MITSUBISHI ELECTRIC

CITY MULTI Control System

ME Remote Controller PAR-F27MEA-US

Installation Manual

This manual describes installation of the ME remote controller that connects to CITY MULTI air conditioner indoor unit. Please read this manual thoroughly and install the remote controller accordingly. For information on how to wire and install the air conditioning units, refer to the installation manual for them.

1 Safety Precautions

- Read these Safety Precautions and perform installation work accordingly.
- The following two symbols are used to 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-F27MEA-US.
⚠ **CAUTION**	This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAR-F27MEA-US.

- After reading this installation manual, give it and the indoor unit installation manual to the end user.
- The end user should keep this manual and the indoor unit installation manual in a place where he or she can see it at anytime. When someone moves or repairs the PAR-F27MEA-US, make sure that this manual is forwarded to the end 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-F27MEA-US.
Any lack of strength may cause the PAR-F27MEA-US to fall down, resulting in personal injury.

Firmly 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-F27MEA-US 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-F27MEA-US 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-F27MEA-US 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, 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 104°F (40°C) or less than 32°F (0°C) or exposed to direct sunlight.

Do not install in any steamy place such 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 remove the insulation sheet on the PCB.
Doing so may cause 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.

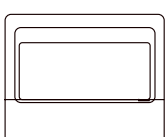
Never contact the power supply with the control wiring terminals.
Doing so will certainly cause the controller to catch fire.

When installing the remote controller in a hospital or communication facility, take ample countermeasures against noise.
Inverters, emergency power supply generators, high-frequency medical equipment, and wireless communication equipment can cause the remote controller to malfunction or to fail. Radiation from the remote controller may effect communication equipment and prevent medial operations on the human body or interfere with image transmission and cause noise.

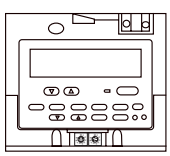
2 Confirming the Supplied Parts

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

1. Remote controller (cover, body) 1
2. Remote control cord 10 m (32 ft) 1
3. Cross recessed pan head screw (M4 × 30) 2
4. Wood screw (4.1 × 16, used for directly hooking to the wall) 2
5. Instruction book 1
6. Caution label (in 10 languages) 1



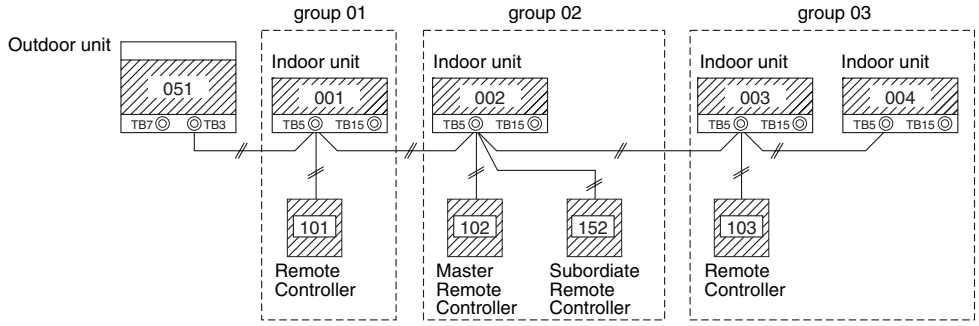
Remote controller cover



Remote controller case

3 How to wire transmission line

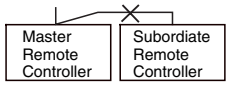
1. When grouping by same refrigerant system



① Wiring from the remote controller
- Connect to TB5 (terminal block for indoor/outdoor unit transmission line) on the indoor unit.
- The terminal block has no polarity. Connect to the symbols "A" and "B" on the terminal block.

