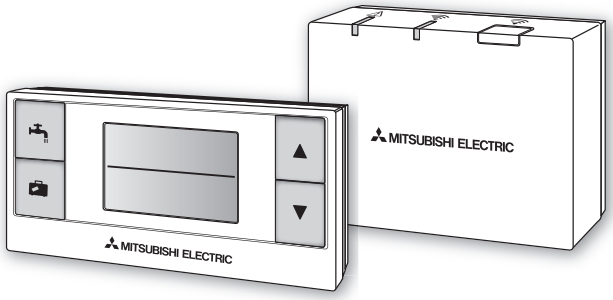
MITSUBISHI ELECTRIC

ecodan

Wireless Remote Controller and Receiver

PAR-WT50R-E
PAR-WR51R-E



This manual explains installation of the PAR-WR51R-E wireless receiver and the PAR-WT50R-E wireless remote controller, and settings of these devices. Before installing the devices, read this manual thoroughly. After reading, be sure to hand this manual to the user.

1. Safety Precautions

- The precautions mentioned below are important to use the device safely. Be sure to understand and follow them.
- The following hazardous classification shows the likelihood and severity of hazards if a person does not follow the instructions contained on the following signs.

⚠ **Warning**	Indicates a hazardous situation which, if a person does not follow the instructions, could result in death or serious injury.
⚠ **Caution**	Indicates a potentially hazardous situation that, if a person does not follow the instructions, may result in bodily injury or property damage.

⚠ Warning	
►Installation	
Do not use the device in particular environments.	Do not use the device in particular environments where the following substances are present in large amounts: oil, vapour, organic solvent, corrosive gas (such as ammonia, sulphuric compounds, and acid or the like), or where acid or alkali solution, or particular sprays are used frequently. This could affect operating performance, or cause corrosion, which could result in electrical shock, breakdown, smoke generation, or fire.
Do not place the devices in an environment where flammable gas may occur, stay, flow in, or leak.	Build-up of flammable gas could result in fire or explosion.
The device must be installed by a dealer or an authorised technician according to the appropriate installation manual.	If the device is installed improperly, electric shock or fire could result.
Do not place the device in an environment that exposes it to large amounts of vapor or condensation.	Electric shock, fire, or breakdown could result.
►Wiring	
The wireless receiver's maximum voltage is 12V DC. Do not connect 230V AC power source to the wireless receiver.	Breakdown, ignition, or fire could result.
Connections must be made securely and without tension or external force on the terminals.	If connections are made improperly, breaking of wire, heat generation, or fire could result.
►Others	
Do not use sharp objects to press the buttons.	Electric shock or breakdown may result.
Do not touch or operate the device with wet hands.	Electric shock or breakdown may result.
Do not wash the device with water or solution or the like.	Electric shock or breakdown may result.
When installing or repairing the device, ask a dealer or a qualified technician.	If the device is not installed properly, electric shock, smoke generation, or fire could result from entry of dust or water.
Do not disassemble or modify.	

⚠ Caution	
Do not drop the device.	This could break the case or affect the device enough to make it inoperable.
Install the device in a place capable of bearing its own weight .	If the device is not installed securely or properly, the wireless receiver may fall.

■ Disposal

This symbol mark is for EU countries only.

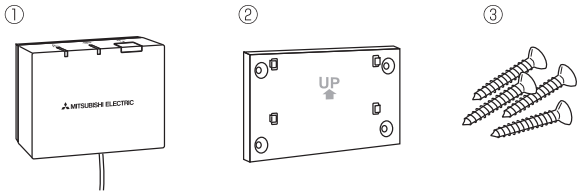
This symbol mark is according to the directive 2002/96/EC Article 10 Information for users and Annex IV, and/or to the directive 2006/66/EC Article 20 Information for end-users and Annex II.

Your MITSUBISHI ELECTRIC product is designed and manufactured with high quality materials and components which can be recycled and/or reused. This symbol means that electrical and electronic equipment, batteries and accumulators, at their end-of-life, should be disposed of separately from your household waste. If a chemical symbol is printed beneath the symbol, this chemical symbol means that the battery or accumulator contains a heavy metal at a certain concentration.
This will be indicated as follows: Hg: mercury (0.0005%), Cd; cadmium (0.002 %), Pb: lead (0.004%)
In the European Union there are separate collection systems for used electrical and electronic products, batteries and accumulators.
Please, dispose of this equipment, batteries and accumulators correctly at your local community waste collection/recycling centre.
Please, help us to conserve the environment we live in!

2. Accessories and Installation Tool

The following items are included in the box.

Item	Nos.
① Wireless receiver <PAR-WR51R-E> (2 m long cable included)	1
② Bracket	1
③ Flat head screw (4.1 × 6)	4
④ Installation and setting manual	1



* Installing of the devices requires a Phillips-head screwdriver (No.2 6 mm).

3. Before using ATW wireless system

Following is the summary of the procedure for installing and setting the wireless system.

1. Devices and manuals required to set and install the wireless system

① PAR-WR50R-E wireless remote controller
② PAR-WR51R-E wireless receiver
③ ATW wireless system installation and setting manual (this manual)
④ Wireless remote controller operation manual (hereinafter abbreviated as OM)
⑤ Ecodan system installation manual (hereinafter abbreviated as IM)

2. Installing and setting procedure

① Power off the ecodan system.
② Install the wireless receiver on the ecodan system.
(See "4. Installing the Wireless Receiver" in this manual.)

