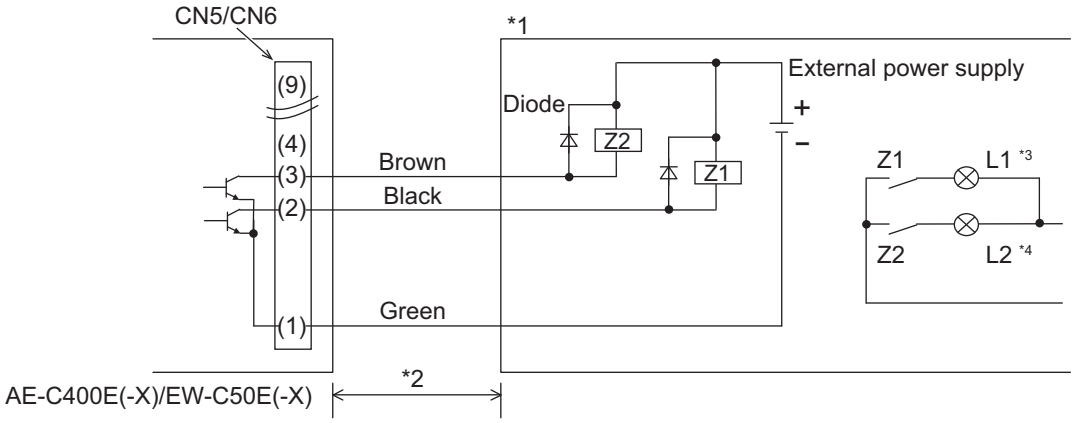
(1) Recommended circuit examples (external output)

Follow the conditions below when connecting an external output circuit.

- Because the controller uses transistor output (sink type), an external power supply (12 V or 24 V DC) is required. Because no external power supply is supplied with the controller, procure it locally.
- Procure relays, indicator lamps, diodes, and extension cables locally.

Note:
- To prevent malfunction, connect the external power supply to the output circuit with the correct polarity. Especially when using a relay with a built-in surge-protection diode, be sure to connect the external power supply with the correct polarity.
- Connect terminal (1) of the connector to the negative side of the external power supply. (See the figure below.)
- Do not connect the external power supply with no relays (no load) connected.
- Install a diode at both ends of the relay coil. (Relays with built-in diode are recommended.)
- Cut unused cables near the connector, and insulate the cut end of the cables with tape.

1) Relay driving



*1 Unsupplied parts

*2 External input/output adapter

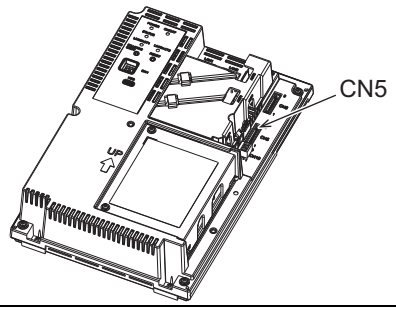
The total wiring length of the external input/output adapter and an extension cable must be 10 m (32-3/4 ft) or shorter. (Use a cable of at least 0.3 mm^2 in diameter (AWG 22).)

*3 Output 1 (L1: Indicator lamp)

*4 Output 2 (L2: Indicator lamp)

Note: Each element turns on when a signal is output.

Note: When connecting the external input/output cables to connector CN5 on the controller, punch out the knockout hole.



CONTROLLER

4. Connecting network cables

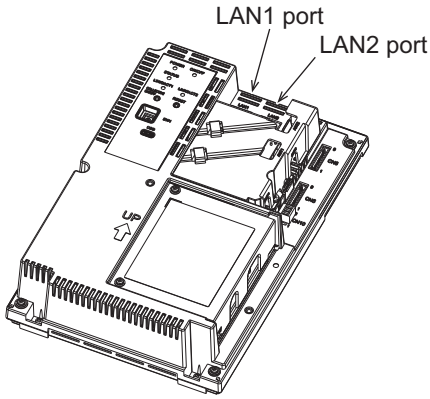
Before installing the controller, complete LAN wiring work so that LAN cables can be connected to the controller.

Note: When monitoring air-conditioning units and other equipment via the Internet, ensure security by using security devices such as VPN router to prevent unauthorized access and tampering.

(1) Connecting LAN cables

1) Connect a LAN cable to the LAN1 or LAN2 port of the controller.

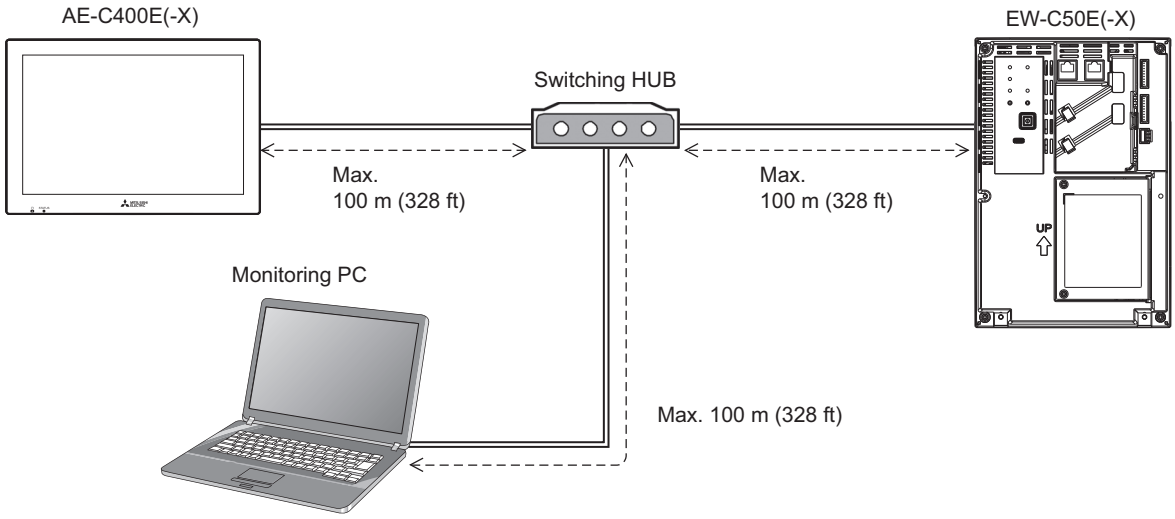
- When the LAN cable exceeds 100 m (328-1/16 ft), relay the LAN cables, using a switching HUB.



5. Confirming the LAN transmission delay time

Connect a monitoring PC to a device such as HUB that is connected to the AE-C400E(-X)/EW-C50E(-X). Send a command from the PC to the EW-C50E(-X), and receive the response from the EW-C50E(-X).
Check the time between sending and receiving on the PC display.

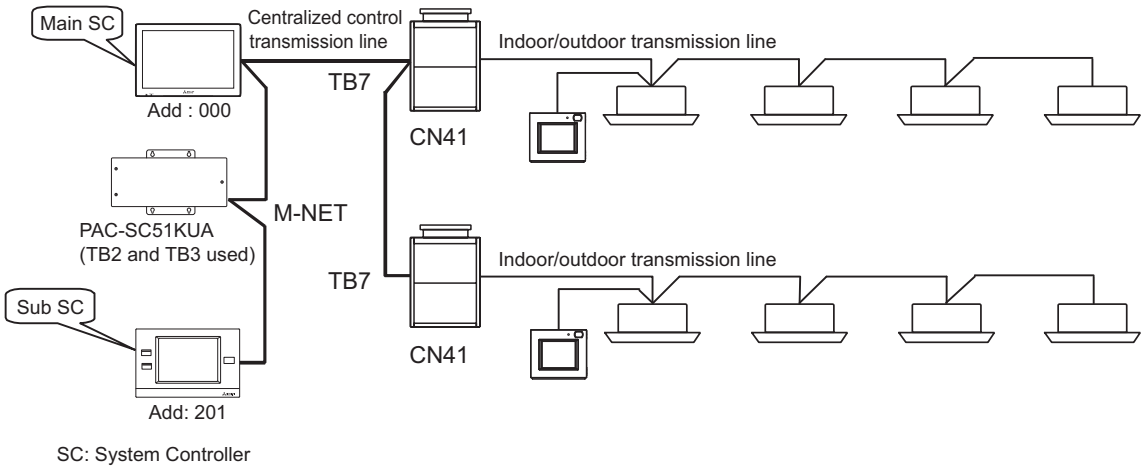
Sample system connection



3-5. Power supply unit [PAC-SC51KUA]

PAC-SC51KUA supplies DC power of M-NET (23-32 V) at TB2 (for centralized transmission use).
The power supply coefficient is 5. For power consumption coefficient, refer to section 3-7. Transmission booster [PAC-SF46EPA-G].

(1) When using PAC-SC51KUA as the power supplier for system controller, the capacity for system controller is considered as follows.

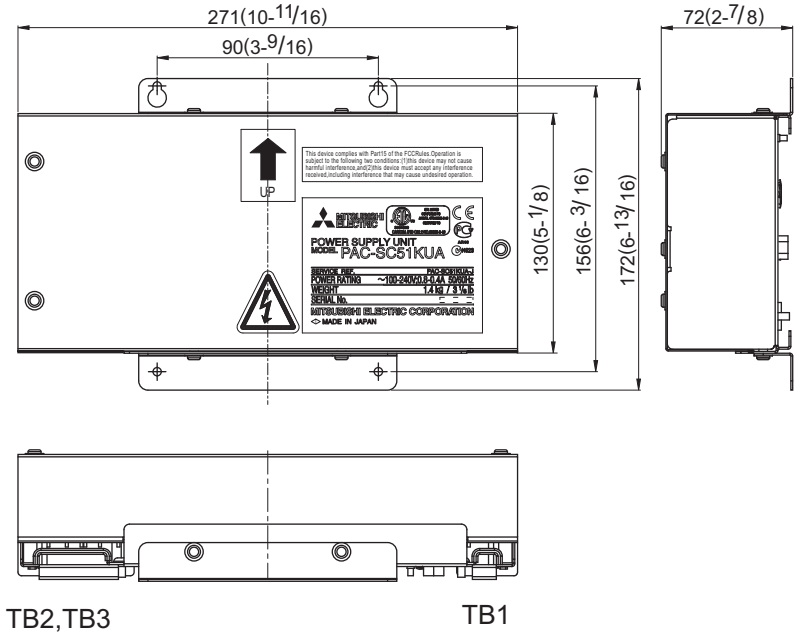


SC: System Controller

Fig.1 Equivalent power consumption of controllers

External dimension

Unit: mm [in.]



CONTROLLER

3-6. BACnet®

CITY MULTI can easily combine into a Building Management System (BMS) via EW-C50E(-X) (AE-C400E(-X)). BACnet® is an open transmission protocol widely used at BMS, and related equipment control. CITY MULTI is compatible with large-scale BMS management via BACnet®.

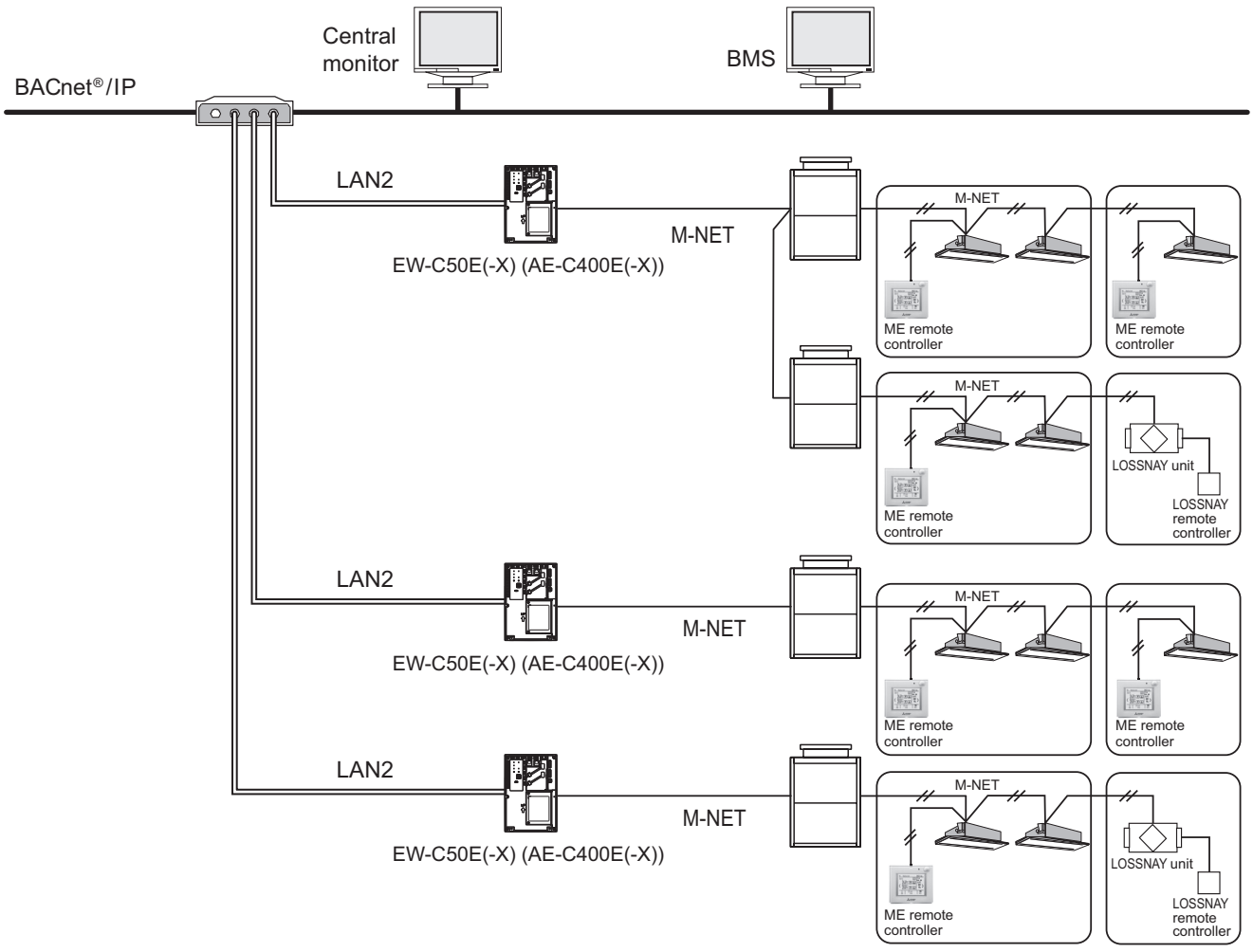
EW-C50E(-X) (AE-C400E(-X)) can control up to 50 units/groups (including LOSSNAY).
*To use the BACnet® function on EW-C50E(-X) (AE-C400E(-X)), BACnet® license registration is required.

Functions

FUNCTION	CONTENT
Operation	
ON/OFF	ON/OFF
Mode	Cooling/Drying/Heating/Auto/Fan
Fan Speed	Low-Mid2-Mid1-High-Auto
Air Direction	Horizontal-Downblow 60%-80%-100%-Swing
Set Temperature	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.
Filter Sign Reset	Normal/Reset
Permit/Prohibit	ON/OFF, Mode, Filter sign reset, Set temp, Fan speed
Forced Off	Reset/Execute
Ventilation Mode	Heat Recovery/Bypass/Auto
Air to Water Mode	Heating/ECO/Hot Water/Antifreeze/Cooling

FUNCTION	CONTENT
Monitoring	
ON/OFF	ON/OFF
Mode	Cooling/Drying/Heating/Auto/Fan
Fan Speed	Low-Mid2-Mid1-High-Auto
Air Direction	Horizontal-Downblow 60%-80%-100%-Swing
Set Temperature	Changes the set temperature. * Set temperature range varies depending on the indoor unit model.
Filter Sign	ON/OFF
Permit/Prohibit	ON/OFF, Mode, Filter sign reset, Set temp, Fan speed
Indoor Temperature	Temperature
Alarm Signal	Normal/Error
Error Code	2 Character code- Indicates all unit alarms
Error Code Detail	4 Character code- Indicates all unit alarms
Communication State	Normal/Error
Ventilation Mode	Heat Recovery/Bypass/Auto
Air to Water Mode	Heating/ECO/Hot Water/Antifreeze/Cooling
Charge function	Group, Interlocked Units [0.1 kWh]
PI controller Electric Energy	[0.1 kWh]
Apportionment Parameter	No Units
Night Purge State	ON/OFF
Thermo On/Off State	ON/OFF
External Heat Source State	ON/OFF
Trend Log	Indoor Temp, Charge function, PI controller Electric Energy, Apportionment Parameter

System example



3-7. Transmission booster [PAC-SF46EPA-G]

The Outdoor unit supplies transmission power 30VDC for the indoor-outdoor transmission line at its connector TB3 and TB7. The power is consumed by the Indoor unit, ME remote controller, and System controllers.
When the total quantity of Indoor units, and ME remote controller, and equivalent number of units is over 40, or when transmission power supply is not enough, the transmission booster PAC-SF46EPA-G should be designed into the air-conditioner system to ensure the system communication.

Designing PAC-SF46EPA-G into an air-conditioner system.
Taking the power consumption of Indoor unit as 1, the equivalent power consumption or supply of others are listed at Table 1 and Table 2.

Table 1 The equivalent power consumption and the equivalent number of units

Category	Model	The equivalent power consumption	The equivalent number of units
CITY MULTI indoor unit OA unit CITY MULTI connection kit Air handling unit controller	Except for the models indicated by *2 PEFY-AF2500, 3000, 4000, 5000, 6000MH GUF-50, 100 PAC-LV11M-J PAC-AH125, 140, 250, 500M-J	1	1
CITY MULTI indoor unit *2	PDFY-P100VM-E-RE	2	2
BC controller	CMB-P/M	2	1
HBC controller	CMB-WP CMB-WM-V-AA/AB	2	1
	CMB-WM-F-AA CMB-WM-V-BB	2	2
Hydro unit	CMH-WM-V-A	2	1
PWFY *1	P100VM-E1-BU	6	1
	P200VM-E1-AU P200VM-E2-AU	5	1
	(E)P100VM-E1-AU (E)P100VM-E2-AU P140VM-E1-AU P140VM-E2-AU	1	1
PFAV	P250, 300, 500, 600VM-E(-F)	1	1
	P750, 900VM-E(-F)	2	2
PFV, PEV	P200, 250, 400, 500YM-A	1	1
MA remote controller/ LOSSNAY	PAR-CT01MA series PAR-FS01MA series PAR-21, 31, 32, 33, 40, 41MA series PAC-YT52CRA PAR-FA32MA LGH PZ-60, 61, 62DR PZ-43SMF-E	0	0
ME remote controller	PAR-U02MEDA	0.5	1
	PZ-52SF	0.25	1
System controller	AE-C400E(-X)/EW-C50E(-X) AE-200E/AE-50E/EW-50E LM-AP	0	0
	AG-150A EB-50GU-J PAC-IF01AHC-J	0.5	1
	AT-50B	1.5	5
	PAC-YG60MCA PAC-YG66DCA PAC-YG63MCA	0.25	1
ON/OFF controller	PAC-YT40ANRA	1	1
MN converter	CMS-MNG-E	2	1
Outdoor/Heat source unit	TB7 power consumption	0	0
System control interface	MAC-333IF-E	0	0
A-M converter	PAC-SF83MA-E		

*1 PWFY cannot be connected to PUMY model.

Table 2 The equivalent power supply

Category	Model	The equivalent power supply		
Transmission Booster	PAC-SF46EPA-G	25 *1		
Power supply unit	PAC-SC51KUA	5		
Expansion controller	PAC-YG50ECA	6		
BM ADAPTER	BAC-HD150	6		
System controller	AE-C400E(-X)/EW-C50E(-X)	0.75		
	AE-200E/AE-50E	0.75		
	EW-50E	1.5		
	LM-AP	0		
Outdoor/Heat source unit		TB3 and TB7 total	TB7 only	TB3 only
	Outdoor unit except S-Series and TKA *2	32 *1	6	32 *1-equivalent power supplied to TB7
	S-Series outdoor unit	12 *1	0	12 *1
	S-Series outdoor unit (YBM)	32 *1	0	32 *1
	TKA outdoor unit	32 *1	- *3	32 *1

*1 When one or more indoor units listed below is connected, subtract 3 from the equivalent power supply.

Table 3

Category	Model
Indoor unit	Sized P200/P250 PEFY-AF4000/5000/6000MH, PFFY-P400/500YM-E, PFFY-P400/500YMH-C PFFY-P300/600YM-E-F, PFFY-P300/600YM-C-F, PDFY-P100VM-E-RE
Air handling unit controller	PAC-AH250/500M-J
PFAV	PFAV-P500/600/750/900VM-E(-F)
PFV	PFV-P400/500YM-A
PEV	PEV-P400/500YM-A

*2 If PAC-SC51KUA is used to supply power at TB7 side, no power supply need from Outdoor/Heat source unit at TB7, Connector TB3 itself will therefore have 32.
*3 Do not supply power to TB7 from TKA outdoor units.
Use PAC-SC51KUA or PAC-SF46EPA-G when connecting an M-NET device to TB7.

With the equivalent power consumption values and the equivalent number of units in Table 1 and Table 2, PAC-SF46EPA-G can be designed into the air-conditioner system to ensure proper system communication according to (A), (B), (C).

(A) Firstly, count from TB3 at TB3 side the total equivalent number of units of Indoor units, OA processing units, ME remote controller, and System controllers. If the total equivalent number of units reaches 40, a PAC-SF46EPA-G should be set.

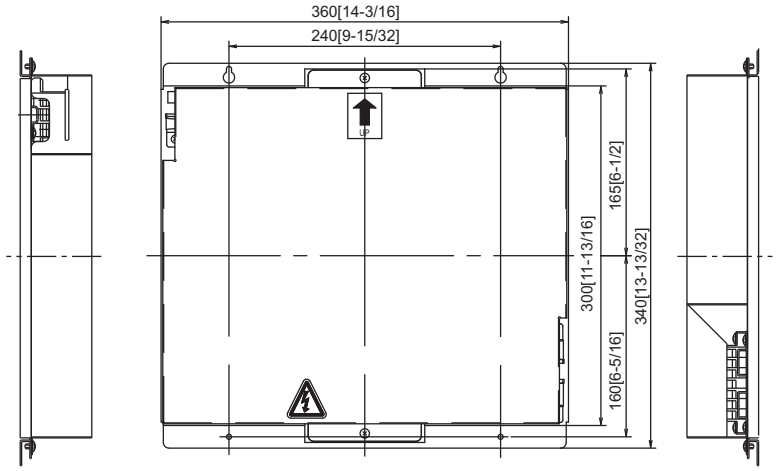
(B) Secondly, count from TB7 side to TB3 side the total transmission power consumption. If the total equivalent power supply reaches 32, a PAC-SF46EPA-G should be set. Yet, if a PAC-SC51KUA or another controller with a built-in power supply, such as AE-C400E(-X)/EW-C50E(-X), is used to supply power at TB7 side, count from TB3 side only.

(C) Thirdly, count from TB7 at TB7 side the total transmission power consumption. If the total equivalent power supply for only TB7 reaches 6, a PAC-SF46EPA-G should be set. Also, count from TB7 at TB7 side the total equivalent number of units of System controllers, and so on. If the total equivalent number of units reaches 40, a PAC-SF46EPA-G should be set.

* The equivalent power supply of S-Series outdoor unit is 12.
* When one or more indoor units listed in Table 3 is connected, subtract 3 from the equivalent power supply.

External dimension

Unit: mm [in.]



3-8. AHC ADAPTER [PAC-IF01AHC-J]

The Advanced HVAC CONTROLLER (AHC) comprises MITSUBISHI ELECTRIC's AHC ADAPTER (PAC-IF01AHC-J) and α2 SIMPLE APPLICATION CONTROLLER* (ALPHA2).

* α2 SIMPLE APPLICATION CONTROLLER is one of the Programming Logic Controllers manufactured by MITSUBISHI ELECTRIC CORPORATION.

AHC allows for the connection of MITSUBISHI ELECTRIC's air conditioning network system (M-NET) to other systems, which was not possible with the use of ALPHA2 alone. AHC provides the following functions:

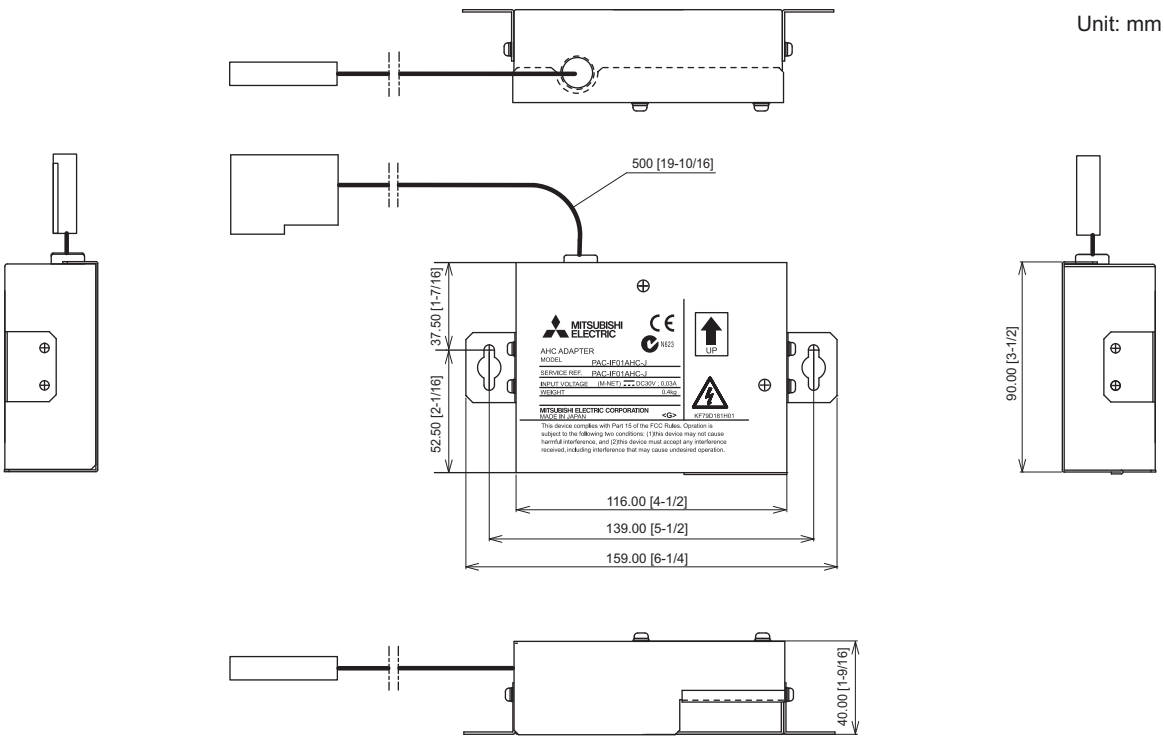
1) Controls external devices using the sensor data of the air conditioning units connected to M-NET
2) Interlocks the operation of air conditioning units and external devices that are connected to ALPHA2
3) Controls air conditioning units that are connected to M-NET
4) Allows for the combined use of items 1)-3) above
5) Monitors the input/output status of ALPHA2 via a remote controller or a centralized controller

Compatible controllers
- Remote Controller: PAR-U01MEDU, PAR-U02MEDA
- Centralized Controller: AE-C400/EW-C50

* Refer to the manual that came with ALPHA2 for information about ALPHA2.
* Use of the AHC ADAPTER requires either a remote controller or a centralized controller.

External Dimensions

Unit: mm (in)



⚠CAUTION

Usage Restrictions
- This manual contains explanations and figures to help the user to properly install, program, and operate AHC.
- All the examples and figures contained in this manual are there for the sole purpose of clarification. It is not guaranteed that AHC will properly work in the types of applications used as examples or are shown in figures. MITSUBISHI ELECTRIC shall not be held responsible for any damage or loss that may result from the use of AHC in the manners shown in the examples and figures contained in this manual.
- Thoroughly read the technical manual, and check the surrounding for safety before changing the settings of AHC in operation (e.g., changing programs or parameters, forcing signal output, or changing the operation status).

CONTROLLER

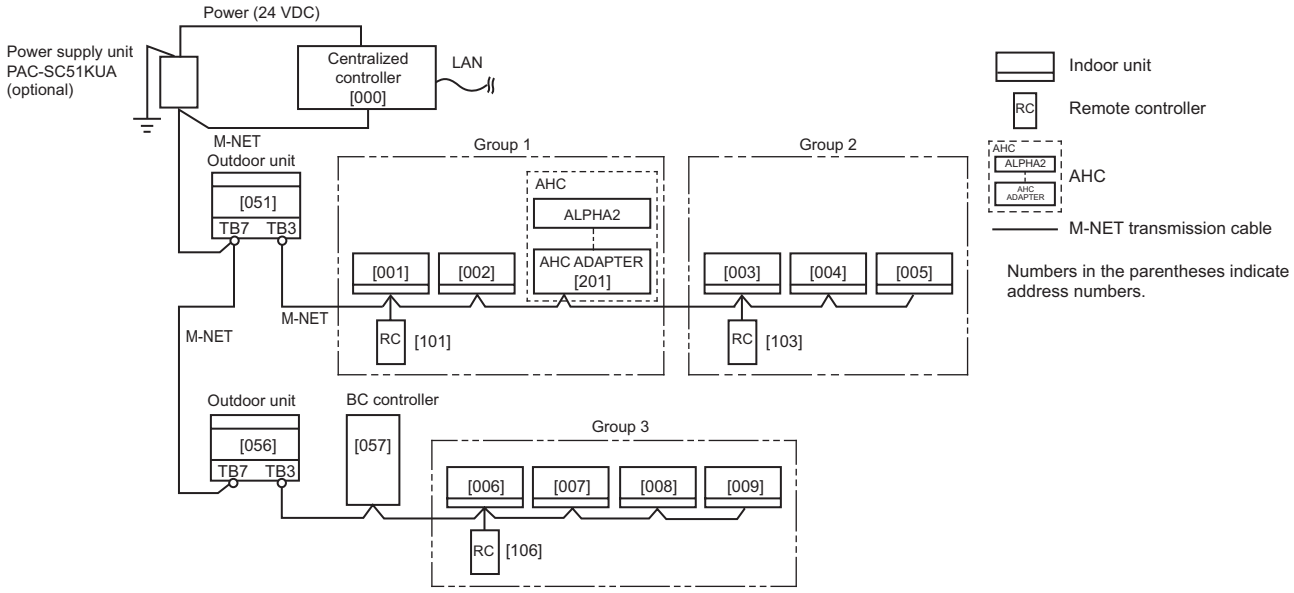
1. Specifications

(1) Device specifications

Item			Specifications
Power supply	M-NET		17–32 VDC
Interface	M-NET transmission terminal		Exclusively for connection to M-NET
	Connector for ALPHA2		Exclusively for connection to ALPHA2
Ambient conditions	Temperature	Operating temperature range	-10°C – +55°C [+14°F – +131°F]
		Storage temperature range	-20°C – +60°C [-4°F – +140°F]
	Humidity		30%–90% RH (Non-condensing)
Dimensions (W × H × D)			116 × 90 × 40 mm [4-9/16 × 3-1/2 × 1-9/16 in.]
Weight			0.4 kg [0.9lbs]
Installation conditions			Inside the metal control box * To be used in a business office or similar environment

1) System configuration

The figure below only shows the transmission cable connections. Power cables are omitted.