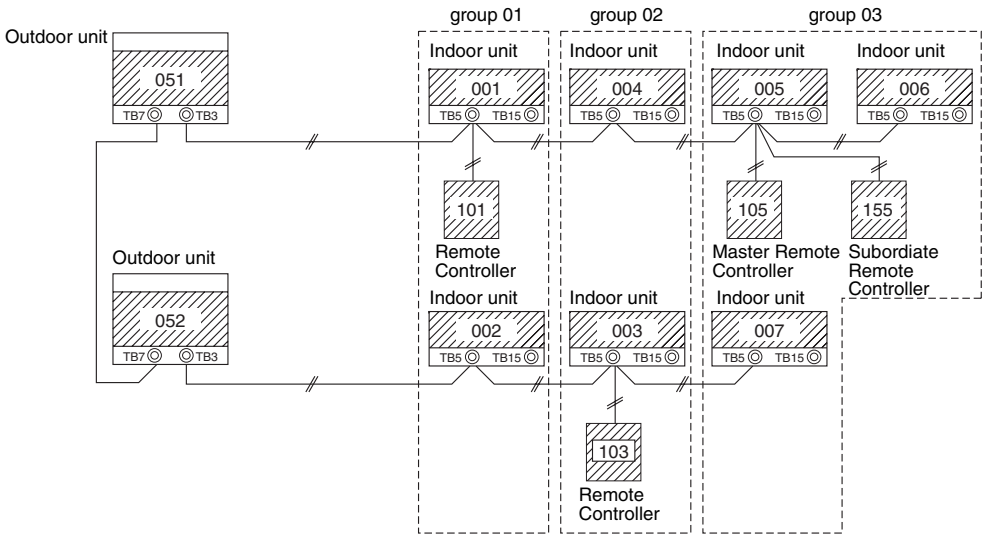
② Operating in a group (Groups 01, 02, and 03 above)
- Match the remote controller address with the master unit address of the indoor units you want to operate as a group.
  The master unit address indicates the lowest address in the group.
  Set the remote controller address to master unit address No. + 100.

③ The master remote controller and one subordinate remote controller, a total of two, can be connected to each indoor unit or a group made up of indoor units.
- Connect them as described in ① above.
- Be sure to set the master and subordinate remote controller addresses.
  Set the subordinate remote controller to indoor units master unit address + 150.

⚠ CAUTION	- Remote controllers cannot be wired together. Only one wire can be connected to the remote controller terminal block. - An ME remote controller and MA remote controller cannot be connected in the same group.	

④ You have just completed all the settings for same refrigerant system.

2. When grouping by different refrigerant systems



① Wiring from the remote controller (Same as for same refrigerant system)

② Operating in a group
- Match the remote controller address with the master unit address of the indoor units you want to operate in a group.
  The master unit address indicates the lowest address in the group.
  Set the remote controller address to master unit address No. + 100.

③ A master remote controller and one subordinate remote controller, a total of two, can be connected to each indoor unit or to a group made up of indoor units. (This is the same as for same refrigerant system)

④ Set a group of units using each remote controller. (For detailed information, see section 6 Group registration.)
However, when used in combination with a MELANS system controller, group setting are performed at the system controller and do not have to be performed at the remote controller.

⑤ You have just completed all the settings for different refrigerant systems.

NOTE: When grouping by different refrigerant systems, interchange power supply selection connectors (CN41) and (CN40) on the control PC board of one outdoor unit only.

NOTE: If you need to use a cable extension longer than 10 m (32 ft), select an electric wire that meets the following specifications:
Wire specification ..... CVV (2-core): 1.25 mm² (16 AWG) or equivalent

* CVV is a control cable which is sheathed in polyvinyl chloride with polyvinyl insulated wires inside.

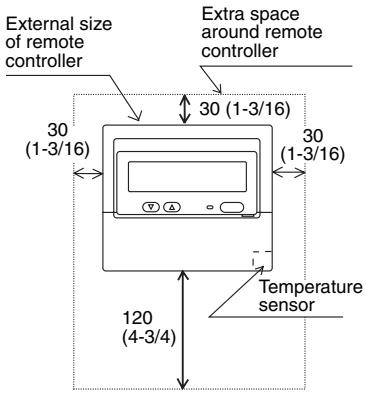
4 How To Install

1. Chose a place in which to install the remote controller (switch box).

Be sure to observe the following steps:

(1) Temperature sensors are provided with both the remote controller and the indoor units. When using the remote controller temperature sensor, the master remote controller detects the room temperature. Install the master remote controller in a place where the average room temperature can be detected and which is not affected by any heat source from direct sunlight or air blown from air conditioning units.
(For how to set the master and subordinate remote controller, see step 6 in section 4 How To Install.
For how to set the temperature sensor, refer to the CITY MULTI indoor unit installation manual.)

