BH79D482H01

MITSUBISHI ELECTRIC

ZONE REMOTE CONTROLLER
PAR-ZC01M-E

INSTALLATION MANUAL

- Before starting installation, read the following description together with the installation manual included with the zone controller.
- Please read carefully and observe fully the following safety precautions.

⚠ WARNING	Precaution that must be observed to prevent injuries or death.
⚠ CAUTION	Precaution that must be observed to prevent damages to the unit.

- After installation carry out a test run to ensure correct operation, then explain operation method and safety precautions to the end user.
  Tell your customers to keep this installation manual together with the operation manual, and when they give or sell this machine to any other person include this installation manual and operation manual with it.

⚠WARNING

- The zone remote controller must not be installed by the user. Ask an installer or an authorized technician to install the zone controller. If the zone remote controller is installed improperly, electric shock, or fire may be caused.
- For installation work, follow the instructions in the Installation Manual and use tools.
- The zone remote controller must be securely installed on a structure that can sustain its weight. If the zone remote controller is mounted on an unstable structure, it may fall down and cause damages or injuries.
- All electric work must be performed by a qualified technician according to local regulations and the instructions given in this manual.
- Only the specified cables can be used for wiring. Connections must be made securely without tension on the terminals. If cables are connected or installed improperly, It may result in overheating or fire.
- Terminal block cover panel of the zone remote controller must be firmly fixed. If the cover panel is mounted improperly, dust and moisture may enter the zone remote controller, and it may cause electric shock or fire.

- Make sure to use accessories authorized by Mitsubishi Electric and ask an installer or an authorized technician to install them. If accessories are improperly installed, it may cause electric shock, or fire.
- Do not remodel the zone remote controller. Consult an installer for repairs. If alterations or repairs are not performed correctly, it may cause electric shock or fire.
- The user should never attempt to repair the zone remote controller or transfer it to another location. If the zone remote controller is installed improperly, it may cause electric shock or fire. If the zone remote controller needs to be repaired or moved, ask an installer or an authorized technician.
- When installing sensors and parts, do not expose the terminals.

⚠CAUTION

<Before installation (Environment)>
- Do not install the zone remote controller in outdoor location as it is designed for indoor installation only. Otherwise, electric shock or breakdown may be caused by water drop, wind or dust.
- Do not use the zone remote controller in an unusual environment. If the zone remote controller is installed or exposed to steam, volatile oil (including machine oil), sulfuric gas, briny air, the internal parts can be damaged.
- Do not install the zone remote controller where combustible gases may leak, be produced, flow, or accumulate. If combustible gas accumulates around the zone remote controller, it may cause fire or explosion.
- When installing the zone remote controller in a hospital or in a building where communications equipment are installed, you may need to take measure to noise and electronic interference. Inverters, home appliances, high-frequency medical equipment, and radio communications equipment can cause the zone remote controller to malfunction or to breakdown. At the same time, the noise and electric interference from the zone remote controller may disturb the proper operation of medical equipment, and communications equipment.

<Before installation or relocation>
- Be fully careful when moving the zone remote controller. Do not hold the packaging bands. Wear protective gloves to unpack and to move it, in order to avoid your hands be injured by parts.
- Be sure to safely dispose of the packaging materials. Packaging materials, such as nails and other metal or wooden parts may cause injuries.
- Do not wash the zone remote controller. You may receive an electric shock.

<Before electric work>
- Make sure to ground the zone controller. Do not connect the ground wire to gas or water pipes, lightning rods, or telephone grounding lines. If the zone controller is not properly grounded, there may be a risk to get an electric shock.

1. Accessory

|	Parts Name	Q'ty
①	Zone remote controller	1
②	Screw	8
③	Installation manual	1
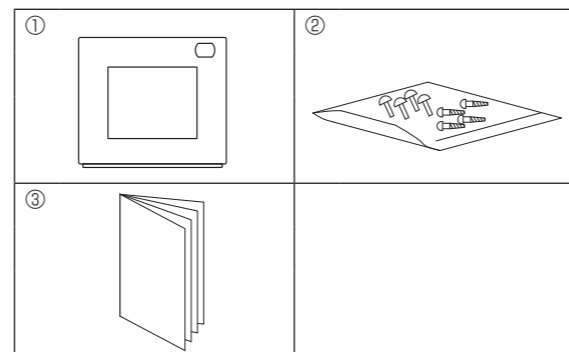
2. Installing the zone remote controller

This remote controller is for the wall installation. It can be installed either on a mounting block or directly on the wall. When performing direct wall installation, cables can be thread through either back or top of the remote controller.

