

# MITSUBISHI ELECTRIC

Building Air Conditioning Control System

## Network Remote Controller PAR-F25MA

Installation Manual



This installation manual contains only the description of how to install the Network Remote Controller PAR-F25MA. 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 Network Remote Controller PAR-F25MA 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-F25MA.
- CAUTION** This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAR-F25MA.

After reading this installation manual, keep it in a place where the final user can see it anytime he or she wants to it. When someone moves, repairs or uses the PAR-F25MA, 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-F25MA.**  
Any lack of strength may cause the PAR-F25MA 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-F25MA 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-F25MA yourself.**  
Any deficiency caused by installation may result in an electric shock or fire.  
Ask your distributor or special vendor for moving and installation.

#### CAUTION

**Do not install in any place exposed to flammable gas leakage.**  
Flammable gases accumulated around the body of PAR-F25MA 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 or less than 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.

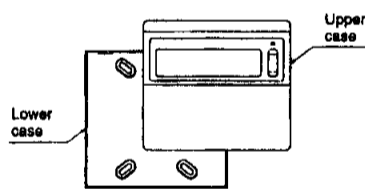
**Never contact the power supply with the control wiring terminals.**  
Doing so will certainly cause the controller to catch fire.

### 2 Confirming the Supplied Parts

#### 1 Confirmation of parts

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

- (1) Remote controller (with upper and lower cases) ..... 1
- (2) Remote control cord (10m) ..... 1
- (3) Cross recessed pan head screw (M4 x 30) ..... 2
- (4) Wood screw (4.1 x 16, used for directly hooking to the wall) ..... 2
- (5) Installation manual ..... 1
- (6) Caution label (in 12 languages) ..... 1

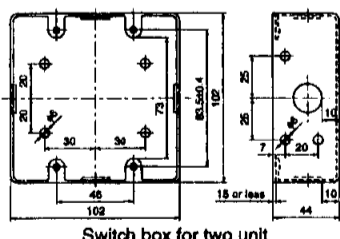


**NOTE:** If you need to use a cable extension longer than 10 meters, select an electric wire that meets the following specifications:  
Wire specification .... CVV (2-core): 1.25 mm<sup>2</sup> or equivalent

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

#### 2 Parts which must be supplied on site.

- Switch box for two units
- Thin-copper wiring pipe
- Lock nut and bushing

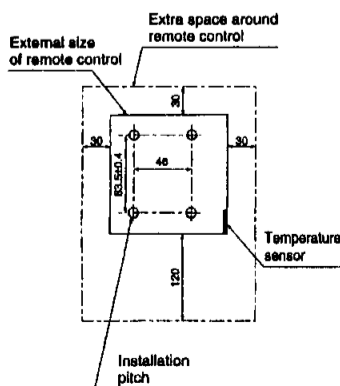


Switch box for two unit

### 3 How To Install

#### (1) Choose a place in which to install the remote controller (switch box). Be sure to observe the following steps:

- Temperature sensors are provided with both the remote controller and the indoor units. When using the remote control temperature sensors, 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 also 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 ③ in (6) How To Wire Transmission Lines.)
- When installing on either the switch box or the wall, allow extra space around the remote controller as shown in the figure on the right. (When using it in combination with a Program timer, see the installation manual for the Program timer.)

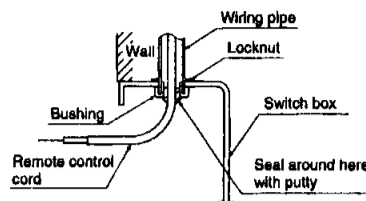


**NOTE:** Make sure that there is no wiring or wire near the remote controller sensors. If there is, the remote controller cannot detect the exact room temperature.

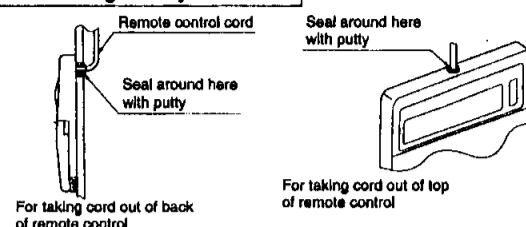
#### (2) Seal the remote controller cord lead-in hole with putty in order to prevent the possible entry of dew, water droplets, cockroaches, other insects, etc.

- 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 the remote control cord (or taking the cord out of the back of the remote control), seal that hole with putty.
- When routing the cord via the portion cut off from the upper case, equally seal that portion with putty.