When installing the wireless receiver, be sure to set the SW1-8 on the control board to ON. (See "5.1 DIP Switch Functions" in IM.)

③ Power on the ecodan system, and the LEDs will blink on the receiver for 3 seconds.
④ Place two AA alkaline batteries in the wireless remote controller.
(See "·Batteries" in "4. Before Operation" in OM.)
⑤ Perform pairing process between the wireless receiver and the remote controller.
(See "5. Pairing process" in this manual.)

The wireless receiver does not go through a pairing process unless the ecodan system is off. When the system is ON, be sure to turn it off before beginning the pairing process.

⑥ Test wireless communication between the wireless remote controller and the wireless receiver.
(See "6.4 Communication Test" in "6. Setting wireless remote controllers" in this manual.)
⑦ Position the wireless remote controller in an appropriate place.
(See "4. Before Operation" in OM.)
⑧ To set the wireless remote controller as a room sensor that monitors room temperature, see "Remote Controller Options" in IM.

⑨ Use the main controller to set the ecodan system to the room temp. ( ) mode.
When the flow temp. ( ) mode or the compensation curve ( ) mode is selected, the wireless remote controller will operate as a thermostat. (See “Main Controller” in IM.)

When the remote controller set as a room sensor runs out of battery or gets a communication error during room temp. mode, the room temp. mode will automatically switch to the compensation curve mode.
The room temp. mode will be restored by battery replacement or solution of communication error.

Installation and setting of the wireless remote controller is complete. To set additional wireless remote controllers, repeat Step ⑤ to ⑧

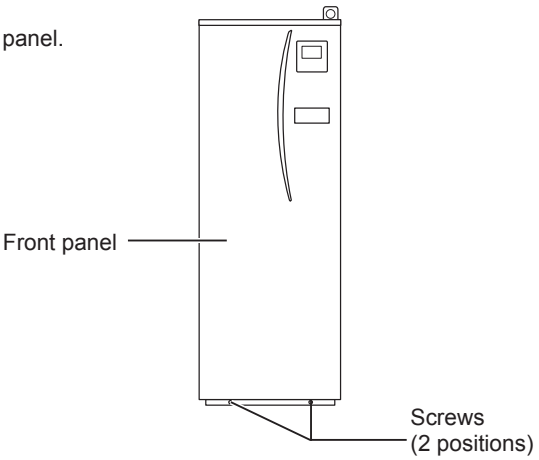
4. Installing Wireless Receiver

4.1 Connecting to Cylinder unit

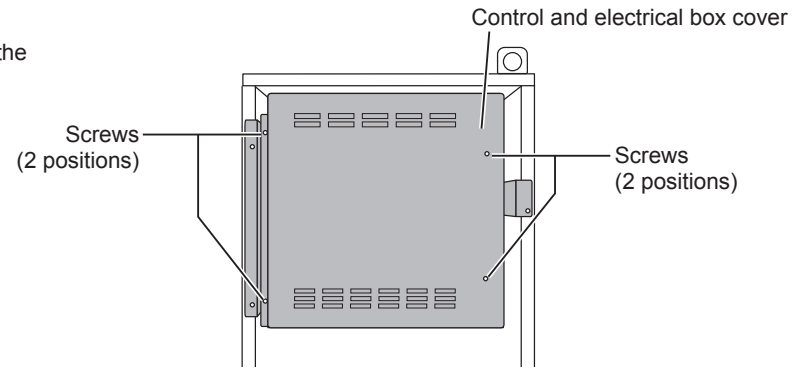
*** Before installation, be sure to turn off the main power supply.**

① Remove the two screws that hold the front panel, and remove the panel.

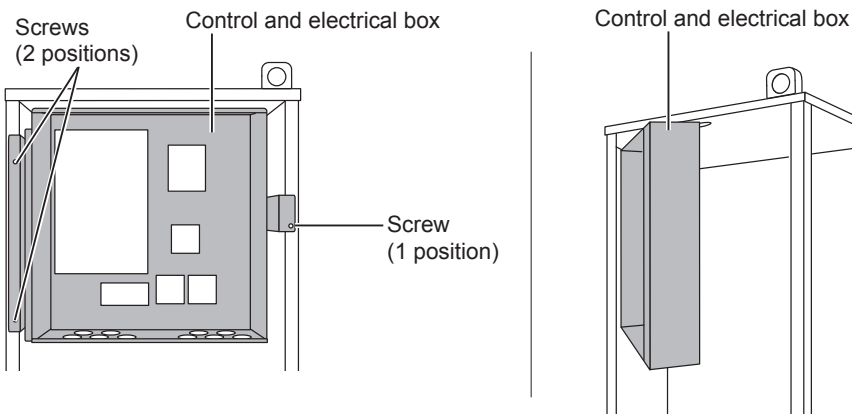
If the removed front panel is set aside away from the indoor unit, ensure the relay connector on the main controller is disconnected.



② Remove the four screws to remove the control and electrical box cover.

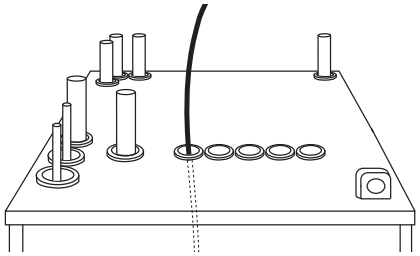


③ Remove the two screws and pull the control and electrical box so that the control and electrical box is swung toward you from right.