(1) Selecting an installation site
Install the remote controller on the site where the following conditions are met.

(a) A flat surface
(b) A place where the remote controller can measure the accurate room temperature
  Sensors to monitor the room temperature on the indoor unit and on the remote controller.
  • To monitor the accurate room temperature, install the remote controller away from direct sunlight, heat sources, and the supply air outlet of the air conditioner.
  • Install the remote controller in a location that allows the sensor to measure the representative room temperature.
  • Install the remote controller where no wires are routed around the temperature sensor on the controller or where no obstacles block the air inlet, otherwise the sensor cannot measure accurate room temperature.
  • Do not install the controller where it is exposed to high concentration of acid, alkaline, or volatile organic compounds.
(c) Install the remote controller where occupancy and brightness can be properly detected.
  The remote controller has an occupancy sensor and a brightness sensor.
  Each sensor has a sensor-detection area.
  • Install the remote controller where the coverage area covers the appropriate area in the room.
  The maximum distance the sensor can detect occupancy is approximately 10 m (32 ft).
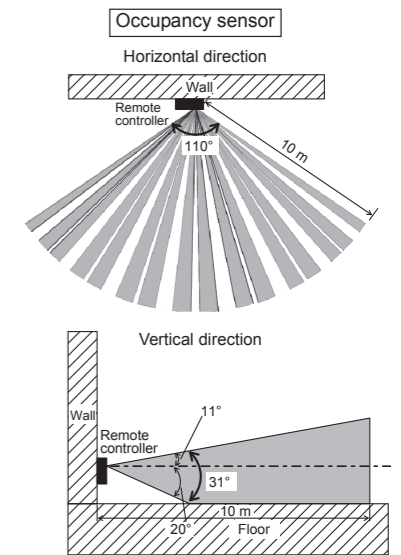
Occupancy sensor detects occupancy based on the temperature difference between the occupant and its surroundings.
The occupancy sensor is designed to detect the changes in the amount of infrared light emitted from an object in the detection area, including human bodies.
The occupancy sensor will not detect occupancy if no movements exist.
The sensor also becomes less sensitive to occupancy when the temperature difference between the occupant and its surroundings is small.
Select the installation location carefully to avoid false detection.

Factors that contribute to false detection by the occupancy sensor
  • Direct sunlight to the remote controller
  • Supply air directed straight toward the remote controller
  • Fireplace in the detection zone
  • Portable heater (e.g., oscillating electric heater) in the detection area
  • Excessive vibrations or large impact inflicted on the remote controller
  • Strong electrical noise
  • Movements of small animals, such as cats and dogs

Handling precautions
  • Keep the lens scratch-free.
  • Do not place adhesive tape or labels over the lens.
  • Use a soft cloth to clean the lens.

Important
Do not use solderless terminals to connect cables to the terminal block.
Solderless terminals may come in contact with the circuit board and cause malfunctions or damage the controller cover.

To avoid deformation and malfunction, do not install the remote controller in direct sunlight, where the ambient temperature may rise above 40°C (104°F) or drop below 0°C (32°F), or where the relative humidity may rise above 90% or drops below 20%.

To reduce the risk of malfunctions, do not install the controller in a place where water or oil may come into contact with the controller, or in a condensing or corrosive environments.

Do not install the remote controller directly onto electrically conductive objects such as metal plate that has not been painted.

To use the Energy Saving Assist function in a system with both main and sub remote controllers, activate the function only on the remote controller whose coverage area is the largest.

Important
Use caution when handling circuit boards to prevent damage from static electricity.
Although the circuit board is covered with an insulation sheet, part of the circuit board is exposed. Use extra caution not to let your fingers come in contact with the circuit board.

