

MITSUBISHI ELECTRIC



Building Air Conditioning Control System

Signal Receiving Unit

Installation Manual

PAR-SA9CA-E

This installation manual contains only the description of how to install the Signal Receiving Unit PAR-SA9CA-E. For information about how to wire and how to install air conditioning units, see the installation manual for them.
For your safety, first be sure to read (1) Safety Precautions described below thoroughly and then install the Signal Receiving Unit PAR-SA9CA-E correctly.

1 Safety Precautions

- The following two symbols are used to denote dangers that may be caused by incorrect use and their degree:

WARNING This symbol denotes what could lead to serious injury or death if you misuse the PAR-SA9CA-E.

CAUTION This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAR-SA9CA-E.

- After reading this installation manual, keep it in a place where the final user can see it anytime. When someone moves, repairs or uses the PAR-SA9CA-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.
- Install in a place which is strong enough to withstand the weight of the PAR-SA9CA-E.** Any lack of strength may cause the PAR-SA9CA-E to fall down, resulting in personal injury.
- Never connect the wiring using the specified cables. Carefully check that the cables do not exert any force on the terminals.** Improper wiring connections may produce heat and possibly a fire.
- Never modify or repair the PAR-SA9CA-E by yourself.** Any deficiency caused by your modification or repair may result in an electric shock or fire. Consult with your dealer about repairs.
- Ensure that installation work is done correctly following this installation manual.** Any deficiency caused by installation may result in an electric shock or fire.
- 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 PAR-SA9CA-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.
- To dispose of this product, consult your dealer.**

CAUTION

- Do not install in any place exposed to flammable gas leakage.** Flammable gases accumulated around the body of PAR-SA9CA-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.
- Completely seal the wire lead-in port with putty etc.** Any dew, moisture, cockroaches, insects entering the unit may cause an electric shock or a malfunction.
- Do not wash with water.** Doing so may cause an electric shock or a malfunction.
- 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 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 a malfunction.
- 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.
- Use standard wires in compliance with the current capacity.** A failure to this may result in an electric leakage, heating or fire.
- Do not touch any PCB (Printed Circuit Board) with your hands or with tools.** Do not allow dust to collect on the PCB. Doing so may cause fire or an electric shock.
- Do not touch any control button with your wet hands.** Doing so may cause an electric shock or a malfunction.
- Do not press any control button using a sharp object.** Doing so may cause an electric shock or a malfunction.
- Never contact the power supply with the control wiring terminals.** Doing so will certainly cause the controller to catch fire.

2 Confirming the Supplied Parts

Check that the box includes the following parts in addition to this installation manual:

| | | | |
|--|---|---------------------------|---|
| (1) Signal Receiving Unit | 1 | (3) Screw (M4 × 30) | 2 |
| (2) Remote controller wire (5 m (16 ft)) | 1 | (4) Wood screw (4.1 × 16) | 2 |

3 Sample System Connection

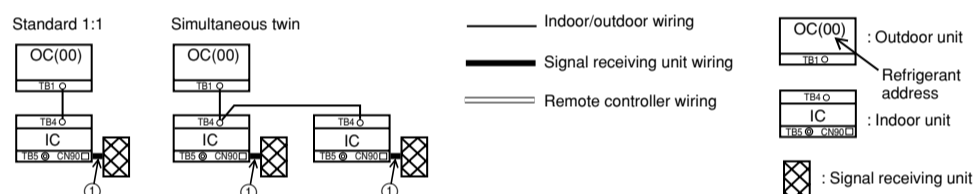
Only the wiring from the signal receiving unit and between the remote controllers is shown below. The wiring differs depending on the unit to be connected or the system to be used. For details on restrictions, refer to the installation manual or the service handbook that came with the unit.

1. Connecting to Mr. SLIM air conditioner

(1) Standard 1:1, simultaneous twin

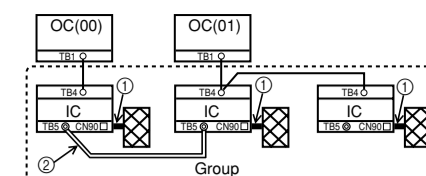
① Connecting the signal receiving unit

Connect the signal receiving unit to the CN90 (Connect to the wireless remote controller board) on the indoor unit using the supplied remote controller wire. Connect the signal receiving units to all the indoor units.