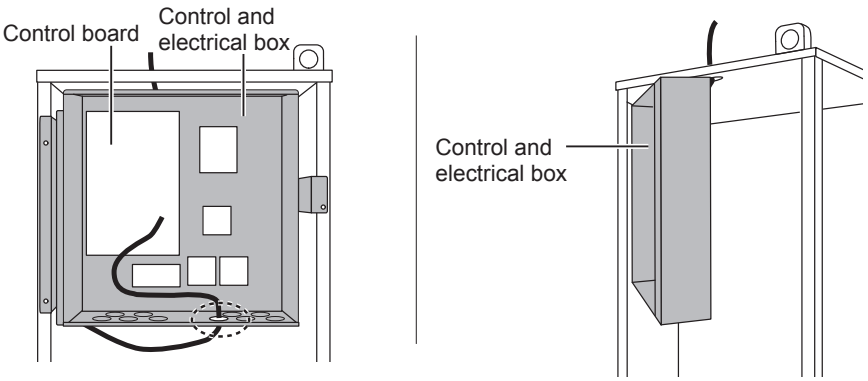


④ Run the receiver's cable into the cylinder unit through the leftmost inlet on top of the unit.

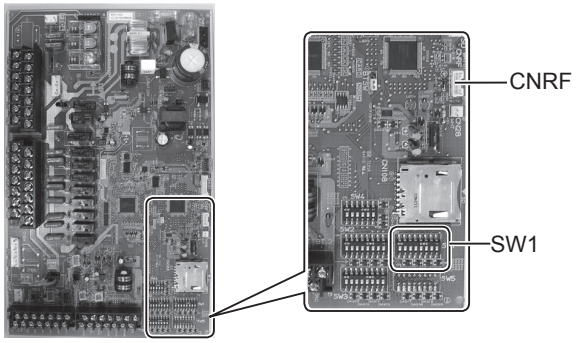
Do not run the receiver's cable through an inlet that a power cable goes through and do not bundle the cable together with a power cable.



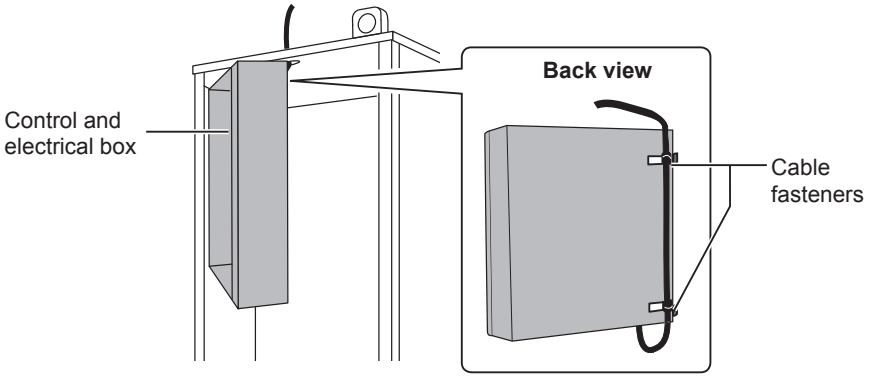
⑤ Route the cable out the back of the control and electrical box, and run the cable into the box through the shown inlet in the underside of the box.



⑥ Connect the cable connector to the CNRF terminal on the control board. Switch ON SW1-8.



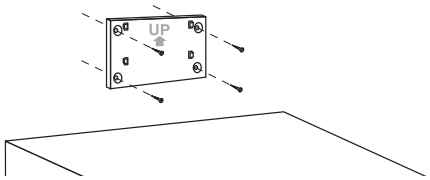
⑦ Remove excessive slack on the cable and secure the cable with two cable fasteners on the back left side of the control and electrical box.



⑧ Place the control and electrical box back in the original position and reinstall the seven screws.

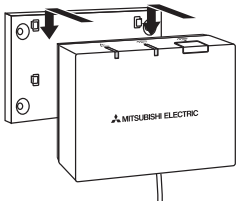
⑨ Check the maximum reach of the cable and install the bracket on the wall with screws.

Do not excessively pull the cable when checking the maximum reach.



<Notice>
- **Do not overtighten the screws.**
  ►The bracket may deform or break.
- **When installing the bracket, select an interference-free space.**
  ►Keep the installing area at least 10 cm away from metal or a wall box. If unable to do so, always place the room wireless remote controllers in locations where the communication test determines that the wireless remote controllers are fully capable of communication with the wireless receiver.
- **Do not install the bracket with screws on the exterior casing of the cylinder unit.**
  ►The internal parts may be damaged, which could result in breakdown of the indoor unit.
- **Do not install the bracket where the receiver could be exposed to moisture or leaked water from piping connections above.**
  ►The wireless receiver subjected to moisture or leaked water could cause electric shock, fire, or its breakdown.

⑩ Place the wireless receiver on the fixed bracket.
Hook the holes on the back of the wireless receiver onto the projections on the bracket, and fix the wireless receiver in place.



