

MITSUBISHI ELECTRIC

CITY MULTI Control System

and Mitsubishi Mr. SLIM Air Conditioners

MA Remote Controller

Installation Manual

PAR-21MAAU

This instruction manual describes how to install the MA Remote Controller for Mitsubishi Building Air Conditioning System, direct expansion type CITY MULTI air conditioner indoor units ("A" type and later), and Mitsubishi Mr. SLIM packaged air conditioners. 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. After the installation, hand over this manual to users.

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-21MAAU.
 - CAUTION** This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAR-21MAAU.
- 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-21MAAU, make sure that this manual is forwarded to the end user.

WARNING

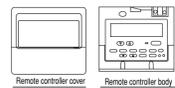
- Ask your dealer or technical representative to install the unit.** Any deficiency caused by your own installation may result in an electric shock or fire.
- Install in a place which is strong enough to withstand the weight of the PAR-21MAAU.** Any lack of strength may cause the PAR-21MAAU to fall down, 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-21MAAU by yourself.** Any deficiency caused by your modification or repair may result in an electric shock or fire. Consult with your dealer about repairs.

CAUTION

- Do not install in any place exposed to flammable gas leakage.** Flammable gases accumulated around the body of PAR-21MAAU 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.
- 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 affect communication equipment and prevent medical operations on the human body or interfere with image transmission and cause noise.
- Wire so that it does not receive any tension.** Tension may cause wire breakage.
- 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 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.** Doing so may cause deformation or malfunction.

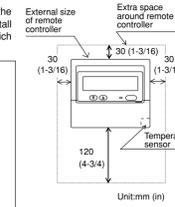
2 Confirming the Supplied Parts

- Confirm that the box includes the following parts, in addition to this installation manual:
- Remote controller cover (body)
 - Cross recessed pan head screw (M4 x 30)
 - Wood screw (4.1 x 16), used for directly hooking to the wall
 - Caution label (in 12 languages)
 - ISO metric screw thread
- For the remote control, obtain a 2-core cable between 22AWG and 16 AWG (0.3 and 1.25 mm) at the site. PAC-YT32PFA cannot be connected.

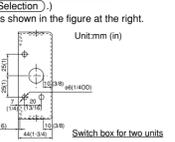


3 How To Install

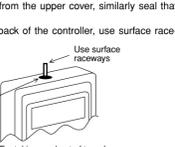
- Choose a place in which to install the remote controller (switch box).
 - Be sure to observe the following steps:
 - Temperature sensors are provided with both the remote controller and the indoor units. When using the remote controller temperature sensor, the master remote controller detects the room temperature. Installing 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 blow from air conditioning units.



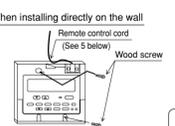
- Seal the remote controller cord with putty in order to prevent the possible entry of dew, water droplets, cockroaches, other insects, etc.
 - When installing on the switch box, seal the connections between the switch box and wiring pipe with putty.
 - When installing directly on the wall, allow extra space around the remote controller as shown in the figure at the right.



- Remove the remote controller cover.
 - Insert a flat-tip screwdriver into one of the open slots and move the screwdriver in the arrow direction.



- Install the lower case on the switch box or directly on the wall.
 - When using the switch box, seal the remote control cord lead-in hole with putty.
 - When installing directly on the wall, use a wood screw to secure the unit.



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

NOTE: - Choose 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.

- Connect the remote control cord to the remote controller terminal block.
 - To indoor unit MA remote controller or A control terminal block: There is no polarity.
 - To connect the remote control cord, peel 1/4in (6mm) of coating.

CAUTION Do not use crimp terminals to connect to remote controller terminal blocks. The terminals may contact the board and cause trouble or contact the cover and damage the cover.

CAUTION Prevent remote cord chips from getting into the remote controller. Electric shock or malfunction may result.

- 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.

- Install the cover to the remote controller.
 - To remove the cover, insert a flat-tip screwdriver into one of the open slots, and move it in the direction of the arrow shown in the figure.

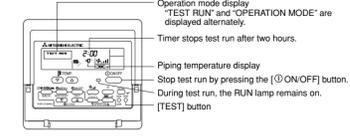
First, hook the cover to the two upper claws and then fit to the remote controller.

CAUTION Press the cover until it snaps shut. If not, it may fail to fit. **CAUTION** Do not insert the screwdriver in the slot. Doing so may damage the slot.