##### When using the switch box

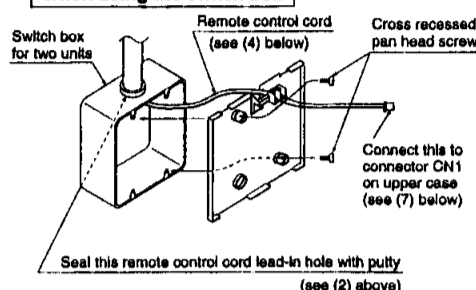


##### When installing directly on the wall

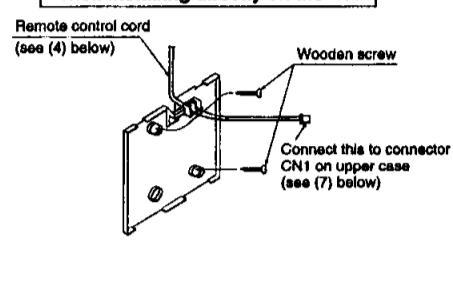


#### (3) Install the lower case on the switch box or directly on the wall.

##### When using the switch box



##### When installing directly on the wall

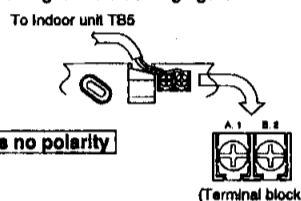


**CAUTION** Do not tighten the screws too much. Doing so may result in a deformation or crack of the lower case.

**NOTES:** • Choose a flat plane for installation.  
• Fix the switch box at more than two places when installing directly on the wall.

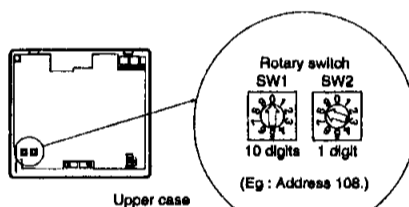
#### (4) Connect the remote control cord to the terminal block on the lower case.

Wire correctly referring to the following figure.



**CAUTION** Do not use any pressurized terminal for the connection of remote control blocks. Doing so may bring the terminal into contact with the board, resulting in malfunctions of the terminal and board.

#### (5) Set the remote control address using the rotary switches.



**NOTE:** The allowable address numbers that can be set in the PAR-F25MA are 101 to 200. The unit of 100 is fixed at 1.

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

• The factory-rotary switch is set at 01.

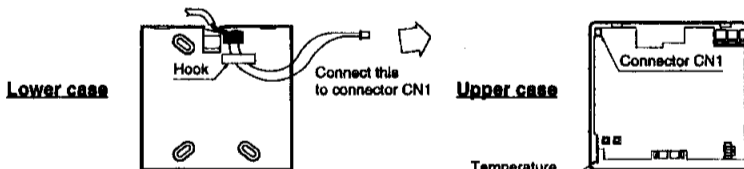
#### (6) Wiring hole for installing directly on the wall (or open wiring)

- Cut off the shaded area from the upper case using a knife nipper.
- Take out the remote control cord connected to the terminal block via this portion.



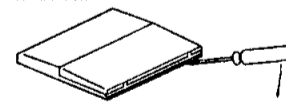
#### (7) Connect this connector on the lower case to Connector CN1 on the upper case.

**CAUTION** • After connection, do not hang the upper case down as shown in the figure - right. Doing so may cause the cord to be damaged, resulting in an operational malfunction.  
• Be sure to route the cord via the hook for fixing. If not, the terminal block may receive an undesirable force directly, cutting off the cord.  
• Do not remove the insulation sheet affixed to the PCB and/or PCB. Doing so may cause a malfunction of the PCB.  
• Do not touch any temperature sensor. Doing so may prevent the remote controller from sensing the correct temperature.



#### (8) Fitting the upper case.

To remove the upper case, insert a minus screwdriver into one of the open slots, and move it in the direction of the arrow as shown in the figure.



First, hook the upper case to the two upper claws and then fit it as shown in the above figure.

**CAUTION** Press the case until it snaps shut. If not, it may fall down.

**CAUTION** Do not turn screwdriver while it is inserted into the open slot. Doing so can result in damage to the open slot.

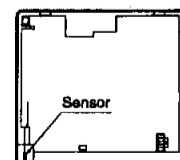
**NOTE:** A protective sheet has been affixed to the control panel. Remove the sheet when starting.

