

Air-Conditioners For Building Application

Multiple Remote Controller Adapter PAC-SA88HA-E

Installation Manual

This installation manual describes only the connection of the Multiple Remote Controller Adapter to the outdoor unit of CITY MULTI air conditioner series.

This part is a wiring member to connect the external circuit (locally procured) to the board on the indoor unit. This adapter has ports for the ON/OFF signals, and error output status and operation status output can be checked.

For details of compatible models, connection method and setting method, refer to the CITY MULTI DATA BOOK, Electrical Wiring Diagram etc. For your safety, first be sure to read section 1 "Safety Precaution" described below thoroughly and then install the PAC-SA88HA-E.

1. Safety Precaution

- The following two symbols are used to denote dangers that may be caused by incorrect use.

| | |
|------------------|---|
| ⚠ WARNING | This symbol denotes what could lead to serious injury or death if you misuse the PAC-SA88HA-E. |
| ⚠ CAUTION | This symbol denotes what could lead to a personal injury or property damage if you misuse the PAC-SA88HA-E. |

- After reading this manual, keep it in a place where the end user can find it anytime he or she wants to it. When someone moves, repairs or uses the PAC-SA88HA-E, make sure that this manual is forwarded to the final user.

⚠ WARNING

- Ask your dealer or technical representative to install the unit.**
Any deficiency caused by your own installation may result in an electric shock or fire.
- Ensure that installation work is done correctly following this manual.**
Any deficiency caused by installation may result in an electric shock or fire.
- Firmly connect the wiring using the specified cables. Carefully check that the cables do not exert any forces on the terminals.**
Improper wiring connections may produce heat and possibly a fire.
- Never modify or repair the PAC-SA88HA-E.**
Any deficiency caused by your modification or repair may result in an electric shock or fire. Consult with your dealer about repair.

- All electrical work must be performed by a licensed technician, according to local regulations and the instructions given in this manual.**
Any lack of electric circuit or any deficiency caused by installation may result in an electric shock or fire.
- Do not move and re-install the PAC-SA88HA-E yourself.**
Any deficiency caused by installation may result in an electric shock or fire. Ask your distributor or special vendor for moving and installation.
- Stop the operation if any malfunction occurs.**
If malfunction occurs (burning smell, etc.) stop the operation and turn off the power supply. Contact your dealer or technical representative. If the controller continues to operate after a malfunction occurs, this may cause damage, electric shock or fire.
- Do not turn on the main power until installation has been completed.**
Doing so may result in electric shock or fire.

⚠ CAUTION

- Do not install in any place exposed to flammable gas leakage.**
Flammable gases accumulated around the body of PAC-SA88HA-E may cause an explosion.
- Do not use in any special environment.**
Using in any place exposed to oil (including machine oil), steam and sulfuric gas may deteriorate the performance significantly or give damage to the component parts.
- Wire so that it does not receive any tension.**
Tension may cause wire breakage, heating or fire.
- Do not install in any place at a temperature of more than 40°C (104°F) or less than 0°C (32°F) or exposed to direct sunlight.**
- Do not install in any place where acidic or alkaline solution or special spray are often used.**
Doing so may cause an electric shock or malfunction.
- Do not install in any steamy place such as a bathroom or kitchen.**
Avoid any place where moisture is condensed into dew. Doing so may cause an electric shock or malfunction.
- Use standard wires in compliance with the current capacity.**
A failure to this may result in an electric leakage, heating or fire.
- Do not wash with water.**
Doing so may cause an electric shock or malfunction.

2. Parts list

Make sure that the following items are included in the package.

Multiple Remote Controller Adapter 2 m (6-1/2 ft)

- PAC-SA88HA-E: 1 pc.

3. Connection to the Indoor Unit

Connect the connector of the Multiple Remote Controller Adapter to the connector CN51 or CN52 of the indoor unit control board as necessary. The connector can only be connected in one direction. Do not force the connection.

4. Locally Procured Parts

All parts other than the Multiple Remote Controller Adapter are procured locally. The items required will depend on the connection method. Refer to the example of use shown below.