<Notice>
- **Do not place the wireless receiver inside the cylinder unit.**
  ►Both the wireless receiver and its wire may break due to heat inside the indoor unit.
- **Do not let the wireless receiver stand on top of the cylinder unit. Always fix the wireless receiver onto the bracket.**
  ►Wireless communication performance may be affected.
- **Do not pull the cable excessively.**
  ►Breakdown, ignition, or fire may result.
- **Do not have the wireless receiver suspended.**
  ►Breakdown, ignition, or fire may result.

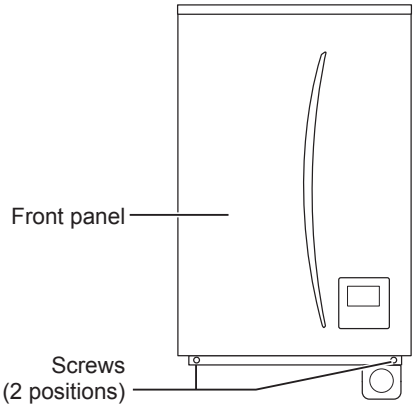
⑪ Close the control and electrical box cover, and fix it with screws.

⑫ Fix the front panel with screws.

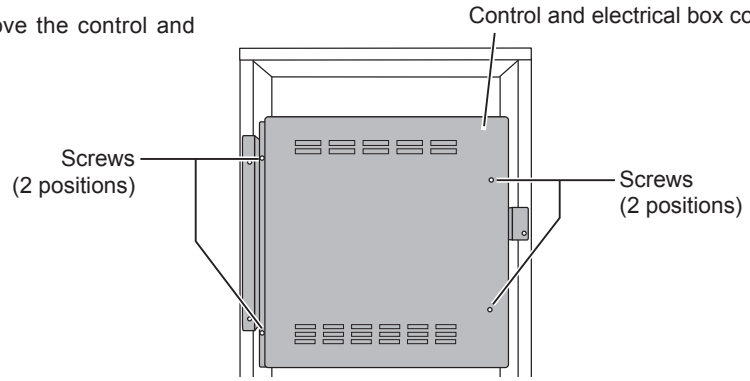
4.2 Connecting to Hydrobox

*** Before installation, be sure to turn off the main power supply.**

① Remove the two screws that hold the front panel, and remove the panel.

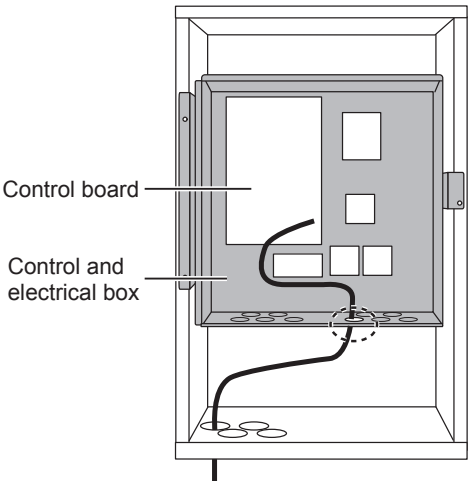


② Remove the four screws and remove the control and electrical box cover.

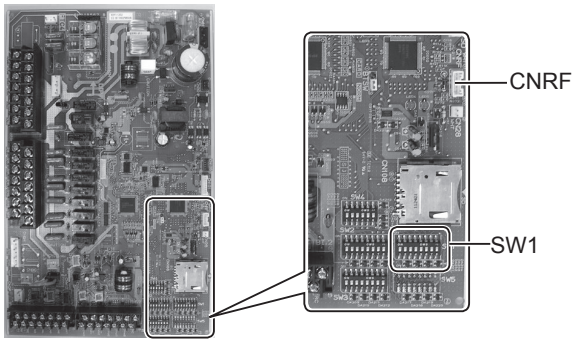


③ Route the receiver's cable into the hydrobox through the leftmost inlet at the bottom of the unit. Then route into the control and electrical box through the shown inlet at the bottom of the control and electrical box.

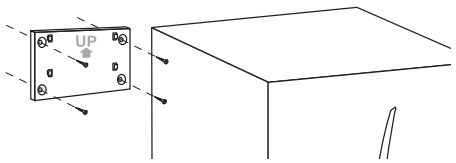
- **Do not bundle the receiver cable with a power cable.**
- **Do not run the cable through an inlet that a power cable goes through.**



④ Connect the cable connector to CNRF on the control board. Switch ON SW1-8.



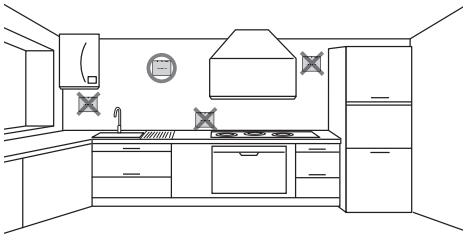
⑤ Check the maximum reach of the cable and install the bracket with screws.



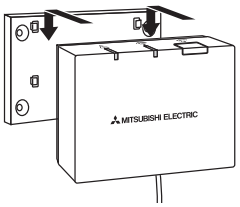
Do not excessively pull the cable when measuring the maximum reach.

<Notice>
- **Do not overtighten the screws.**
  ►The bracket may deform or break.
- **When installing the bracket, select an interference-free space.**
  ►Keep the installing area at least 10 cm away from metal or a wall box. If unable to do so, always place the room wireless remote controllers in locations where the communication test determines that the wireless remote controllers are fully capable of communication with the wireless receiver.
- **Do not install the bracket with screws on the exterior casing of the cylinder unit.**
  ►The internal parts may be damaged, which could result in breakdown of the indoor unit.
- **Do not install the bracket where the receiver could be exposed to moisture or leaked water from piping connections above.**
  ►The wireless receiver subjected to moisture could cause electric shock, fire, or its breakdown.