#### (9) The remote controllers are provided with temperature sensors.

Temperature sensors are provided with both remote control and indoor unit. Use one on either remote controller or indoor unit. Since temperature should be set on the indoor unit, see the installation manual for the air conditioners for further information.

#### (10) Affix a caution label.

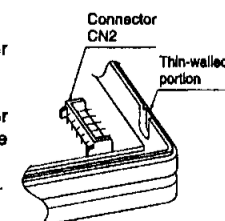
A caution label in English is supplied on the back surface of the control panel door. Affix another caution label in the language of a country where you use the remote control over the English one.



### 4 How To Connect Optional Parts

- When connecting a program timer, connect a 5-core cable to Connector CN2 (timer connector) on the upper case. (A 5-core cable is supplied with a program timer.)
- In order to route the cable, cut off the thin-wall portion.
- For convenience of wire path, when installing directly on the wall, install a program timer on the left-hand side of the remote control. For this, take into a consideration some program timer space on the left-hand side of the remote control.

For more information about how to install, see the installation manual for program timers.

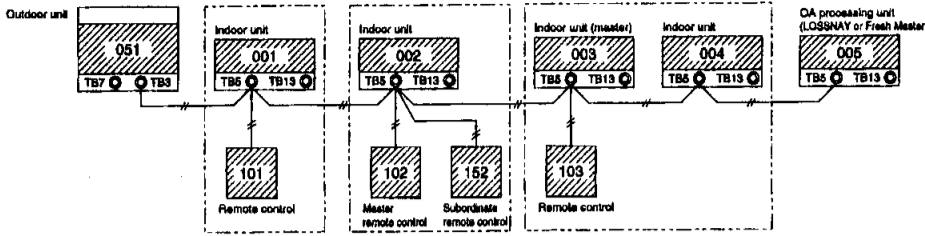






## 5 How To Wire Transmission Lines

### Example in which the same refrigerant system is used:

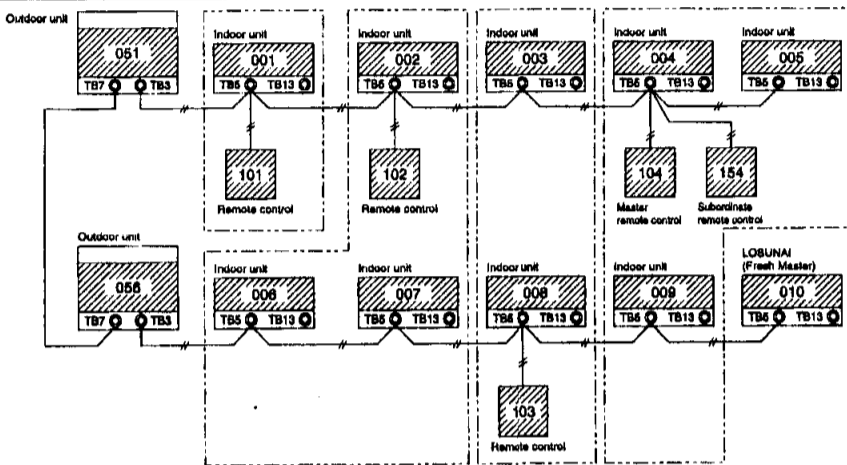


- Wiring from the remote controller
  - Connect to TB5 (terminal block for transmission) on the indoor unit.
  - The terminal block has no polarity.
  - Connect to the symbols "A" and "B" on the terminal block.
- Operating in a group
  - Match the remote controller address with the master unit address for indoor units you want to operate in a group.
  - Set the remote controller address to the master unit address + 100.
- The master remote controller and one subordinate remote controller, a total of two, can be connected to a group consisting of indoor units.
  - Connect them as ① above.
  - Be sure to set the master and subordinate remote control addresses.
  - Set the subordinate to the master unit address of indoor units + 150.
- To interlock the OA processing unit (LOSSNAY or Fresh Master) make the following settings using the remote controller. (For a description of how to set an interlock, refer to (6) Group registration and interlocked registration with Remote controller.)
  - Set any indoor units and the OA processing unit (LOSSNAY or Fresh Master) which you want to interlock.
  - Set the indoor unit with the lowest address number in that group.

**NOTE:** Be sure to make settings so that the indoor unit with the lowest address is interlocked with the OA processing unit (LOSSNAY or Fresh Master). If it is not interlocked, the OA processing unit will not operate.