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

4 Test Run

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



5 Ventilation Setting

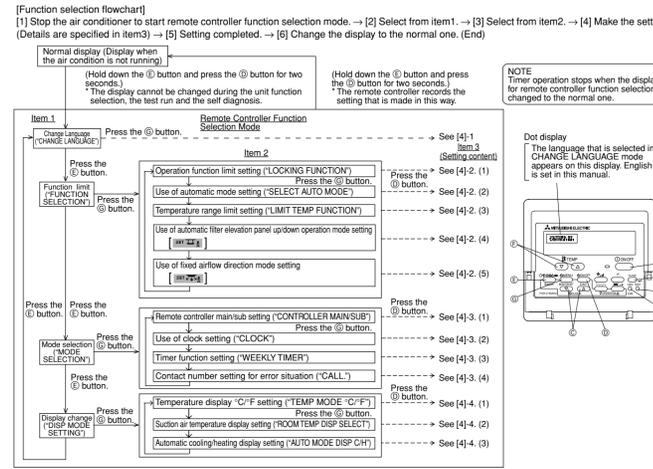
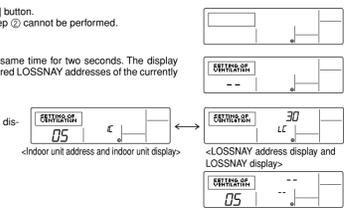
Make this setting only when interlocked operation with LOSSNAY is necessary with CITY MULTI models. (This setting cannot be made with Mr. SLIM air conditioners.)

* When the upper controller is connected, make the setting using the upper controller.

NOTE: When using LOSSNAY units in conjunction, interlock the addresses of all indoor units within the group and address of LOSSNAY units.

Perform this operation when you want to register the LOSSNAY, confirm the registered units, or delete the registered units controlled by the remote controller. The following uses indoor unit address 05 and LOSSNAY address 30 as an example to describe the setting procedure.

- [Setting Procedure]
- Stop the air conditioner using the remote controller [ON/OFF] button. If the OFF display shown below does not appear at this time, step ② cannot be performed.
 - Press and hold down the [FILTER] and [] buttons at the same time for two seconds. The display shown below appears. The remote controller confirms the registered LOSSNAY addresses of the currently connected indoor units.
 - Registration confirmation result
 - The indoor unit address and registered LOSSNAY address are displayed alternately.
 - When LOSSNAY are not registered
 - If registration is unnecessary, end registration by pressing and holding down the [FILTER] and [] buttons at the same time for two seconds. If a new LOSSNAY must be registered, go to step 1. **Registration procedure.** If you want to confirm another LOSSNAY, go to step 2. **Confirmation procedure.** To delete a registered LOSSNAY, go to step 3. **Deletion procedure.**



- [Detailed setting]
- [4]-1 CHANGE LANGUAGE setting
The language that appears on the display can be selected.
• Press the [] button to change the language.
① English (GB), ② German (D), ③ Spanish (E), ④ Russian (RU), ⑤ Italian (I), ⑥ Chinese (CH), ⑦ French (F), ⑧ Japanese (JP)
- [4]-2 Function limit
① Operation function limit setting (operation lock)
• To switch the setting, press the [ON/OFF] button.
① ON : Operation lock setting is made on all buttons other than the [ON/OFF] button.
② OFF : Operation lock setting is made on all buttons.

- ② OFF (Initial setting value): Operation lock setting is not made.
* To make the operation lock setting valid on the normal screen, it is necessary to press buttons [Filter and Hold down the [FILTER] and [ON/OFF] buttons at the same time for two seconds.] on the normal screen after the above setting is made.
- ② Use of automatic mode setting
When the remote controller is connected to the unit that has automatic operation mode, the following settings can be made.
• To switch the setting, press the [ON/OFF] button.
① ON (Initial setting value): The automatic mode is displayed when the operation mode is selected.
② OFF : The automatic mode is not displayed when the operation mode is selected.
- ③ Temperature range limit setting
After this setting is made, the temperature can be changed within the set range.
• To switch the setting, press the [ON/OFF] button.
① LIMIT TEMP COOL MODE : The temperature range can be changed on cooling/dry mode.
② LIMIT TEMP HEAT MODE : The temperature range can be changed on heating mode.
③ LIMIT TEMP AUTO MODE : The temperature range can be changed on automatic mode.
④ OFF (Initial setting) : The temperature range limit is not active.
* When the setting, other than OFF, is made, the temperature range limit setting on cooling, heating and automatic mode is made at the same time. However, the range cannot be limited when the set temperature range has not changed.