When installing the wireless receiver, observe the following.
- Keep the other electric or electronic devices (e.g. radio, induction heating cooker, microwave oven, refrigerator, and mobile phone or the like) at least 50 cm away from the wireless receiver.
- Place the wireless receiver in an interference-free area and keep the wireless receiver away from metal.



⑥ Place the wireless receiver on the fixed bracket.
Hook the holes on the back of the wireless receiver onto the projections on the bracket, and fix the wireless receiver.



<Notice>
- **Do not place the wireless receiver inside the cylinder unit.**
  ►Both the wireless receiver and its wire may break due to heat inside the indoor unit.
- **Do not pull the cable excessively.**
  ►Breakdown, ignition, or fire may result.
- **Do not have the wireless receiver suspended.**
  ►Breakdown, ignition, or fire may result.

⑦ Close the control and electrical box cover, and fix it with the screws.

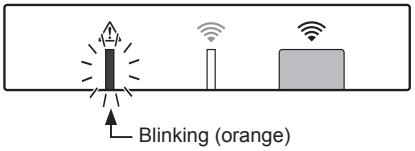
⑧ Hold the front panel with the screws.

5. Pairing process

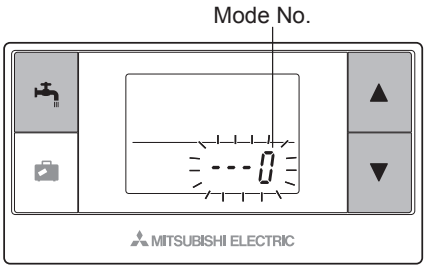
- **If the wireless remote controller is not paired, the indoor unit cannot be operated using the remote controller.**
- **Before using the wireless remote controllers, always ensure to go through a pairing process.**
- **Pairing is NOT possible unless the ecodan system is off. When the ecodan system is ON, be sure to turn it off before starting the pairing process.**
- **The wireless receiver is also needed for pairing, so please make sure to operate the wireless remote controller near the wireless receiver.**

①Hold down button on the wireless receiver for 3 seconds or more until orange ⚠ LED blinks.

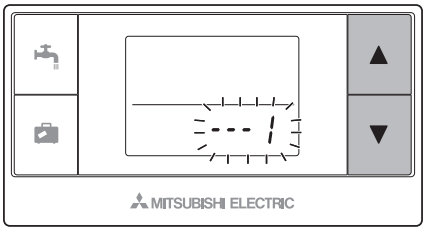
The pairing mode is cancelled by pressing button.



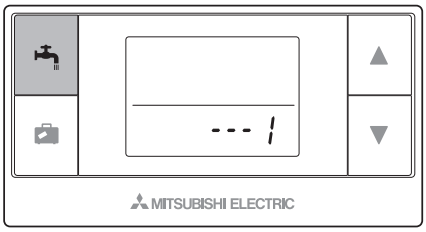
② Hold down ▲, ▼ and 🚰 buttons simultaneously for at



③ Press ▲ or ▼ button to set the mode number to “1” and press 🚰 button.



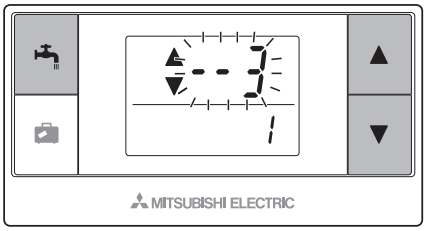
④ When 🧳 button is pressed in the middle of setting, the screen returns to the previous indication.



When ⚠ appears on the display, do not perform pairing. The power may be turned off in the middle of pairing, which may lose the pairing information.

⑤ Press ▲ or ▼ button to select a pairing address, and press 🚰 button to set the address.
" - " (no setting) is displayed initially. Choose a number from 1 to 8.

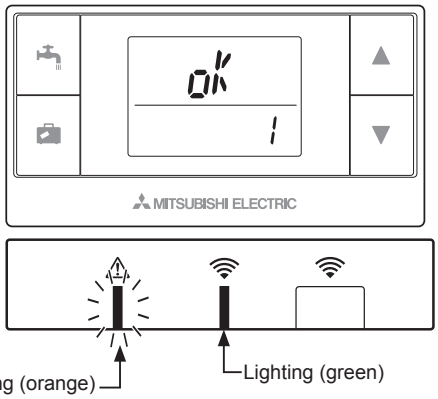
After pressing 🚰 button, the wireless remote controller starts communication with the wireless receiver.



When using multiple wireless remote controllers in one ecodan system, be sure to set different address for each remote controller.

⑥ When the pairing process has been successfully performed, " ok " is shown on the remote controller and green 📶 LED steadily lights on the wireless receiver.