* AHC ADAPTER requires either an outdoor unit or a power supply device as a power source.

2) Functions

AHC comprises of an ALPHA2 and an AHC ADAPTER. The use of AHC ADAPTER requires the use of ALPHA2.

The following ALPHA2 are compatible with AHC. Other types of ALPHA2 do not support AHC.

- AL2-14MR-A
- AL2-14MR-D
- AL2-24MR-A
- AL2-24MR-D

Compatible controllers

- Remote Controller: PAR-U01MEDU, PAR-U02MEDA
- Centralized Controller: AE-C400/EW-C50

CONTROLLER

AHC enables the connection of M-NET with other systems, which was not possible with the use of ALPHA2 alone.
AHC supports the functions listed in Table 1.

Table 1 AHC function list

AHC function	Example	Supplemental Inf.
1) Controls external devices using the sensor data of the air conditioning units connected to M-NET.	• External heaters are controlled, using the temperature sensors on air conditioning units or on remote controllers.	By using the sensor on the air conditioning unit connected to the M-NET, no other external sensors will be required.*1
2) Interlocks the operation of air conditioning units and external devices that are connected to ALPHA2.	• The operation of external heaters is interlocked with the operation of air conditioning units in heating operation. • The operation of external humidifiers is interlocked with up to 16 air conditioning units. Humidifiers will go into operation whenever at least one air conditioning unit is in operation.	Operation status data of a maximum of 2 groups of units can be simultaneously collected. Each group can contain a maximum of 16 units. Error status of a maximum of 50 units can be simultaneously collected.
3) Controls air conditioning units that are connected to M-NET.	• The ON/OFF operation of air conditioning units is interlocked with the insertion/removal of a card into or out of a card reader.	A maximum of 2 groups of units can be simultaneously controlled. Each group can contain a maximum of 16 units.
4) Allows for the combined use of the items 1)-3) above.	• Drying operation of air conditioning units is controlled, using the built-in humidity sensor on the remote controller.	
5) Monitors the input/output status of ALPHA2 via a remote controller or a centralized controller.		

*1 The sensor on the air conditioning unit connected to the M-NET will collect data at 70-second intervals. If a real time control at intervals shorter than 70 seconds is required, connect a sensor to the Analog Input on ALPHA2.

Note: For detailed information about the functions supported by AHC, refer to the technical manual that came with the AHC.

(2) Field-supplied items

The following items are required to install AHC ADAPTER.
* Two types of installation options (A and B in the table below) are available for AHC ADAPTER. Select the one that is best suited for a given environment.

Field-supplied items		Specifications
A	Unit fixing screw (required when using L-fittings)	M4 x 2 pcs.
B	DIN rail and fixing screw (required when using DIN rails)	DIN rail width: 35 mm (1-13/32 in) Applicable type (IEC 60715/DIN 60715): TH35-7.5Fe, TH35-7.5Al
Functional ground wire		* Use a wire with an appropriate diameter so that the wire can be fixed with the cable strap below the terminal block. A diameter of 10 mm is recommended.
Sleeved ring terminal		M3.5 ring terminal (for M-NET transmission cables (A, B, S)) M4 ring terminal (for functional ground wire)
Transmission cable		• CVVS Min. 1.25 mm² (Min. AWG 16) * CPEVS: PE*1 insulated PVC*1 sheathed shielded communication cable * CVVS: PVC*1 insulated PVC*1 sheathed shielded control cable * Use cables with an appropriate diameter so that the cables can be fixed with the cable strap below the terminal block. A diameter of 10 mm is recommended.

*1 PE: Polyethylene; PVC: Polyvinyl chloride

[Parts to be Purchased Separately]

Name	Model	Application	Remark
Power supply unit	PAC-SC51KUA	Power supply to the M-NET transmission line	This is not required when power is to be supplied from an outdoor unit.

[ALPHA2 components]

Name	Model	Power source specification	Optional module (Note 1)	Number of ports				Remark
				Digital Input (DI)	Analog Input (AI)(Note 2)	Digital Output (DO)	Analog Output (AO)(Note 2)	
ALPHA2	AL2-14MR-D	Requires a separate 24 VDC power source.	-	8	(8)*	6	-	
			AL2-4EX	12	(8)*	6	-	
			AL2-4EYT or AL2-4EYR	8	(8)*	10	-	
			AL2-2DA	8	(8)*	6	2	
	AL2-24MR-D	Requires a separate 24 VDC power source.	-	15	(8)*	9	-	
			AL2-4EX	19	(8)*	9	-	
			AL2-4EYT orAL2-4EYR	15	(8)*	13	-	
			AL2-2DA	15	(8)*	9	2	
	AL2-14MR-A	Requires a separate 100-240 VAC power source.	-	8	-	6	-	
			AL2-4EX-A2	12	-	6	-	
			AL2-4EYR	8	-	10	-	
	AL2-24MR-A	Requires a separate 100-240 VAC power source.	-	15	-	9	-	
			AL2-4EX-A2	19	-	9	-	
			AL2-4EYR	15	-	13	-	

* The AI ports for the DC type are shared by DI, with a maximum number of 8 AI ports.
* AI and AO cannot be used with the AC type ALPHA2.

(Note 1) I/O Extension Module /Analog Expansion Module

I/O Extension module

- EI: Digital input extension module of ALPHA2. 4 digital input ports can be added.
  Type name: AL2-4EX-A2 (AC type) and AL2-4EX (DC type)
- EO: Digital output extension module of ALPHA2. 4 digital output ports can be added.
  Type name: AL2-4EYR (AC type) and AL2-4EYT (DC type)

Analog Expansion module

- AO: Analog output extension module of ALPHA2. 2 analog output ports can be used.
  Type name: AL2-2DA (DC type)

Only one of the above EI, EO, and AO can be used.

(Note 2) Analog signals that can be used for AI and AO of the DC type ALPHA2

- Analog Input (AI): 0-10V, PT100(*), thermocouple(*)

(*) To use a PT100 or thermocouple, a temperature sensor module is required separately.
Type name: AL2-2PT-ADP(Pt100 sensor), AL2-2TC-ADP(Thermocouple)
(Converts the Pt100/thermocouple to 0-10V)

- Analog Output (AO): 0-10V, 4-20mA

For details, refer to the ALPHA2 manuals (Installation Manual and Hardware Manual).

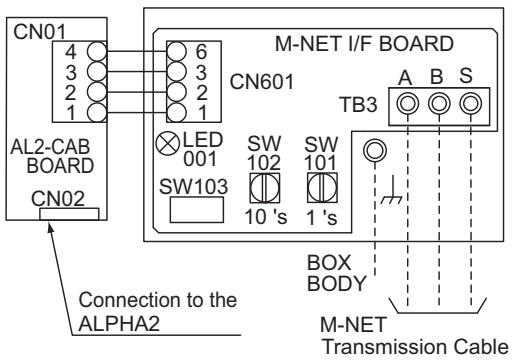
[Commercially available parts]

Name	Application	Remark
External 24 VDC power source	Supplies power to the ALPHA2 and/or Extension module.	Check to see if an external 24 VDC power source is required for a specific ALPHA2 and an Extension module.
Sensor	Measures temperature and humidity, etc.	Some sensors require additional parts.

For details, refer to the ALPHA2 manuals (Installation Manual and Hardware Manual).

2. Wiring Instructions

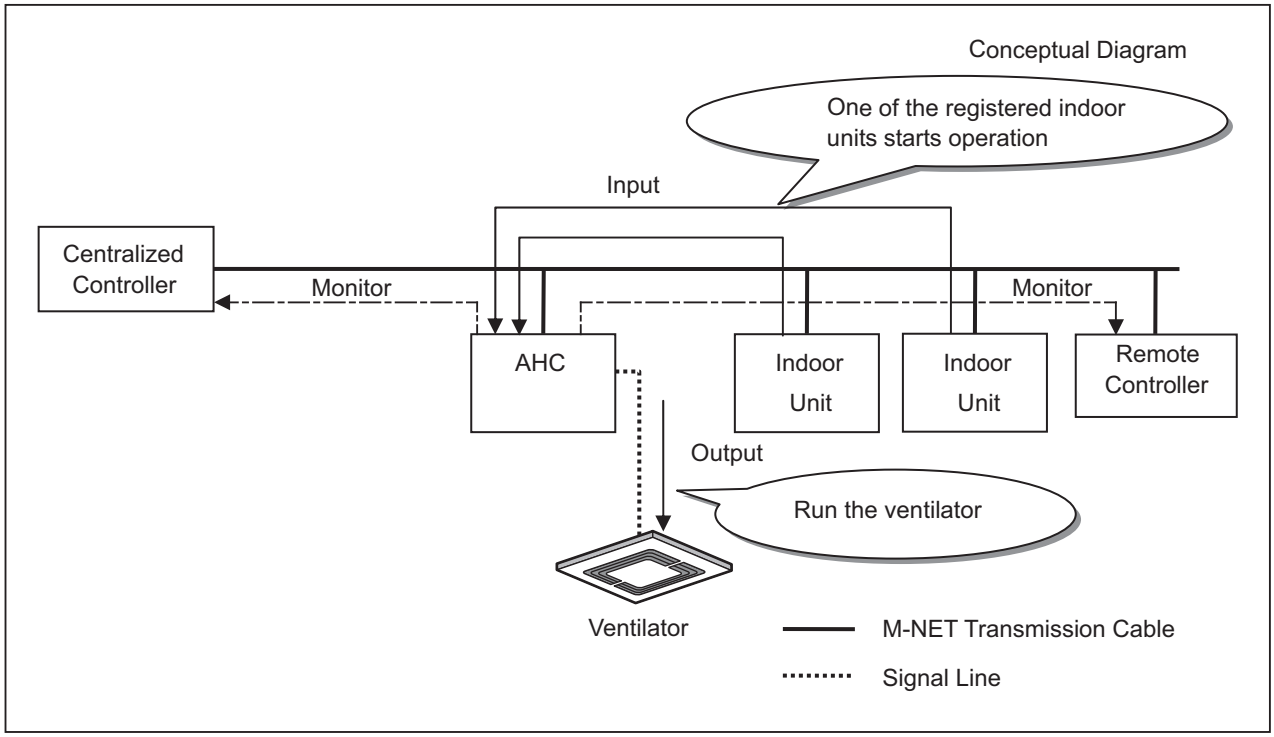
Connecting the Power and M-NET Transmission Cable.



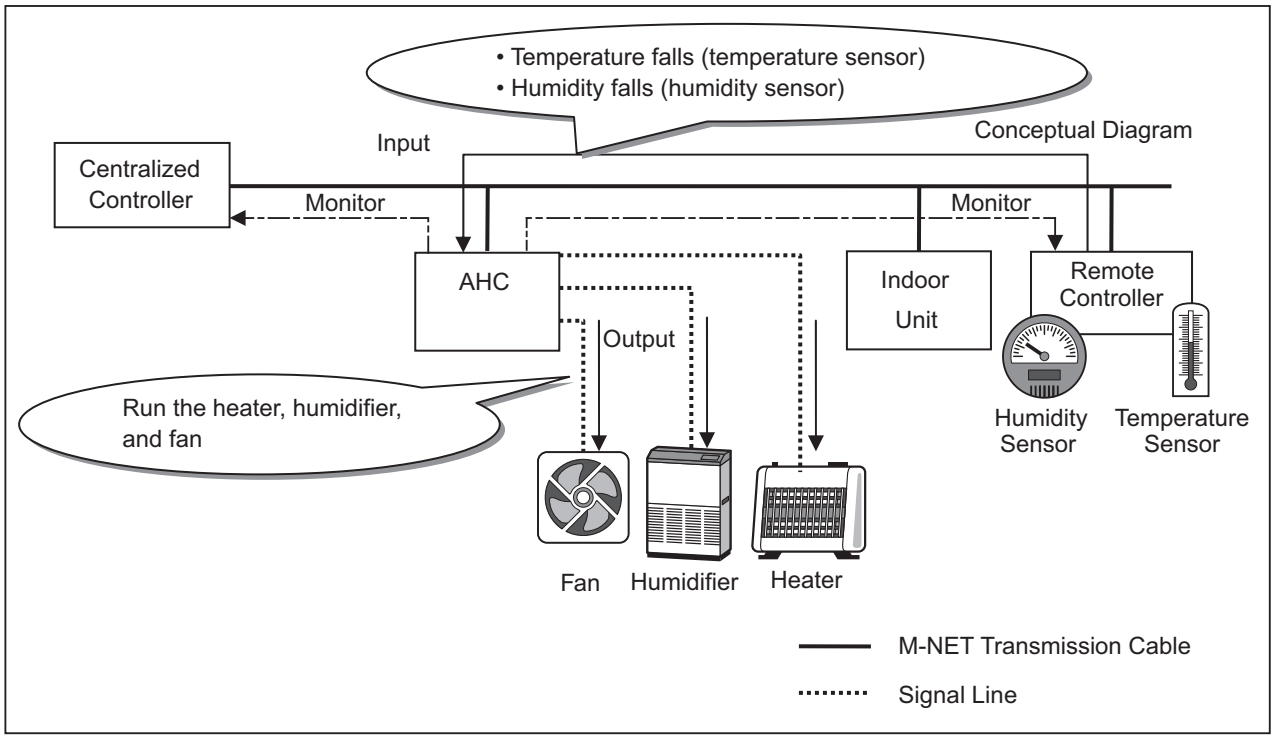
CONTROLLER

3. Combination and Application Example of the Input Information and Equipment Items

Interlocking with the external Ventilator Using the Start and Stop Information of Multiple Air Conditioners



Interlocking the Heater, Humidifier, and Fan



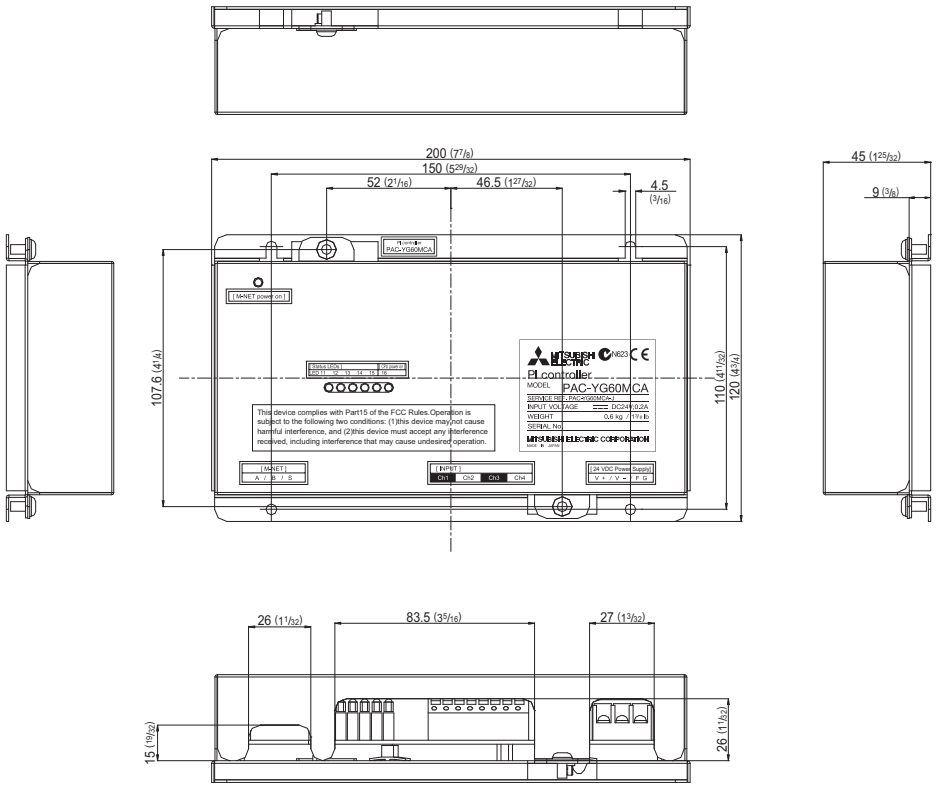
CONTROLLER

3-9. PI controller [PAC-YG60MCA]

The PI controller counts pulses from a power meter, gas meter, water meter, and calorimeter.
Combining the use of the AE-C400E(-X) and EW-C50E(-X) allows for calculating the charges for each unit and performing peak-cut (e.g., demand control) operation.
The meters can be monitored on AE-C400E(-X) LCD.

External Dimensions

Unit: mm (in)



⚠CAUTION

Usage Restrictions

- Mitsubishi Electric does not take financial responsibility for damages caused by issues beyond our control or special circumstances (predicable or unpredictable); and secondary or accidental damages, and damages to other objects. We also do not take financial responsibility for opportunities lost as a result of device failure, or electrical power failure at the end-user site.
  Mitsubishi Electric does not take financial responsibility caused by end-users' requests including, but not limited to, device testing, startup, readjustment, and replacement.
- Because the PI controller only counts pulses, accuracy and performance of pulse conversion depend on the meter.
  Mitsubishi Electric does not take financial responsibility for damages caused by issues beyond our control or special circumstances (predicable or unpredictable); and secondary or accidental damages and damages to other object.
- Depending on each country's laws and regulations, etc., there may be cases these measured charges cannot be used for certificate of transaction.

1.Specifications

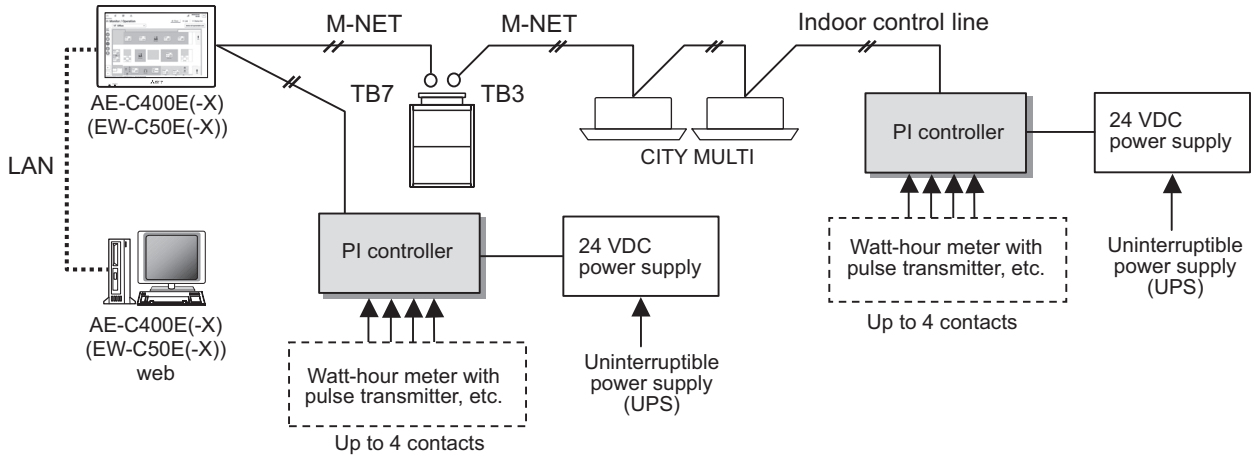
(1). Device Specifications

Item	Rating and Specification		
Power Supply	24 VDC ±10%: 5 W		Screw terminal block (M3)(*3)
Interface	M-NET communication	17 to 30 VDC (*1)	Screw terminal block (M3)(*3)
	Non-voltage a-contact input	Number of contacts: 4 Pulse signal: a-contact Pulse width: 100 ms to 300 ms (Idle period until next pulse: 100 ms or more) 100 ms or more 100 ms ~ 300 ms Rated voltage: 24 VDC Rated current: 1 mA or less (*2)	Screwless terminal block
Environment Conditions	Temperature	Operating temperature range	0 to 40°C [32°F to 104°F]
		Storage temperature range	-20 to 60°C [-4°F to 140°F]
	Humidity	30 to 90%RH (no condensation)	
Dimensions	200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 1 25/32 (D) in		
Weight	0.6 kg / 1 3/8 lbs		
Time Backup During Power Failure	In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)		
Installation Environment	Inside the metal control board (indoors) * Use this product in a hotel, a business office environment or similar environment.		

*1: Supply electric power from a power unit for the transmission line or an outdoor unit. Furthermore, the power consumption factor of the M-NET circuitry of this device is "1/4".

*2: Supply electric power from the main unit to the contacts of the meters.

*3: M3 is the size of the screw on the terminal block (ISO metric screw thread). The number indicates the screw diameter (mm).



*This figure omits the power supply line and only shows the transmission line.

<Restrictions>

The maximum settable total number of built-in PI controllers and PI controllers (PAC-YG60MCA) for each AE-C400E(-X)/EW-C50E(-X) is 15. The number of units that can be connected to one AE-C400E(-X)/EW-C50E(-X) is up to 50 including this device, indoor units, LOSSNAY units, etc.

CONTROLLER

NOTE

- For the shield ground of the M-NET centralized control line for central control, use single-point grounding at the power unit for the transmission line.
  However, when supplying electric power to the M-NET centralized control line from the R410A-Series outdoor unit*1 without using a power supply unit for the transmission line, use single-point grounding at the TB7 of that outdoor unit. *1 : Except PUMY model.
  Furthermore, when connecting this device to the M-NET indoor control line, use grounding at the TB3 for each outdoor unit system.
- Connecting an Uninterruptible power supply (UPS) to the 24 VDC power supply is recommended in order to prevent the loss of pulse data in the event of a power failure.
  If a UPS cannot be connected, try to make the AC power supply to the 24 VDC power supply as much same as the AC power supply line to the meters.
- This device does not support level meters. To use a level meter, incorporate a Converter circuit externally and convert to pulse input.
- If the M-NET transmission line of this device is connected to an M-NET indoor control line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the PI controller cannot be controlled from the system controller.

(2). Parts Purchased Separately

Prepare the following parts to install this device.

Required Part	Specification
Unit fixing screws	M4 screw × 4 (* M4: ISO metric screw thread)
Power supply for this device	Power source: 24 VDC 0.2 A (Minimum loading), SELV circuit, power line with grounding terminal Ripple noise: Lower than 200 mVp-p Compatible specification Authorized or CE marked products Subject to regulations: - IEC60950 (or EN60950) - CISPR22/24 (or EN55022/24) - IEC61000-3-2/3-3 (or EN61000-3-2/3-3)
Power line	Use a sheathed vinyl cord or cable. At least 0.75 mm^2 (AWG18)
M-NET transmission line	Type of the cable: Sheathed vinyl cords or cable which comply with the following specifications or equivalent. • CPEV ø1.2 mm to ø1.6 mm • CVVS 1.25 mm^2 to 2 mm^2 (AWG16 to 14) * CPEV: PE insulated PVC sheathed shielded communication cable * CVVS: PVC insulated PVC sheathed shielded control cable PE: Polyethylene PVC: Polyvinyl choloride Power needs to be supplied to the M-NET circuitry of this device. Use an outdoor unit or a separately purchased power supply unit for the transmission line.
Signal lines	Shows the size of the electric wire (copper wire) that is adapted to the terminal block of this device. Electric wire size..... (1)Solid wire: ø0.65 mm (AWG21) - ø1.2 mm (AWG16) (2)Stranded wire: 0.75 mm^2 (AWG18) - 1.25 mm^2 (AWG16) Single strand: At least ø0.18 mm

[Parts to be Purchased Separately]

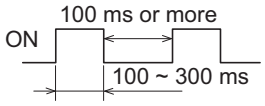
Name	Model	Application	Remark
Power supply unit	PAC-SC51KUA	Power supply to the M-NET transmission line	This is not required when power is to be supplied from an outdoor unit.

[Commercially available parts]

Part	Use	Remark
External 24 VDC power source	Supplies power to the PI controller.	Refer to "Power supply for this device" in "Required Part" above for the capacity of the power supply.

[Recommended Pulse Specifications]

Prepare a measuring instrument that measures the type of pulse signals indicated in table below.

Type	Specification
Output pulse relay method	Semiconductor relay method
Output pulse width	100 ~ 300 ms (100 ms and above) Choose an instrument that outputs non-voltage a-contact point pulse per each pulse output. 
Pulse unit	Watt-hour meter: 0.1 kWh/pulse, 1 kWh/pulse recommended Water meter: m^3/pulse Gas meter: m^3/pulse Calorimeter: MJ/pulse * Except for the watt-hour meter, select instruments that take measurements in the appropriate pulse unit.

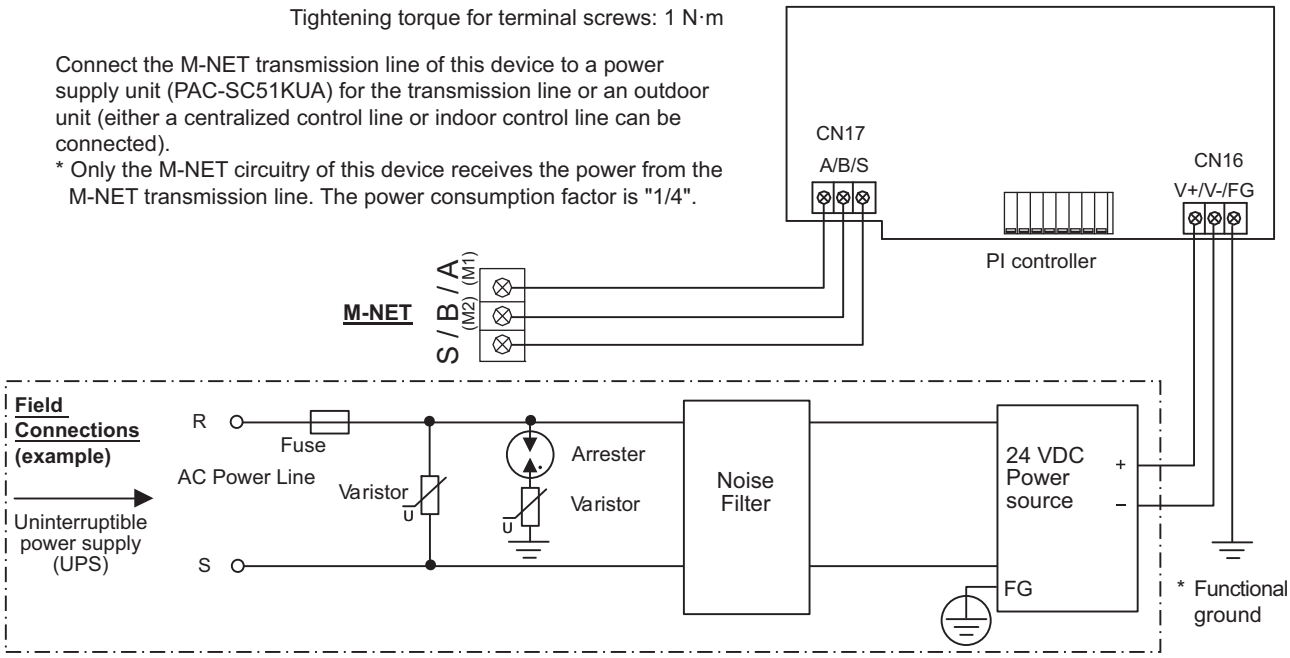
CONTROLLER

2. Wiring Instructions

(1). Connecting the Power and M-NET Transmission Lines

Tightening torque for terminal screws: 1 N·m

Connect the M-NET transmission line of this device to a power supply unit (PAC-SC51KUA) for the transmission line or an outdoor unit (either a centralized control line or indoor control line can be connected).
* Only the M-NET circuitry of this device receives the power from the M-NET transmission line. The power consumption factor is "1/4".



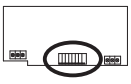
⚠CAUTION

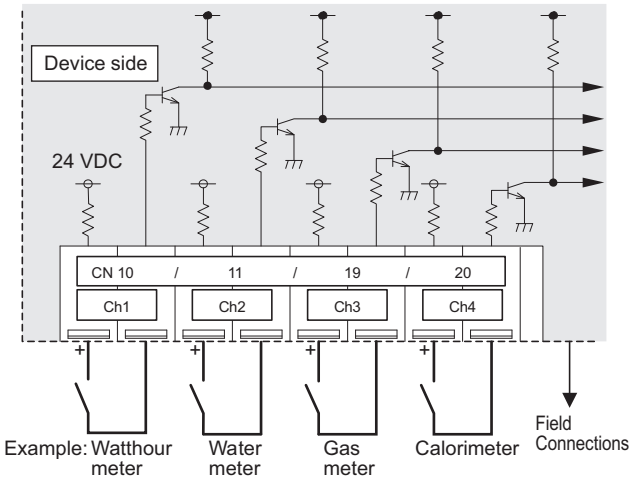
- Use a power line and M-NET transmission line that satisfy the specifications described in "1-(2). Parts Purchased Separately".
- Attach a circuit comprising the following components to the supply primary side of the 24 VDC power supply.
  (1) Varistor, (2) Arrester, (3) Noise filter, (4) Fuse
- It is important to pay attention to the polarity when connecting to the 24 VDC power supply terminal block. Connecting the positive and negative in the reverse order will cause a failure.
- Fix the power line and M-NET transmission line in place on the outside to ensure that the terminal block is not affected by any external force.
  Not securely connecting and fixing the wires in place may cause heat generation and fire.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires. Cover the shielded line of the M-NET transmission line with materials such as vinyl tape and prevent short-circuiting with the plates.

(2). Connecting the Signal Lines

- Separately procure items such as terminal blocks and cables locally.
- The maximum wire length is 100 m (328 ft).
  However, since the use of long wires makes the device susceptible to noise, using wires shorter than 10 m (32.8 ft) is recommended.

1) Pulse input (non-voltage a-contact)





NOTE	
	• The pulse unit (weight) can be added to each of the inputs of channels 1 to 4. • Be sure to set the pulse unit (weight) settings from a system controller (AE-C400E(-X)/EW-C50E(-X)). If the pulse unit (weight) value has not been set as required, the charge function and peak cut control will not work normally because correct measurement of usage amounts will not be made. • This device does not support level meters. To use a level meter, incorporate a Converter circuit externally and convert to pulse input.