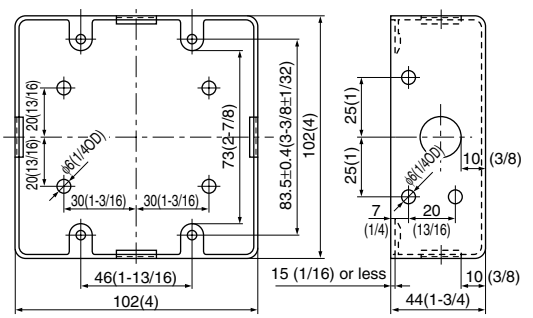
(2) When installing on either the switch box or the wall, allow extra space around the remote controller as shown in the figure at the right.
(When using the remote controller in combination with a Program timer, refer to the Program timer installation manual.)



Unit: mm (in)

NOTE: Make sure that there is no wiring or wire near the remote controller sensor. If there is, the remote controller cannot detect the exact room temperature.

(3) Parts which must be supplied on site.
- Switch box for two units
- Thin-copper wiring pipe
- Lock nut and bushing



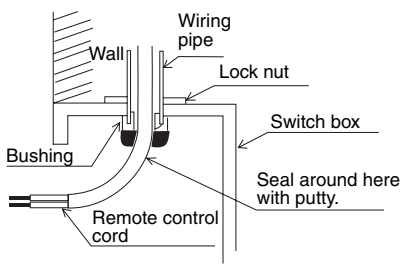
Switch box for two units

Unit: mm (in)

2. Seal the remote controller cord with putty in order to prevent the possible entry of dew, water droplets, cockroaches, other insects, etc.

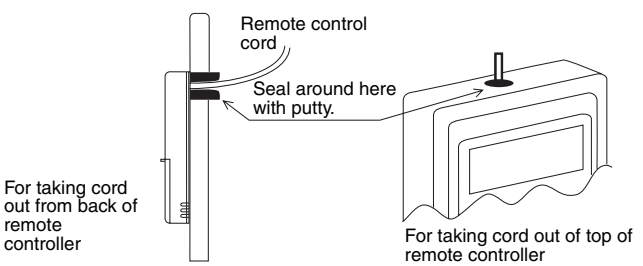
When using the switch box

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



When installing directly on the wall

- When opening a hole using a drill for the remote controller cord (or when taking the cord out of the back of the remote controller), seal the hole with putty.
- When routing the cord via the portion cut off from the upper cover, similarly seal that portion with putty.



3. Remove the remote controller cover.

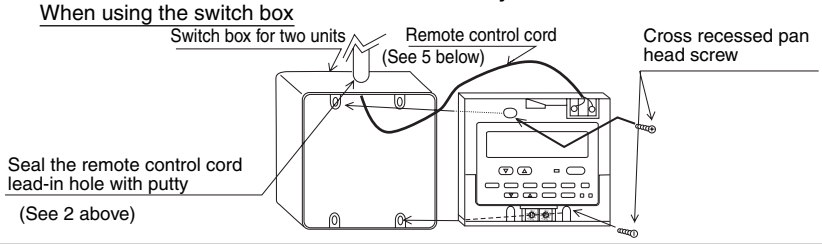
- Insert a slotted screwdriver into one of the open slots and move the screwdriver in the arrow direction.



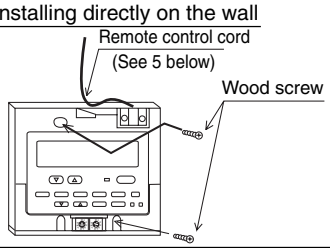
⚠ CAUTION	Do not into turn the screwdriver in the slot. Doing so may damage the slot.

4. Install the lower case on the switch box or directly on the wall.

When using the switch box



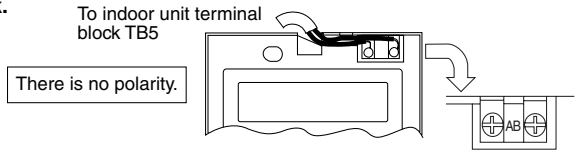
When installing directly on the wall



⚠ CAUTION	Do not tighten the screws too tight. Doing so may deform or crack the lower cover.