- ② Use of clock setting
• To switch the setting, press the [ON/OFF] button.
① ON : The clock function can be used.
② OFF : The clock function cannot be used.
- ③ Timer function setting
• To switch the setting, press the [ON/OFF] button (Choose one of the followings).
① WEEKLY TIMER (Initial setting value): The weekly timer can be used.
② AUTO OFF TIMER: The auto off timer can be used.
③ SIMPLE TIMER: The simple timer can be used.
④ TIMER MODE OFF: The timer mode cannot be used.
* When the use of clock setting is OFF, the "WEEKLY TIMER" cannot be used.
- ④ Contact number setting for error situation
• To switch the setting, press the [ON/OFF] button.
① CALL OFF: The set contact numbers are not displayed in case of error.
② CALL ***** : The set contact numbers are displayed in case of error.
CALL : The contact number can be set when the display is as shown on the left.

(2) Unit Function Selection

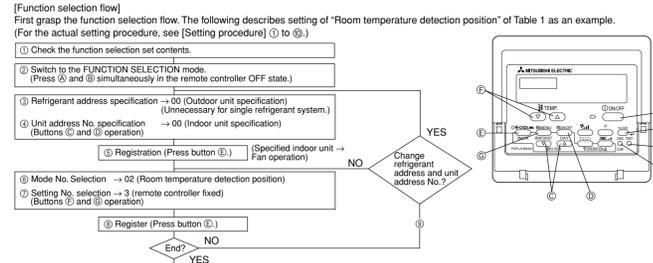
Perform only when change is necessary with Mr. SLIM air conditioner.

Set the functions of each indoor unit from the remote controller, as required. The functions of each indoor unit can be selected only from the remote controller. Set the functions by selecting the necessary items from Table 1.

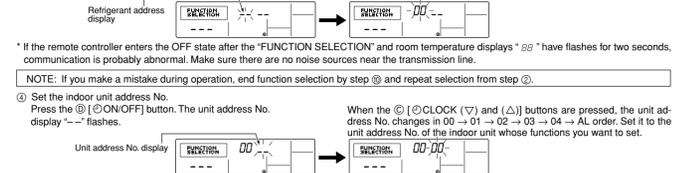
Table 1. Function selection contents (For a detailed description of the factory settings and mode of each indoor unit, refer to the indoor unit installation manual.)

Function	Settings	Mode No.	Setting No.	Check	Object unit address No.
Power failure automatic recovery	Not available Available (Approximate 4 minutes wait period after power is restored)	01	01, 2		Unit address No. 00
Indoor temperature detecting	Indoor unit operating average Set by indoor unit's remote controller Remote controller's internal sensor Not supported	02	02, 2		These items are set for all indoor units.
LOSSNAY connectivity	Supported (indoor unit is not equipped with outdoor-air intake) Supported (indoor unit is equipped with outdoor-air intake) Not supported	03	03, 2		
AUTO mode	Energy saving cycle automatically enabled Energy saving cycle automatically disabled	05	05, 1		Unit address No. 01 to 04 or AL
Filter sign	100 Hr 200 Hr No filter sign indicator	07	07, 2, 3		
Fan speed	Quiet Standard High ceiling	08	08, 1, 3		These items are set for each indoor unit.
No. of air outlets	4 directions 3 directions Not supported Supported	09	09, 2, 10		
Installed options	Not supported Supported	10	10, 2		
Updown vane setting	No vanes Equipped with vanes (No. 1 set) Equipped with vanes (No. 2 set)	11	11, 3		
Energy saving air flow	Disabled Enabled	12	12, 1		
Humidifier	Not supported Supported	13	13, 2		

NOTE: When the indoor unit functions were changed using the function selection after installation is complete, always indicate the set contents by entering ○ or other mark in the appropriate check field of Table 1.