⚠CAUTION	
	• The polarity of the input terminals is important, so be sure to match the polarity when using contacts that have polarity. • Select a contact with a minimum applicable load of 1 mA or less. • Supply 24 VDC 1 mA from the positive terminal to the contacts of the meters. • The pulse unit of the watt-hour meter being used should be 1 kWh/pulse or less. Note that the apportioning error will increase if a watt-hour meter with large pulse unit is used. • The input signal line should not come into contact with or be installed alongside the M-NET transmission line and power supply line. Care must also be taken to avoid wiring loops. • Strip 12 ± 1 mm (15/32 ± 1/32 in) of the wire coating and insert firmly into the terminal. • Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires. • Perform wiring so that the terminal block is not strained. If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

3. System Operation Test

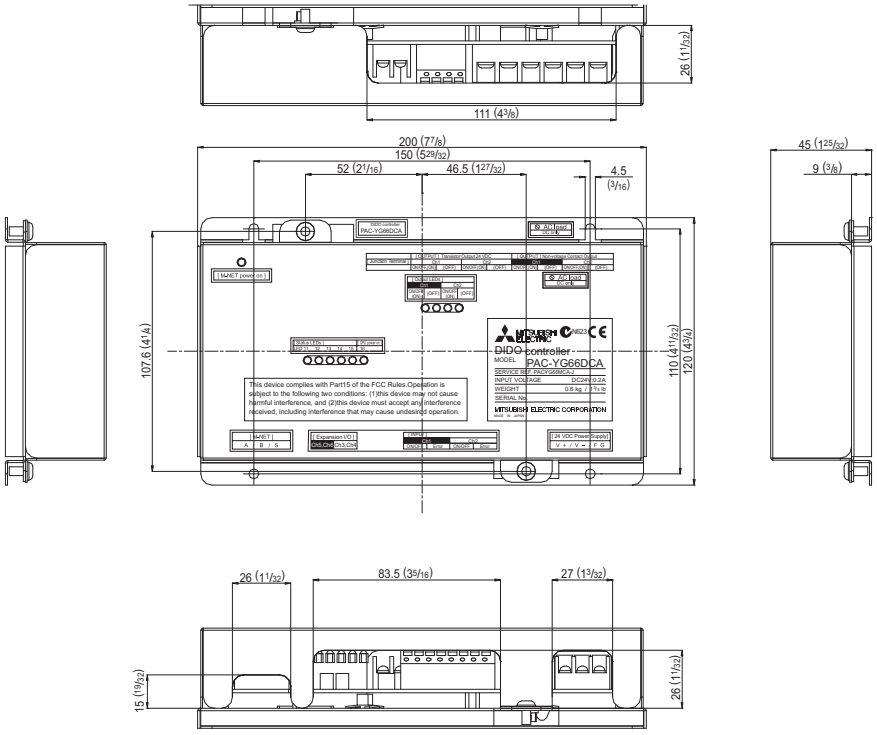
Do not turn the power OFF after starting operation. The power rate will not be counted while the power interruption.
Forcible pulse input must never be carried out after startup.

3-10. DIDO controller [PAC-YG66DCA]

The DIDO controller is used in combination with a AE-C400E(-X)/EW-C50E(-X) to operate general-purpose equipment, as well as to monitor operating and error status. It is equipped with two sets of standard terminals (Channels 1 and 2), and four sets of expansion connectors for the input/output terminals. Expansion cable is optional.
Operation can be monitored or performed from the AE-C400E(-X) LCD.
In addition, this device includes a function that interlocks M-NET devices such as indoor units, general equipment, etc.

External Dimensions

Unit: mm (in)



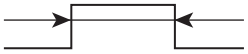
⚠CAUTION

Usage Restrictions

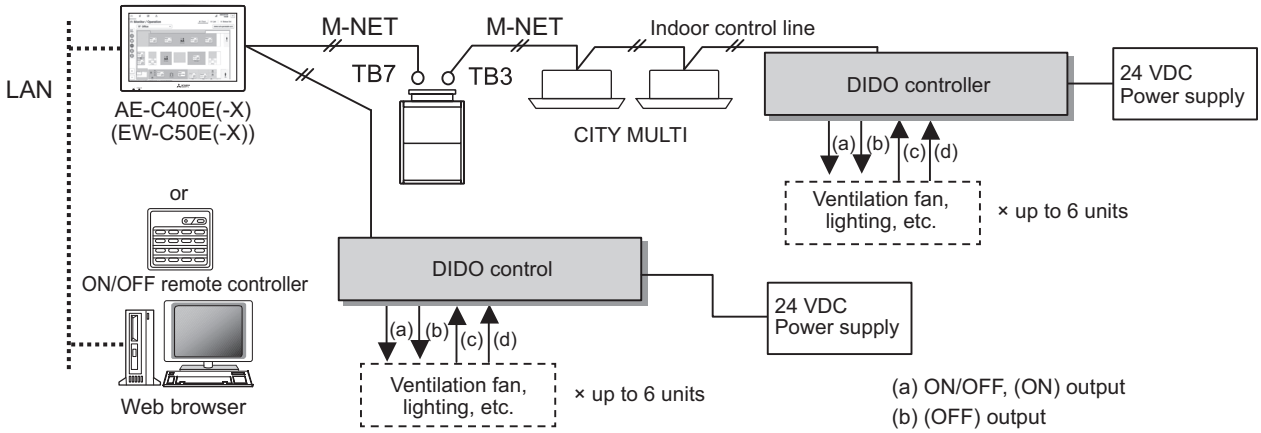
- Mitsubishi Electric does not take financial responsibility for damages caused by issues beyond our control or special circumstances (predicable or unpredictable); and secondary or accidental damages, and damages to other objects. We also do not take financial responsibility for opportunities lost as a result of device failure, or electrical power failure at the end-user site.
  Mitsubishi Electric does not take financial responsibility caused by end-users' requests including, but not limited to, device testing, startup, readjustment, and replacement.
- Do not use this device in disaster prevention, security, or "critical to life" applications.
- It is recommended to provide an external switch for general-purpose equipment in case of a failure of the DIDO controller or a peripheral part.

1. Specifications

(1). Device Specifications

<table>
<tr><th>Item</th><th colspan="6">Rating and Specification</th></tr>
<tr><td>Power Supply</td><td colspan="5">24 VDC ±10%: 5 W (*1)</td><td>Screw terminal block (M3) (*8)</td></tr>
<tr><td rowspan="9">Interface</td><td colspan="3">M-NET communication</td><td colspan="2">17 to 30 VDC (*2)</td><td>Screw terminal block (M3) (*8)</td></tr>
<tr><td rowspan="4">Standard</td><td rowspan="3">Output (*3)</td><td>ON/OFF, (ON) (*4)</td><td>Non-voltage Relay contact (2)</td><td>Applied load
MAX: 24 VDC, 5 W
MIN: 5 VDC, 2 mW
* AC loads cannot be connected.</td><td>Screw terminal block (M3.5) (*8)</td></tr>
<tr><td>Transistor (2)</td><td>24 VDC 40 mA or less (*5)</td><td>Screwless terminal block</td></tr>
<tr><td rowspan="2">(OFF) (*4)</td><td>Non-voltage Relay contact (2)</td><td>Applied load
MAX: 24 VDC, 5 W
MIN: 5 VDC, 2 mW
* AC loads cannot be connected.</td><td>Screw terminal block (M3.5) (*8)</td></tr>
<tr><td>Transistor (2)</td><td>24 VDC 40 mA or less (*5)</td><td>Screwless terminal block</td></tr>
<tr><td rowspan="2">Input</td><td>ON/OFF
Error/Normal</td><td>Non-voltage a contact (2 each)</td><td>24 VDC 1 mA or less (*6)</td><td>Screwless terminal block</td></tr>
<tr><td rowspan="4">Expansion</td><td rowspan="2">Output</td><td>ON/OFF, (ON) (*4)
(OFF) (*4)</td><td>Transistor (4 each)</td><td>24 VDC 40 mA or less (*5)</td><td>9 pin connector</td></tr>
<tr><td rowspan="2">Input</td><td>ON/OFF
Error/Normal</td><td>24 VDC input (4 each)</td><td>24 VDC 1 mA or less (*7)</td><td>9 pin connector</td></tr>
<tr><td colspan="3">Output Pulse Width</td><td>1s ± 30 ms</td><td colspan="2">1s ±30 ms  </td></tr>
<tr><td>Interlock Function</td><td colspan="6">Interlock M-NET devices and output contacts according to status of input contacts. (*8)</td></tr>
<tr><td rowspan="3">Environment Conditions</td><td colspan="2" rowspan="2">Temperature</td><td>Operating temperature range</td><td colspan="2">0 to 40°C[32°F to 104°F]</td></tr>
<tr><td>Storage temperature range</td><td colspan="2">-20 to 60°C[-4°F to 140°F]</td></tr>
<tr><td colspan="2">Humidity</td><td colspan="3">30 to 90%RH (no condensation)</td></tr>
<tr><td>Dimensions</td><td colspan="6">200 (W) × 120 (H) × 45 (D) mm / 7 7/8 (W) × 4 3/4 (H) × 1 25/32 (D) in</td></tr>
<tr><td>Weight</td><td colspan="6">0.6 kg / 1 3/8 lbs</td></tr>
<tr><td>Time Backup During Power Failure</td><td colspan="6">In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)</td></tr>
<tr><td>Installation Environment</td><td colspan="6">Inside the metal control board (indoors)
* Use this product in a hotel, a business office environment or similar environment.</td></tr>
</table>

*1: For details, refer to "1-(2). Parts Purchased Separately".
*2: Supply electric power from a power unit for the transmission line or an outdoor unit.
Furthermore, the power consumption factor of the M-NET circuitry of this device is "1/4".
*3: Non-voltage Relay contact or transistor is available for output. Only one can be used at a time.
*4: ( ) is in the case of a pulse.
*5: The output is open collector type. Power must be supplied from an external power source to the output circuit of this device.
*6: Power is supplied from this device to the external contacts.
*7: Power must be supplied from an external power source.
*8: M3 and M3.5 are sizes of the screw on the terminal block (ISO metric screw thread).
The number indicates the screw diameter (mm).



*This figure omits the power supply line and only shows the transmission line.

(a) ON/OFF, (ON) output
(b) (OFF) output
(c) ON/OFF input
(d) Error/Normal input
Standard: Terminal block (for 2 units)
Expansion: Connectors (for 4 units)
Total: 6 units

<Restrictions>
Maximum of 50 units (50 channels) per AE-C400E(-X)/EW-C50E(-X)
However, the number of units that can be connected to a AE-C400E(-X)/EW-C50E(-X) is up to 50 including the number of contacts used on this device, an indoor unit, LOSSNAY unit, etc.
Up to 6 contacts can be connected to the DIDO controller (1 M-NET address). One contact connected to this device is calculated as the equivalent of one indoor unit connected to AE-C400E(-X)/EW-C50E(-X).
For example, 5 contacts connected to the DIDO controller are calculated as the equivalent of 5 indoor units connected to AE-C400E(-X)/EW-C50E(-X).

NOTE

- For the shield ground of the M-NET centralized control line, use single-point grounding at the power unit for the transmission line.
  However, when supplying electric power to the M-NET centralized control line from the R410A-Series outdoor unit*1 without using a power supply unit for the transmission line, use single-point grounding at the TB7 of that outdoor unit. *1: Except PUMY model.
  Furthermore, when connecting this device to the M-NET indoor control line, use grounding at the TB3 for each outdoor unit system.
- If the M-NET transmission line of this device is connected to the M-NET indoor control line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the DIDO controller cannot be controlled from the system controller.
- Controlling the ON/OFF remote controller is only possible with channel 1 of a standard terminal block.
- When AE-C400E(-X)/EW-C50E(-X) is connected, monitoring control can only be performed from AE-C400E(-X)/EW-C50E(-X) Web. Monitoring control cannot be performed from the ON/OFF remote controller.

(2). Parts Purchased Separately

Prepare the following parts to install this device.

Required Part	Specification
Unit fixing screws	M4 screw × 4 (*M4: ISO metric screw thread)
Power supply for this device	Commercially available power source: 24 VDC±10% 0.2 A (Minimum loading), SELV circuit, power line with grounding terminal Ripple noise: Lower than 200 mVp-p Compatible specification Authorized or CE marked products Subject to regulations: - IEC60950 (or EN60950) - CISPR22/24 (or EN55022/24) - IEC61000-3-2/3-3 (or EN61000-3-2/3-3) When using transistor output (including extension output) for the 24 VDC output of this device, increase the capacity to match the number used. • 1 set used: 0.3 ADC (Minimum) • 2 sets used: 0.4 ADC (Minimum) • 3 sets used: 0.5 ADC (Minimum) • 4 sets used: 0.6 ADC (Minimum) • 5 sets used: 0.7 ADC (Minimum) • 6 sets used: 0.8 ADC (Minimum) * The increase of the power supply capacity is 0.1 ADC for every set.
Power line	Use a sheathed vinyl cord or cable. At least 0.75 mm^2 (AWG18)
M-NET transmission line	Type of the cable: Sheathed vinyl cords or cable which comply with the following specifications or equivalent. • CPEV ø1.2 mm to ø1.6 mm • CVVS 1.25 mm^2 to 2 mm^2 (AWG 16 to 14) * CPEV: PE insulated PVC sheathed shielded communication cable * CVVS: PVC insulated PVC sheathed shielded control cable PE: Polyethylene PVC: Polyvinyl choloride Power needs to be supplied to the M-NET circuitry of this device. Use an outdoor unit or a separately purchased power supply unit for the transmission line.
Signal lines	Use electric wire of an appropriate size for the terminal block of this device. Electric wire size ···· (1) Solid wire: ø0.65 mm (AWG21) - ø1.2 mm (AWG16) (2) Stranded wire: 0.75 mm^2 (AWG18) - 1.25 mm^2 (AWG16) Single strand: At least ø0.18 mm To use an expansion input/output, use a separa tely purchased external input/output adapter.

[Parts to be Purchased Separately]

Name	Model	Application	Remark
Power supply unit	PAC-SC51KUA	Power supply to the M-NET transmission line	This is not required when power is to be supplied from an outdoor unit.
External I/O adapter	PAC-YG10HA-E	Connection adapter for using an expansion input/output	This is required when an expansion input/output is used.

[Commercially available parts]

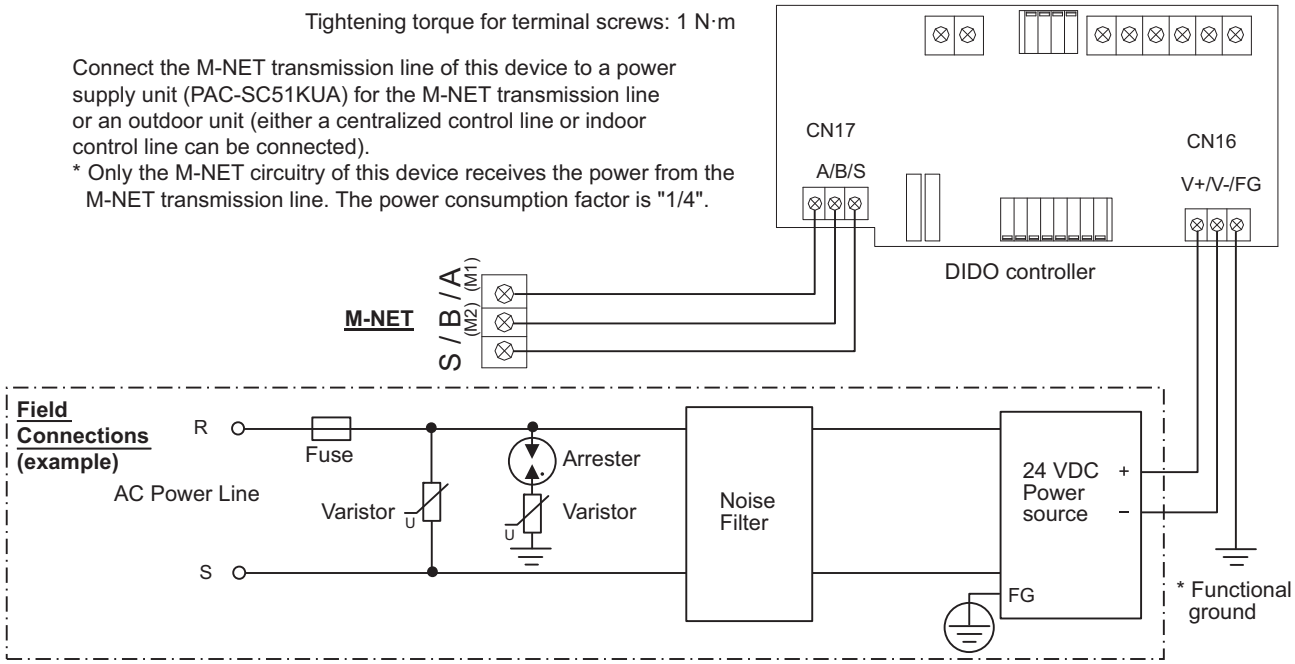
Name	Application	Remark
External 24 VDC power source	Supplies power when to use the DIDO controller or transistor output.	Refer to "Power supply for this device" in "Required Part" above for the power supply capacity.
Relay device	Requires commercially available relay device depending on the electric specifications with an external device.	

2. Wiring Instructions

(1). Connecting the Power and M-NET Transmission Lines

Tightening torque for terminal screws: 1 N·m

Connect the M-NET transmission line of this device to a power supply unit (PAC-SC51KUA) for the M-NET transmission line or an outdoor unit (either a centralized control line or indoor control line can be connected).
* Only the M-NET circuitry of this device receives the power from the M-NET transmission line. The power consumption factor is "1/4".



⚠CAUTION

- Use a power line and M-NET transmission line that satisfy the specifications described in "1-(2). Parts Purchased Separately".
- Attach a circuit comprising the following components to the supply primary side of the 24 VDC power supply.
  (1) Varistor, (2) Arrester, (3) Noise filter, (4) Fuse
- It is important to pay attention to the polarity when connecting to the 24 VDC power supply terminal block. Connecting the positive and negative in the reverse order will cause a failure.
- Fix the power line and M-NET transmission line in place on the outside to ensure that the terminal block is not affected by any external force.
  Not securely connecting and fixing the wires in place may cause heat generation and fire.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires. Cover the shielded line of the M-NET transmission line with materials such as vinyl tape and prevent short-circuiting with the plates.

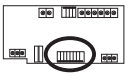
(2). Connecting the Signal Lines

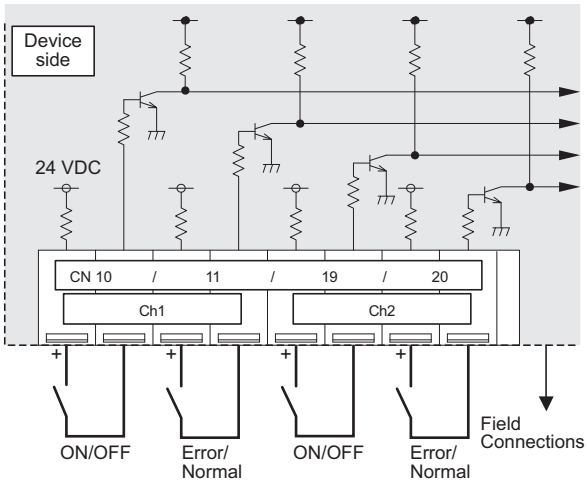
- Separately procure the relay, power supply for the relay, terminal block, and cable locally.
- The maximum wire length is 100 m (328 ft). However, since the use of long wires makes the device susceptible to noise, using wires shorter than 10 m (32.8 ft) is recommended.
- Connect another relay within 10 m (32.8 ft) from DIDO controller to extend the input line.

1) Standard Terminals (Channels 1 and 2)

(1-1) Input

(a) Non-voltage a-contact Inputs





Contacts closed :
Operating (ON); detected an error
Contacts closed :
Operating (ON); detected an error
*Error/normal detection becomes inverted from contact open/closed logic for a b-contact setting.

NOTE

- Connect the operate/stop (ON/OFF) inputs so that closing the contact operates (ON) the device and opening the contact stops (OFF) the device.
- The error/normal inputs of channels 1 and 2 can be switched between a-contact and b-contact.

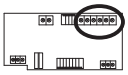
⚠CAUTION

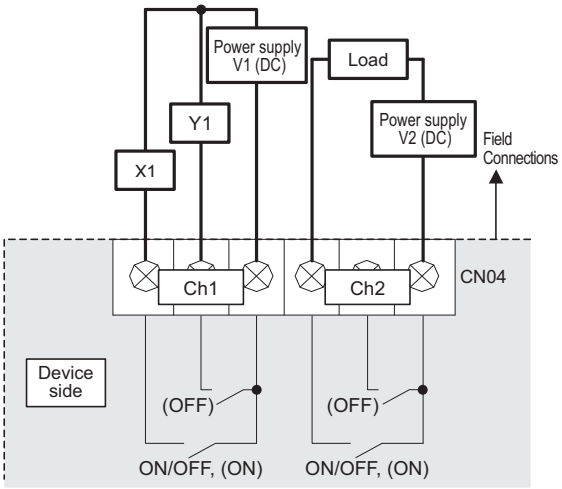
- The polarity of the input terminals is important, so be sure to match the polarity when using contacts that have polarity.
- Select a contact with a minimum applicable load of 1 mADC or less.
- Supply 24 VDC 1 mA from the positive terminal to the external contacts.
- Do not install alongside or in contact with other wires.
- Strip 12 ±1 mm (15/32 ± 1/32 in) of the wire coating and insert firmly into the terminal.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

(1-2) Output

Non-voltage Relay contact or transistor is available for output. Only one can be used at a time.

(a) Non-voltage Relay Contact Outputs





Operate (ON) output :
Contacts closed
Stop (OFF) output :
Contacts open
*Upon pulse output, the (ON), (OFF) contacts close according to the output content. ((ON) and (OFF) refer to the junctions in the diagram.)

( ) is in the case of a pulse.

Tightening torque for terminal screws: 1 N·m

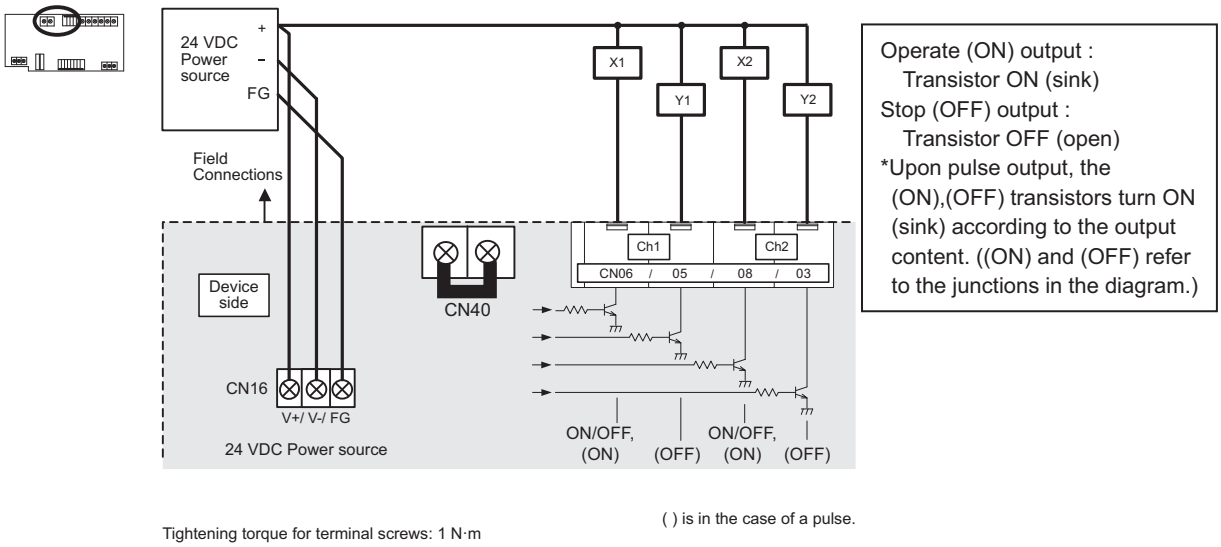
⚠CAUTION

- To use X1 and Y1 relay, obtain one that satisfies the following specifications.
  Operating coil
  [Applied load]
  MAX: 24 VDC, 5 W (Built-in diode)
  MIN: 5 VDC, 2 mW (Built-in diode)
  *1 AC loads cannot be connected.
  *2 Provide a power supply (V1, V2) that matches the load and relay to be used.
- To drive a direct load, use ones within the following.
  [Applied load]
  MAX: 24 VDC, 5 W
  MIN: 5 VDC, 2 mW

* AC loads cannot be connected.

- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.
- Do not connect the wires directly from the top of the control panel to the terminal block.
  Moisture may enter this device along the wiring and cause electric shock or fire.

(b) Transistor Outputs (Open Collector)



( ) is in the case of a pulse.

Tightening torque for terminal screws: 1 N·m

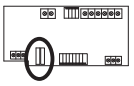
NOTE	The junction terminal block CN40 (for 24 VDC) is provided. Use them as relay terminals if necessary.

⚠CAUTION	• When X1, X2, Y1 and Y2 relays are used, select ones that satisfy the following specifications. Operating coil Rated voltage: 24 VDC (Built-in diode) Power consumption: 0.9 W or less (*1) Be sure to use the ones with the voltages rated above. Exceeding the rated voltage may affect the ON/OFF of other outputs. (*2) When using a separate power supply for this device, connect GND of the power supply to V- of CN16 of the terminal block of this device. (*3) Use a relay with a withstanding voltage of at least 2000 VAC between the coil and contact. Otherwise, there is the likelihood of an electric shock or fire. • Strip 12 ±1 mm (15/32 ±1/32 in) of the wire coating and insert firmly into the terminal. • Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires. • Perform wiring so that the terminal block is not strained. If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block. • Do not connect the wires directly from the top of the control panel to the terminal block. Moisture may enter this device along the wiring and cause electric shock or fire.

2) Expansion Connectors (Channels 3 to 6)

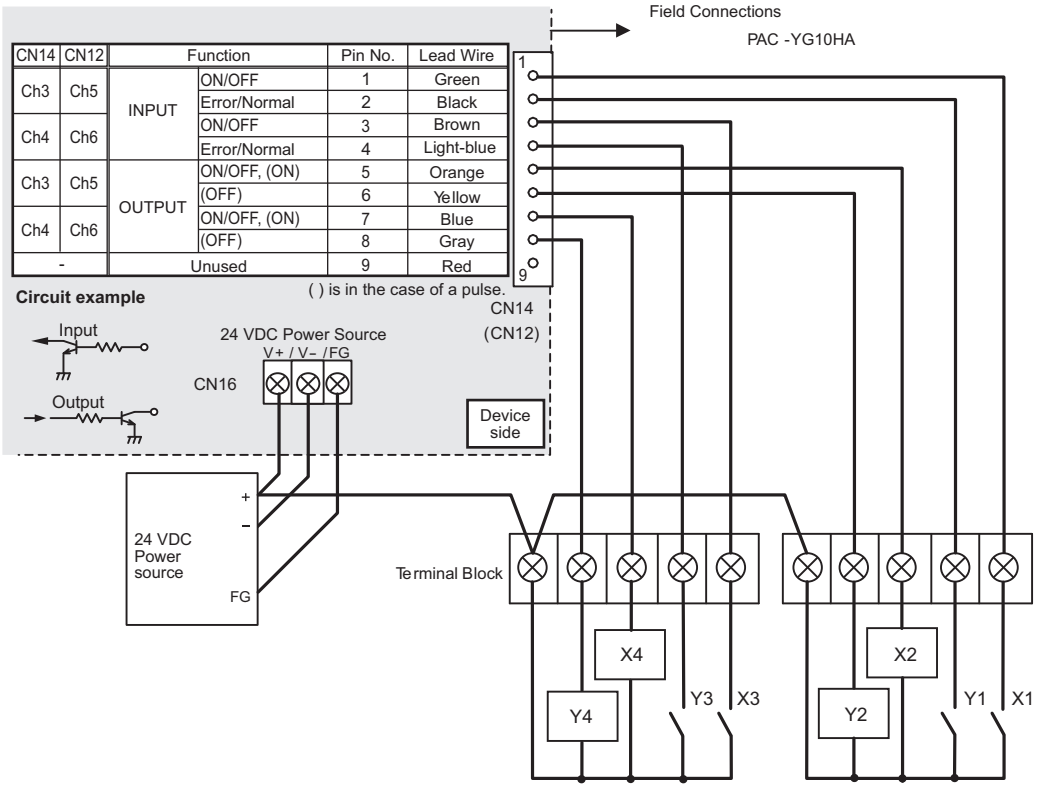
(2-1) Expansion Inputs/Outputs

Purchase an optional external input/output adapter (model: PAC-YG10HA-E) when using expansion inputs/outputs.
PAC-YG66DCA has two expansion connectors, and up to two external input/output devices can be connected to each connector.
An optional external input/output adapter is required for each connector used.



CN14	CN12	Function		Pin No.	Lead Wire
Ch3	Ch5	INPUT	ON/OFF	1	Green
			Error/Normal	2	Black
Ch4	Ch6		ON/OFF	3	Brown
			Error/Normal	4	Light-blue
Ch3	Ch5	OUTPUT	ON/OFF, (ON)	5	Orange
			(OFF)	6	Yellow
Ch4	Ch6		ON/OFF, (ON)	7	Blue
			(OFF)	8	Gray
-		Unused		9	Red

( ) is in the case of a pulse.



[Input]
Contacts closed (24 VDC applied): Operating (ON); detected an error
Contacts open : Stopped (OFF); detected as normal
* Error/normal detection becomes inverted from contact open/closed logic for a b-contact setting.
[Output]
Operate (ON) output : Transistor ON (sink)
Stop (OFF) output : Transistor OFF(open)
* Upon pulse output, the (ON), (OFF) transistors turn ON (sink) according to the output content. ((ON) and (OFF) refer to the junctions in the diagram.)

⚠CAUTION

- When using X1, X2, X3, X4, Y1, Y2, Y3 and Y4 relays, select ones that satisfy the following specifications.
  Operating coil Rated voltage: 24 VDC (Built-in diode)
  Power consumption: 0.9 W or less
  (*1) Be sure to use the ones with the voltages rated above. Exceeding the rated voltage may affect the ON/OFF of other outputs.
  (*2) When using a separate power supply for this device, connect GND of the power supply to V– of CN16 of the terminal block of this device.
  (*3) Use a relay with a withstanding voltage of at least 2000 VAC between the coil and contact. Otherwise, there is the likelihood of an electric shock or fire.
- Select a contact with a minimum applicable load of 1 mADC or less for the input contact.
- Do not install alongside or in contact with other wires.