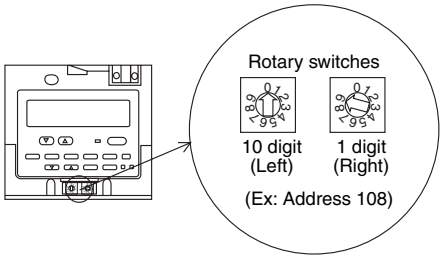
NOTE: - Chose a flat plane for installation.
- Fasten the switch box at more than two places when installing directly on the wall.
- When reinstalling on the wall, fasten securely using anchors.

5. Connect the remote control cord to the remote controller terminal block.



⚠ CAUTION	Do not use crimp terminals to connect to the remote controller terminal block. To do so may cause the terminals to touch the board and cause trouble at the remote controller. If the terminals touch the cover, the cover may be damaged.

6. Set the remote controller address using the rotary switches.



	Address setting range	How to set
Master remote controller	101 to 150	Set to lowest unit address No. in same group + 100
Subordiate remote controller	151 to 200	Set to lowest unit address No. in same group + 150

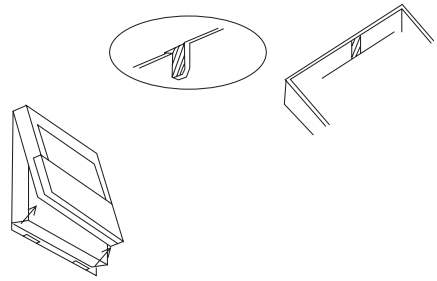
Rotary switch setting	Address No.
01 to 99	101 to 199 (to which 100 is added)
00	200

⚠ CAUTION	- When setting the address, use a precision screwdriver [(–), 2.0 mm (1/16 in) (W)] and apply a load of 19.6 N or less. - If performed any other way, the rotary switch may be destroyed.

NOTE: - Address No. 101 to 200 can be set with the ME remote controller. When set to "01 to 99", the 100 digit is set to [1] and when set to "00", the 100 digit is automatically fixed at [2].
- The rotary switches are factory set to 01.

7. Wiring hole for installing directly on the wall (or open wiring)
- Cut off the shaded area from the upper cover using a knife, nippers, etc.
- Take out the remote control cord connected to the terminal block via this portion.

8. Install the cover to the remote controller.
First, hook the cover to the two upper claws and then fit it to the remote controller.



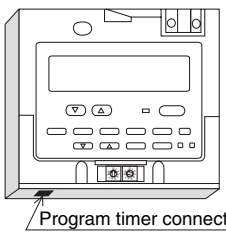
⚠ CAUTION	Press the cover until it snaps shut. If not, it may fall off.

NOTE: A protection sheet is stuck to the operation section. Peel off this protection sheet before use.

9. Affix a caution label.
A caution label in English is supplied on the back surface of the control panel door. Affix another caution label in the language of a country where you use the remote control over the English one.

5 How To Connect Optional Parts

- When connecting a Program timer, connect a 5-core cable to the connector on the remote controller. (A 5-core cable is supplied with the Program timer.)
- To route the cable, cut off the thin-wall portion.
- For wiring path convenience, install the Program timer to the left-hand side of the remote controller. When expansion is expected, take into consideration remote controller space at the left-hand side. For the operation method details, refer to the Program timer installation manual.



6 Group registration

This operation should be performed to set a group of indoor units between different refrigerant systems and to manually raise the indoor/outdoor unit addresses.

Group setting ..... To register the indoor units you want to control with the remote controller, confirm the registered units, or delete registered units.