The remote controller can be installed either on a mounting block or directly on the wall. Perform the installation properly according to the method.
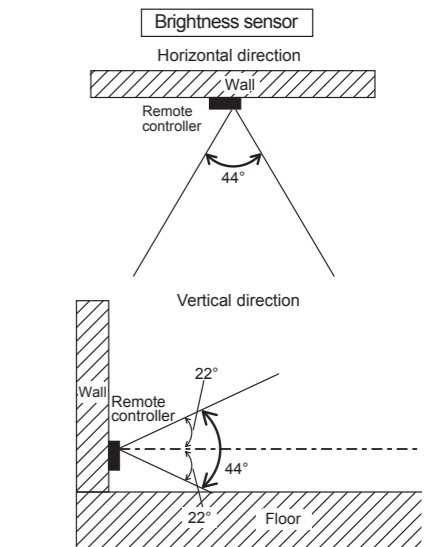① Drill a hole in the wall.
  ■ Installation using a mouting block
    • Drill a hole in the wall, and install the mouting block on the wall.
    • Connect the mouting block to the conduit tube.
  ■ Direct wall installation
    • Drill a hole in the wall, and thread the cable through it.
Note: No cable access hole is required when running the remote controller cable along the wall.
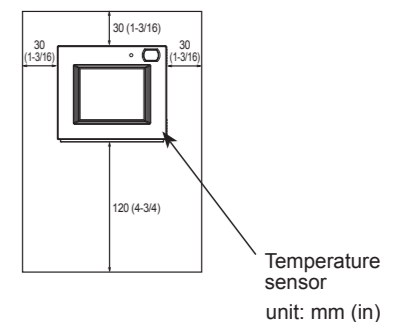② Seal the cable access hole with putty.
  ■ Installation using a mouting block
    • Seal the cable access hole at the connection of mouting block and conduit tube with putty

To reduce the risk of electric shock, malfunctions, or fire, seal the gap between the cables and cable access holes with putty.
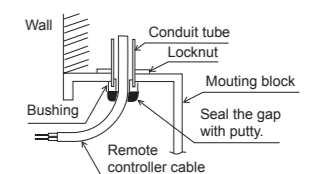
Occupancy sensor

Horizontal direction

Vertical direction

<Fig. 1>

▨ : Detection area

Note: As an inherent characteristic of the occupancy sensor, it is more sensitive to movements across the area indicated by ▨ than to movements straight toward the sensor.

Brightness sensor

Horizontal direction

Vertical direction

<Fig. 2>

Required space around the remote controller

Temperature sensor

unit: mm (in)

<Fig. 3>

<Fig. 4>

③ Prepare the bottom case of the remote controller.
Take the following procedure only when performing direct wall installation and running the remote controller cable along the wall.
• Cut out the thin-wall part on the cover (indicated with the shaded area in the right figure) with a knife or a nipper.

Note: Make sure that the hole edges are smooth and will not damage the wires.

④ Install the bottom case.
• Remove the sheath as shown in the figure at right, and route the remote controller cable behind the bottom case.
Install the bottom case.
■ Installation using a mounting block
• Secure at least two corners of the switch box with screws.
■ Direct wall installation
• Secure at least two corners of the remote controller with screws.
• Be sure to secure top-left and bottom-right corners of the remote controller (viewed from the front) to prevent it from lifting. (Use wall anchor etc.)

Important

To avoid damage to the controller, do not overtighten the screws.	To avoid damage to the controller, do not make holes on the controller cover.

⑤ **Install the top case on the bottom case.**
Two mounting tabs are at the top of the top case.
Hook those two tabs onto the bottom case, and click the top case into place. Check that the case is securely installed and can not be lifted.

The controller is shipped with the front cover mounted to the top case.
Remove the front cover from the top case before installing the top case on the wall.
Refer to "① Uninstalling the front cover".

⑥ **Connect the remote controller cable to the terminal block on the top case.**
Connect the remote controller cable to the terminal block.

To reduce the risk of electric shock, shorting, or malfunctions, keep wire pieces and sheath shavings out of the terminal block.

Important

Do not use solderless terminals to connect cables to the terminal block. Solderless terminals may come in contact with the circuit board and cause malfunctions or damage the controller cover.	Hold the cables in place with clamps to prevent undue force from being applied to the terminal block and causing cable breakage.

Take the following procedure only when performing direct wall installation and drilling a hole in the wall.
• Seal the hole through which the cable is threaded with putty.

⑦ **Install the front cover on the top case.**
Two mounting tabs are at the top of the front cover.
Hook those two tabs onto the top case, and click the front cover into place. Check that the case is securely installed and not lifted.