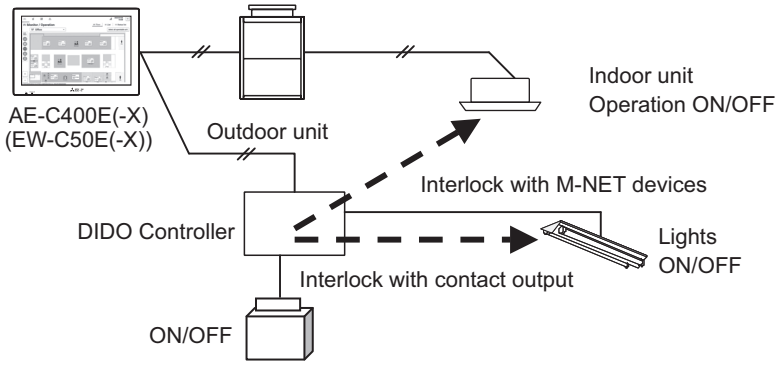
3. Interlock control

The DIDO controller (PAC-YG66DCA) has an interlock control function, which enables operation or set temperature change on the M-NET devices such as indoor units and also enables signal output to the contacts on the DIDO controller.
Interlock control covers the units connected to the DIDO controller with M-NET system.
AE-C400E(-X)/EW-C50E(-X) must be connected to use the function.
Ask your dealer for interlock control setting. The setting requires special tool support.

⚠CAUTION

Before using the interlock control, you must agree to the following.
1.This feature must not be used for disaster prevention or security purpose.
(Not designed to be used in situations that are life-threatening)
2.No functions must be added that allow the malfunctioning unit to run by defeating the safety features, such as an external ON/OFF switch or a short-circuit.
3.Those settings for the function that are not supported by the interlocked units must not be made. All the settings must be made within the specified range.
(Failure to observe these precautions may result in malfunctions and failures.)
4.Perform a test run for interlock control, and confirm the correct settings and normal operation.
5.The system must be configured in the way that integrates the operation of the interlocked fire and emergency control systems.

Item	Content	Remarks
Number of events	24 events	1 event interlock with 1 unit
Determinant condition for interlock control	At input contact change	• Operation input ON/OFF • Error input Error/Normal
Interlock control contents (to be output)	1 action for 1 condition • ON/OFF operation of indoor units • Operation mode change of indoor units • Temperature setting of indoor units (*1) • Contact output to DIDO controller (*2)	Interlock control covers the units connected to DIDO controllers with M-NET system. (*1) Temperature setting range: 19-28ºC (Standard setting) (*2) DIDO controller itself or other DIDO controllers in the same M-NET system.
Other	Interlock control prohibition function is enabled at emergency stop from AE-C400E(-X)/EW-C50E(-X)	



Interlock control of DIDO controller (example)

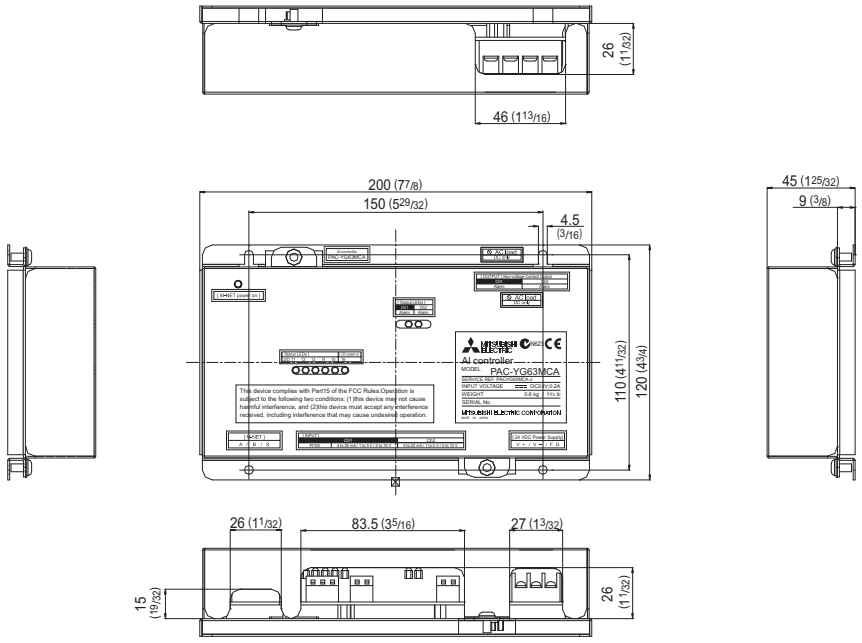
Note: Do not use Interlock control function on both AE-C400E(-X)/EW-C50E(-X) and DIDO controller at the same time.

3-11. AI controller [PAC-YG63MCA]

The AI controller measures temperature and humidity; it also has an alarm capability if the measurement data exceeds defined setpoints.
Historical measurement data can be displayed via only the AE-C400E(-X)/EW-C50E(-X) LCD.
Temperature and humidity can be displayed on the AE-C400E(-X) LCD.
Furthermore, an alarm can be output if measurement data exceeds a preset upper or lower limit.
The AI controller also features a function that interlocks M-NET devices for indoor units, etc.

External Dimensions

Unit: mm (in)



⚠CAUTION

Usage Restrictions

- Mitsubishi Electric does not take financial responsibility for damages caused by issues beyond our control or special circumstances (predicable or unpredictable) and secondary or accidental damages, and damages to other objects. We also do not take financial responsibility for opportunities lost as a result of device failure, or electrical power failure at the end-user site.
  Mitsubishi Electric does not take financial responsibility caused by end-users' requests including, but not limited to, device testing, startup, readjustment and replacement.
- Do not use this device in disaster prevention security or "critical to life" applications.

1. Specifications

(1). Device Specifications

Item	Description							
Power Supply	24 VDC ± 10%: 5 W							Screw terminal block (M3) (*5)
Interface	M-NET communication			17 to 30 VDC (*1)				Screw terminal block (M3) (*5)
	Input (*2)	Ch	Sensor		Measurement target	Measurement range	Measurement error	External connection method
		Ch1	Pt100 (3-wire system)		Temperature	-30 to 60°C [-22 to 140°F]	± 0.3%FS ± 0.1°C (0.18°F) (*3) [at 25°C (77°F)]	Screwless terminal block (3 poles)
		Ch1	Analog	4 to 20 mADC	Temperature/ humidity	(Set by system controller)	± 0.5%FS ± 0.1°C (0.18°F) (*3) ± 0.5%FS ± 0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
				1 to 5 VDC				
				0 to 10 VDC				
		Ch2	Analog	4 to 20 mADC	Temperature/ humidity	(Set by system controller)	± 0.5%FS ± 0.1°C (0.18°F) (*3) ± 0.5%FS ± 0.1%RH [at 25°C (77°F)]	Screwless terminal block (2 poles)
				1 to 5 VDC				
				0 to 10 VDC				
	Output	Upper/lower limit alarm interlock output (non-voltage contact)			Applied load MAX: 24 VDC, 5 W MIN: 5 VDC, 2 mW * AC loads cannot be connected.			Screw terminal block (M3.5) (*5)
Interlock Function	Interlock M-NET devices according to measurement data values. (*4)							
Environment Conditions	Temperature				Operating temperature range	0 to 40°C [32°F to 104°F]		
					Storage temperature range	-20 to 60°C [-4°F to 140°F]		
	Humidity				30 to 90%RH (no condensation)			
Dimensions	200 (W) × 120 (H) × 45 (D) mm / $7\frac{7}{8}$ (W) × $4\frac{3}{4}$ (H) × $1\frac{25}{32}$ (D) in							
Weight	0.6 kg / $1\frac{3}{8}$ lb							
Time Backup During Power Failure	In the event of power failure or shut-off, the internal capacitor will continue to track time for approximately one week. (The internal capacitor takes about 24 hours to fully charge; a replacement battery is not necessary.)							
Installation Environment	Inside the metal control board (indoors) * Use this product in a hotel, a business office environment or similar environment.							

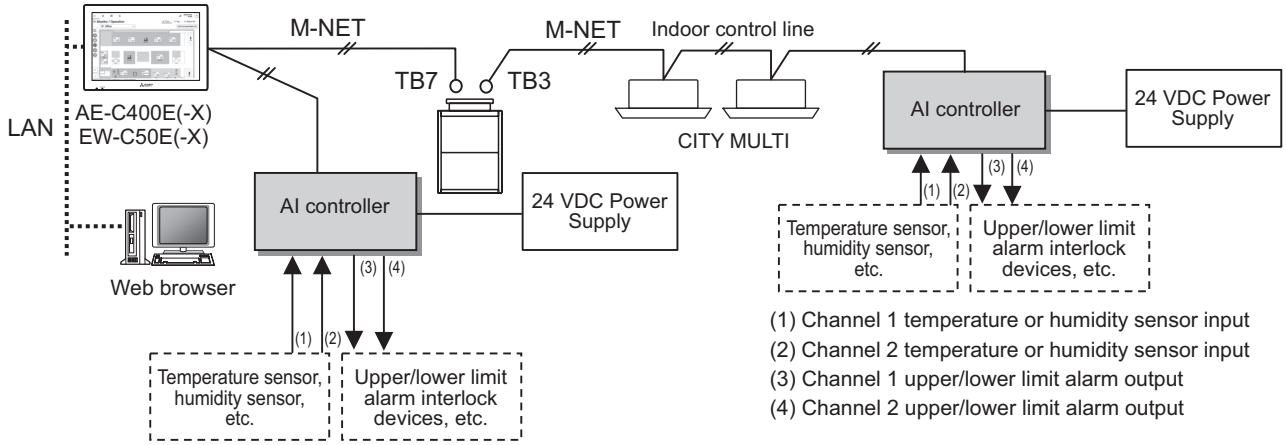
*1: Supply electric power from a power supply unit for the transmission line or an outdoor unit. Furthermore, the power consumption factor of the M-NET circuitry of this unit is "1/4".

*2: Configure the dip switch settings for the analog input method to use.

*3: The measurement error for the system includes the measurement error for this unit, sensor, and wiring.
a%FS (full scale) = a% × ([measurement range's upper limit value] - [lower limit value])

*4: Settings for the interlock function are performed from the Maintenance Tool. For details, refer to the operation manual for the Maintenance Tool.

*5: M3 and M3.5 are sizes of the screw on the terminal block (ISO metric screw thread). The number indicates the screw diameter (mm).



* This figure omits the power supply line and only shows the transmission line.

<Restrictions>
Maximum of 50 units per AE-C400E(-X)/EW-C50E(-X)
However, the number of units that can be connected to a AE-C400E(-X)/EW-C50E(-X) is up to 50 including this device, an indoor unit, LOSSNAY unit, etc.

NOTE

- For the shield ground of the M-NET centralized control line, use single-point grounding at the power unit for the transmission line.
  However, when supplying electric power to the M-NET centralized control line from the R410A-Series outdoor unit*1 without using a power supply unit for the transmission line, use single-point grounding at the TB7 of that outdoor unit. *1 : Except PUMY model.
  Furthermore, when connecting the M-NET transmission line of this device to the M-NET indoor control line, use grounding at the TB3 for each outdoor unit system.
- If the M-NET transmission line of this device is connected to an M-NET indoor control line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the AI controller cannot be set and monitored from the system controller.
- The sensor connected to the AI controller can only be monitored from AE-C400E(-X)/EW-C50E(-X) LCD. The sensor can be monitored from the AE-C400E(-X) LCD.

(2). Parts Purchased Separately

Prepare the following parts to install this device.

Required Part	Specification
Unit fixing screws	M4 screw × 4 (* M4: ISO metric screw thread)
Power supply for this device	Commercially available power source: 24 VDC ±10% 0.2 A (Minimum loading), SELV circuit, power line with grounding terminal Ripple noise: Lower than 200 mVp-p Compatible specification Authorized or CE marked products. Subject to regulations: - IEC60950 (or EN60950) - CISPR22/24 (or EN55022/24) - IEC61000-3-2/3-3 (or EN61000-3-2/3-3)
Power supply for sensors	A separate power supply for sensors may be required. In the case of 24 VDC voltage, the capacity of the power supply for this unit can be increased so that the power supply can be shared.
Power line	Use a sheathed vinyl cord or cable. At least 0.75 mm^2 (AWG18)
M-NET transmission line	Type of the cable: Sheathed vinyl cords or cable which comply with the following specifications or equivalent. • CPEV ø1.2 mm to ø1.6 mm • CVVS 1.25 mm^2 to 2 mm^2 (AWG 16 to 14) * CPEV: PE insulated PVC sheathed shielded communication cable * CVVS: PVC insulated PVC sheathed shielded control cable PE: Polyethylene PVC: Polyvinyl chloride Power needs to be supplied to the M-NET circuitry of this device. Use an outdoor unit or a separately purchased power supply unit for the transmission line.
Signal lines (Sensor input lines)	Shows the size of the electric wire (copper wire) that is adapted to the terminal block of this device. Refer to the usage and cautionary items of the sensor when performing settings. However, use a line with shielded line. Electric wire size ···· (1)Solid wire: ø 0.65 mm (AWG21) - ø 1.2 mm (AWG16) (2)Stranded wire: 0.75 mm^2 (AWG18) - 1.25 mm^2 (AWG16) Single strand: At least ø 0.18 mm

[Parts to be Purchased Separately]

Name	Model	Application	Remark
Power supply unit	PAC-SC51KUA	Power supply to the M-NET transmission line	This is not required when power is to be supplied from an outdoor unit.

[Commercially available parts]

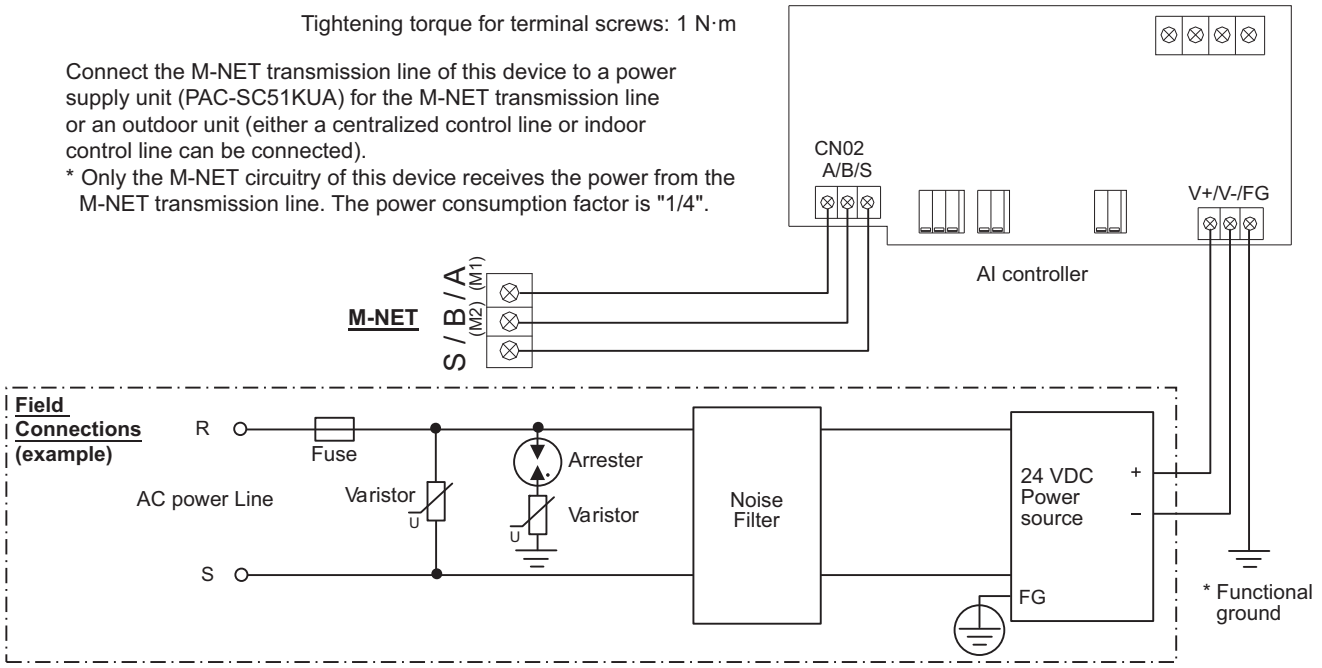
Part	Use	Remark
External 24 VDC power source	Supplies power to the AI controller.	Refer to "Power supply for this device" and "Power supply for sensors" in "Required Part" above for the capacity of the power supply.
Sensor	Measures temperature and humidity.	Temperature sensor (PAC-SE42TS-E) cannot be connected.

2. Wiring Instructions

(1). Connecting the Power and M-NET Transmission Lines

Tightening torque for terminal screws: 1 N·m

Connect the M-NET transmission line of this device to a power supply unit (PAC-SC51KUA) for the M-NET transmission line or an outdoor unit (either a centralized control line or indoor control line can be connected).
* Only the M-NET circuitry of this device receives the power from the M-NET transmission line. The power consumption factor is "1/4".



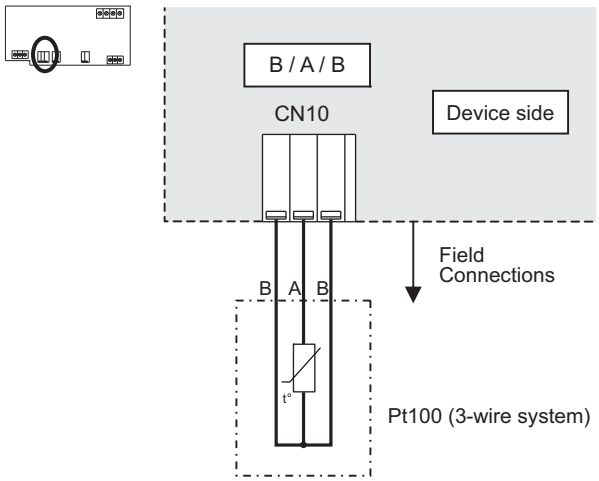
⚠CAUTION	• Use a power line and M-NET transmission line that satisfy the specifications described in "1-(2). Parts Purchased Separately". • Attach a circuit comprising the following components to the supply primary side of the 24 VDC power supply. (1) Varistor, (2) Arrester, (3) Noise filter, (4) Fuse • It is important to pay attention to the polarity when connecting to the 24 VDC power supply terminal block. Connecting the positive and negative in the reverse order will cause a failure. • Fix the power line and M-NET transmission line in place on the outside to ensure that the terminal block is not affected by any external force. Not securely connecting and fixing the wires in place may cause heat generation and fire. • Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires. Cover the shielded line of the M-NET transmission line with materials such as vinyl tape and prevent short-circuiting with the plates.

NOTE	• If the M-NET transmission line of this device is connected to an M-NET indoor control line and the outdoor unit is down because, for example, the power supply is interrupted for servicing or there is a failure, the AI controller cannot be set and monitored from the system controller. • Be sure to ground this device, PAC-SC51KUA and 24 VDC Power source. Measurement accuracy may be affected if devices are not grounded.

(2). Connecting the Sensors

• For channel 1, select one of the following four types: Pt100 detection, 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.
• For channel 2, select one of the following three types: 4 to 20 mADC, 1 to 5 VDC, or 0 to 10 VDC analog input.
• The wire length depends on the specifications of the sensor. However, since the use of long wires makes the device susceptible to noise, using wires shorter than 12 m (39.4 ft) is recommended. Use a shielded line for the sensor line and connect to the FG terminal on this unit or the FG terminal on the control panel.

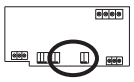
1) Channel 1 Pt100 Input



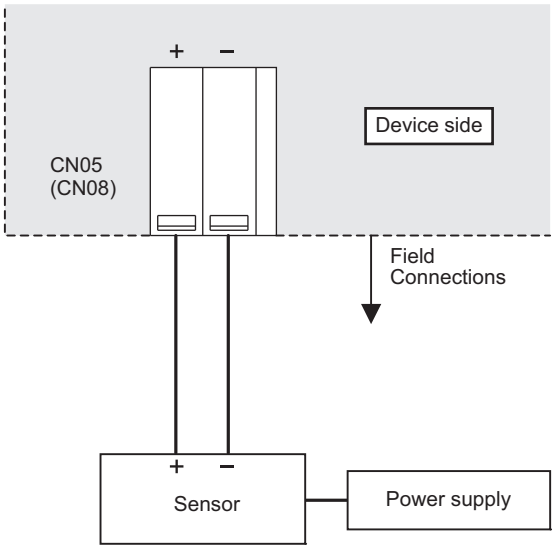
⚠CAUTION

• Use a 3-wire system for Pt100.
• A/B polarity is important for Pt100.
Be sure to match the polarity when using Pt100.
• Do not install the sensor input line parallel to or near the M-NET transmission line or power line.
Also avoid loop wiring.
Furthermore, confirm the precautions for the sensor.
• Strip 12 ± 1 mm (15/32 ± 1/32 in) of the wire coating and insert firmly into the terminal.
• Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
• Perform wiring so that the terminal block is not strained.
If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

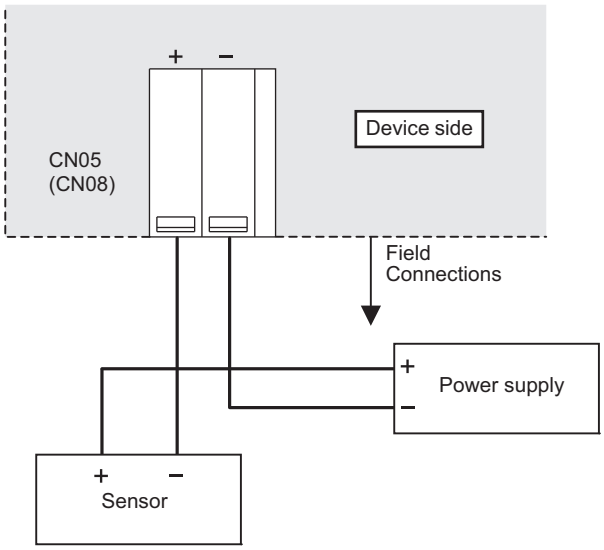
2) Channel 1 (Channel 2) Analog Input (4 to 20 mADC, 1 to 5 VDC, 0 to 10 VDC)



(a) When 1 to 5 VDC, 0 to 10 VDC, or 4 to 20 mADC (type for which power is supplied to the sensor) is connected



(b) When 4 to 20 mADC (type for which power is supplied to the signal line) is connected

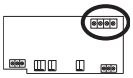


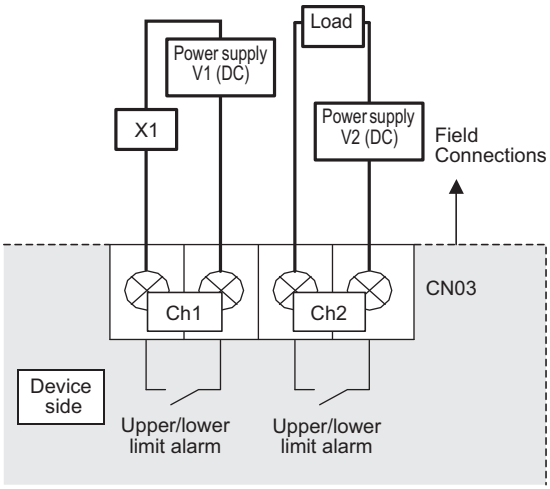
⚠CAUTION

- Select a power supply that is suitable for the sensor to be used.
- Do not install the sensor input line parallel to or near the M-NET transmission line or power line. Also avoid loop wiring.
  Furthermore, confirm the precautions for the sensor.
- Strip 12±1 mm (15/32 ±1/32 in) of the wire coating and insert firmly into the terminal.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.

(3). Connecting Alarm Setpoint Outputs (Non-voltage Contacts)

The maximum wire length is 100 m. However, since the use of long wires makes the device susceptible to noise, using wires no more than 10 m long is recommended.





* The contact of the internal relay is always ON during detection of an upper/lower limit alarm. (Level output)

Tightening torque for terminal screws: 1 N·m.

⚠CAUTION

- To use X1 relay, obtain one that satisfies the following specifications.
  Operating coil
  [Applied load]
  MAX: 24 VDC, 5 W (Built-in diode)
  MIN: 5 VDC, 2 mW (Built-in diode)
  *1 AC loads cannot be connected.
  *2 Provide a power supply (V1, V2) that matches the load and relay to be used.
- To drive a direct load, use ones within the following.
  [Applied load]
  MAX: 24 VDC, 5 W
  MIN: 5 VDC, 2 mW
  * AC loads cannot be connected.
- Make sure that the copper wiring is not short-circuiting the plates (cover, lower case) or neighboring wires.
- Perform wiring so that the terminal block is not strained.
  If strained, use a wire guide or junction terminal to alleviate the stress on the terminal block.
- Do not connect the wires directly from the top of the control panel to the terminal block.
  Moisture may enter this device along the wiring and cause electric shock or fire.

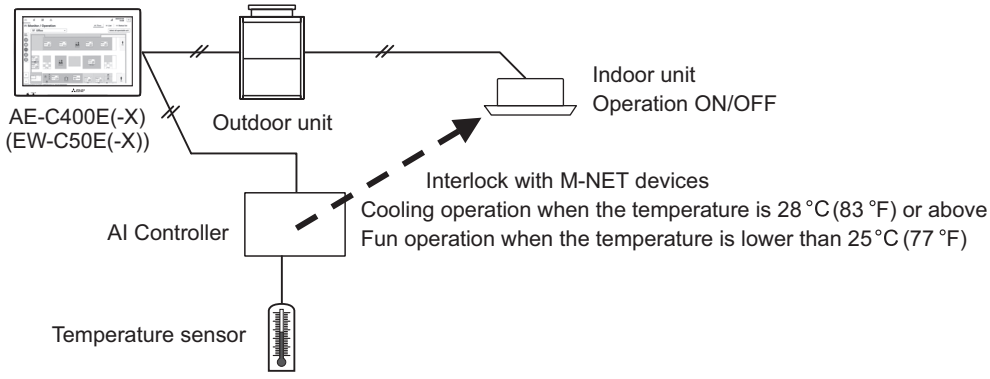
3. Interlock control

AI controller (PAC-YG63MCA) has an interlock control function, which enables operation or set temperature change on the M-NET devices such as indoor units.
Interlock control covers the units connected to the AI controller with M-NET system. AE-C400E(-X)/EW-C50E(-X) must be connected to use the function.
Ask your dealer for interlock control setting. The setting requires special tool support.

⚠CAUTION

Before using the interlock control, you must agree to the following.
1.This feature must not be used for disaster prevention or security purpose.
(Not designed to be used in situations that are life-threatening)
2.No functions must be added that allow the malfunctioning unit to run by defeating the safety features, such as an external ON/OFF switch or a short-circuit.
3.Those settings for the function that are not supported by the interlocked units must not be made. All the settings must be made within the specified range.
(Failure to observe these precautions may result in malfunctions and failures.)
4.Perform a test run for interlock control, and confirm the correct settings and normal operation.
5.The system must be configured in the way that integrates the operation of the interlocked fire and emergency control systems.

Item	Content	Remarks
Number of events	24 events	1 event interlock with 1 unit
Determinant condition for interlock control	Measurement value Measurement interval is 1 to 7200 seconds.	• Exceeding measurement value in setting range • Exceeding upper/lower limit alarm detection value and cancellation value
Interlock control contents (to be output)	1 action for 1 condition • ON/OFF operation of indoor units • Operation mode change of indoor units • Temperature setting of indoor units (*1) • Contact output to DIDO controller	Interlock control covers the units connected to AI controllers with M-NET system. (*1) Temperature setting range: 19-28ºC (Standard setting)
Other	Interlock control prohibition function is enabled at emergency stop from AE-C400E(-X)/EW-C50E(-X)	



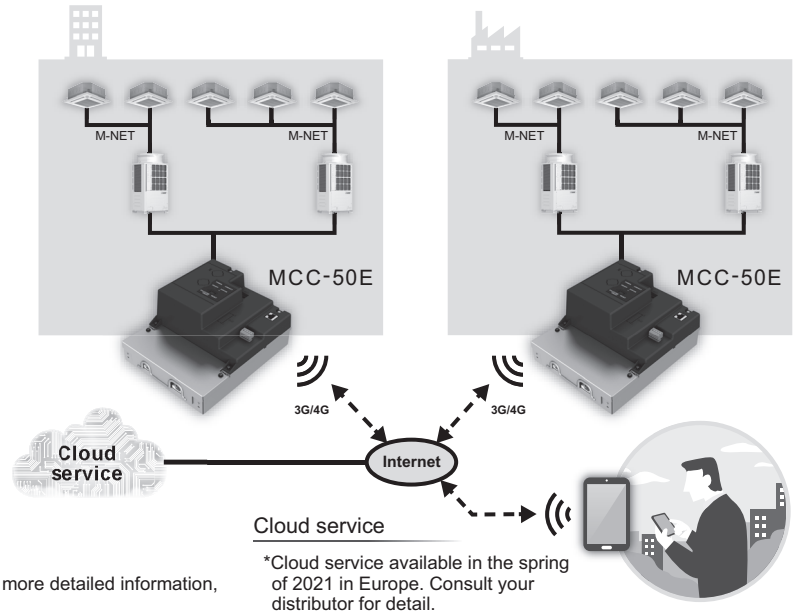
Interlock control of AI controller (example)

3-12. Cloud system connection device [MCC-50E]

Dual Set Point



■ System example



MCC-50E

*An Internet connection is required.
For 3G/4G connection, a separate 3G/4G device is required. For more detailed information, contact your local distributor.
Depending on the network environment, communication costs may be incurred.
Ensure sufficient network security.
*This device is not suitable for use in locations where children are likely to be present.
*If radio interference occurs between the 3G/4G dongle and other devices, relocate the MCC-50E.
*Keep a proper distance between the 3G/4G dongle and wireless transmitting devices such as cordless phones, microwave ovens, and wireless LANs to prevent radio interference from these devices from affecting the operation and performance of the MCC-50E.
*Up to 50 CITY MULTI indoor units can be connected to each MCC-50E.

Cloud service

*Cloud service available in the spring of 2021 in Europe. Consult your distributor for detail.

■ Product specifications

Item			Specifications
Power supply			100–240 VAC ± 10%; 50/60 Hz Single-phase
M-NET power feeding coefficient			1.5
Network interface			100BASE-TX
Ambient conditions	Temperature	Operating temperature range	-10°C – +55°C (+14°F – +131°F)
		Storage temperature range	-20°C – +60°C (-4°F – +140°F)
	Humidity		30%–90% RH (Non-condensing)
Dimensions (W × H × D)			172 × 209 × 100 mm (6-13/16 × 8-4/16 × 3-15/16 in) *172 × 253 × 100 mm (6-13/16 × 10 × 3-15/16 in) when using L-fittings
Weight			1.7 kg (3-3/4 lbs)

■ Connectable units

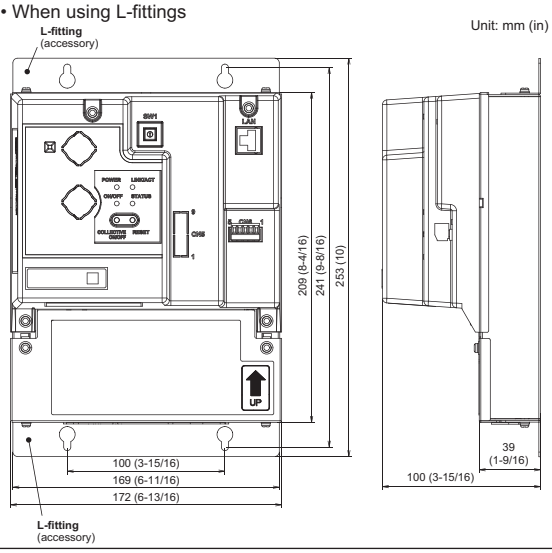
CITY MULTI, HYBRID CITY MULTI, Hot Water Heat Pump (CAHV/CRHV), e-series chiller

*Certain other products that are connectable to the M-NET may be connectable to the Cloud system connection device. Consult your nearest distributor for detail.