④ You've just completed all the settings for the same refrigerant system. Well done!

### Example in which different refrigerant systems are used:



- Wiring from the remote controller should be the same as that in "Example in which the same refrigerant system is used" above.
- Operating in a group
  - Match the remote controller address with the master unit address of indoor units you want to operate in a group.
  - The master unit address number indicates the lowest address number.
  - Set the remote controller address to the master unit address + 100.
- The master remote controller and one subordinate remote controller, a total of two, can be connected to a group consisting of indoor units. (This is the same as that in "Example of the same refrigerant system used" above.)
- To interlock the OA processing unit (LOSSNAY or Fresh Master), make the same setting as that in "Example in which the same refrigerant system is used" above.
- Set a group of the units using each remote control. (For detailed information, refer to Section (6) Group registration and interlocked registration with Remote controller.)
- You've just completed all the settings for different refrigerant systems. Well done!

## 6 Group registration and Interlocked registration with Remote controller

This operation should be done in order to set a group of indoor units between different refrigerant systems.

- Group registration ..... To register the indoor units you want to control with the remote controller, confirm the registered units, and delete the registered units.
- Interlocked registration .. To register the OA processing unit (LOSSNAY or Fresh Master) to be interlocked to indoor units, confirm the registered units, and delete the registered unit.

### Setting Procedure

#### (1) Registration of an address.

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

- Stopping the remote controller to operate by [ON/OFF] button.
  - If no indoor unit is registered, the "H0" display appears on the room temperature display. In this condition, registration can be performed as follows.



#### (B) Interlocked registration

- Displaying "INDOOR UNIT ADDRESS NO."
  - Press and hold down the [Filter] button at (A) and the [Louver button] at (B) at the same time for two seconds. The display appears as follows:



#### (A) Group registration

- Set the indoor unit address No.
  - Press the [▲] and [▼] (TEMP) buttons at (C), increase and decrease to the indoor unit address. Set it to any address number you want to register.

- Registration the indoor unit address No. you have set.
  - Press the [TEST RUN] button at (D) to register the indoor unit address No. being displayed.
  - When the setting is completed normally, the display shows the type of unit as illustrated below.
  - If there is no indoor unit you have specified, the display shows an error message. If this is the case, make sure that there are indoor units, and do the setting operation above again.

When you've completed the setting normally:



Displays unit type (Indoor unit in this case)

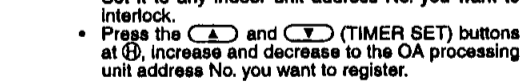
If an error message appears:



"BB" will flash as a registration error (if there is no registered indoor unit)

#### (C) Displaying "OA UNIT ADDRESS NO."

- Press the [Operation mode] button at (E) to show the following display. Pressing it again allows you to get back to the display of (B) "INDOOR UNIT ADDRESS NO."

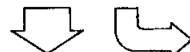


For confirmation of registered address, go to (2) Address retrieval" below

- Displaying OA processing unit (LOSSNAY or Fresh Master) address No. and any indoor unit address No. you want to interlock.
  - Press the [▲] and [▼] (TEMP) buttons at (C), increase and decrease to the indoor unit address. Set it to any indoor unit address No. you want to interlock.
  - Press the [▲] and [▼] (TIMER SET) buttons at (D), increase and decrease to the OA processing unit address No. you want to register.



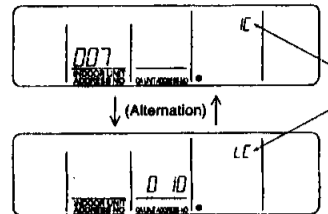
- Repeat the steps (3) and (4) above when registering multiple indoor units.



For confirmation of the registered address, go to (2) Confirmation of registered address" below.

- To return to the normal state;
- Press and hold down the [Filter] button at (A) and the [Louver button] at (B) at the same time for two seconds. This gets you back to the state of the normal operation mode. (OFF condition)

- Registration of interlocking operation of OA processing unit with indoor unit.
  - Press the [TEST RUN] button at (D) to register the interlocking relation of LOSSNAY (of Fresh Master) indicated "OA UNIT ADDRESS No." and the indoor unit indicated "INDOOR UNIT ADDRESS".



When the registration has been completed normally, the display alternates between as shown in the figures: "BB" will flash in the case of a registration error (indicating no unit).