Important

When attaching the front cover to the top case, push it until it they click into place.
If it is not properly locked into place, it may fall, causing personal injury, controller damage, or malfunctions.
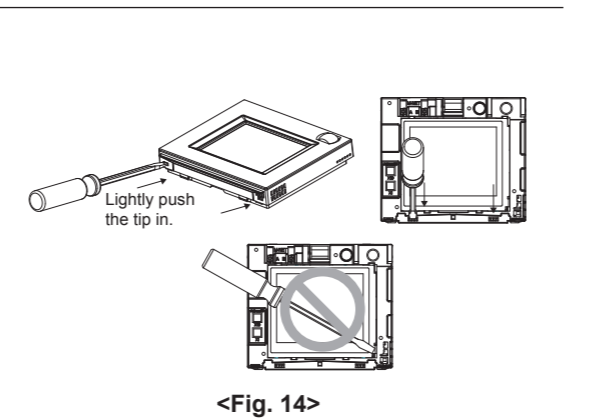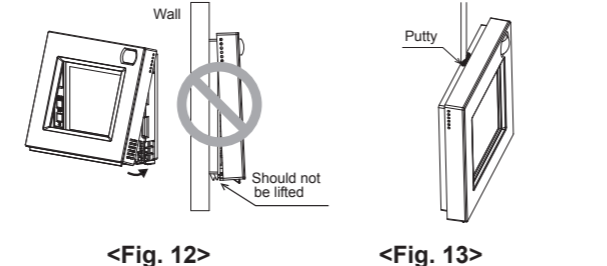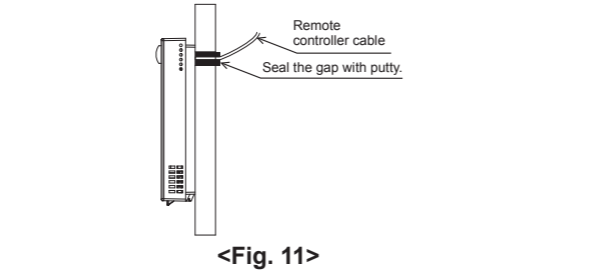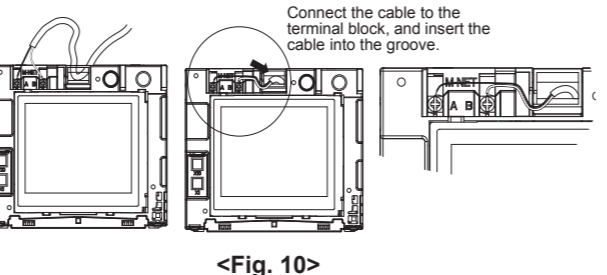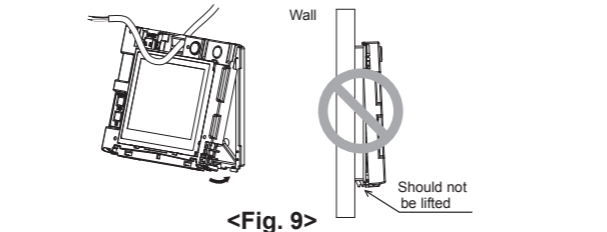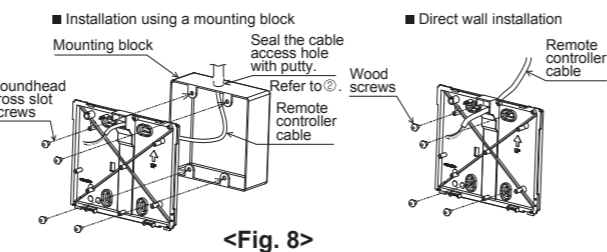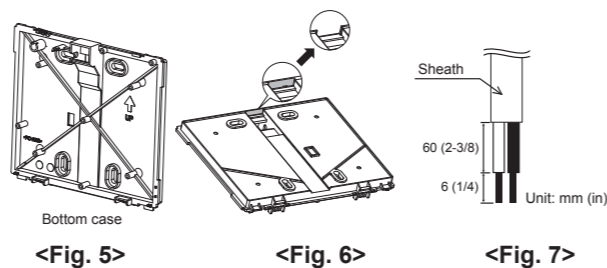
■ Direct wall installation (when running the cable along the wall)
• Thread the cable through the access hole at the top of the remote controller.
• Seal the cut-out part of the cover with putty.
• Use a cable cover.

Installation is complete.
Follow the instructions below when uninstalling them.