■ External dimensions

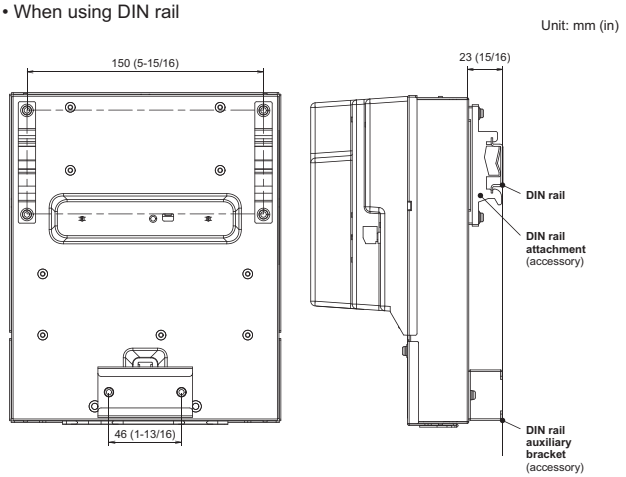
• When using L-fittings

Unit: mm (in)



• When using DIN rail

Unit: mm (in)



CONTROLLER

4-1. S/Y/HP/R2-Series

CITY MULTI system can be monitored or controlled with signal to/from the outside as every control board of Indoor unit or Outdoor unit has input/output signal connectors. Independent control to the individual Indoor or Outdoor can be carried out by using these connectors. Yet, for large-scale control, MELANS would be much easier. When using input/output connectors, a dedicated adapter (optional part) and a relay circuit needed to be prepared by the site.
Following are some typical example. (Y-Series)

Table 4-1-1. Control can be achieved by using Outdoor input/output connectors.

Function	Usage	Using connector		Signal	Option
		PUHY	PURY		
Demand	Prohibiting cooling/heating operation (thermo OFF) by an external input to the outdoor unit. * It can be used as the demand control for each refrigerant system.	CN3D	CN3D	Input (level-signal)	Adapter for external input (PAC-SC36NA-E)
Low noise mode	Performs a low noise operation of the outdoor unit by an external input to the outdoor unit. * It can be used as the low noise operation device for each refrigerant system.				
Snow sensor signal input	Forces the outdoor unit to perform a fan operation by receiving signals from the snow sensor. *4	CN3S	CN3S		
Auto-changeover	Cooling/heating operation can be changed by an external input to the outdoor unit.	CN3N	-		
Energy-saving mode	The operation mode of the unit can be changed from normal cooling operation (performance priority) to energy-saving cooling mode by an external signal input.	CN3K	CN3K		
Operation status of the compressor	How to extract signals from the outdoor unit. * It can be used as an operation status display device.	CN51	CN51	Output (level-signal)	Adapter for external output (PAC-SC37SA-E)
Error status	* It can be used for an interlock operation with external devices.				

*1 For details, refer to 1) through 4) shown below.
*2 Low noise mode is valid when Dip SW6-8 on the outdoor unit is set to OFF. When DIP SW6-8 is set to ON, 4 levels of on-DEMAND are possible, using different configurations of low noise mode input and DEMAND input settings.
When 2 or more outdoor units exist in one refrigerant circuit system, 8 levels of on-DEMAND are possible. When 3 outdoor units exist in one refrigerant circuit system, 12 levels of on-DEMAND are possible.
*3 Low noise mode can be switched from ability main to low noise main with Dip SW6-7 on the outdoor unit. Dip SW6-7 OFF: ability main (ability main mode : The sound pressure level is reduced by limiting the maximum fan frequency under the following condition. Cooling mode : outdoor temp. (TH7) ≤ 30°C Heating mode : outdoor temp. (TH7) ≥ 3°C), ON: low noise main.
*4 When multiple outdoor units exist in one refrigerant circuit system, settings on every outdoor unit (signal input) are required.
*5 For detailed drawing, refer to "4-2. Outdoor unit input/output connector".

1) Table 4-1-2. SW6-8: OFF (Compressor ON/OFF, Low noise mode)

CN3D 1-3P	2-level of on-Demand *6
Open	100%(No Demand)
Short-circuit	0%

CN3D 1-2P	Low noise mode *7 *8
Open	OFF
Short-circuit	ON

*6 When SW6-8 on the outdoor unit in one refrigerant circuit system is set to ON (4 levels or 8 levels or 12 levels of on- DEMAND), this function cannot be used.
*7 This function and the 4 levels or 8 levels on-DEMAND function can be used together. Input the order to CN3D 1-2P on the outdoor unit whose SW6-8 is set to OFF.
*8 The following four patterns shown in the low noise mode setting table can be set.

Low noise mode setting table

	SW4		
	997	1006	
50%	OFF	OFF	Factory setting
60%	OFF	ON	
70%	ON	ON	
85%	ON	OFF	

2) When SW6-8 on one outdoor unit in one refrigerant circuit system is set to ON (4 levels of on-DEMAND) (*9)

	CN3D 1-2P	
CN3D 1-3P	Open	Short-circuit
Open	100% (No DEMAND)	75%
Short-circuit	0%	50%

Note the following steps to be taken when using STEP DEMAND.
Example: When switching from 100% to 50%

Steps in DEMAND level setting

<WRONG> 100% → 0% → 50%
<CORRECT> 100% → 75% → 50%

If the demand settings are switched in the wrong order listed as the wrong example above, the unit may go into thermo OFF mode.
The percentage of the DEMAND listed in the table above is an approximate value based on the compressor volume and does not necessarily correspond with the capacity.
This function and the Low noise mode function cannot be used together.

3) When SW6-8 on the two outdoor units in one refrigerant circuit system is set to ON (8 levels of on-DEMAND) (*9,*10)

8 levels of on-DEMAND		No.2 CN3D				
		1-2P	Open		Short-circuit	
No.1 CN3D	1-2P	1-3P	Open	Short-circuit	Open	Short-circuit
	Open	Open	100% (No DEMAND)	50%	88%	75%
		Short-circuit	50%	0%	38%	25%
	Short-circuit	Open	88%	38%	75%	63%
		Short-circuit	75%	25%	63%	50%

4) When SW6-8 on the all outdoor units in one refrigerant circuit system is set to ON (12 levels of on-DEMAND) (*10)

12 levels of on-DEMAND	No.2 CN3D	1-2P	Open							
		1-3P	Open				Short-circuit			
	No.3 CN3D	1-2P	Open		Short-circuit		Open		Short-circuit	
No.1 CN3D	1-2P	1-3P	Open	Short-circuit	Open	Short-circuit	Open	Short-circuit	Open	Short-circuit
	Open	Open	100%	67%	92%	84%	67%	34%	59%	50%
		Short-circuit	67%	34%	59%	50%	34%	0%	25%	17%
	Short-circuit	Open	92%	59%	84%	75%	59%	25%	50%	42%
		Short-circuit	84%	50%	75%	67%	50%	17%	42%	34%

12 levels of on-DEMAND	No.2 CN3D	1-2P	Short-circuit							
		1-3P	Open				Short-circuit			
	No.3 CN3D	1-2P	Open		Short-circuit		Open		Short-circuit	
No.1 CN3D	1-2P	1-3P	Open	Short-circuit	Open	Short-circuit	Open	Short-circuit	Open	Short-circuit
	Open	Open	92%	59%	84%	75%	84%	50%	75%	67%
		Short-circuit	59%	25%	50%	42%	50%	17%	42%	34%
	Short-circuit	Open	84%	50%	75%	67%	75%	42%	67%	59%
		Short-circuit	75%	42%	67%	59%	67%	34%	59%	50%

*9 Input the order to CN3D on the outdoor unit whose SW6-8 is set to ON.
*10 CN3D of No. 1, 2, 3 can be selected arbitrary with the outdoor unit whose SW6-8 is set to ON.

Table 4-1-3. Control can be achieved by using Indoor input/output connectors.

Function	Usage	Using connector	Signal
Remote/Local switching *1 ON/OFF *2*3	Indoor group can be controlled ON/OFF by an ON/OFF switching or contact input to the connector of the head Indoor in an Indoor group. It can be interlocked with timer, door, window, or other equipment to "Force stopping"	CN32	Input (level-signal)
ON/OFF *2*3	Indoor group can be controlled ON/OFF by an external pulse signal input to the connector of the head Indoor in an Indoor group.	CN51	Input (pulse-signal)
Demand	Indoor group can be controlled ON/OFF by an ON/OFF switching or contact input to the connector of every Indoor in an Indoor group.	CN52	Input (pulse-signal)
Monitoring ON/OFF state	Signal output from a head Indoor unit, presenting its Indoor group.	CN51	Output
Monitoring heating state	It can be used for monitoring or interlock with other equipment purpose and so on.	CN52	
Monitoring cooling/drying state		CN52	
Monitoring Error state Monitoring Thermo-OFF(fan) state	Signal output from every Indoor unit, for monitoring Error or Thermo-off (fan) state. It can be used for monitoring or interlock with other equipment purpose and so on.	CN51 CN52	Output

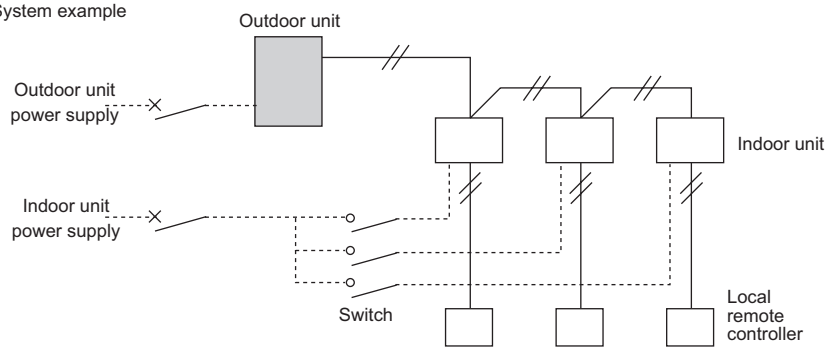
*1. When switching to Remote, control at Local remote controller will NOT be effective, but the "CENTRALLY CONTROLLED" is displayed.
*2. MA or ME remote controller is needed for this function.
*3. If using ON/OFF input function, Automatic-address-start-up can not be performed to start-up the system at commissioning.
*4. If CITY MULTI use AE-C400E(-X)/EW-C50E(-X) and PLC software to control the Indoor unit via its external input/output connectors, Dip Switch 1-9 and Dip Switch 1-10 should be set to ON.
In this case, the input/output connectors act as normal connectors, functions mentioned at Table 4-1-3. are no more available.
Details are available at the PLC software Instruction Manual.

Table 4-1-4. ON/OFF control to each Indoor unit (group) by using Dip Switch 9 and 10 (SW1-9, SW1-10) of the Indoor unit.

Function	Operation on Indoor units	Setting Dip Switch *1*4	
		1-9	1-10
Auto ON	All indoor units will turn ON and automatically resume to its previous mode after 5 minutes from power recovery.	OFF	ON
Auto recovery	Indoor unit recovers to its previous state (ON/OFF, mode) after 5 minutes from power recovery.	ON	OFF
All OFF	Forced stopping regardless of Indoor units' state.	OFF	OFF

*1. The Dip Switch setting should be carried out on every Indoor unit in the group.
*2. Outdoor unit's power supply should NOT be cut. Otherwise, power supply to case heater of the compressor would be cut too, which may cause damage to the compressor.
*3. Above method can not be applied to the power ON/OFF of the drain pump and humidifier equipment.
*4. If CITY MULTI use AE-C400E(-X)/EW-C50E(-X) and PLC software to control the Indoor unit via its external input/output connectors, Dip Switch 1-9 and Dip Switch 1-10 should be set to ON.
In this case, the input/output connectors act as normal connectors, functions mentioned at Table 4-1-4. are no more available.

■ System example



Restart of the CITY MULTI needs to be careful. When no power supply to the outdoor unit, no power supply to the compressor case heater too. The compressor needed to be warmed up before running. When using above functions, power supply to the outdoor unit should be ensured.

Table 4-1-5. How to use Remote/Local switching connector CN32

State	Local remote controller display and operation	CN32-SW-1 for Local/Remote control switching	CN32-SW-2 for Remote "ON/OFF" operation
Local remote controller control	Operation is permitted	OFF	OFF
Remote STOP	"CENTRALLY CONTROLLED" flashing, "ON/OFF" at local remote controller is not possible.	ON	OFF
Remote START	"CENTRALLY CONTROLLED" flashing, "ON/OFF" at local remote controller is not possible.	ON	ON

* For details refer to CN32 in section “4-5. Indoor unit “-E/-A” type input/output connector”.

Table 4-1-6. Limitations to combining system controls ○: Simultaneous use available ×: Simultaneous use not available

	Description		Control combining distant/local	Pulse ON/OFF	Power ON/OFF	Automatic recover
1	Control combining distant/local	CN32	-	×*1	×*1	×*1
2	Pulse ON/OFF	CN51		-	O	O
3	HA ON/OFF(JEMA)	CN41			O	O
4	Power ON/OFF	-			-	×
5	Automatic recover	-				-

*1. Pulse ON/OFF, power ON/OFF and automatic recover can only be used when the remote/local setting CN32 is set to local. Therefore, always avoid this function when combining control.

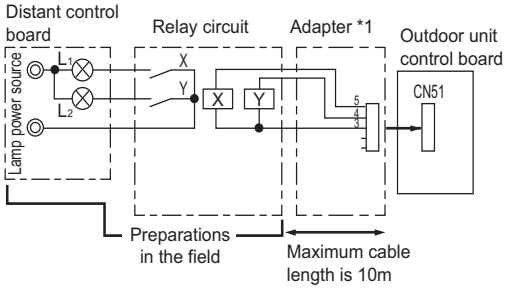
CONTROLLER

4-2. Outdoor unit input/output connector

⚠ Caution:	1.Wiring should be covered by insulation tube with supplementary insulation. 2.Use relays or switches with IEC or equivalent standard. 3.The electric strength between accessible parts and control circuit should have 2750V or more.

4-2-1. Output

• State (CN51)



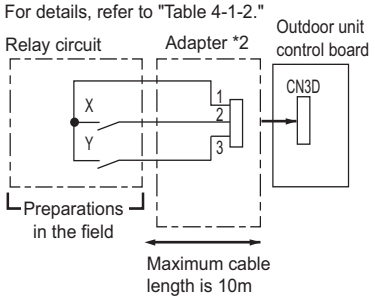
L1 : Outdoor unit error display lamp
L2 : Compressor operation lamp (compressor running state)
X, Y : Relay (coil =<0.9W : 12VDC)

*1. Optional part : PAC-SC37SA-E or field supply.

4-2-2. Input

Y/R2-Series

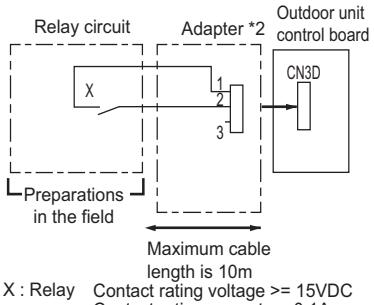
(1) Step demand and Low noise mode (CN3D)



X : Low noise mode or demand
Y : Demand
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

(2) Low noise mode (CN3D + DipSW6-8 OFF)



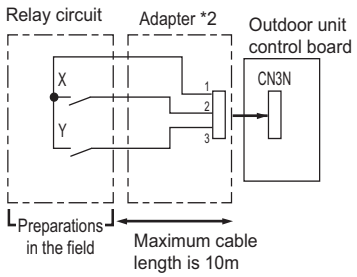
X : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

Low noise mode : The sound pressure level is reduced by controlling the maximum fan frequency and compressor frequency.

-Note-
The sound pressure level can not be reduced, when neither the fan frequency nor the compressor frequency are maximum.

(3) Auto-changeover (CN3N) (R2 excluded)

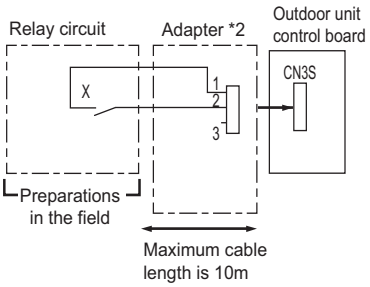


X : Cooling / Heating
Y : Validity / Invalidity of X
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

		X	
		OFF	ON
Y	OFF	Normal	
	ON	Cooling	Heating

(4) Snow sensor (CN3S)

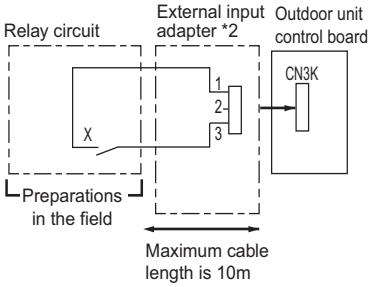


X : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

Snow sensor : The outdoor fan runs when X is closed in stop mode or thermostat mode.

(5) Energy-saving mode (CN3K)



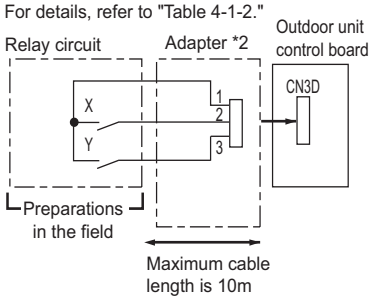
X : Energy-saving mode command
X : Relay Contact rating voltage >= DC15V
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

CONTROLLER

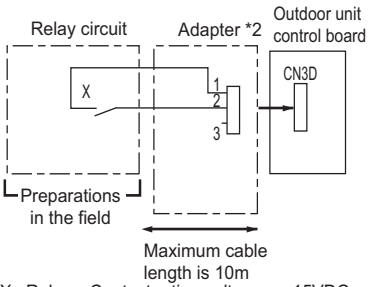
HP-Series

(1) Step demand and Low noise mode (CN3D)



X : Low noise mode or demand
Y : Demand
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC
*2. Optional part : PAC-SC36NA-E or field supply.

(2) Low noise mode (CN3D + DipSW4-4 OFF)

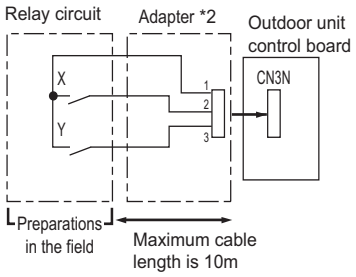


X : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC
*2. Optional part : PAC-SC36NA-E or field supply.

Low noise mode : The sound pressure level is reduced by controlling the maximum fan frequency and compressor frequency.

-Note-
The sound pressure level can not be reduced, when neither the fan frequency nor the compressor frequency are maximum.

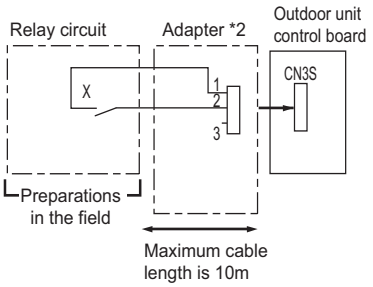
(3) Auto-changeover (CN3N)



X : Cooling / Heating
Y : Validity / Invalidity of X
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC
*2. Optional part : PAC-SC36NA-E or field supply.

		X	
		OFF	ON
Y	OFF	Normal	
	ON	Cooling	Heating

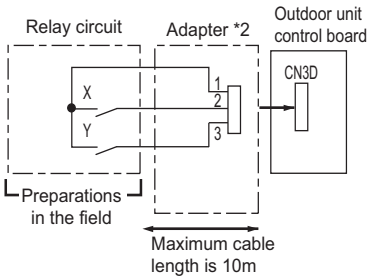
(4) Snow sensor (CN3S)



X : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC
*2. Optional part : PAC-SC36NA-E or field supply.
Snow sensor : The outdoor fan runs when X is closed in stop mode or thermostat mode.

S-Series

(1) Step demand and Low noise mode (CN3D)



X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.
PUMY-P112-140YKM2/VKM2: DipSW9-2 ON (Step demand only)
PUMY-P200YKM: DipSW2-6 ON (Step demand only)

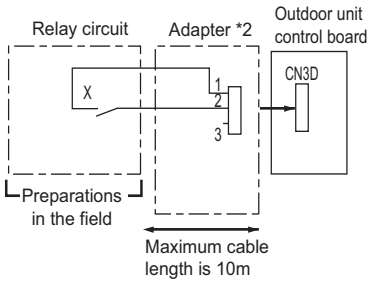
		X	
		OFF	ON
Y	OFF	100%	75%
	ON	0%	50%

*They are rough values.

DipSW9-2 OFF (Low noise mode)

X	Low noise mode
OPEN	OFF
SHORT	ON

(2) Low noise mode
PUMY-P112-140YKM3/VKM3 (CN3D + DipSW9-2 OFF)
PUMY-P200YKM1 (CN3D + DipSW2-6 OFF)



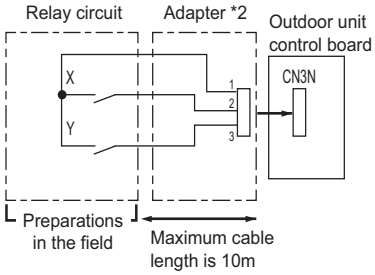
X: Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part: PAC-SC36NA-E or field supply.

Low noise mode: The sound pressure level is reduced by controlling the maximum fan frequency and compressor frequency.

-Note-
The sound pressure level can not be reduced, when neither the fan frequency nor the compressor frequency are maximum.

(3) Auto-changeover (CN3N)



X: Cooling/Heating
Y: Validity/Invalidity of X
X, Y: Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

		X	
		OFF	ON
Y	OFF	Normal	
	ON	Cooling	Heating

4-3. WY/WR2-Series

CITY MULTI system can be monitored or controlled with signal to/from the outside as every control board of Indoor unit or heat source unit has input/output signal connectors. Independent control to the individual Indoor or heat source can be carried out by using these connectors. Yet, for large-scale control, MELANS would be much easier. When using input/output connectors, a dedicated adapter (optional part) and a relay circuit needed to be prepared by the site. Following are some typical example.

Table 4-3-1. Control can be achieved by using heat source input/output connectors.

Function	Usage	Using connector		Signal	Option
		PQHY	PQRY		
Demand	Prohibiting cooling/heating operation (thermo OFF) by an external input to the heat source unit. * It can be used as the demand control for each refrigerant system.	CN3D	CN3D	Input (level-signal)	Adapter for external input (PAC-SC36NA-E)
Low noise mode	Performs a low noise operation of the heat source unit by an external input to the heat source unit. * It can be used as the low noise operation device for each refrigerant system.				
Pump Interlock signal input	Forces the heat source unit to stop operation by receiving contact signals from the pump interlock circuit	TB8	TB8		
Auto-changeover	Cooling/heating operation can be changed by an external input to the heat source unit.	CN3N	-		Adapter for external output (PAC-SC37SA-E)
Operation status of the compressor	How to extract signals from the heat source unit. * It can be used as an operation status display device. * It can be used for an interlock operation with external devices.	CN51	CN51	Output (level-signal)	
Error status					
Operation ON signal		TB8	TB8		

*1 For details, refer to 1) through 3) shown below.
*2 Low noise mode is valid when Dip SW6-8 on the heat source unit is set to OFF. When DIP SW6-8 is set to ON, 4 levels of on-DEMAND are possible, using different configurations of low noise mode input and DEMAND input settings.
When 2 or more heat source units exist in one refrigerant circuit system, 8 levels of on-DEMAND are possible.
*3 For detailed drawing, refer to "4-4. Heat source unit input/output connector".

1) Table 4-3-2. SW6-8: OFF (Compressor ON/OFF, Low noise mode)

CN3D 1-3P	2-level of on-Demand *4
Open	100%(No Demand)
Short-circuit	0%

CN3D 1-2P	Low noise mode *5
Open	OFF
Short-circuit	ON

*4 When SW6-8 on the heat source unit in one refrigerant circuit system is set to ON (4 levels or 8 levels of on- DEMAND), this function cannot be used.
*5 This function and the 4 levels or 8 levels on-DEMAND function can be used together. Input the order to CN3D 1-2P on the heat source unit whose SW6-8 is set to OFF.

2) When SW6-8 on one heat source unit in one refrigerant circuit system is set to ON (4 levels of on-DEMAND) (*6)

	CN3D 1-2P	
CN3D 1-3P	Open	Short-circuit
Open	100% (No DEMAND)	75%
Short-circuit	0%	50%

Note the following steps to be taken when using STEP DEMAND.
Example: When switching from 100% to 50%

Steps in DEMAND level setting						
	<WRONG>	100%	→	0%	→	50%
	<CORRECT>	100%	→	75%	→	50%

If the demand settings are switched in the wrong order listed as the wrong example above, the unit may go into thermo OFF mode.
The percentage of the DEMAND listed in the table above is an approximate value based on the compressor volume and does not necessarily correspond with the capacity.
This function and the Low noise mode function cannot be used together.

3) When SW6-8 on the two heat source units in one refrigerant circuit system is set to ON (8 levels of on-DEMAND) (*6,*7)

8 levels of on-DEMAND		No.2 CN3D				
		1-2P	Open		Short-circuit	
No.1 CN3D	1-2P	1-3P	Open	Short-circuit	Open	Short-circuit
	Open	Open	100% (No DEMAND)	50%	88%	75%
		Short-circuit	50%	0%	38%	25%
	Short-circuit	Open	88%	38%	75%	63%
		Short-circuit	75%	25%	63%	50%

*6 Input the order to CN3D on the heat source unit whose SW6-8 is set to ON.
*7 CN3D of No. 1, 2 can be selected arbitrary with the heat source unit whose SW6-8 is set to ON.

CONTROLLER

Table 4-3-3. Control can be achieved by using Indoor input/output connectors.

Function	Usage	Using connector	Signal
Remote/Local switching *1 ON/OFF *2*3	Indoor group can be controlled ON/OFF by an ON/OFF switching or contact input to the connector of the head Indoor in an Indoor group. It can be interlocked with timer, door, window, or other equipment to "Force stopping"	CN32	Input (level-signal)
ON/OFF *2*3	Indoor group can be controlled ON/OFF by an external pulse signal input to the connector of the head Indoor in an Indoor group.	CN51	Input (pulse-signal)
Demand	Indoor group can be controlled ON/OFF by an ON/OFF switching or contact input to the connector of every Indoor in an Indoor group.	CN52	Input (pulse-signal)
Monitoring ON/OFF state	Signal output from a head Indoor unit, presenting its Indoor group.	CN51	Output
Monitoring heating state	It can be used for monitoring or interlock with other equipment purpose and so on.	CN52	
Monitoring cooling/drying state		CN52	
Monitoring Error state	Signal output from every Indoor unit, for monitoring Error or Thermo-off (fan) state.	CN51	Output
Monitoring Thermo-OFF(fan) state	It can be used for monitoring or interlock with other equipment purpose and so on.	CN52	

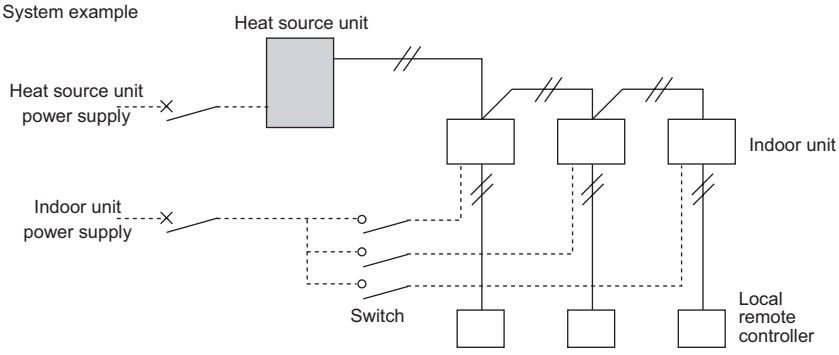
*1. When switching to Remote, control at Local remote controller will NOT be effective, but the "CENTRALLY CONTROLLED" is displayed.
*2. MA or ME remote controller is needed for this function.
*3. If using ON/OFF input function, Automatic-address-start-up can not be performed to start-up the system at commissioning.
*4. If CITY MULTI use AE-C400E(-X)/EW-C50E(-X) and PLC software to control the Indoor unit via its external input/output connectors, Dip Switch 1-9 and Dip Switch 1-10 should be set to ON.
In this case, the input/output connectors act as normal connectors, functions mentioned at Table 4-3-3. are no more available.
Details are available at the PLC software Instruction Manual.

Table 4-3-4. ON/OFF control to each Indoor unit (group) by using Dip Switch 9 and 10 (SW1-9, SW1-10) of the Indoor unit.

Function	Operation on Indoor units	Setting Dip Switch *1*4	
		1-9	1-10
Auto ON	All indoor units will turn ON and automatically resume to its previous mode after 5 minutes from power recovery.	OFF	ON
Auto recovery	Indoor unit recovers to its previous state (ON/OFF, mode) after 5 minutes from power recovery.	ON	OFF
All OFF	Forced stopping regardless of Indoor units' state.	OFF	OFF

*1. The Dip Switch setting should be carried out on every Indoor unit in the group.
*2. Heat source unit's power supply should NOT be cut. Otherwise, power supply to case heater of the compressor would be cut too, which may cause damage to the compressor.
*3. Above method can not be applied to the power ON/OFF of the drain pump and humidifier equipment.
*4. If CITY MULTI use AE-C400E(-X)/EW-C50E(-X) and PLC software to control the Indoor unit via its external input/output connectors, Dip Switch 1-9 and Dip Switch 1-10 should be set to ON.
In this case, the input/output connectors act as normal connectors, functions mentioned at Table 4-3-4. are no more available.

■ System example



Restart of the CITY MULTI needs to be careful. When no power supply to the heat source unit, no power supply to the compressor case heater too. The compressor needed to be warmed up before running. When using above functions, power supply to the heat source unit should be ensured.

Table 4-3-5. How to use Remote/Local switching connector CN32

State	Local remote controller display and operation	CN32-SW-1 for Local/Remote control switching	CN32-SW-2 for Remote "ON/OFF" operation
Local remote controller control	Operation is permitted	OFF	OFF
Remote STOP	"CENTRALLY CONTROLLED" flashing, "ON/OFF" at local remote controller is not possible.	ON	OFF
Remote START	"CENTRALLY CONTROLLED" flashing, "ON/OFF" at local remote controller is not possible.	ON	ON

* For details refer to CN32 in section “4-5. Indoor unit “-E/-A” type input/output connector”.