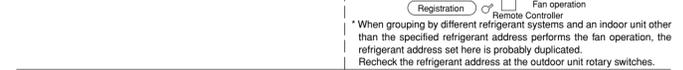


[Procedure] (Set only when change is necessary.)
① Check the set contents of each mode. When the set contents of a mode were changed by function selection, the functions of that mode also change. Check the set contents as described in steps ② to ⑦ and change the setting based on the entries in the Table 1 check field. For the factory settings, refer to the indoor unit installation manual.
② Set the remote controller to OFF.
Press and hold down the [FILTER] and [TEST] buttons at the same time for two seconds or longer.
* "FUNCTION SELECTION" blinks for a while, then the remote controller display changes to the display shown below.



* If the remote controller enters the OFF state after the "FUNCTION SELECTION" and room temperature displays "88" have flashes for two seconds, communication is probably abnormal. Make sure there are no noise sources near the transmission line.
NOTE: If you make a mistake during operation, end function selection by step ③ and repeat selection from step ②.

- Set the indoor unit address No. Press the [] [ON/OFF] button. The unit address No. display → "88" flashes.
When the [] [CLOCK (V)] and [] buttons are pressed, the unit address No. changes in 00 → 01 → 02 → 03 → 04 → AL order. Set the unit address No. of the indoor unit whose functions you want to set.
- Refrigerant address and unit address No. registration Press the [] [CLOCK (V)] button. The refrigerant address and unit address No. are registered. After a while, the mode No. display "88" flashes.
When the [] [CLOCK (V)] and [] buttons are pressed, the registered indoor unit begins fan operation. When you want to know the location of the indoor units of the unit address No. whose functions were selected, check here. When the unit address No. is 00 or AL, all the indoor units of the selected refrigerant address perform the fan operation.

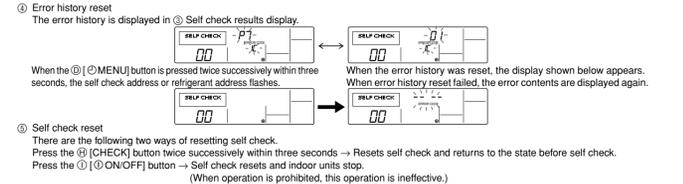


* When "88" flashes at the room temperature display, the selected refrigerant address is not in the system.
When "F" is displayed at the unit address No. display, and when it flashes together with the refrigerant address display, the selected unit address No. does not exist. Correctly set the refrigerant address and unit address No. by repeating steps ② and ③.

- Mode No. selection Select the mode No. you want to set with the [] [TEMP (V)] and [] buttons. (Only the settable mode numbers can be selected.)
 - Select the setting contents of the selected mode. When the [] [MENU] button is pressed, the current setting No. flashes. Use this to check the currently set contents.
 - When the [] [MENU] button is pressed, the current setting No. flashes. Use this to check the currently set contents.
 - When the [] [MENU] button is pressed, the mode No. and setting No. flash and registration begins. The flashing mode No. and setting No. change to a steady light and setting ends.
- * When "-" appears at the mode No. and setting No. displays and "88" flashes at the room temperature display, communication is probably abnormal. Make sure there are no noise sources near the transmission line.
* To select more functions, repeat steps ③ to ⑤.
* End function selection. Press and hold down the [] [FILTER] and [] [TEST] buttons at the same time for two seconds or longer. After a while, the function selection display disappears and the remote controller returns to the air conditioner off display.
- * Do not operate the air conditioner from the remote controller for 30 seconds after the end of function selection.
- NOTE:** When the functions of an indoor unit were changed by function selection after the end of installation, always indicate the set contents by entering a ○ or other mark in the appropriate check field of Table 1.

7 Self check

- Retrieve the error history of each unit using the remote controller.
- Switch to the self check mode. When the [] [CHECK] button is pressed twice successively within three seconds, the display shown below appears.
 - Self check result display <Error history> (For the contents of the error code, refer to the indoor unit installation manual or service handbook.)
 - Self check result display. There are the following two ways of resetting self check. Press the [] [CHECK] button twice successively within three seconds → Resets self check and returns to the state before self check. Press the [] [ON/OFF] button → Self check resets and indoor units stop. (When operation is prohibited, this operation is ineffective.)



8 Remote Controller Check

- First check the power mark. When normal voltage (DC12V) is not applied to the remote controller, the power mark goes off. When the power mark is off, check the remote controller wiring and the indoor unit.
- Switch to the remote controller check mode. When the [] [CHECK] button is held down for five seconds or longer, the display shown below appears.