(2) Grouping indoor units connected to different outdoor units

- Connecting the signal receiving unit
Connect the signal receiving unit to the CN90 (Connect to the wireless remote controller board) on the indoor unit using the supplied remote controller wire. Connect the signal receiving units to all the indoor units.
- Remote controller wiring
Connect the remote controller wire to the TB5 (terminal block for remote controller wiring) on the indoor unit. (No polarity)
- The indoor units can be grouped by the remote controller wiring. Daisy-chain the indoor unit to be grouped to one of the indoor units connected to the same outdoor unit.
- When some types of indoor units are in the system, connect the remote controller wire to the indoor unit with the most functions (wind velocity, vane, louver, etc.). Assign the refrigerant address of "00" to the outdoor unit connected to the indoor unit with the most function.
- The indoor units connected to 16 different outdoor units at maximum can be controlled as one group.



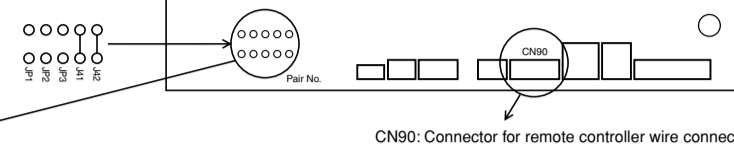
4 Setting the Pair Number Switch

Pair number setting cannot be made on the SEZ-KA-VA or SEZ-KC-VA model. For details on restrictions, refer to the installation manual or the service handbook with the unit.

1. Setting method

Assign the same pair number to the wireless remote controller as that of the indoor unit. If not doing so, the remote controller cannot be operated. Refer to the installation manual that came with the wireless remote controller for how to set pair numbers of wireless remote controllers.

Position of daisy wire on the controller circuit board on the indoor unit



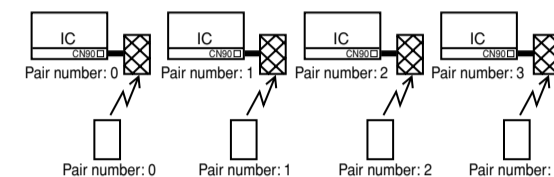
For pair number settings, the following 4 patterns (A-D) are available.

| Pair number setting pattern | Pair number on remote controller side | Indoor controller circuit board side Point where the daisy wire is disconnected |
|-----------------------------|---------------------------------------|--|
| A | 0 | Not disconnected |
| B | 1 | J41 disconnected |
| C | 2 | J42 disconnected |
| D | 3-9 | J41 and J42 disconnected |

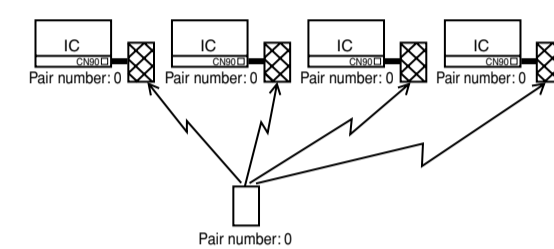
2. Setting example

(1) To use the units in the same room

- Separate setting
Assign a different pair number to each indoor unit to operate each indoor unit by its own wireless remote controller.

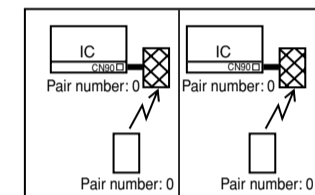


- Single setting
Assign the same pair number to all the indoor units to operate all the indoor units by a single wireless remote controller.



(2) To use the units in different rooms

Assign the same pair number to the wireless remote controller as that of the indoor unit. (Leave the setting as it is at purchase.)



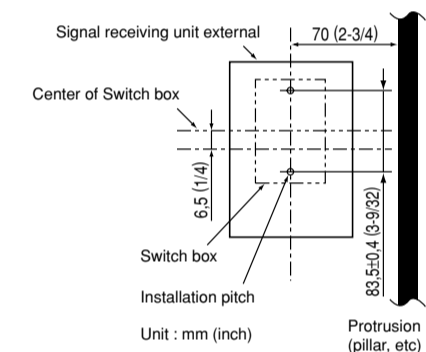
5 How To Install

The installation method for the signal receiving unit varies depending on the installation site. When it is installed on the ceiling, refer to the section "Installation on the ceiling", and when it is installed on the switch box or on the wall, refer to the section "Installation on the switch box or on the wall".

1. Common items for "Installation on the ceiling" and "Installation on the switch box or on the wall"

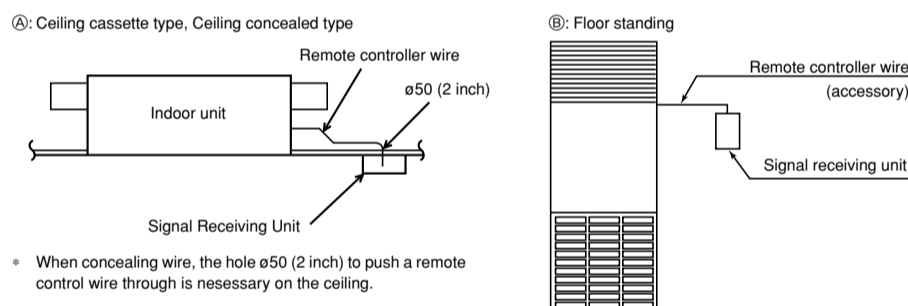
(1) Select the installation site.