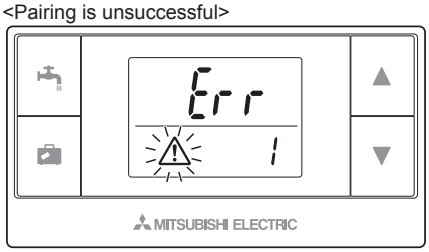
<Pairing is successful>

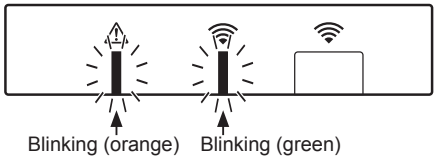


When "Err" appears on the remote controller and green LED on the wireless receiver blinks , correctly repeat the same process from step 5.

Even if the pairing process failed, the wireless receiver stays in the pairing mode for 5 minutes unless cancelled.

<Pairing is unsuccessful>





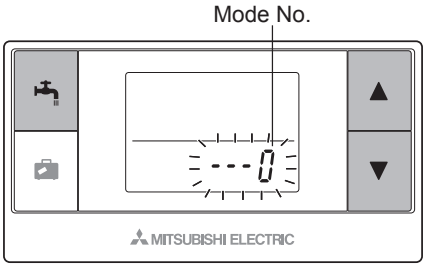
<<Main causes that prevent successful pairing>>

- **The wireless receiver does not enter the pairing mode.**
  ►Press button for 3 seconds or more until orange ⚠ LED blinks.
  Make sure to turn off the ecodan system by main controller.
- **Pairing is attempted outside the transmission range of the wireless receiver.**
  ►Adjust the distance between the wireless receiver and remote controller, and so try again.
  If the distance is excessively short, pairing may fail. Keep the distance of about 50 cm.
- **The wireless remote controller has been already paired with the wireless receiver.**
  ►The pairing address assigned to a wireless remote controller cannot be changed by remote controller. Use the wireless receiver to reset pairing information. (Refer to "(3) Resetting pairing information" in "7.3. Wireless Receiver Functions".)

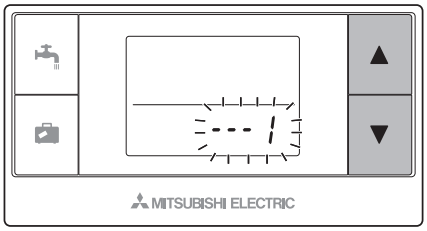
Even when power fails or when the batteries run down, the pairing information will be kept.

6. Setting wireless remote controllers

① Hold down ▲ , ▼ and buttons simultaneously for at least 3 seconds until the mode number blinks.

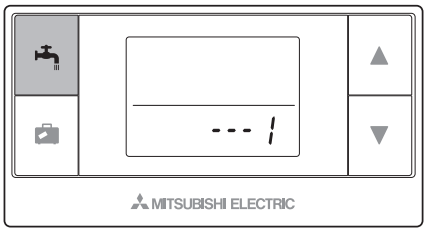


② Press ▲ or ▼ button to choose a mode number.



③ Confirm setting by pressing button.
The display stops blinking and lights steadily.

When button is pressed in the middle of setting, the screen returns to the previous indication.

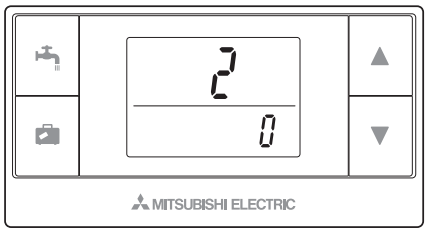


Mode No.	Names	Functions	Initial settings
0	Pairing address display	To view the own pairing address of the wireless remote controller.	
1	Pairing	To perform a pairing process with the wireless receiver.	
2	Temperature unit	To select °C or °F.	°C
3	Communication test	Communication test with the wireless receiver.	
4	Room temperature display	Actual room temperature display	OFF
5	Automatic zone no. display	To enable or disable automatic zone no. display.	OFF

6.1. Viewing Address Number (Mode No. 0)

Set the mode no. to “0”.

The display to the right shows that the address is set to “2”.



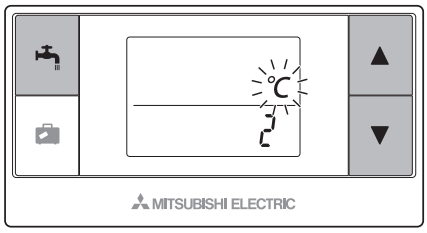
6.2. Pairing (Mode No. 1)

For details, refer to “5. Pairing process”.

6.3. Selecting the Temperature Unit (Mode No. 2)

Set the mode no. to “2”.
The temperature reading can be selected between Celsius (°C) or Fahrenheit (°F).

Press ▲ or ▼ button to select °C or °F and press button to confirm the selection.

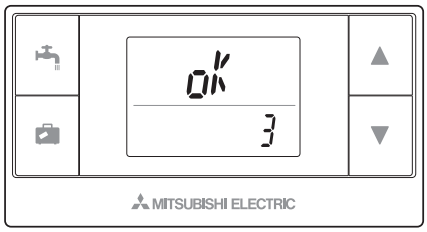


6.4. Communication Test (Mode No. 3)

Set the mode no. to “3”.
Communication test is performed between the wireless remote controller and the wireless receiver.

When the display shows "ok", this indicates that the communication between the remote controller and the receiver is established. If "Err" is shown, the wireless remote controller is not communicating with the wireless receiver.

Do not leave the wireless remote controller in a location where the communication test results in "Err".



Before conducting the communication test, ensure that the wireless remote controller goes through a pairing process.