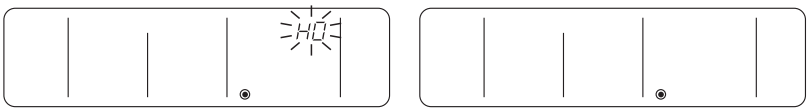
[Setting Procedure]

(1) Address registration

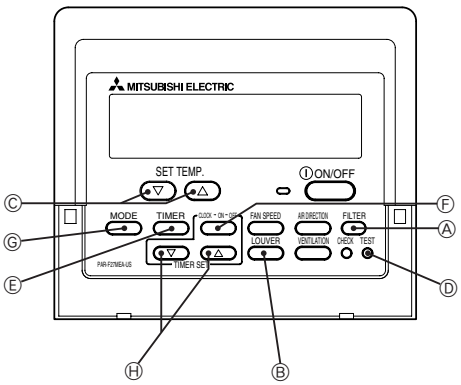
Register the indoor unit address you want to control with the remote controller.

① Display "H0", which flashes when the power is on, or OFF using the [ON/OFF] button.

The liquid crystal displays are shown below. If any of these displays is different, the next set cannot be performed.



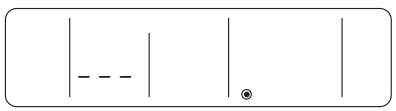
["H0" flashing display] [OFF display]



Group registration

② Displaying "GROUP REGISTRATION".

- Press and hold down the Ⓐ [FILTER] and Ⓑ [Louver] buttons at the same time for two seconds. The display shown below appears.



"INDOOR UNIT ADDRESS"

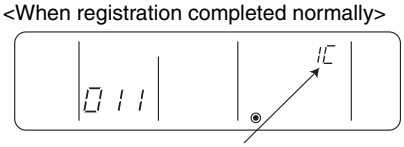
③ Set the unit address No.

- Press the Ⓒ [TEMP. (▽) and (△)] buttons. The unit address No. decreases and increases. Set it to the address No. you want to register.

④ Register the indoor unit address No. you have set.

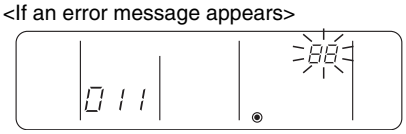
- Press the Ⓓ [TEST] button to register the indoor unit address No. being displayed.
- When registration is completed normally, the unit type is displayed as shown below.
- If the specified indoor unit does not exist, an error message will be displayed. Make sure there are indoor units and repeat the operation above.

<When registration completed normally>



Displays the unit type. (Indoor unit in this case.)

<If an error message appears>



" 88 " will flash as a registration error.
(If the registered indoor unit does not exist)

⑤ To register multiple indoor units, repeat steps ③ and ④.

To confirm the addresses, go to "(2) Registered address confirmation".

Returning to the normal state

When all the group registration and interlock registration operations are completed, return to the normal state as described below.

⑥ Press and hold down the Ⓐ [FILTER] and Ⓑ [Louver] buttons at the same time for two seconds. The remote controller returns to the state of ①.

(2) Registered address confirmation

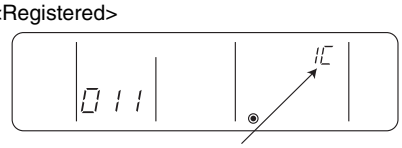
Display the indoor unit address No. registered in the remote controller by performing steps ① and ②.

Group registration information confirmation

⑦ Displaying "GROUP REGISTRATION"

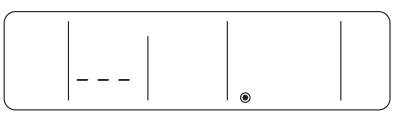
- Each time you press the Ⓔ [TIMER] button, the registered indoor unit address No. and unit type are displayed.
- When there is one registration, one address No. is displayed no matter how many times the button is pressed.
- When there are multiple registrations (ex: "011", "012", "013", the address Nos.) are displayed in 011 → 012 → 013 order each time the Ⓔ [TIMER] button is pressed.

<Registered>



Indicates the unit type.
(Indoor unit in this case.)

<Not registered>



To delete an address, go to "(3) Address deletion".

To return to the normal state, go to step ⑥.

(3) Address deletion

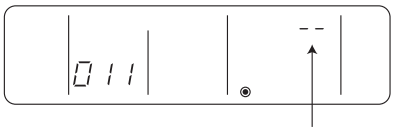
Group registration information deletion deletes the indoor units registered in the remote controller.
Interlocked registration information deletion deletes the interlock between units.
Both deletion operations perform the address confirmation processing of (2) and are performed in the state in which the unit you want to delete was displayed.