Table 4-3-6. Limitations to combining system controls ○: Simultaneous use available ×: Simultaneous use not available

	Description		Control combining distant/local	Pulse ON/OFF	Power ON/OFF	Automatic recover
1	Control combining distant/local	CN32	-	×*1	×*1	×*1
2	Pulse ON/OFF	CN51		-	O	O
3	HA ON/OFF(JEMA)	CN51			O	O
4	Power ON/OFF	-			-	×
5	Automatic recover	-				-

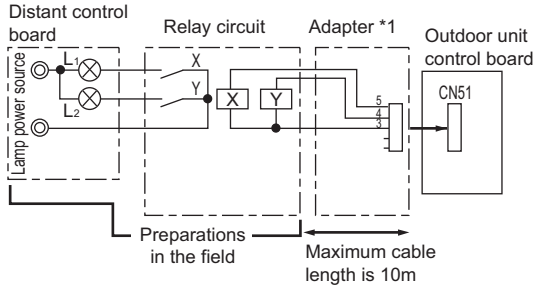
*1. Pulse ON/OFF, power ON/OFF and automatic recover can only be used when the remote/local setting CN32 is set to local. Therefore, always avoid this function when combining control.

4-4. Heat source unit input/output connector

⚠ Caution:	1.Wiring should be covered by insulation tube with supplementary insulation. 2.Use relays or switches with IEC or equivalent standard. 3.The electric strength between accessible parts and control circuit should have 2750V or more.

4-4-1. Output

• State (CN51)



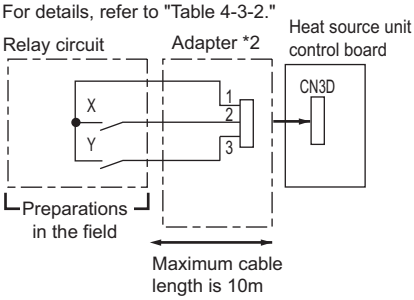
L1 : Heat source unit error display lamp
L2 : Compressor operation lamp (compressor running state)
X, Y : Relay (coil =<0.9W : 12VDC)

*1. Optional part : PAC-SC37SA-E or field supply.

4-4-2. Input

(1) Step demand and Low noise mode (CN3D)

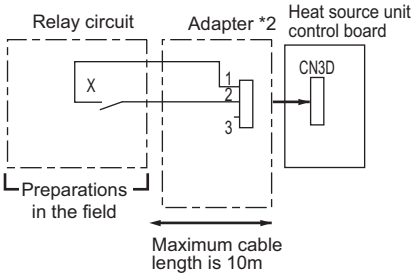
For details, refer to "Table 4-3-2."



X : Low noise mode or demand
Y : Demand
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

(2) Low noise mode (CN3D + DipSW6-8 OFF)



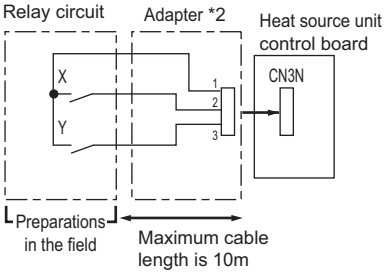
X : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

Low noise mode : The sound pressure level is reduced by controlling the maximum compressor frequency.

-Note-
The sound pressure level can not be reduced, when neither the fan frequency nor the compressor frequency are maximum.

(3) Auto-changeover (CN3N) (WR2 excluded)

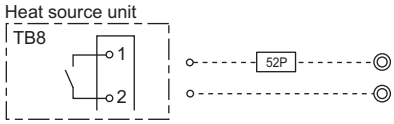


X : Cooling / Heating
Y : Validity / Invalidity of X
X,Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

*2. Optional part : PAC-SC36NA-E or field supply.

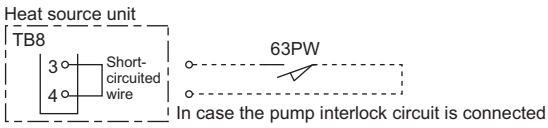
		X	
		OFF	ON
Y	OFF	Normal	
	ON	Cooling	Heating

(4) Operation ON signal (TB8)



X : Relay (Contact rating 200VAC 1A)
52P : Pump contactor

(5) Pump Interlock signal input (TB8)



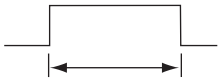
When connecting the pump interlock circuit to terminals 3 and 4 on TB8, remove the short-circuited wire.
63PW : Pressure switch (Contact: Minimum applied load 5mA)

CONTROLLER

4-5. Indoor unit "-E/-A" type input/output connector

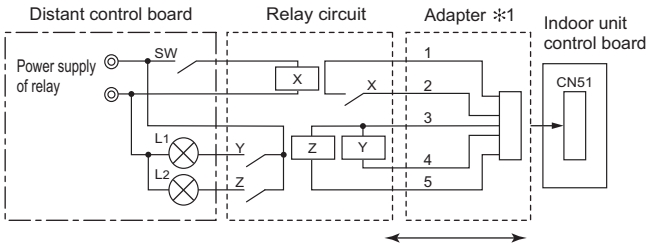
⚠ Caution:	1.Wiring should be covered by insulation tube with supplementary insulation. 2.Use relays or switches with IEC or equivalent standard. 3.The electric strength between accessible parts and control circuit should have 2750V or more.

● ON/OFF (Pulse) input specification

Item	Description
Input signal	Pulse sign (a connect)
Standard of pulse	

● Input

CN51

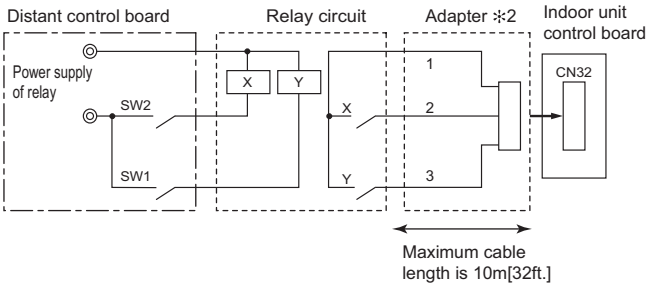


Maximum cable length is 10m[32ft.]

SW : Distant ON/OFF switch
L1 : Status lamp
L2 : Error lamp
X : Relay (a point of contact, fixed DC1mA)
Y, Z : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

※ Every time the SW is pushed (the pulse is inputted), it reacts against ON/OFF.

CN32

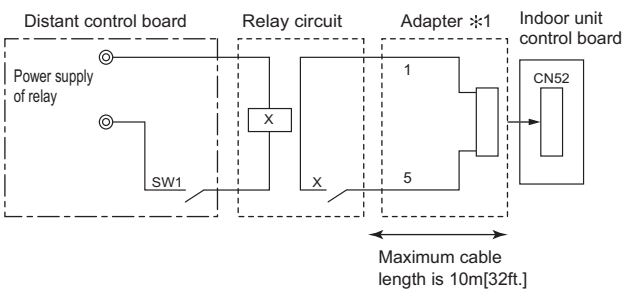


Maximum cable length is 10m[32ft.]

SW1 : Distant/Local switching
SW2 : ON/OFF switch
X, Y : Relay Contact rating voltage >= 15VDC
Contact rating current >= 0.1A
Minimum applicable load =< 1mA at DC

※ SW2 is available when SW1 is ON.

CN52



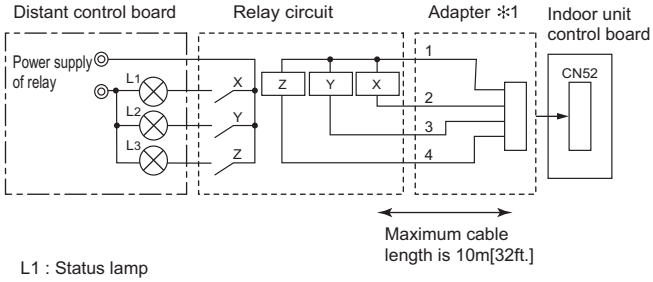
Maximum cable length is 10m[32ft.]

SW1 : Demand switch
X : Relay (coil <=0.9W,12VDC)

SW1	Indoor unit
ON	Forced thermo-OFF
OFF	Normal running

● Output

CN52



Maximum cable length is 10m[32ft.]

L1 : Status lamp
Fan motor output (SW1-5 OFF)
Thermostat ON (SW1-5 ON)
L2 : Cooling/Dry status lamp
L3 : Heating status lamp
X, Y, Z : Relay (Coil with fixed 12VDC, a power consumption of 0.9W or less)

※ 1. Optional part : PAC-SA88HA-E or field supply
※ 2. Optional part : PAC-SE55RA-E or field supply

CONTROLLER

HYBRID CITY MULTI R32/R410A Series

5. APPENDIX

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Installation information

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1-4. Precautions for control-related items ..... 5 - 6

* Refer to the enclosed Installation Manual for details on installation. Arrange to have an expert install the system correctly.

1-1. General precautions

1-1-1. Usage

- The air-conditioning system described in this DATA BOOK is designed for human comfort.
- This product is not designed to assist in the preservation of food, provide conditions to maintain plants or animals, or stabilize environments for the preservation of precision equipment or art objects. To prevent loss of quality, do not use the product for purposes other than those it is designed for.
- To reduce the risk of water leakage and electric shock, do not use the product for air-conditioning vehicles or vessels.

1-1-2. Installation environment

- Do not install any unit other than the dedicated unit in an area where the voltage changes significantly, large amounts of mineral oil (e.g., cutting oil) are present, cooking oil may splash, or a large quantity of steam can be generated, such as a kitchen.
- Do not install the unit in acidic or alkaline environments.
- Installation should not be performed in locations exposed to chlorine or other corrosive gases. Avoid installation near sewers.
- To reduce the risk of fire, do not install the unit in an area where flammable gas may leak or flammable material is present.
- This air-conditioning unit has a built-in microcomputer. The effects of noise should be taken into consideration when deciding on the installation position. It is recommended that the air-conditioning unit be installed in a position away from antennas or electronic devices.
- Install the unit on a solid foundation in accordance with local safety measures against typhoons, wind gusts, and earthquakes to prevent the unit from being damaged, toppling over, or falling.

1-1-3. Backup system

- In regions in which the malfunctioning of the air conditioner may have a critical effect, it is recommended to have two or more systems made up of single outdoor/heat source units and multiple indoor units.

1-1-4. Unit characteristics

- The heat pump efficiency of the outdoor unit depends on the outdoor temperature. In heating mode, performance drops as the outside air temperature drops. In cold climates, performance can be poor. Warm air will continue to be trapped near the ceiling and the floor level will remain cold. In such cases, heat pumps require a supplemental heating system or air circulator. Before purchasing, consult your local distributor for assistance in selecting the unit and system.
- When the outdoor temperature is low and the humidity is high, the heat exchanger on the outdoor/heat source unit side tends to collect frost, which reduces its heating performance. The Auto-defrost function will be activated in order to remove the frost, and the heating mode will temporarily stop for 3-10 minutes. Heating mode will automatically resume upon completion of the defrost process.
- An air conditioner with a heat pump requires time to warm up the whole room after the heating operation begins, because the system circulates warm air in order to warm up the whole room.
- Sound levels were obtained in an anechoic room. Sound levels during actual operation are usually higher than the simulated values due to ambient noise and echoes. Refer to the section on "SOUND LEVELS" in the DATA BOOK for the measurement location.
- Depending on the operating conditions, the unit generates noise caused by valve actuation, refrigerant flow, and pressure changes even when operating normally. Try to avoid positioning the air conditioner in locations where quietness is required. With regard to the BC/HBC controller, it is recommended that the unit be installed in areas such as corridor ceilings, restrooms and plant rooms.
- The total capacity of the connected indoor units can be greater than the capacity of the outdoor/heat source unit. However, when the connected indoor units operate simultaneously, each unit's capacity may become smaller than the rated capacity.
- When the unit is started up for the first time within 12 hours after the power comes on, i.e. after a power failure, it performs initial startup operation (capacity control operation) to prevent damage to the compressor. The initial startup operation requires a maximum of 90 minutes to complete, depending on the operating load.

1-1-5. Related equipment

- Use an earth leakage breaker (ELB) with medium sensitivity, and an activation speed of 0.1 second or less.
- Consult your local distributor or a qualified technician when installing an earth leakage breaker.
- If the unit is an inverter type, select an earth leakage breaker able to respond to high harmonic waves and surges.
- Leakage current is generated not only through the air-conditioning unit but also through the power wires. The leakage current of the main power supply is therefore greater than the total leakage current of each unit. Take the capacity of the earth leakage breaker or leakage alarm into consideration when installing one at the main power supply. To measure the leakage current simply on site, use a measurement tool equipped with a filter, and clamp all the four power wires together. The leakage current measured on the ground wire may not be accurate because the leakage current from other systems may be included in the measurement value.
- Do not install a phase-advancing capacitor on a unit connected to the same power system as an inverter-type unit and its related equipment.
- If a large current flows due to the malfunctioning of the product or faulty wiring, both the earth leakage breaker on the product side and the upstream overcurrent breaker may trip almost at the same time. Separate the power system or coordinate all the breakers depending on the system's priority level.

1-1-6. Unit installation

- Your local distributor or a qualified technician must read the Installation Manual that is provided with each unit carefully before performing installation work.
- Consult your local distributor or a qualified technician when installing the unit. Improper installation by an unqualified person may result in water leakage, electric shock, or fire.
- Ensure that there is enough space around each unit.

1-1-7. Optional accessories

- Only use accessories recommended by Mitsubishi Electric. Consult your local distributor or a qualified technician when installing them. Improper installation by an unqualified person may result in water leakage, power leakage, system breakdown, or fire.
- Some optional accessories may not be compatible for use with the air-conditioning unit or may not be suitable for the installation conditions. Check the compatibility when considering any accessories.
- Note that some optional accessories may affect the air conditioner's external form, appearance, weight, operating sound, and other characteristics.

1-1-8. Operation/Maintenance

- Read the Instruction Book that is provided with each unit carefully prior to use.
- Maintenance or cleaning of each unit may be risky and require expertise. Read the Instruction Book to ensure safety. Consult your local distributor or a qualified technician when special expertise is required, such as when the indoor unit needs to be cleaned.

1-2. Precautions for Indoor unit, Hydro unit, and HBC controller

1-2-1. Operating environment

- If the refrigerant leaks, the oxygen level may drop to harmful levels. If the air conditioner is installed in a small room, measures must be taken to prevent the refrigerant concentration from exceeding the safety limit even if the refrigerant leaks.
- If the units operate in cooling mode at a humidity above 80%, condensation may collect and drip from the indoor units.
- Regular checking and cleaning of the drain drainage paths, such as the drain pan or the drain pump, is recommended to prevent clogging. The neglect of a clogged drain pump may trigger the water-leakage protection function which stops operation of the entire system.

1-2-2. Unit characteristics

- The return air temperature display on the remote controller may differ from the displays on the other thermometers.
- The clock on the remote controller may be displayed with a time lag of approximately one minute every month.
- The temperature measured by the built-in temperature sensor on the remote controller may differ from the actual room temperature due to the effect of the wall temperature.
- Use the built-in thermostat on the remote controller or a separately-sold thermostat when indoor units installed on or in the ceiling operate the automatic cooling/heating switchover.
- The room temperature may rise drastically due to Thermo OFF in areas where the air-conditioning load is large, such as computer rooms.
- Be sure to use a regular filter. If an irregular filter is installed, the unit may not operate properly, and operating noise may increase.
- The room temperature may increase above the preset temperature in environments in which the heating or airconditioning load is small.

1-2-3. Unit installation

- The insulation for the gas pipe between the hydro unit and the outdoor unit or the insulation for the low-pressure pipe between the HBC controller and the outdoor/heat source unit must be at least 20 mm thick. If the unit is installed on the top floor or in a high-temperature, high-humidity environment, thicker insulation may be necessary.
- Do not have any branching points on the downstream of the refrigerant pipe header.
- When a field-supplied external thermistor is installed or when a device for demand control is used, the unit may stop abnormally or damage may occur to the electromagnetic contactor. Consult your local distributor for details.
- Do not install the unit above the cooking or food processing area.

1-2-4. Noise level (Sound pressure level)

- The sound pressure level is a value measured in an anechoic room in accordance with the conventional method in JIS standard. The sound pressure level actually measured at the installation site is usually higher than the value indicated in this DATA BOOK due to the influence of ambient noise and echoes.

1-3. Precautions for outdoor unit/heat source unit

1-3-1. Installation environment

- The outdoor unit with the salt-resistant specification is recommended for use in an area in which it will be exposed to salt air.
- Even when the unit with the salt-resistant specification is used, it is not completely protected against corrosion. Be sure to follow the directions or precautions described in the Instruction Book and Installation Manual for installation and maintenance. The salt-resistant specification is referred to in the guidelines published by JRAIA (JRA9002).
- Install the unit in an area where the flow of discharge air is not obstructed. If the flow of discharge air is obstructed, short-cycling of discharge air may occur.
- Provide proper drainage around the base of the units; condensation may collect and drip from outdoor units. Provide water-proofing protection to the floor when installing the unit on the rooftop.
- In regions where snowfall can be expected, install the unit so that the outlet faces away from the direction of the wind, and install a snow guard to protect the unit from snow. Install the unit on a base approximately 50 cm higher than the expected snowfall. Close the openings for pipes and wiring, because the ingress of water and small animals may cause equipment damage. If a SUS snow guard is used, refer to the Installation Manual that comes with the snow guard and be careful with the installation to avoid the risk of corrosion.
- When the unit is expected to operate continuously for a long period of time at outside air temperatures of below 0ºC, take appropriate measures, such as the use of a unit base heater, to prevent ice forming on the unit base.
- Install the snow guard so that the outlet/inlet faces away from the direction of the wind.
- When approximately 50 cm or more of snow accumulates on the snow guard, remove the snow from the guard. Install a roof that is strong enough to withstand loads caused by snow in areas where snow accumulates.
- Provide proper protection around the outdoor units in places such as schools to avoid the risk of injury.
- A cooling tower and heat source water circuit should be a closed circuit so that water is not exposed to the atmosphere. When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air to ensure that the oxygen dissolved in the water is 1 mg/L or less.
- Install a strainer (50 mesh or more recommended) on the water pipe inlet on the heat source unit.
- Interlock the heat source unit and water circuit pump.
- Note the following to prevent the freezing and bursting of pipes when the heat source unit is installed in an area where the ambient temperature can be 0ºC or below.
  - Keep the water circulating to prevent it from freezing when the ambient temperature is 0ºC or below.
  - Before a long period of non-use, be sure to purge the water from the unit.
- The salt-resistant unit is resistant to salt corrosion, but not salt-proof.

Please note the following when installing and maintaining outdoor units in a marine environment.

1. Install the salt-resistant unit in an area in which it is not directly exposed to sea breezes, and minimize exposure to salt water mist.
2. Avoid installing a sun shade over the outdoor unit, so that rain will wash away salt deposits off the unit.
3. Install the unit horizontally to ensure proper water drainage from the base of the unit. Accumulation of water in the base of the outdoor unit will significantly accelerate corrosion.
4. Periodically wash salt deposits off the unit, especially when the unit is installed in a coastal area.
5. Repair all noticeable scratches after installation and during maintenance.
6. Periodically check the unit, and apply an anti-rust agent and replace corroded parts as necessary.

1-3-2. Circulating water

- Regularly check the quality of the water in the heat source unit, following the guidelines published by JRAIA (JRA-GL02-1994).
- A cooling tower and heat source water circuit should be a closed circuit so that water is not exposed to the atmosphere. When a tank is installed to ensure that the circuit has enough water, minimize the contact with outside air to ensure that the oxygen dissolved in the water is 1 mg/L or less.

1-3-3. Unit characteristics

- When the Thermo ON and OFF is frequently repeated on the indoor unit, the operating status of outdoor/heat source units may become unstable.

1-3-4. Related equipment

- Provide grounding in accordance with the local regulations.

1-3-5. Noise level (Sound pressure level)

- The sound pressure level is a value measured in an anechoic room in accordance with the conventional method in JIS standard. The sound pressure level actually measured at the installation site is usually higher than the value indicated in this DATA BOOK due to the influence of ambient noise and echoes.
  Valve operation noise and refrigerant flow noise may occur from inside the outdoor unit/heat-source unit.

1-4. Precautions for control-related items

1-4-1. Product specification

- To introduce the MELANS system, a consultation with us is required in advance. Especially to introduce the electricity charge-apportioning function or energy save function, further detailed consultation is required. Consult your local distributor for details.
- Billing calculation for AE-200E/AE-50E/EW-50E, or the billing calculation unit is unique and based on our original method. (Backup operation is included.) It is not based on the metering method, and do not use it for official business purposes. It is not the method that the amount of electric power consumption (input) by air conditioner is calculated. Note that the electric power consumption by air conditioner is apportioned by using the ratio corresponding to the operation status (output) for each air conditioner (indoor unit) in this method.
- In the apportioned billing function for AE-200E/AE-50E and EW-50E, separate watt-hour meters should be used for A-control units, K-control units, and CITY MULTI packaged air conditioners. It is recommended that an individual watt-hour meter should be used for large-capacity indoor units (with two or more addresses).
- When using the peak cut function on the AE-200E/AE-50E or EW-50E, note that the control is performed once every minute and it takes time to obtain the effect of the control. Take appropriate measures such as lowering the criterion value. Power consumption may exceed the limits if the AE-200E/AE-50E or EW-50E malfunctions or stops. Provide a back-up remedy as necessary.
- The controllers cannot operate while the indoor unit is OFF. (No error)
  Turn ON the power to the indoor unit when operating the controllers.
- When using the interlocked control function on the AE-200E/AE-50E/EW-50E/PAC-YG66DCA or PAC-YG63MCA, do not use the control for fire prevention or security. (This function should never be used in a way that would put people's lives at risk.) Employ any methods or circuits that allow ON/OFF operation using an external switch in case of failure.

1-4-2. Installation environment

- Surge protection may be required for the transmission line in areas where lightning strikes occur frequently.
- The receiver for a wireless remote controller may not work properly due to the effect of general lighting. Leave a space of at least 1 m between the general lighting and the receiver.
- When the auto-elevating panel is used and the system is operated using a wired remote controller, install the wired remote controller in a place where all the air conditioners being controlled (at least the bottom part of them) can be seen from the wired remote controller. If not, the descending panel may cause damage or injury; be sure to use a wireless remote controller designed for use with the elevating panel (sold separately).
- Install the wired remote controller (switch box) in a place where the following conditions are met.
  - Where the installation surface is flat
  - Where the remote controller can detect an accurate room temperature
    The temperature sensors that detect the room temperature are installed both in the remote controller and in the indoor unit.
    When the room temperature is detected using the sensor in the remote controller, the main remote controller is used to detect the room temperature. In this case, follow the instructions below.
    - Install the controller in a place where it is not affected by a heat source.
      (If the remote controller faces direct sunlight or the direction of the supply air flow, the remote controller cannot detect the accurate room temperature.)
    - Install the controller in a place where the average room temperature can be detected.
    - Install the controller in a place where no other wires are present around the temperature sensor.
      (If other wires are present, the remote controller cannot detect an accurate room temperature.)
- To prevent unauthorized access, always use a security device such as a VPN router when connecting the AE-200E/AE-50E or EW-50E to the Internet.

Safety handling for R32

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1. Caution for refrigerant leakage

The installer and/or air conditioning system specialist shall secure safety against refrigerant leakage according to local regulations or standards.
The following standard may be applicable if no local regulation or standard is available.

1-1. Refrigerant property

R32 refrigerant has lower flammability (A2L refrigerant: ISO817, 2014). The R32 is heavier than the indoor air in density.
Leakage of the refrigerant in a room has possibility to lead to a hypoxia situation and fire. Therefore, the critical concentration specified below shall not be exceeded even if the leakage happens.

- **Critical concentration**

  Critical concentration hereby is the refrigerant concentration in which no human body would be hurt if immediate measures can be taken when refrigerant leakage happens.

  Critical concentration of R32: 0.063kg/m^3
  (The weight of refrigeration gas per 1 m^3 air conditioning space.);
  * The Critical concentration is subject to ISO5149 (2014), EN378-1 (2016).

For the HYBRID CITY MULTI/CITY MULTI system, the concentration of refrigerant leaked should not have a chance to exceed the critical concentration in any situation.

1-2. Confirm the Critical concentration and take countermeasure

The maximum refrigerant leakage concentration (Rmax) is defined as the result of the possible maximum refrigerant weight (Wmax) leaked into a room divided by its room capacity (V). The refrigerant of Outdoor unit here includes its original charge and additional charge at the site.
The additional charge is calculated according to the refrigerant charging calculation of each kind of Outdoor unit, and shall not be over charged at the site. Procedure 1-2-1~3 tells how to confirm maximum refrigerant leakage concentration (Rmax) and how to take countermeasures against a possible leakage.

1-2-1. Find the possible maximum leakage (Wmax) in the room. If a room has HBC/BC(s) or indoor unit(s) from more than 1 Outdoor unit, add up the refrigerant of the Outdoor units.
1-2-2. Divide (Wmax) by (V) to get the maximum refrigerant leakage concentration (Rmax).
1-2-3. Find if there is any room in which the maximum refrigerant leakage concentration (Rmax) is over 0.063kg/m^3.
If no, then the HYBRID CITY MULTI/CITY MULTI is safe against refrigerant leakage.
If yes, following countermeasure is recommended to do at site.
Countermeasure 1: Smaller total charge (making Wmax smaller)
e.g.Avoid connecting more than 1 Outdoor unit to one room.
e.g.Using smaller model size but more Outdoor units.
e.g.Shorten the refrigerant piping as much as possible.

Note 1. In principle, MITSUBISHI ELECTRIC requires proper piping design, installation and air-tight testing after installation to avoid leakage happening.
In the area should earthquake happen, anti-vibration measures should be fully considered.
The piping should consider the extension due to the temperature variation.

Observe the following restrictions that apply to the installation of units.

2-1. General restrictions

⚠WARNING
Do not install the unit where combustible gas may leak.
- If combustible gas accumulates around the unit, fire or explosion may result.

- Provide sufficient space around the unit for effective operation, efficient air movement, and ease of access for maintenance.
- All restrictions mentioned in this manual apply not only to new installations but also to relocations and layout changes.
- Refer to the Installation manual for other precaution on installation.

2-2. Restrictions by product type

Product type	Installation place	Restriction
Outdoor unit *1	Outside of building	Please see the article “2-3.”
Hydro unit	Outside of building	Please see the article “2-3.”
	Inside of building	Please see the article “2-4.”
HBC/BC	Inside of building	Please see the article “2-4.”
Indoor unit (for VRF only) *2	Inside of building	Please see the article “2-4.”

*1 Do not install the outdoor unit at the inside of building such as a basement or machinery room, where the refrigerant stagnates.
*2 Refrigerant does not circulate in the indoor unit for HVRF. Indoor units for HVRF where water is circulated are not subject to restrictions.

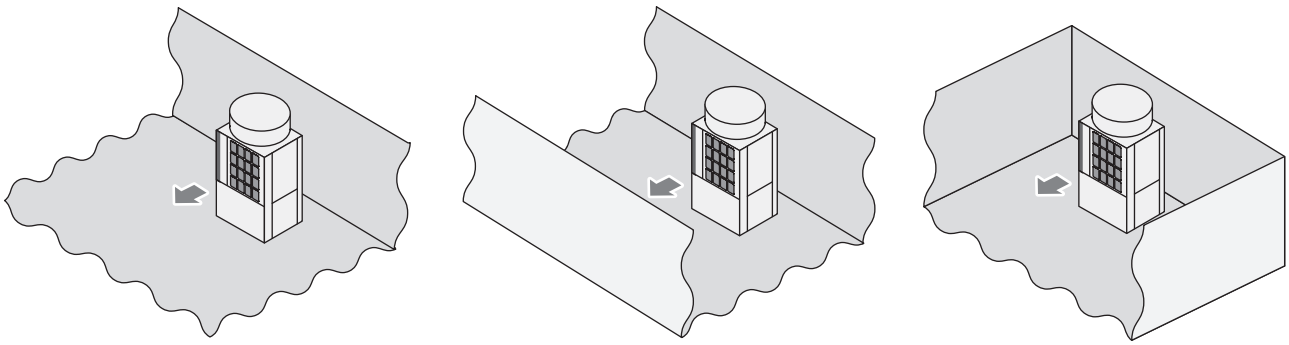
2-3. Installation at the outside of building (Outdoor unit and hydro unit)

- Install the unit in a place where at least one of four side is open.

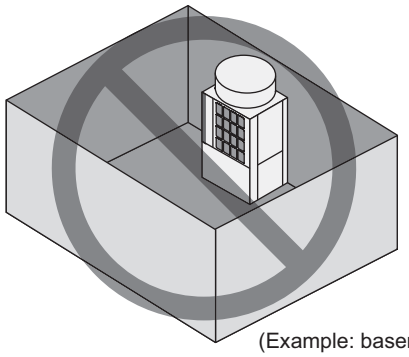
*The figure shows an outdoor unit as an example.

Figure 1

Correct installation



Wrong installation



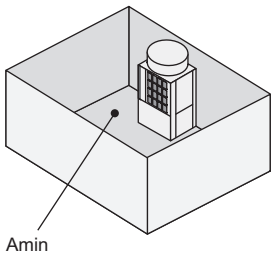
(Example: basement)

If the unit needs to be installed in a space where all four sides are blocked, confirm that one of these situations (A, B, or C) is satisfied.

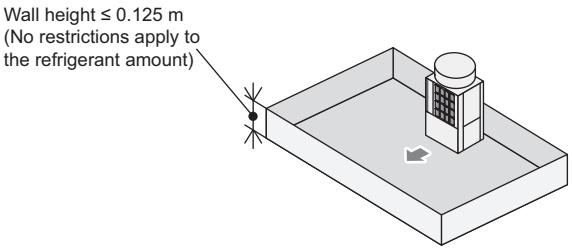
A Secure sufficient installation space (minimum installation area: Amin).