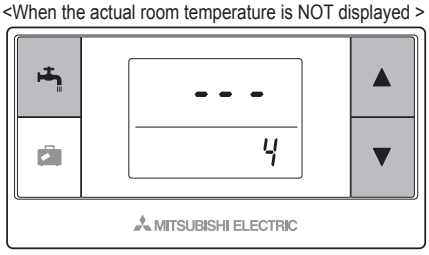
6.5. Displaying or Hiding Room Temperature (Mode No. 4)

Set the mode no. to “4”.
Select either displaying or hiding the room temperature.

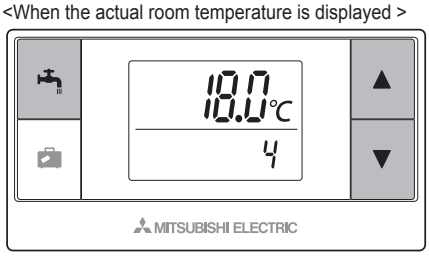
Press ▲ or ▼ button to select displaying or hiding the room temperature, and press button to save the setting.

Hiding :" - - - ".
Displaying :Actual room temperature is displayed

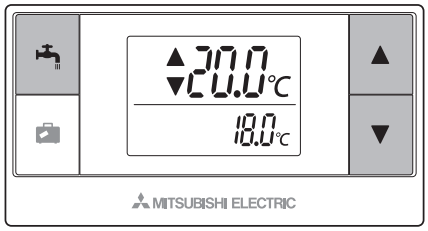
<When the actual room temperature is NOT displayed >



<When the actual room temperature is displayed >



When the indoor unit is operating, the room temperature display shows the actual room temperature (18°C) below and the set temperature (20°C) above as shown in the figure to the right. The measurable temperature range is from 0°C to 40°C.



If the measured room temperature is out of 0°C to 40°C range, the room temperature display blinks.

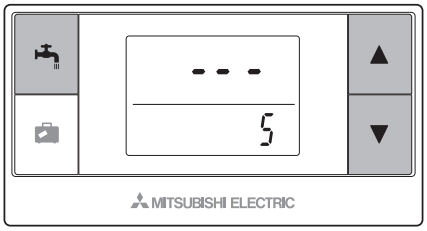
When the wireless remote controller is installed on a bracket, room temperature might not be accurate being affected by the wall temperature.
Perform a test run and place the remote controller where the room temperature can be correctly detected.

6.6. Automatic Zone No. Display (Mode No. 5)

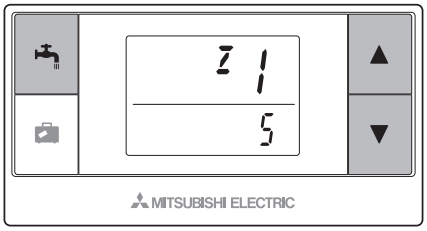
Set the mode no. to “5”.
When the automatic zone no. display is active, a zone number assigned to the remote controller is displayed for 3 seconds after temperature setting.
Press ▲ or ▼ button to select between " - - - " and Z1 or Z2, and press button to save setting.

Inactive :" - - - ".
Active :The zone no. (Z1 or Z2) assigned to the remote controller is shown.

<Inactive>



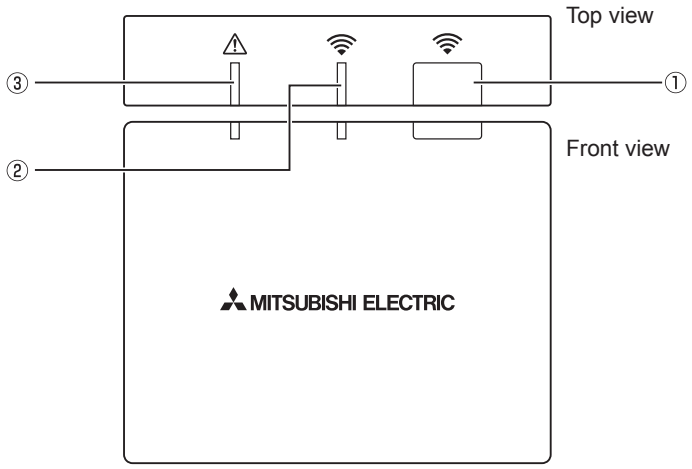
<Active>



7. Wireless Receiver Operation

The wireless receiver is powered by indoor unit. It communicates with the wireless remote controller(s), and transmits to the indoor unit the operation status and commands received from the wireless remote controlle(s). The wireless receiver has two modes available: pairing mode and pairing reset mode.

7.1. Functions of Buttons and Displays



Number	Item	Description
①	Setting button	To switch operating mode.
②	Communication LED (green)	To indicate that the wireless receiver is communicating.
③	Operation LED (orange)	To show operating status of the wireless receiver.

The following table shows the operating and illuminating status of the LEDs.