⑧ Deleting registered indoor unit or interlock between units.

- Press the Ⓕ [CLOCK → ON → OFF] button two times in succession. The displayed indoor unit address or the interlock between units is deleted. When the information is deleted, the display shown below appears.

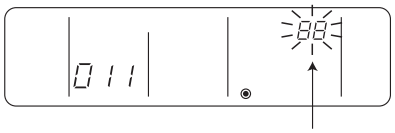
Deleting group registration information

<When completed normally>



" - - " is displayed at the room temperature display.

<When an error occurs>



" 88 " is displayed at the room temperature display.

- If there is a transmission error, registration is not deleted and the display shown below appears.
  In this case, repeat the operations above.

To return to the normal state, go to step ⑥.

7 Remote controller functions selection

In the remote controller function selection mode, three functions can be selected and changed. Select and change these functions, as required.
For the operating instructions refer to "(6) How to select the remote controller functions" of (3 | How to Operate) in Instruction Book.

(A) Operation mode display selection mode ("AUTO" mode heating/cooling display selection)
When the AUTO mode was selected with the remote controller, the indoor unit is judged from the room temperature and heating or cooling is performed automatically. In this case, "AUTO" "COOLING" or "AUTO" "HEATING" is displayed at the remote controller. However, only "AUTO" without "COOLING" or "HEATING" can also be displayed.

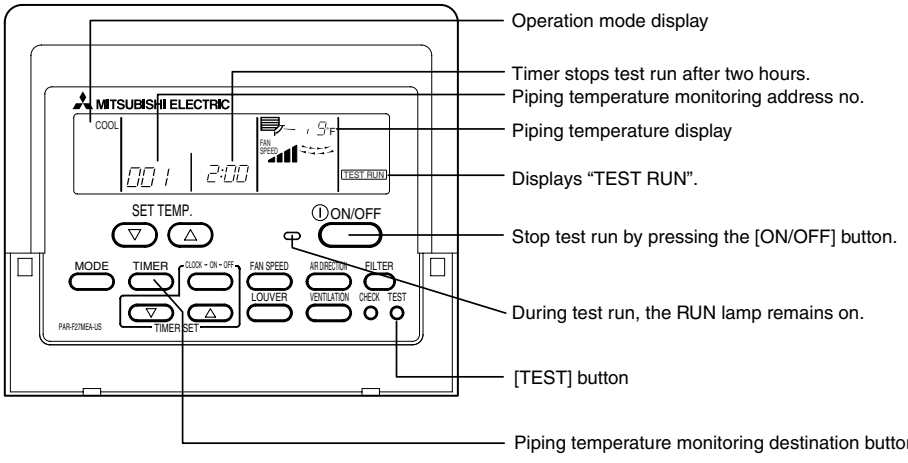
(B) Room temperature display selection mode (Room temperature display/no display selection)
Normally, the intake air temperature is displayed at the remote controller. However, no display can also be selected.

(C) Set temperature range limit mode
Ordinarily, the set temperature can be freely set over the 19 °C to 30 °C range for cooling and dry and the 17 °C to 28 °C range for heating. However, for cooling and dry, the lower limit temperature and for heating, the upper limit temperature can be limited to a preset temperature. If the set temperature range is made higher for cooling and dry and is set lower for heating by this method, excessive cooling and heating can be prevented and energy can be saved.

⚠ CAUTION	When the normal set temperature adjustment range was changed using a remote controller connected to a simultaneous cooling/heating air condition with an AUTO mode, the AUTO mode cannot be selected with the [Mode selection] button.

8 Test Run

1. Before making a test run, refer to the "Test Run" section of the indoor unit installation manual.
2. Press the [TEST] button twice successively within three seconds. Test run starts.
3. Stop the test run by pressing the [ON/OFF] button.
4. If trouble occurred during the test run, refer to the "Test Run" section of the indoor unit installation manual.



Operation mode display
Timer stops test run after two hours.
Piping temperature monitoring address no.
Piping temperature display
Displays "TEST RUN".
Stop test run by pressing the [ON/OFF] button.
During test run, the RUN lamp remains on.
[TEST] button
Piping temperature monitoring destination button