- The following must be observed.
- Connect the signal receiving unit to the indoor unit with the supplied remote controller wire. Note that the length of the remote controller wire is 5 m (16 ft). Install the remote controller within the reach of the remote controller wire.
 - When installing on either the switch box or the wall, allow space around the Signal Receiving Unit as shown in the figure on the right.
 - When installing the Signal Receiving Unit to the switch box, the Signal Receiving Unit slipped downward for 6.5 mm (1/4 inch) as right illustrated.



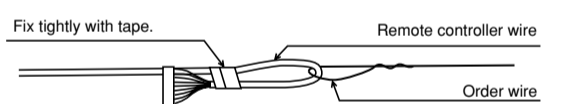
① Parts which must be supplied on site.

- Switch box for one unit
- Thin-copper wiring pipe
- Lock nut and bushing
- The thickness of the ceiling to which the remote controller is installed must be between 9 mm (3/8 inch) and 25 mm (1 inch).
- Install the unit on the ceiling or on the wall where the signal can be received from the wireless remote controller. The area where the signal from the wireless remote controller can be received is 45° and 7 m (22 ft) away from the front of the signal receiving unit.
- Install the signal receiving unit to the position shown below depending on the indoor unit model.



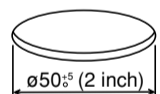
NOTE: • The point where the remote controller wire is connected differs depending on the indoor unit model. Take into account that the remote controller wire cannot be extended when selecting the installation site. • If the Signal Receiving Unit is installed near a fluorescent lamp specially inverter type, signal interception may occur. Be careful for installing the Signal Receiving Unit or replacing the lamp.

- Connect the remote controller wire securely to the order wire to pass the remote controller wire through the conduit as shown below.

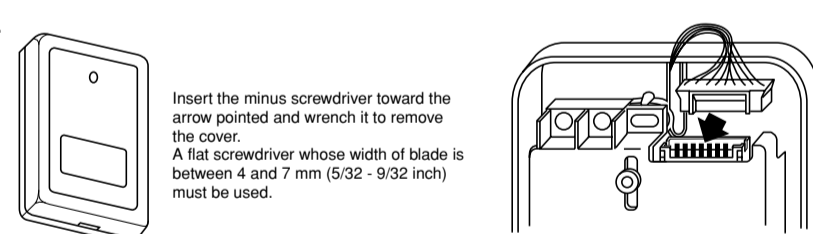


2. Installation on the ceiling

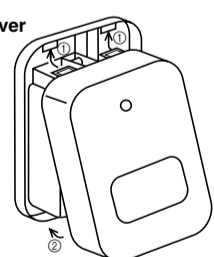
(1) Make a hole on the ceiling to install the signal receiving unit.



(2) Install the remote controller wire to the terminal block.



Mounting the cover



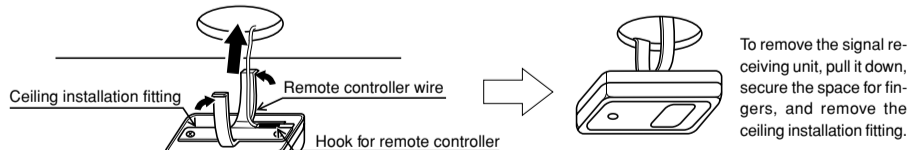
- Hang the cover to the upper hooks (2 places).
- Mount the cover to the lower case

CAUTION Insert the cover securely until the clicking sound is made. If not doing so, the cover may fall.

(3) Use the remote controller wire to connect it to the connector (CN90) on the controller circuit board on the indoor unit.

Refer to the (4) Setting the Pair Number Switch for details on controller circuit board on the indoor unit.

(4) Install the signal receiving unit to the ceiling.



- Hang the remote controller wire securely to the hook before installation.
- Hook the springs on the ceiling installation fitting first, and push the signal receiving unit from the bottom to install it to the ceiling.

CAUTION • Do not install the signal receiving unit to the ceiling with holding the ceiling installation fitting. Doing so cause fingers to be caught leading to injury. • Do not leave the remote controller wire hanging from the signal receiving unit. Doing so may cause disconnection of the wire or malfunction of the signal receiving unit.

NOTE: Confirm the installation direction first before installing the signal receiving unit.

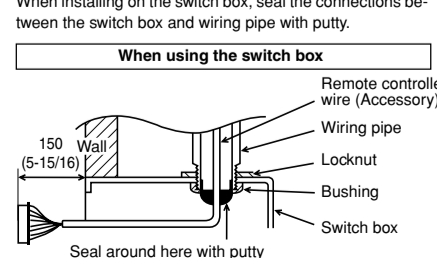
3. Installation on the switch box or on the wall

(1) Use the remote controller wire to connect it to the connector (CN90) on the controller circuit board on the indoor unit.