• **Uninstalling the front cover and top case**
① Uninstalling the front cover
Insert a flat-tip screwdriver (with a blade width of 5.5mm (7/32 in) or less) into either of the two latches at the bottom of the remote controller as shown in the figure at right.
Lightly push the tip of the flat-head screwdriver in the direction of the arrow in the figure to remove the front cover.
② Uninstalling the top case
Insert a flat-tip screwdriver (with a blade width of 5.5mm (7/32 in) or less) into either of the two latches at the front of the remote controller as shown in the figure at right.
Push the tip of the flat-head screwdriver in the direction of the arrow in the figure to remove the top case.

Important

Use a flat-head screwdriver with a blade width of 4-5.5mm (5/32-7/32 in). The use of a screwdriver with a narrower or wider blade tip may damage the controller casing.	To prevent damage to the control board, do not insert the driver into the slot strongly.
	To prevent damage to the controller casing, do not force the driver to turn with its tip inserted in the slot.

<Fig. 5>
<Fig. 6>
<Fig. 7>
Bottom case
Sheath
60 (2-3/8)
6 (1/4)
Unit: mm (in)

■ Installation using a mounting block
Mounting block
Seal the cable access hole with putty. Refer to ④.
Roundhead cross slot screws
Remote controller cable
■ Direct wall installation
Remote controller cable
Wood screws
<Fig. 8>

Wall
Should not be lifted
<Fig. 9>

Connect the cable to the terminal block, and insert the cable into the groove.
<Fig. 10>

Remote controller cable
Seal the gap with putty.
<Fig. 11>

Wall
Should not be lifted
<Fig. 12>

Putty
<Fig. 13>

Lightly push the tip in.
<Fig. 14>

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3. Connecting the zone remote controller cable to the zone control interface

3.1 Main zone remote controller

Maximum 2 remote controllers can be connected to TB3M. Connect the remote controller cable to M1, M2 on the terminal block (TB3M) <Fig. 15>. Connect the part of shield wiring of remote controller cable to S on the terminal when using 2-core shielded cable.

	Wiring (under 10m)	Wiring (10–200m)
Wiring wire	2×0.3mm² (standerd AWG22) *1	CVVS1.25mm² (standerd AWG 16) or CPEVSφ1.2mm (standerd AWG 16) or equivalent *1
Wiring type	2-core sheathed cable	2-core shielded cable
Circuit rating	24–30V DC	

*1 For remote controllers, use a cable with supplementary insulation; double coating or minimum thickness coating of 1mm.

Notes:
Wiring for remote controller cable shall be (5 cm or more) apart from power source wiring so that it is not influenced by electric noise from power source wiring. (Do not insert remote controller cable and power source wiring in the same conduit.) (Refer to the Zone Controller Installation Manual.)
When wiring to TB3M, use the ring type lugs and insulate them from the cables of adjoining terminals.

Main remote controller
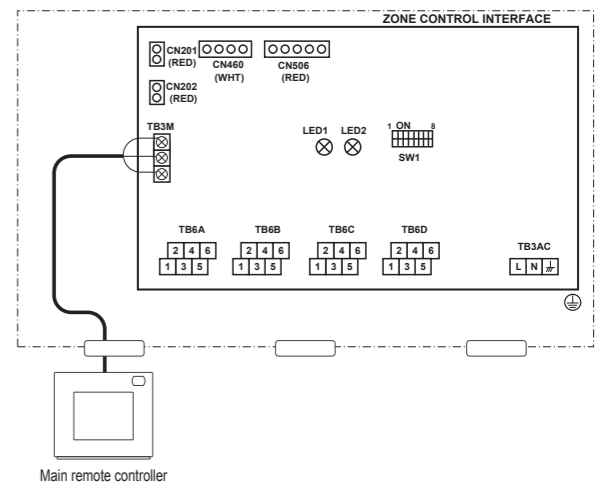<Fig. 15>

Set the M-NET addresses.

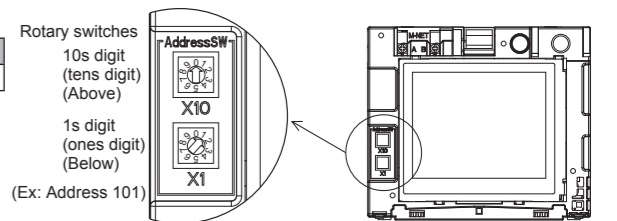|	Address range	Address setting method
Main remote controller	101	Not necessary since it is set to 101 as initial setting.