- NOTES:
- Be sure to set the indoor unit of the least Address No. in a group and the OA processing unit. If not, the OA processing unit does not operate.
  - If there are multiple indoor units that you want to interlock to the OA processing unit, be sure to perform steps (7) and (8) above for all of them.

- If you want to interlock another indoor unit other than the indoor unit of the least Address No. in a group.
  - In this case, do the setting at the steps (7) and (8) above with any indoor Address No. and the LOSSNAY (Fresh Master) you want to interlink.

To return to the normal state, do the step (10).

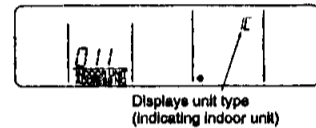
For confirmation of the registered address, go to (2) Confirmation of registered address" below.

- Confirmation of registered address.
  - Display the indoor unit address No. registered on the remote controller by performing steps (1) and (2).

In the case of (A) Group registration"

- Displaying "INDOOR UNIT ADDRESS NO."
  - Each time you press the [Timer/continuous] button at (E), the display shows the indoor unit address No. and the type of unit you have registered.

With a registration:



Displays unit type (indicating indoor unit)

Without registration:



- When there is one registration, no matter how many times you press, the display shows you only one Address No.
- If there are multiple registration (e.g.: "011", "012", "013"), each time you press the [TIMER SELECTION] button at (E), the display shows you 011 → 012 → 013 in this order.



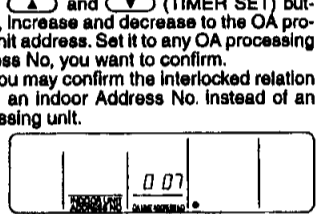
For address deletion, go to (3) Address Deletion" below.

To return to the normal state, perform step (10) above.

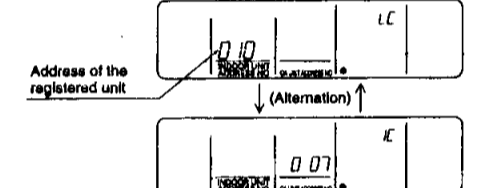
In the case of (B) Interlocked registration"

After completing step (8), do as follows:

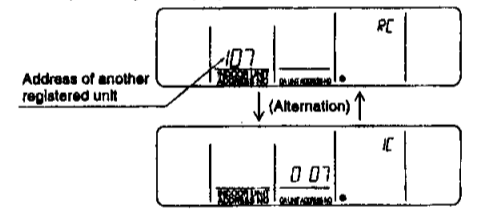
- Displaying any OA processing unit Address No. you want to confirm.
  - Press the [▲] and [▼] (TIMER SET) buttons at (C), increase and decrease to the OA processing unit address. Set it to any OA processing unit address No. you want to confirm.
  - Equally, you may confirm the interlocked relation by setting an Indoor Address No. instead of an OA processing unit.



- Displaying the indoor unit Address No. interlocked with OA processing unit you have set in step (8)
  - Press the [Timer/continuous] button at (E). The display then alternates between OA processing unit Address No. and Indoor unit Address No. as follows:



- Displaying another registered unit address No.
  - Followed by step (2), press the [Timer/continuous] button at (E) again. The display then alternates between the registered unit and another registered unit. (The way of display is the same as in step (12).)



For address deletion, go to (3) Address Deletion" below.

- Address deletion.
  - Deleting the unit registered on the remote controller. First confirm address and then display any indoor unit Address No. or OA processing unit Address No. you want to delete.

- Deleting the registered indoor unit.
  - Press the [TIMER SELECTION] button twice, deleting the indoor unit indicated by "INDOOR UNIT ADDRESS NO." When it is deleted normally, the display is as follows:

In the case of (A) Group registration"

When you've completed normally:



- If there is a transmission error is occurred, registration can not be deleted, showing the following display. In this case, do the step above again.

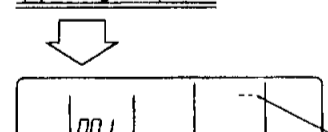
If a transmission error occurs:



"BB" appears on room temp display

To return to the normal state, perform the step (10) above again.

In the case of (B) Setting An Interlink"



When the deletion is completed normally the unit type will be "---". If a deletion error occurs, the unit type will be "BB". If this is the case, do the step above again.

This product is designed and intended for use in a residential, commercial or light-industrial environment. The product at hand is based on the following EU regulations:

- Electromagnetic Compatibility Directive 89/336/EEC