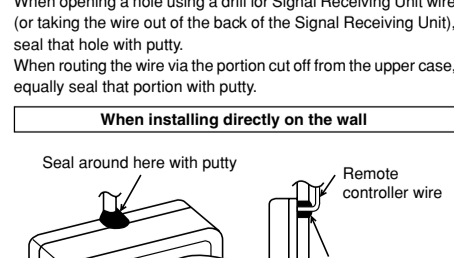
Refer to the (4) Setting the Pair Number Switch for details on controller circuit board on the indoor unit.

(2) Seal the Signal Receiving Unit cord lead-in hole with putty in order to prevent the possible entry of dew, water droplets, cockroaches, other insects, etc.

- When installing on the switch box, seal the connections between the switch box and wiring pipe with putty.

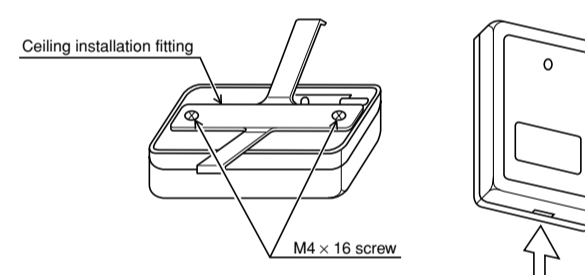


- When opening a hole using a drill for Signal Receiving Unit wire (or taking the wire out of the back of the Signal Receiving Unit), seal that hole with putty.
- When routing the wire via the portion cut off from the upper case, equally seal that portion with putty.

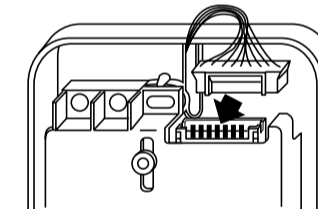


(3) Remove the ceiling installation fitting.

- Remove the screws (M4 × 16) on the ceiling installation fitting.
- The screws (M4 × 16) are fixed with nuts from inside. Remove the cover, and fix the nuts to prevent the nuts from moving.

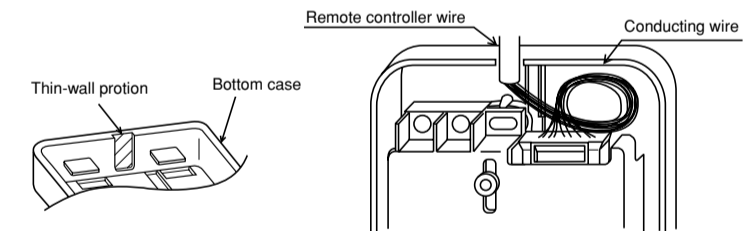


(4) Install the remote control wire to the terminal block.

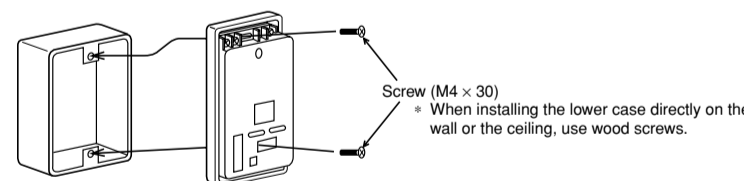


(5) Installing hole when the Signal Receiving Unit is installed on the wall direct.

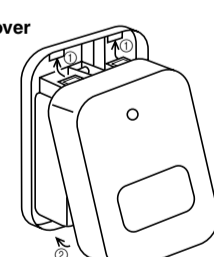
- Cut the thin-wall portion inside the bottom case (oblique section) by a knife or a nipper.
- Take out the connected remote controller wire to the terminal block through this space.



(6) Install the lower case on the switch box or directly on the wall.



Mounting the cover



- Hang the cover to the upper hooks (2 places).
- Mount the cover to the lower case

CAUTION Insert the cover securely until the clicking sound is made. If not doing so, the cover may fall.

6 Emergency Operation

① ON/OFF lamp (lit when unit is operating; unlit when unit is not operating)

② Emergency operation

In cases where the remote control unit does not operate properly, use either the COOL or HEAT button on the wireless remote control signal receiver to toggle the unit on or off. On cooler only units, pushing the HEAT button toggles the fan on and off.

Pressing the COOL or HEAT button selects the following settings.

| Operation mode | COOL | HEAT |
|--------------------|-------------|-------------|
| Preset temperature | 24 °C/75 °F | 24 °C/75 °F |
| Fan speed | High | High |
| Air Direction | Horizontal | Down |