Operation LED (orange)	Communication LED (green)	Description
Blinking	Blinking	Power is ON (for 3 seconds).
Off	Off	Normal mode: Not paired
Off	On	Normal mode: Paired
Off	Blinking	Normal mode: Communicating
Blinking	Off	Performing a pairing process
Blinking	On	Pairing: Successful
Blinking	Blinking	Pairing: Unsuccessful
On	On	Pairing information is cleared

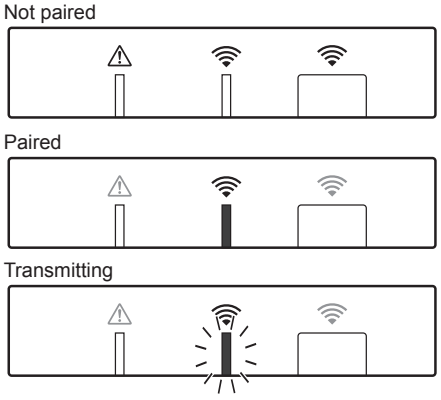
7.2. Turning on Power

When the wireless receiver is powered by indoor unit after installation, green LED and orange LED blink for 3 seconds..

7.3. Wireless Receiver Functions

(1) Normal mode

When the wireless receiver is paired with a wireless remote controller, green LED comes on. When the wireless receiver is communicating with a wireless remote controller, green LED blinks.



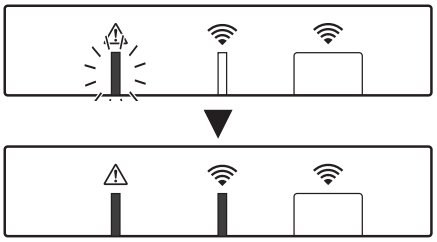
(2) Pairing mode

*For details, refer to “5. Pairing process” in this manual.

(3) Resetting pairing information

Once pairing information has been cleared, ALL the wireless remote controllers need go through a pairing process again.

Hold down button for 5 seconds or more until and LED light while pairing mode is active. All the pairing information is cleared.

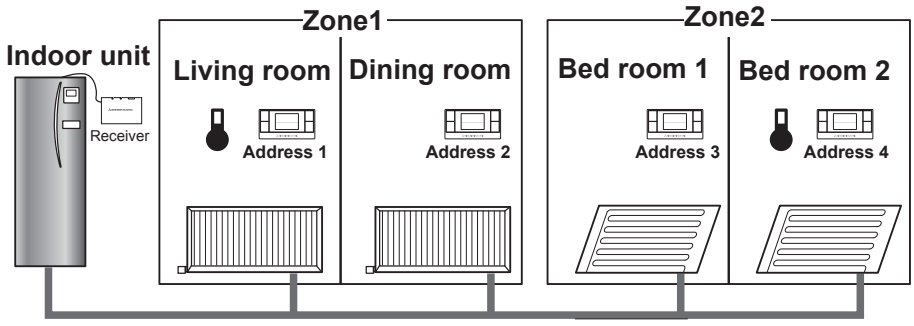


8. Q&A

Questions	Answers
How many wireless remote controllers are allowed to be paired?	Up to 8 controllers.
What should be noted about Pairing?	• The same address cannot be assigned to multiple remote controllers • If the same address is assigned to multiple controllers, the address can be assigned to only the last paired remote controller. • Once the remote controller is paired, its pairing address cannot be changed by remote controller. Use the wireless receiver to reset pairing information.
What causes a communication error between the wireless remote controller and wireless receiver?	Check the following possible causes. • The batteries on the wireless remote controller are running out. • The transmitted signal does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the room temp. display indicates “1” with ⚠ ?	The indoor unit or outdoor unit has a failure. Refer to the indications on the main controller and take appropriate measures. Please also check installation and service manuals for the indoor unit.
What measures should be taken when the room temp. display indicates “2” with ⚠ ?	The thermistor inside the wireless remote controller has a failure. Check the resistance of the thermistor. (When the room temperature is between 0 and 40°C, the resistance must be between 5 and 28 kΩ.)
What measures should be taken when the room temp. display indicates “3” with ⚠ ?	A communication error occurs between the wireless remote controller and the wireless receiver. Check the following possible causes. • The signal that is transmitted by the wireless remote controller does not reach the wireless receiver. • The wireless remote controller is not paired.
What measures should be taken when the room temp. display indicates “4” with ⚠ ?	A communication error occurs between the wireless receiver and the indoor unit. Check the following possible causes. • The cable connecting between the wireless receiver and the indoor unit has severed. • The wireless receiver is not correctly connected to the indoor unit.
What measures should be taken when the room temp. display indicates “E” with ⚠ ?	Backup heater is running due to a failure of the indoor unit or the outdoor unit. Check the error code displayed on the main controller and take appropriate measures accordingly. The holiday mode is NOT available during backup heater only operation.

<<2-zone temperature control>>

- A thermistor is built in the remote controller (Room RC) or the main controller (Main RC), or TH1. The indoor unit refers to temperature monitored by a selected thermistor and controls temperature for each zone.
- For 2-zone temperature control, one room sensor can be selected for Zone1 and Zone2 separately. The room sensor is used for monitoring room temperature.
- The selection of room sensor can be fixed or changed according to time, using a schedule timer.
  Note: Room sensor can be selected by main controller only.



When 🌡 is shown on the remote controller, this indicates that the remote controller is used for monitoring the room temperature. In this example, the living room temperature monitored by remote controller 1 is regarded as the room temperature for Zone1. The bed room 2 temperature monitored by remote controller 4 is regarded as the room temperature for Zone2.

9. Specifications

Item	Description
Power source	12V DC (powered by indoor unit)
Operating temperature and humidity requirements	Temperature: 0 to 40°C Humidity 30 to 90%RH (No condensation)
Weight	150 g (excluding a cable)
Dimension (W×H×D)	100 mm × 80 mm × 30 mm