- (Example) ① Switch Single pole, single action switch.

| | |
|----------------|---|
| CAUTION | Select a part with contacts for extremely low amperage. 5 or 12 VDC is used at the contact points for the switch so there is a load of only approximately 1 mA. Improper switch selection could cause improper operation. |
|----------------|---|

- ② Relay Use relays that meet the following specifications.
 Operation coil
 Rated voltage: 12 VDC
 Power consumption: 0.9 W or less
 * Use the diode that is recommended by the relay manufacturer at both ends of the relay coil.
- ③ Transit relay When the wiring work as described in 6. *Wiring Restrictions* is required, this relay is used.
- ④ Control cable The length of the electrical wiring for the PAC-SA88HA-E is 2 meters (6-1/2 ft). To extend this length, use sheathed 2-core cable. Don't extend the cable more than 10 meters (32 ft).
 Control cable type: CVV, CVS, CPEV or equivalent
 Cable size: 0.5 mm² ~ 1.25 mm² (16 to 22 AWG)

| | |
|----------------|---|
| 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 2750 V or more. |
|----------------|---|

5. Locally Procured Wiring

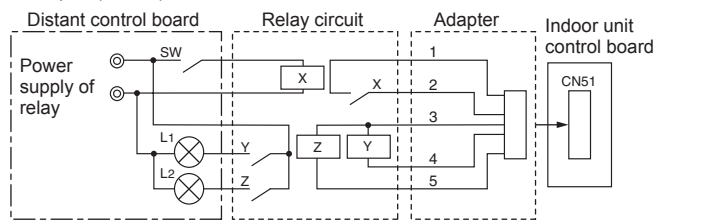
Basic connection methods for following models are shown below as examples. For details, refer to the CITY MULTI DATA BOOK, Electrical Wiring Diagram etc.

Polarity (output terminal)

| No. | Color | CN51 | CN52 |
|-----|--------|------|------|
| 1 | Brown | / | + |
| 2 | Red | / | - |
| 3 | Orange | + | - |
| 4 | Yellow | - | - |
| 5 | Green | - | / |

Indoor unit “-E” type input/output connector (CITY MULTI series)

① Input (CN51)



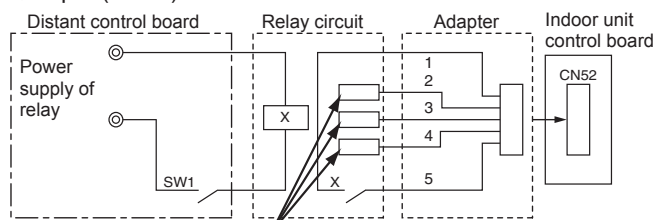
SW: Distant ON/OFF switch
 L1: Status lamp
 L2: Error lamp
 X: Relay (a point of contact, fixed DC1 mA)
 Y, Z: Relay Contact rating voltage ≥ 15 VDC
 Contact rating current ≥ 0.1 A
 Minimum applicable load ≤ DC1 mA

Maximum cable length is 10 m (32 ft.)
 * Every time the SW is pushed (the pulse is inputted), it reacts against ON/OFF.

• ON/OFF (Pulse) input specification

| Item | Description |
|-------------------|----------------------------|
| Input signal | Pulse sign (Normally open) |
| Standard of pulse | |

② Input (CN52)

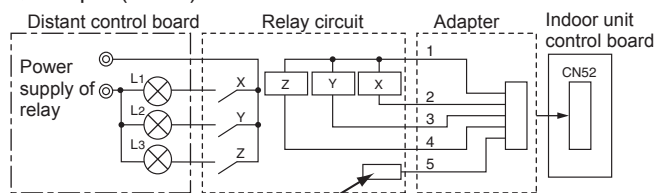


Since this is not used, be sure to completely wrap with insulation tape.
 Maximum cable length is 10 m (32 ft.)

SW1: Demand switch
 X: Relay (coil ≤ 0.9 W, 12 VDC)

| | |
|-----|-------------------|
| SW1 | Indoor unit |
| ON | Forced thermo-OFF |
| OFF | Normal running |

③ Output (CN52)



Since this is not used, be sure to completely wrap with insulation tape.
 Maximum cable length is 10 m (32 ft.)

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 12 VDC, a power consumption of 0.9 W or less)

6. Wiring Restrictions

Keep the length of the cable connecting to the circuit board of the indoor unit shorter than 10 meters (32 ft).

Longer than 10 meters (32 ft) could cause improper operation.

Use a transit relay when extending wiring such as remote wiring.

When using a polarized relay (such as a relay with a diode), connect the relay in the correct polarity to avoid damage to the indoor unit circuit board.

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