Note:
M-NET address can be changed with or without the power being applied to the controller.
The screen will jump to the [Start-up] screen.
Zone settings will be deleted, but the rest of the information will be retained.

Important

To set the address, turn the rotary switch with a precision slotted screwdriver [(-), 2.0mm (1/16 in) (W)] to a torque of less than 19.6 N to avoid the damage to the rotary switches.

Rotary switches
10s digit (tens digit) (Above)
1s digit (ones digit) (Below)
(Ex: Address 101)
<Fig. 16>

3.2 Sub zone remote controller

Maximum 2 remote controllers can be connected to TB3M. Connect the remote controller cable to M1, M2 on the terminal block (TB3M) <Fig. 17>. Connect the part of shield wiring of remote controller cable to S on the terminal when using 2-core shielded cable.

	Wiring (under 10m)	Wiring (10–200m)
Wiring wire	2×0.3mm² (standerd AWG22) *1	CVVS1.25mm² (standerd AWG 16) or CPEVSφ1.2mm (standerd AWG 16) or equivalent *1
Wiring type	2-core sheathed cable	2-core shielded cable
Circuit rating	24–30V DC	

*1 For remote controllers, use a cable with supplementary insulation; double coating or minimum thickness coating of 1mm.

Notes:
Wiring for remote controller cable shall be 5 cm or more apart from power source wiring so that it is not influenced by electric noise from power source wiring. (Do not insert remote controller cable and power source wiring in the same conduit.) (Refer to the Zone Controller Installation Manual.)
When wiring to TB3M, use the ring type lugs and insulate them from the cables of adjoining terminals.
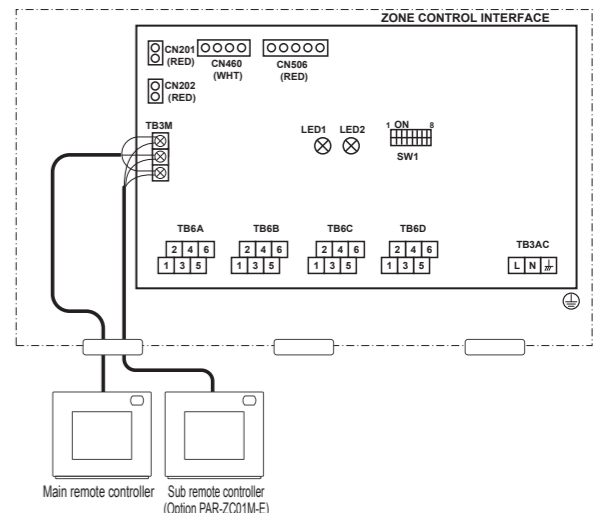
Main remote controller
Sub remote controller (Option PAR-ZC01M-E)
<Fig. 17>

Set the M-NET addresses.

|	Address range	Address setting method
Sub remote controller	151	Set to 151.

Note:
M-NET address can be changed with or without the power being applied to the controller.
The screen will jump to the [Start-up] screen.
Zone settings will be deleted, but the rest of the information will be retained.

Important

To set the address, turn the rotary switch with a precision slotted screwdriver [(-), 2.0mm (1/16 in) (W)] to a torque of less than 19.6 N to avoid the damage to the rotary switches.

Rotary switches
10s digit (tens digit) (Above)
1s digit (ones digit) (Below)
(Ex: Address 151)
<Fig. 18>
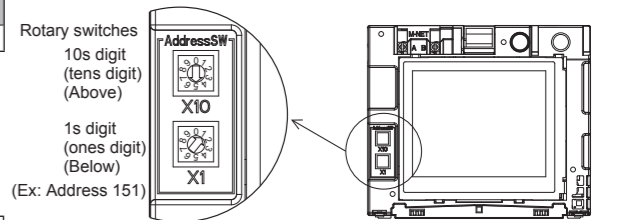
Set "Yes" to the existence of Sub RC on "Zone setting" menu of the zone remote controller.
Refer to the Zone Controller Installation Manual for more detail.

Symptoms	Assumed Causes	Solutions
6600 error on controllers when 2nd controller is installed	Sub contoller's address has not been set to 151	Set sub controller's address to 151, refer to installation manual