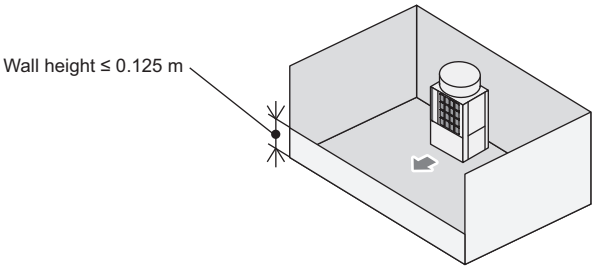
Install the unit in a space with an installation area of Amin or more, corresponding to the refrigerant amount (M).
(M = factory-charged refrigerant + refrigerant to be added on site)

M [kg]	Amin [m^2]
10	112
20	223
30	334
40	445
50	556
60	667

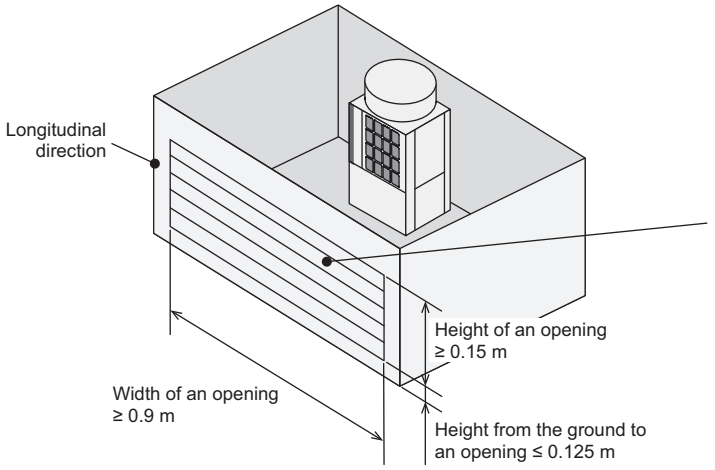


B Install the unit in a space with a wall height of ≤ 0.125 m.





C Create an appropriate ventilation open area.



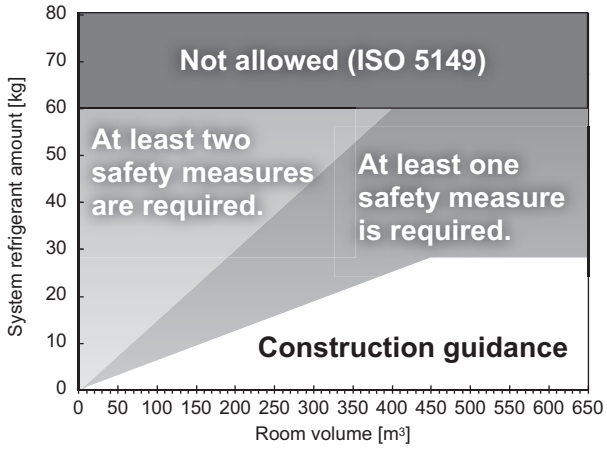
Opening:
- Must occupy 80% of the longitudinal side of a space.
- Must have an opening ratio of 75% or higher.

(Example: space with a louver)

2-4. Installation at the inside of building (Hydro unit, HBC/BC, indoor unit for VRF)

- **Do not place any ignition sources where the unit is installed, such as in machinery rooms, basements, and ceiling space. Examples: Lighters, combustion boilers, and other devices that generate a flame**
- **Take safety measures in accordance with the European Standard, based on the system refrigerant amount and the room volume as shown in the figure 2. (Make sure that the installation restrictions are satisfied based on the flowchart.)**

Figure 2 Refrigerant concentration and required quantity of safety measures



- Room volume calculation area for each product type

Product type					Room volume calculation area	Note
Series		Relay device		Indoor unit (IU)		
			Installation place			
HVRF	Y	Hydro unit	Machinery room/basement	-	Machinery room/basement area	
	R2	HBC	Machinery room/basement	-	Machinery room/basement area	
		HBC	Ceiling space	-	Shared-ceiling area *1	Please see figure3.
VRF	Y	-	-	Ceiling concealed	Shared-ceiling area *1, each room	Please see figure3, 5.
		-	-	4-way airflow	Shared-ceiling area *1, each room	Please see figure3, 6.
	R2	BC	Machinery room/basement	Ceiling concealed	Machinery room/basement area, shared-ceiling area*1, each room	Please see figure3, 5.
		BC	Machinery room/basement	4-way airflow		Please see figure3, 6.
		BC	Ceiling space	Ceiling concealed	Shared-ceiling area *1, each room	Please see figure3, 5.
		BC	Ceiling space	4-way airflow	Shared-ceiling area *1, each room	Please see figure3, 6.

(1) Calculate the room volume of each area listed under "Room volume calculation area" in the table above, depending on the type and installation place of the unit.

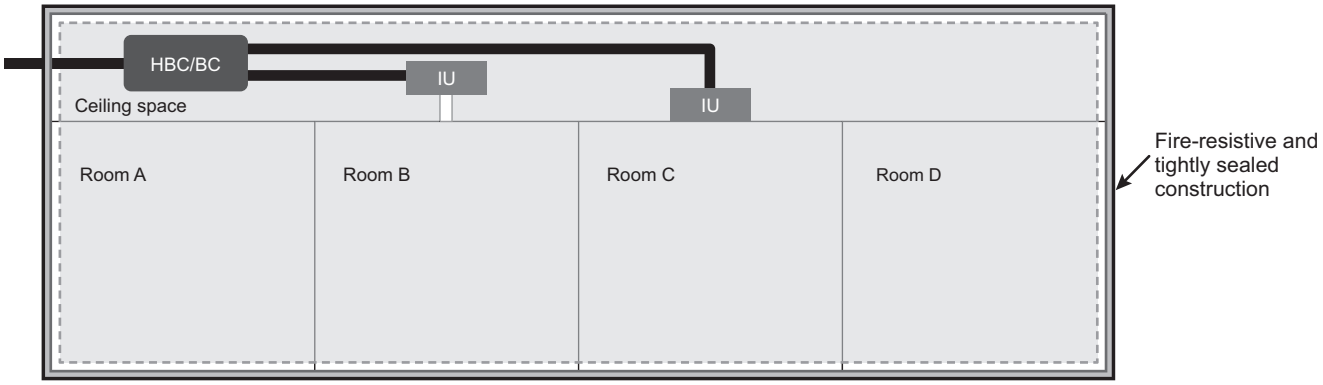
(2) When the hydro unit or the HBC/BC is installed in a machine room or a basement, use the volume of the machine room or the basement to calculate the room volume.

(3) When the unit in which refrigerant flows is installed in a ceiling space, refrigerant may leak from the unit or the refrigerant pipe in the ceiling space to adjacent rooms where a unit is not installed. In such a case, calculate room volume by adding the volumes of spaces that share the ceiling space as shown in Figure 3.

*1 Avoid using breathable ceiling materials (e.g., mesh ceiling). If such materials are used, calculate the room volume based only on the volume of the room located directly below the HBC/BC as shown in Figure 4, because refrigerant is most likely to leak to the room located directly below than to adjacent rooms.

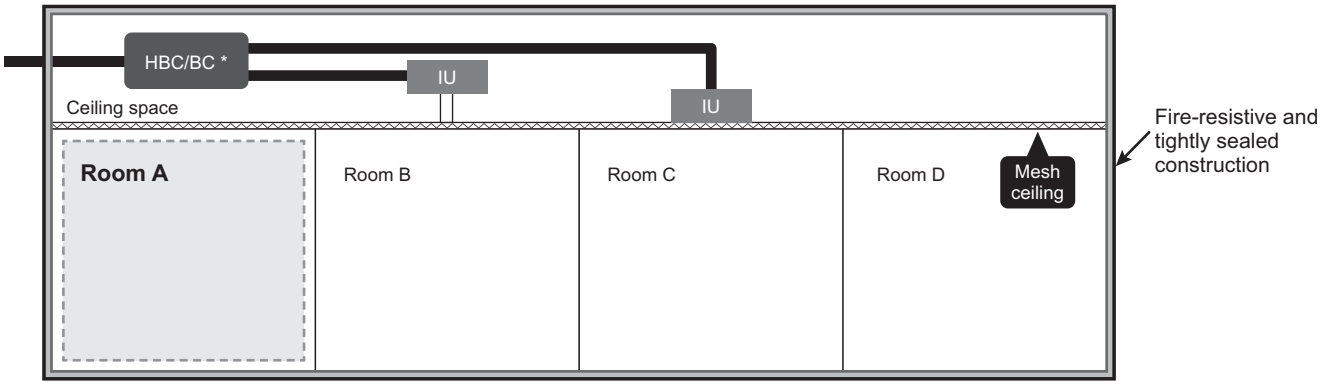
(4) For the VRF system, calculate the room volume of each room where indoor unit is installed and each room connected to the indoor unit with a duct as shown in Figure 5 or 6.

Figure 3 Shared-ceiling area (room volume = area)



*** Since the refrigerant may leak not only from the unit but also to rooms that are not directly connected to the duct (e.g. Room A or Room D), calculate the entire shared-ceiling space.**

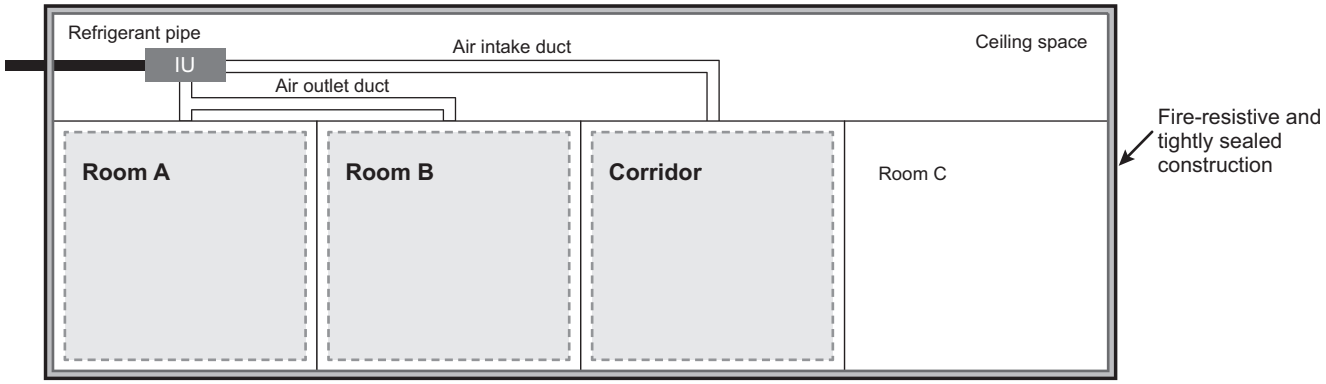
Figure 4 Using breathable ceiling materials (room volume = area)



*** In a system with a BC, refrigerant pipes run above the rooms. Calculate the volume of each of the rooms with connections to indoor units by referring to Figures 5 and 6.**

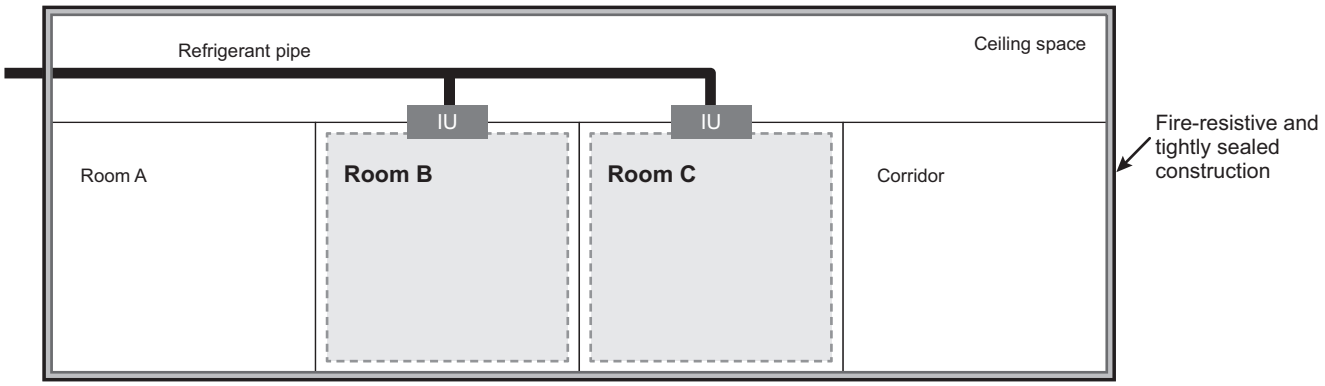
♦ When the unit is installed in a ceiling space, calculate the room volume of the room located directly below the unit.

Figure 5 Each room (for ceiling concealed type indoor units, room volume = area)



♦ Calculate the room volume of "each" room connected to the indoor unit with a duct.

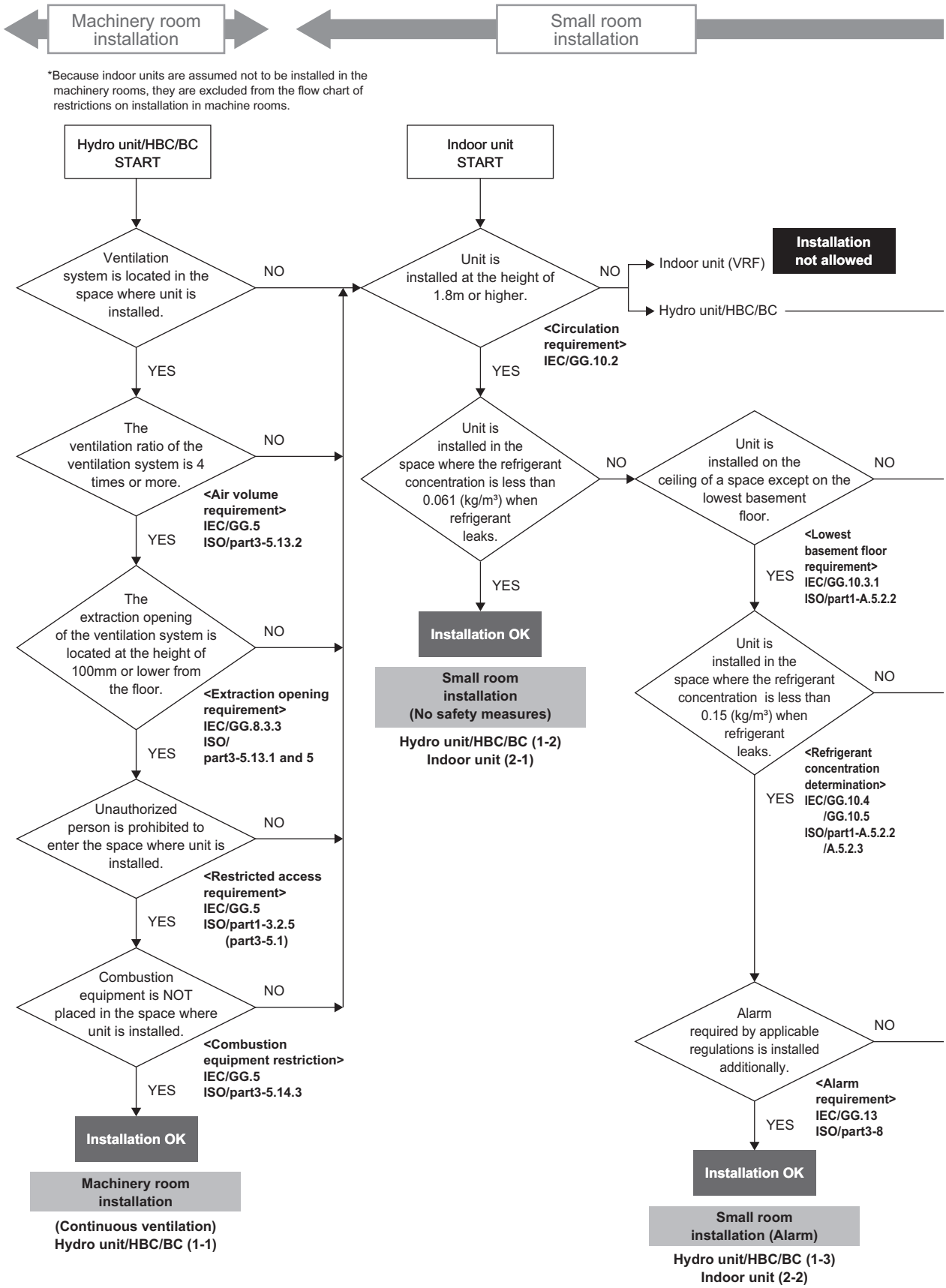
Figure 6 Each room (for 4-way airflow type indoor unit, room volume = [ ] area)



- **Calculate the room volume of "each" room where indoor unit is installed.**
- **Install the indoor units at a height of 1.8 meters or higher from the floor.**
- **Braze the refrigerant pipe properly to prevent refrigerant leakage.**

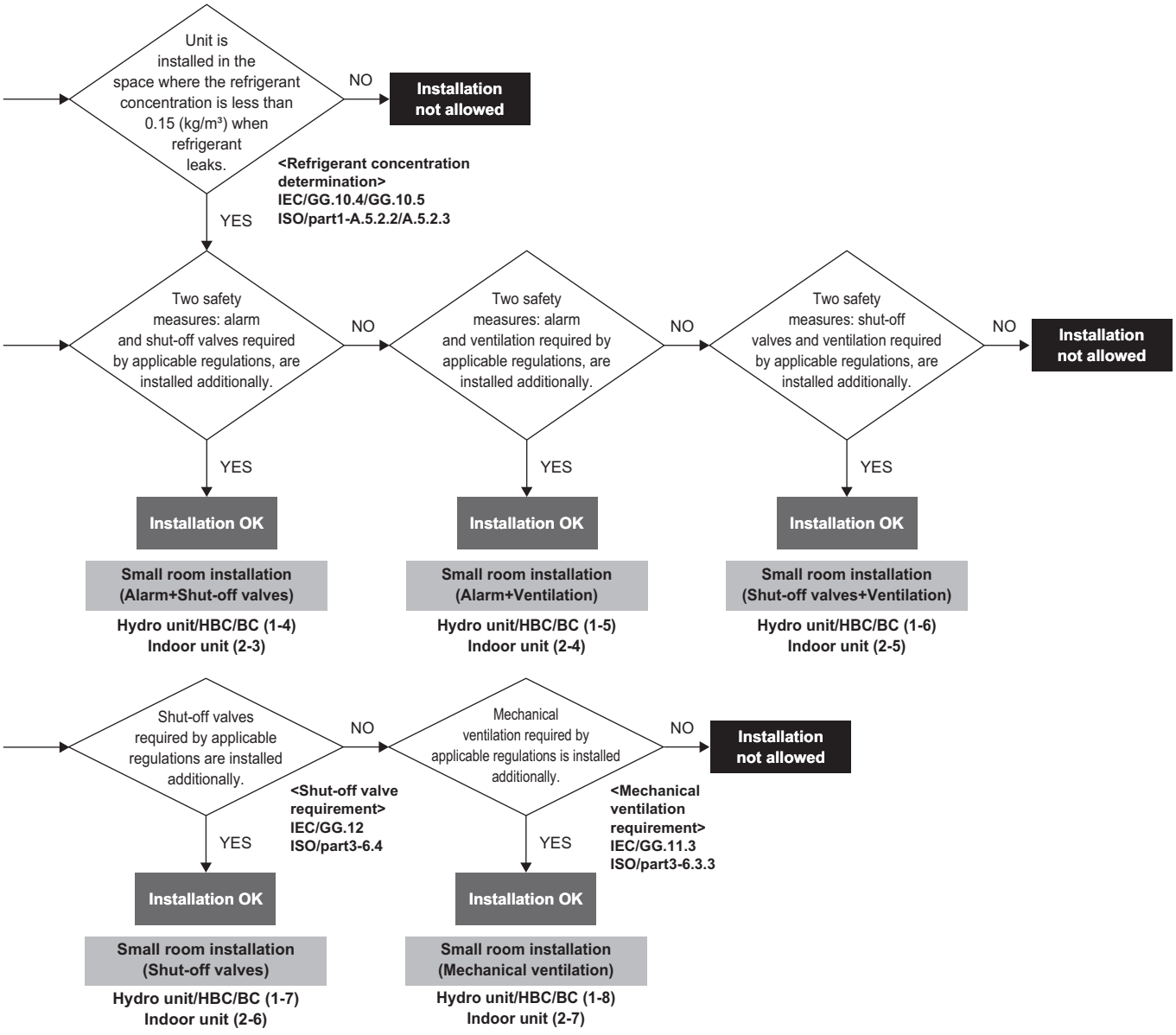
Using the flowchart, make sure the installation restrictions that apply to R32 HVRF/VRF models are met. Even if "Installation OK" is reached in the flowchart, see "Installation chart annex".

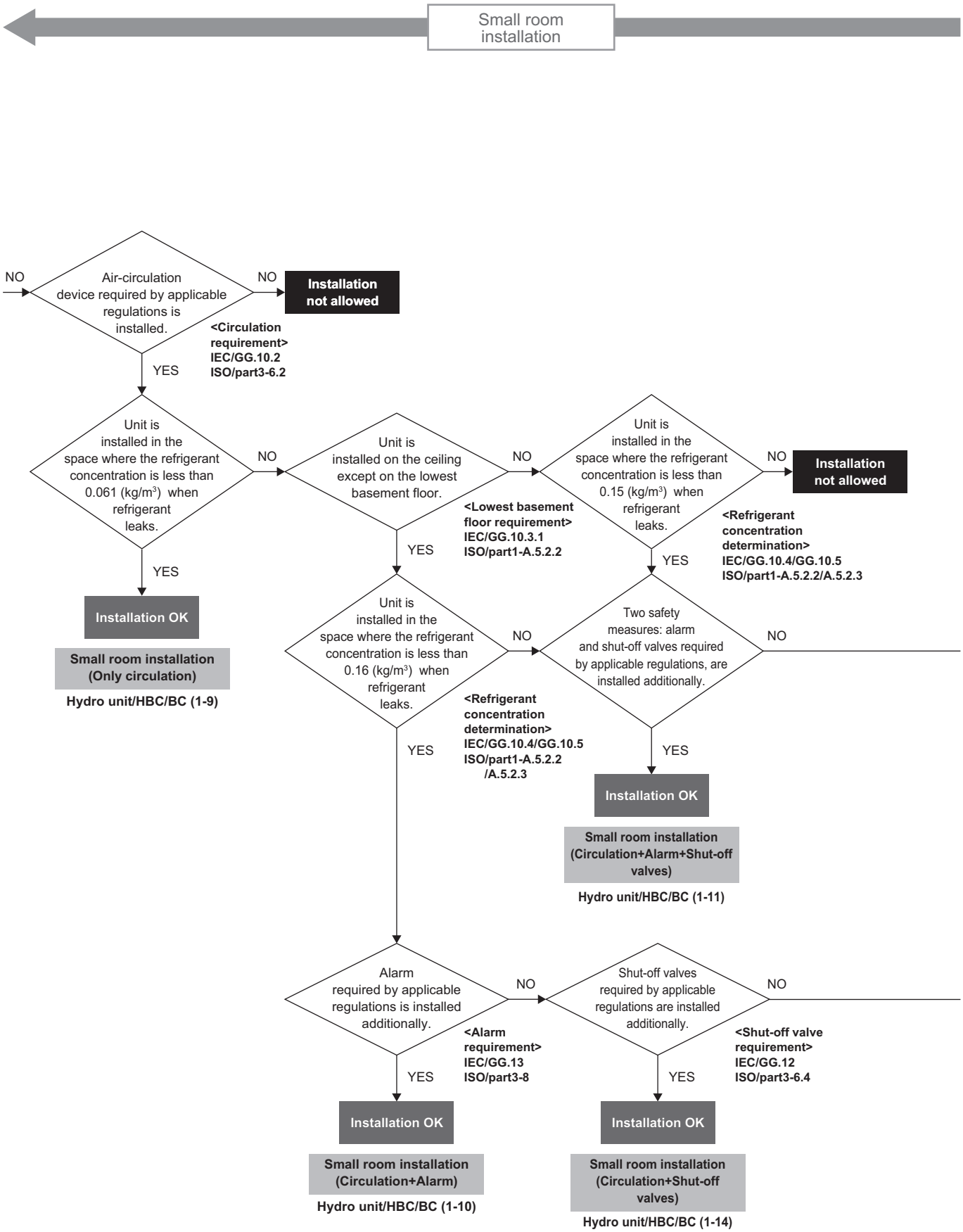
*This flow chart was created based on IEC60335-2-40 (Edition 6.0) and ISO5149 (2014).
*Please refer to 5. regarding regulatory requirements for safety measures.
*Follow the installation restrictions specified in the standards listed above and in any applicable laws and regulations of the country where the unit is installed.



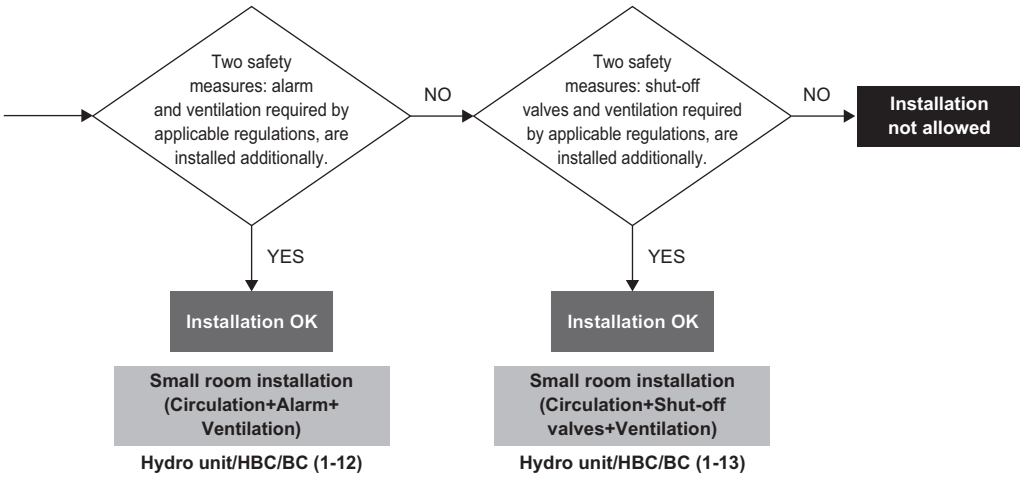
Small room installation

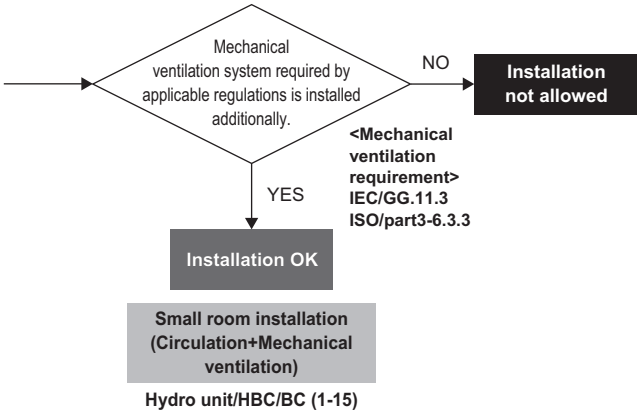
NEXT PAGE




Small room installation
NO
Air-circulation device required by applicable regulations is installed.
NO
Installation not allowed
<Circulation requirement>
IEC/GG.10.2
ISO/part3-6.2
YES
Unit is installed in the space where the refrigerant concentration is less than 0.061 (kg/m3) when refrigerant leaks.
NO
Unit is installed on the ceiling except on the lowest basement floor.
NO
<Lowest basement floor requirement>
IEC/GG.10.3.1
ISO/part1-A.5.2.2
Unit is installed in the space where the refrigerant concentration is less than 0.15 (kg/m3) when refrigerant leaks.
NO
Installation not allowed
<Refrigerant concentration determination>
IEC/GG.10.4/GG.10.5
ISO/part1-A.5.2.2/A.5.2.3
YES
YES
YES
Installation OK
Small room installation (Only circulation)
Hydro unit/HBC/BC (1-9)
Unit is installed in the space where the refrigerant concentration is less than 0.16 (kg/m3) when refrigerant leaks.
NO
<Refrigerant concentration determination>
IEC/GG.10.4/GG.10.5
ISO/part1-A.5.2.2
/A.5.2.3
Two safety measures: alarm and shut-off valves required by applicable regulations, are installed additionally.
NO
YES
YES
Installation OK
Small room installation (Circulation+Alarm+Shut-off valves)
Hydro unit/HBC/BC (1-11)
Alarm required by applicable regulations is installed additionally.
NO
<Alarm requirement>
IEC/GG.13
ISO/part3-8
Shut-off valves required by applicable regulations are installed additionally.
NO
<Shut-off valve requirement>
IEC/GG.12
ISO/part3-6.4
YES
YES
Installation OK
Small room installation (Circulation+Alarm)
Hydro unit/HBC/BC (1-10)
Installation OK
Small room installation (Circulation+Shut-off valves)
Hydro unit/HBC/BC (1-14)


Small room installation


Two safety measures: alarm and ventilation required by applicable regulations, are installed additionally.
NO
Two safety measures: shut-off valves and ventilation required by applicable regulations, are installed additionally.
NO
Installation not allowed
YES
YES
Installation OK
Installation OK
Small room installation (Circulation+Alarm+ Ventilation)
Small room installation (Circulation+Shut-off valves+Ventilation)
Hydro unit/HBC/BC (1-12)
Hydro unit/HBC/BC (1-13)

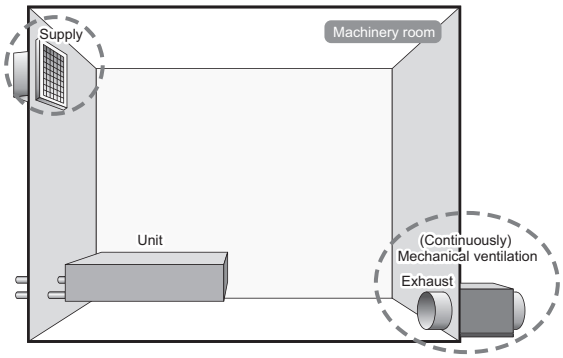

Mechanical ventilation system required by applicable regulations is installed additionally.
NO
Installation not allowed
<Mechanical ventilation requirement>
IEC/GG.11.3
ISO/part3-6.3.3
YES
Installation OK
Small room installation (Circulation+Mechanical ventilation)
Hydro unit/HBC/BC (1-15)

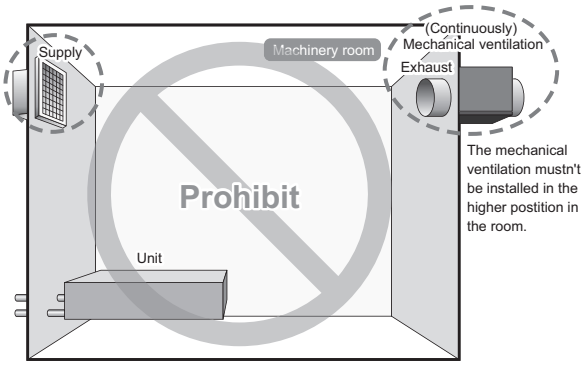
4-1. Hydro unit/HBC/BC

<Installation example of safety measures>

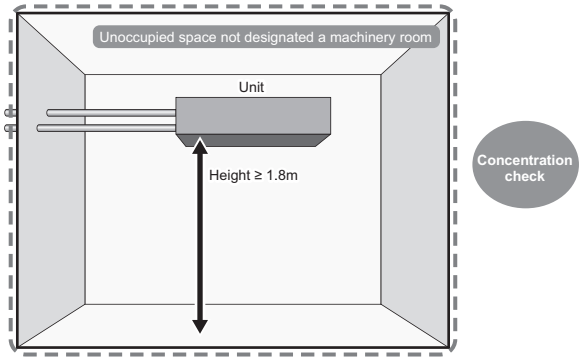
* The alarm shall warn audibly and visibly such as both a loud buzzer and flashing light.
* Refer to the installation manual of each unit for installation instructions.

(1-1) Machinery room installation (Continuous ventilation)

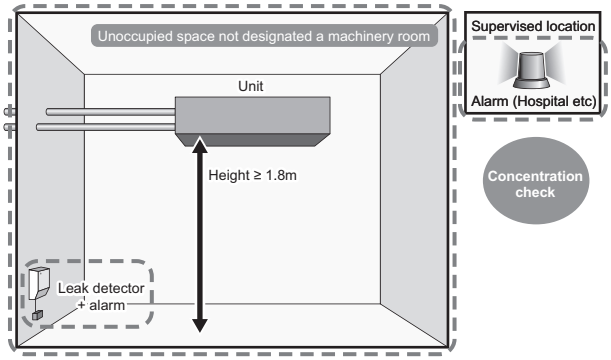




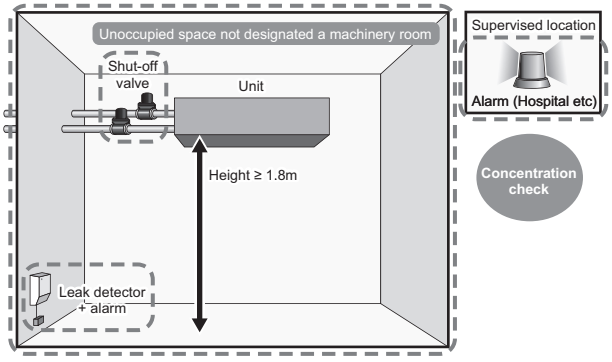
(1-2) Small room installation (No safety measures)



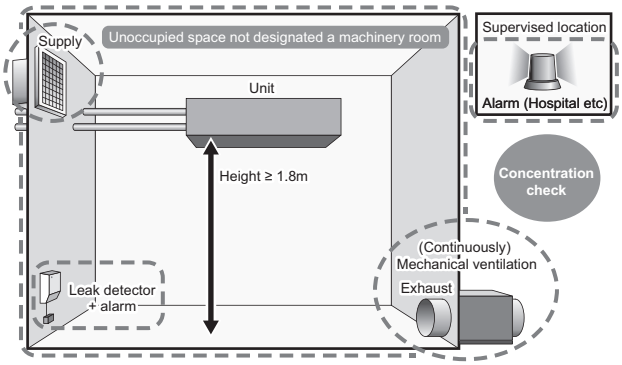
(1-3) Small room installation (Alarm)



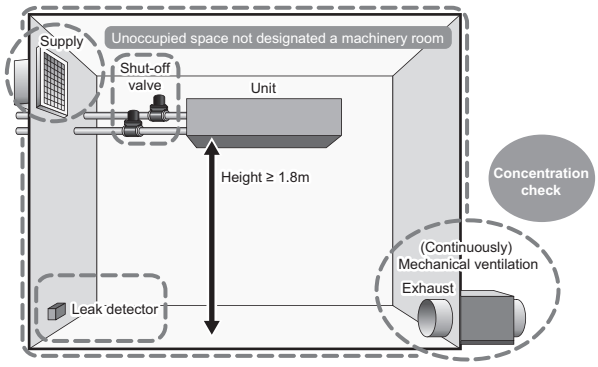
(1-4) Small room installation (Alarm + Shut-off valves)



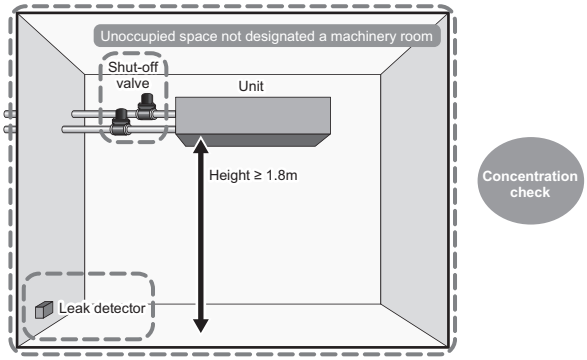
(1-5) Small room installation (Alarm + Ventilation)



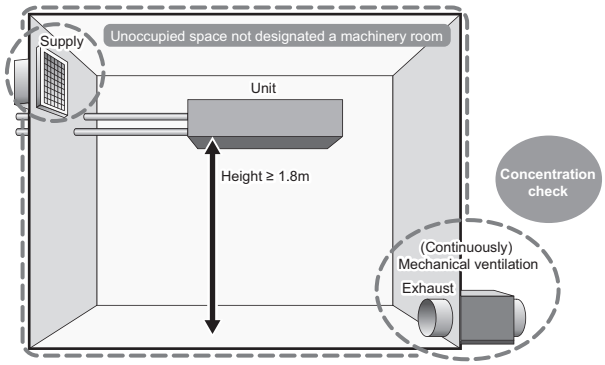
(1-6) Small room installation (Shut-off valves + Ventilation)



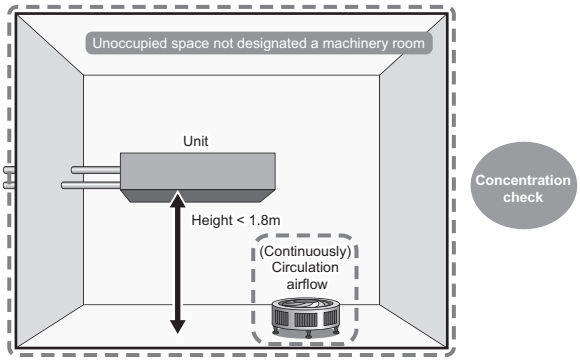
(1-7) Small room installation (Shut-off valves)



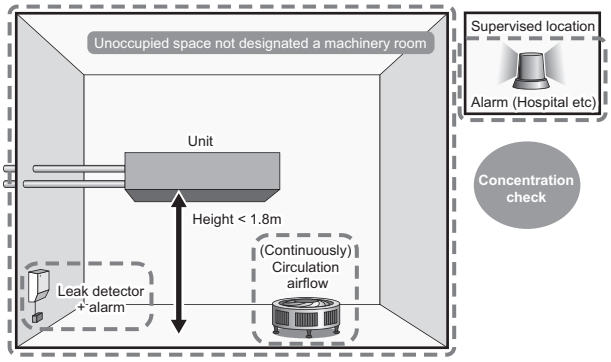
(1-8) Small room installation (Mechanical ventilation)



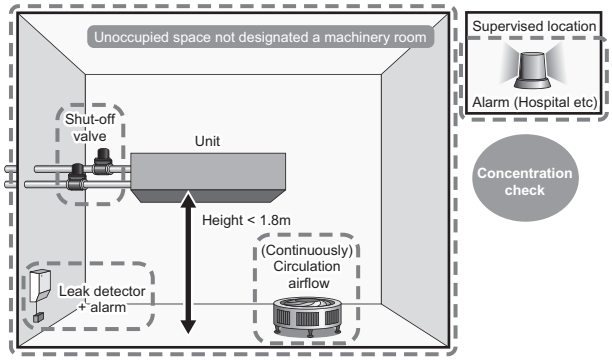
(1-9) Small room installation (Only circulation)



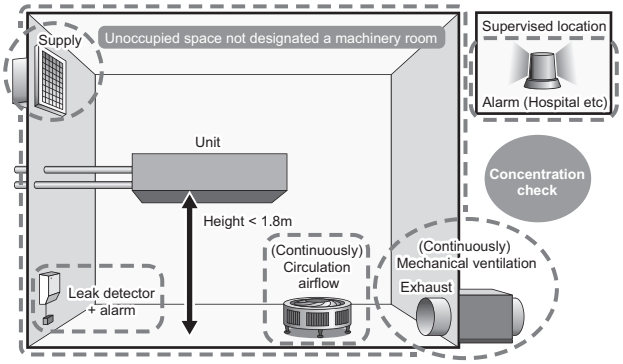
(1-10) Small room installation (Circulation + Alarm)



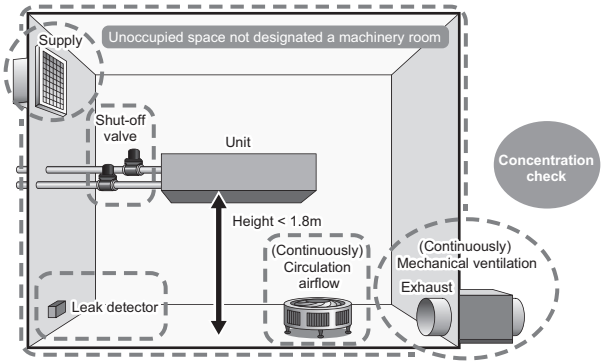
(1-11) Small room installation (Circulation + Alarm + Shut-off valves)



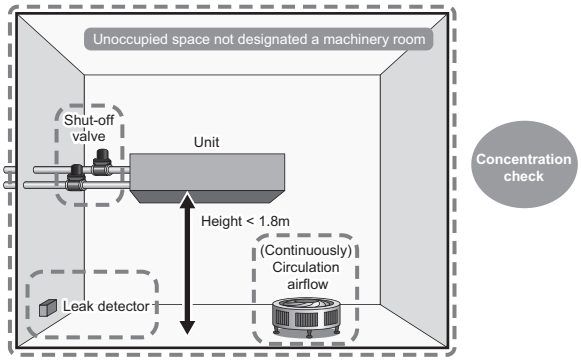
(1-12) Small room installation (Circulation + Alarm + Ventilation)



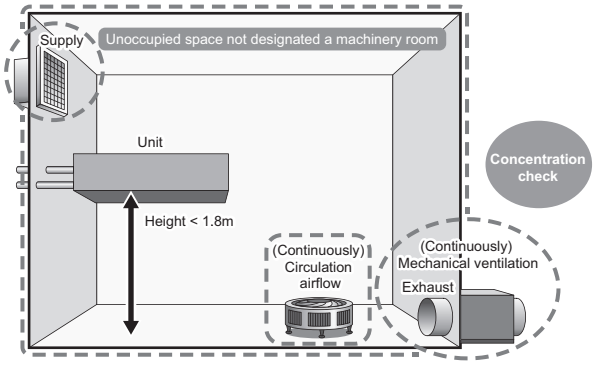
(1-13) Small room installation (Circulation + Shut-off valves + Ventilation)



(1-14) Small room installation (Circulation + Shut-off valves)



(1-15) Small room installation (Circulation + Mechanical ventilation)

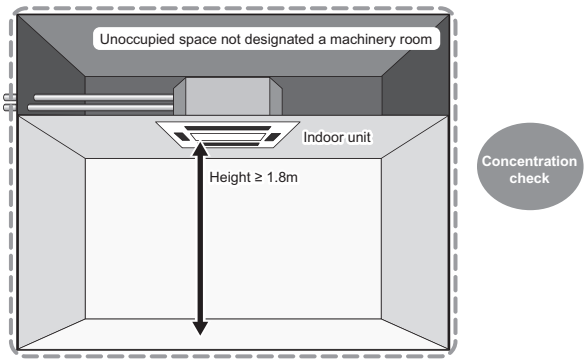


4-2. Indoor unit (VRF)

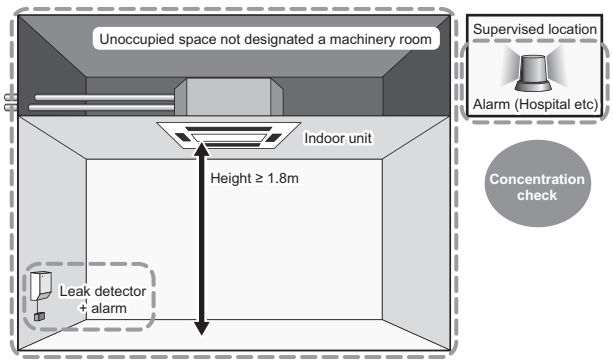
<Installation example of safety measures>

* The alarm shall warn audibly and visibly such as both a loud buzzer and flashing light.
* Refer to the installation manual of each unit for installation instructions.

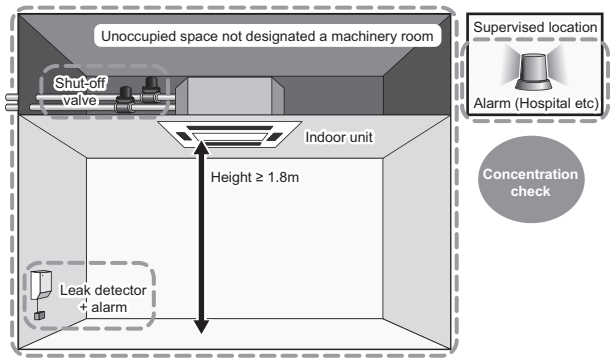
(2-1) Small room installation (No safety measures)



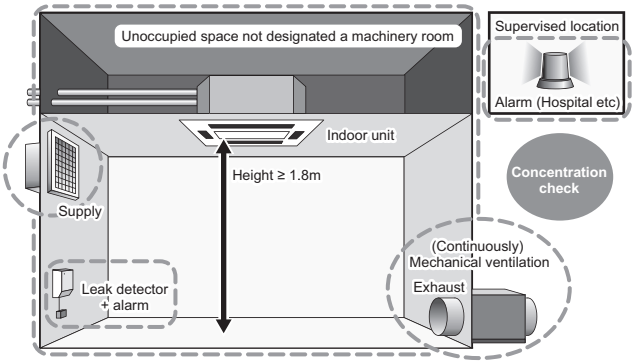
(2-2) Small room installation (Alarm)



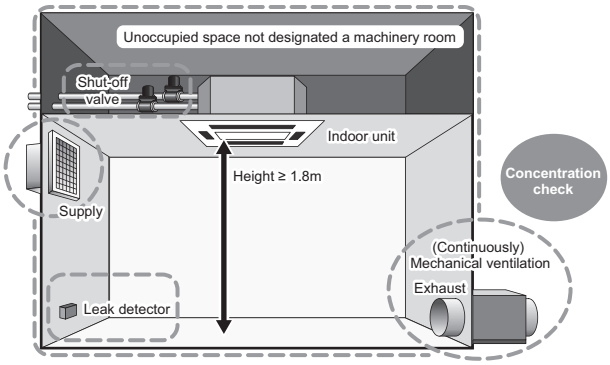
(2-3) Small room installation (Alarm + Shut-off valves)



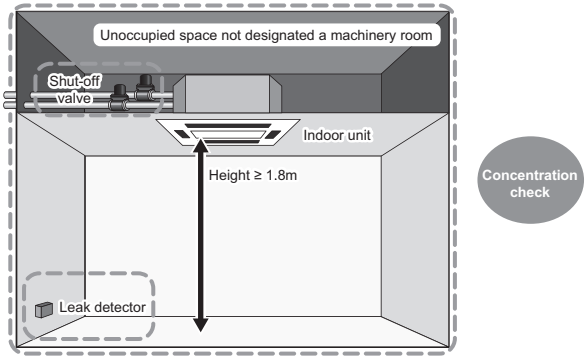
(2-4) Small room installation (Alarm + Ventilation)



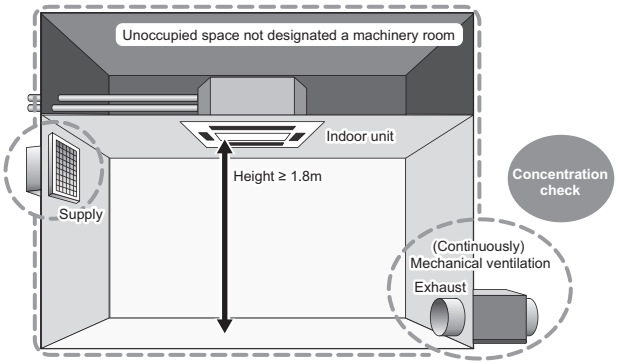
(2-5) Small room installation (Shut-off valves + Ventilation)



(2-6) Small room installation (Shut-off valves)



(2-7) Small room installation (Mechanical ventilation)



See below for information on installing a safety device on the HVRF/VRF R32 system.

*Safety devices shall be regularly inspected, maintained, and replaced in accordance with the relevant laws, regulations, and the instructions of the manufacturers.

*The requirements listed below were established based on IEC60335-2-40 (Edition 6.0) and ISO5149 (2014). See the original standards for further information on selecting a safety device.

<Regulatory requirements for alarm>

1) For hospitals, hotels and other buildings, the alarm system shall be required in monitoring room in addition to the living room. <IEC/GG.10.1/GG.13.2.2> <ISO-1/A.5.2.1> <ISO-3/8.3.2>
2) The alarm shall be turned on by the signal from the refrigerant detection system. <IEC/GG.13.1> <ISO-1/A.5.2.1>
3) The alarm shall also alert an authorized person to take appropriate action. <IEC/GG.13.1> <ISO-3/8.1>
4) The alarm system shall warn audibly and visibly such as both a loud buzzer (15 dBA above the background level) and flashing light. <IEC/GG.13.2.1> <ISO-3/8.3.1>
5) The air conditioner and alarm shall use different electrical power supply. <ISO-3/7.2 and 8.2>
6) The alarm system shall comply with the requirements of the fire alarms. <ISO-3/8.2>

<Regulatory requirements for safety shut-off valve>

1) Safety shut-off valves shall be located outside or in a space with a room volume large enough so that refrigerant concentration is lower than LFL/4 and LFL/2. <IEC/GG.12.1>
2) Safety shut-off valves shall be positioned to enable access for maintenance by an authorized person. <IEC/GG.12.1> <ISO-3/6.4.2>
3) Safety shut-off valves shall be designed to close in the event of an electric power failure. <IEC/GG.12.2> <ISO-3/6.4.3>
4) Safety shut-off value shall be installed in the place where the amount of refrigerant leaked into the occupied space is less than QLMV (<LFL/2). <IEC/GG.12.2> <ISO-3/6.4.1>
5) Safety shut-off valve shall shut off the refrigerant under the control of refrigerant leakage detector. <ISO-1/A.5.2.1, ISO-3/6.4.1>
6) The air conditioner and safety shut-off valve shall use different electrical power supply. <ISO-3/7.2>
7) When the shut-off valve is used as a safety measure, natural ventilation (example: a gap under a door through ventilation openings) is required because slow leak occurs at the time of opening and closing of the shut-off valve. <Mitsubishi Electric requirements>

*Note that units may come to an abnormal stop due to pressure error when safety shut-off valves are tripped.

<Regulatory requirements for mechanical ventilation>

1) Mechanical ventilation shall be operated continuously or be switched on by the refrigerant detection system. <IEC/GG.11.3.4> <ISO-3/6.3.3.3>
2) During the continuous operation of the fan, the airflow shall be detected or monitored continuously. If the airflow is reduced, the unit operation (in heating mode) shall be stopped, or alarm shall be turned on. <IEC/GG.8.3.1>
3) When the ventilation system is interlocked with the sensor, even if the detcted value of concentration becomes lower than the one for alert, the ventilation system shall continue to operate more than 5 minutes after the detection and air conditioning unit shall stop operation. (in heating mode) <IEC/GG.8.3.1>
4) Air volume of ventilation <ISO-3/6.3.3.1>
   Q = 10/RCL (Refrigerant Concentration Limit) ≈ 164 m^3/h
5) The position of the mechanical ventilation openings <IEC/GG.11.3.3><ISO-3/5.13.1><ISO-3/5.13.5> <ISO-3/6.3.3.2>
   The upper edge of the ventilation opening shall be located equal or below the refrigerant release point.
   For floor standing units, the lower edge of the opening shall be more than 100 mm above the floor.
   The exhaust ventilation openings shall be located a sufficient distance from intake openings to prevent re-circulation to the occupied space.
6) (For machinery room) Ventilation route shall be designed to avoid leakage of refrigerant to the neighbouring rooms, corridors and so on. <ISO-3/5.2>
7) (For machinery room) Exterior openings shall not be situated within 2 m of building emergency exit staircases or other building openings, e.g. windows, doors, ventilation inlets, etc. <ISO-3/5.7>
8) (For machinery room) The ventilation system shall be independent of any other ventilation system. <ISO-3/5.13.1>
9) The air conditioner and mechanical ventilation shall use different electrical power supply. <ISO-3/7.2 and 8.2>

<Regulatory requirements for refrigerant leakage detector>

1) Alarm threshold shall be set to be activated before the refrigerant concentration reaches 25% of the LFL. The LFL shall be taken at WCF (Worst Case Formulation) as defined in ISO 817. <IEC/LL.1> <ISO-3/9.4.2>
2) Refrigerant detection system shall make output signal to activate the safety measures within 30 seconds at the refrigerant concentration of 25% of LFL or lower. <IEC/LL.2 and 3>
   The delay of the detector shall be 30s or less at a concentration of 1.6 times the pre-set value. <ISO-3/9.4.1>
3) The refrigerant detection system, including the sensors, shall comply with the above requirements over the full range of operating temperature and humidity as specified by the appliance manufacturer. <IEC/LL.3>
   The sensitivity tolerance of the detector shall be considered to ensure that the output signal is triggered at or below the pre-set value. The tolerance of the detector shall take into account the ±10% of power line voltage tolerance. <ISO-3/9.4.1>
4) The refrigerant detection system shall be pre-set and calibrated (with an accuracy of ±20%) from the factory for the refrigerant used. <IEC/LL.4>
   The pre-set value for the refrigerant detector at 30˚C or 0˚C, whichever is more critical, shall be half or less of the RCL (Refrigerant Concentration Limit) concentration as given in ISO 817. <ISO-3/9.4.1>
5) Vibration requests <IEC/LL.6>
   If vibration operating parameters are not established by the manufacturer, then a sample of the sensor shall be subject to the requirements defined below.
   - frequency 10 Hz-31.5 Hz, total amplitude 1.0 mm, and
   - frequency 31.5 Hz-150 Hz, maximum acceleration 2G
   The samples shall be vibrated over the specified frequency range, displacement and acceleration for a period of 1 hour in each of the three mutually perpendicular planes (X-Y-Z). The change rate shall not exceed 10 Hz/min. After the samples are vibrate, they shall be tested to verify they still sense refrigerant at 25% of LFL or lower.
6) The sensor shall include a means for self-testing, and the test shall be run at least every hour and if a failure is detected, an alarm shall be activated. <IEC/LL.7>
7) If the sensor has a defined life and requires replacement after a given period, the detection system shall initiate an alarm or indication that replacement is required. If sensor becomes more sensitive with aging to generate false alarm, the end of life alarm can be omitted. <IEC/LL.7>
8) The sensors shall be marked with name of manufacturer (or responsible vendor) and model (or type) reference. <IEC/LL.8>
9) The detector shall be located where the refrigerant from the leak will concentrate. <ISO-3/9.2>
10) At least one detector shall be installed in each machinery room and/or at the lowest underground room. <ISO-3/9.2>
11) The detector shall continue to activate the alarm signal if the concentration exceeds the threshold. <ISO-3/9.4.2>
12) The installation of the detector shall allow access for checking, repair, or replacement by an authorized person. <ISO-3/9.5.1>
13) The detector shall be protected to prevent tampering or unauthorized resetting of the pre-set value. <ISO-3/9.5.2>
14) The air conditioner and refrigerant leakage detector shall use different electrical power supply. <ISO-3/7.2 and 8.2>

<Regulatory requirements for circulation airflow>

1) The circulation shall operate continuously or be turned on by refrigerant detection systems. <IEC/GG.10.2.1>
2) Minimum airflow = 240 m^3/h <IEC/GG.10.2.1>
3) Minimum air velocity
   vmin = $(-4.0 \times 10^{-5} \times M^2 + 0.0108 \times M + 1.42) / \sin ø$ <IEC/GG.10.2.1>
   * Because of R32 Molecular weight = 52.0 g/mol, vmin ≈ 1.87 m/s
   * Reduction of the area due to the outlet grill (= air speed up) is not considered.
4) Where the continuous operation of the fan, the airflow shall be monitored. If the airflow is reduced, the unit operation shall be stopped, or alarm shall be turned on. <IEC/GG.10.2.2>
5) Where ventilation is activated being interlocked with refrigerant detection system, after the detected value of concentration reached lower than the pre-set alarm concentration, circulation fan shall continue to run for at least 5 min (at the time of heating operation) and the unit shall be stopped. <IEC/GG.10.2.3>

Caution for refrigerant leakage for R410A

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The installer and/or air conditioning system specialist shall secure safety against refrigerant leakage according to local regulations or standards.
The following standard may be applicable if no local regulation or standard is available.

1-1. Refrigerant property

R410A refrigerant is harmless and incombustible. The R410A is heavier than the indoor air in density. Leakage of the refrigerant in a room has possibility to lead to a hypoxia situation. Therefore, the critical concentration specified below shall not be exceeded even if the leakage happens.

• Critical concentration

Critical concentration hereby is the refrigerant concentration in which no human body would be hurt if immediate measures can be taken when refrigerant leakage happens.

Critical concentration of R410A: 0.44kg/m^3
(The weight of refrigeration gas per 1 m^3 air conditioning space.);
* The Critical concentration is subject to ISO5149, EN378-1.

For the CITY MULTI system, the concentration of refrigerant leaked should not have a chance to exceed the critical concentration in any situation.

1-2. Confirm the Critical concentration and take countermeasure

The maximum refrigerant leakage concentration (Rmax) is defined as the result of the possible maximum refrigerant weight (Wmax) leaked into a room divided by its room capacity (V). It is referable to Fig.1-1. The refrigerant of Outdoor/Heat source unit here includes its original charge and additional charge at the site.
The additional charge is calculated according to the refrigerant charging calculation of each kind of Outdoor/Heat source unit, and shall not be over charged at the site. Procedure 1-2-1~3 tells how to confirm maximum refrigerant leakage concentration (Rmax) and how to take countermeasures against a possible leakage.

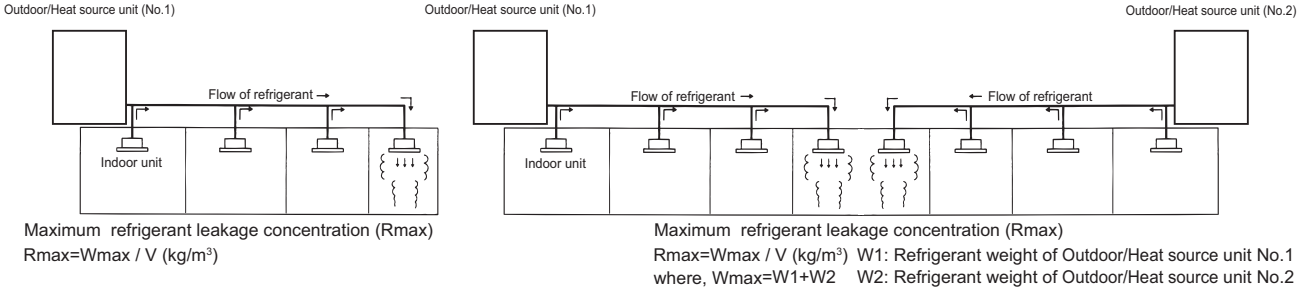


Fig. 1-1 The maximum refrigerant leakage concentration

1-2-1.Find the room capacity (V),
If a room having total opening area more than 0.15% of the floor area at a low position with another room/space, the two rooms/space are considered as one.The total space shall be added up.
1-2-2.Find the possible maximum leakage (Wmax) in the room.If a room has Indoor unit(s) from more than 1 Outdoor/Heat source unit, add up the refrigerant of the Outdoor/Heat source units.
1-2-3.Divide (Wmax) by (V) to get the maximum refrigerant leakage concentration (Rmax).
1-2-4.Find if there is any room in which the maximum refrigerant leakage concentration (Rmax) is over 0.44kg/m^3.
If no, then the CITY MULTI is safe against refrigerant leakage.
If yes, following countermeasure is recommended to do at site.
Countermeasure 1: Let-out (making V bigger)
Design an opening of more than 0.15% of the floor area at a low position of the wall to let out the refrigerant whenever leaked.
e.g.make the upper and lower seams of door big enough.
Countermeasure 2: Smaller total charge (making Wmax smaller)
e.g.Avoid connecting more than 1 Outdoor/Heat source unit to one room.
e.g.Using smaller model size but more Outdoor/Heat source units.
e.g.Shorten the refrigerant piping as much as possible.
Countermeasure 3: Fresh air in from the ceiling (Ventilation)
As the density of the refrigerant is bigger than that of the air. Fresh air supply from the ceiling is better than air exhausting from the ceiling.
Fresh air supply solution refers to Fig.1-2~4.

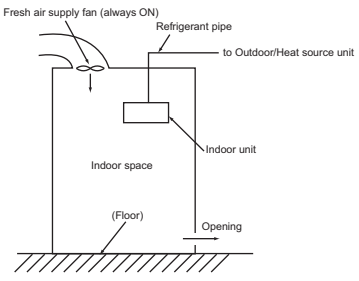


Fig.1-2.Fresh air supply always ON

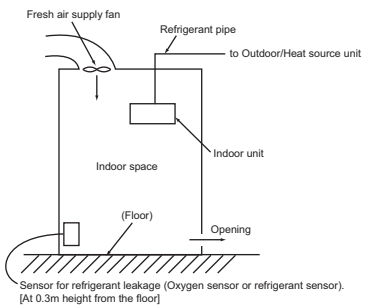


Fig.1-3.Fresh air supply upon sensor action

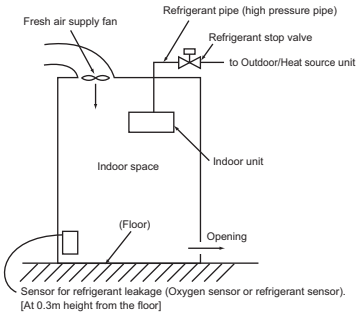


Fig.1-4.Fresh air supply and refrigerant shut-off upon sensor action

Note 1. Countermeasure 3 should be done in a proper way in which the fresh air supply shall be on whenever the leakage happens.
Note 2. In principle, MITSUBISHI ELECTRIC requires proper piping design, installation and air-tight testing after installation to avoid leakage happening.
In the area should earthquake happen, anti-vibration measures should be fully considered.
The piping should consider the extension due to the temperature variation.

DATA BOOK

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R32/R410A series

⚠Warning

■Do not use refrigerant other than the type indicated in the manuals provided with the unit and on the nameplate.
- Doing so may cause the unit or pipes to burst, or result in explosion or fire during use, repair, or at the time of disposal of the unit.
- It may also be in violation of applicable laws.
- MITSUBISHI ELECTRIC CORPORATION cannot be held responsible for malfunctions or accidents resulting from the use of the wrong type of refrigerant.

■Our air conditioning equipment and heat pumps contain a fluorinated greenhouse gas, R32/R410A.

MITSUBISHI ELECTRIC CORPORATION

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