MITSUBISHI ELECTRIC

CE

Building Air Conditioning Control System

Group Remote Controller PAC-SC30GRA

Installation Manual

This installation manual contains only the description of how to install the Group Remote Controller PAC-SC30GRA. 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 Group Remote Controller PAC-SC30GRA 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 PAC-SC30GRA.
⚠CAUTION	This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAC-SC30GRA.

- 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 PAC-SC30GRA, 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 PAC-SC30GRA.
Any lack of strength may cause the PAC-SC30GRA 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 PAC-SC30GRA 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 PAC-SC30GRA 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 PAC-SC30GRA 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 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.

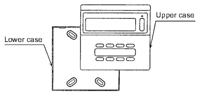
Do not press any control button using a sharp object.
Doing so may cause an electric shock or a malfunction.

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

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

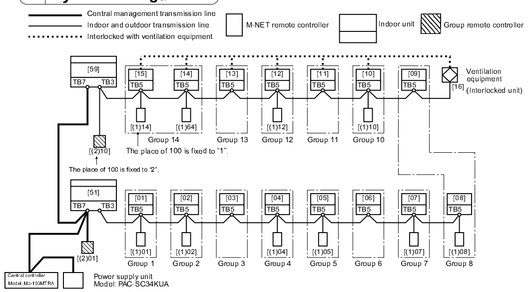
(1) Group remote controller (with upper and lower case) 1
(2) Cross recessed pan head screws (M4×30) 2
(3) Wood screws (4.1×16, for directly hooking to the wall) 2
(4) Room label .... 1 (2 labels)
(5) Label covers 2
(6) Caution label (in 10 languages) 1
(7) Instruction book 2



Use a maximum of 1.25mm² cable for remote controller wiring. 0.75mm² cable is recommended for ease of use.

NOTE: The remote controller cord is supplied on site.
Use a electric cable in accordance with the following specifications.
Electric cable specifications (CVV or CVVS)
With CVVS, be sure to insulate the cable shield so that it does not contact the terminal block.
The 1.25mm² cable is for use as an extension.
• Up to 10m ....0.75mm² twin-core cable
• Longer than 10m....1.25mm² twin-core cable (extension cord)

3 System Configuration



M-NET model address setup (address duplication not possible)

	Address setup	Address
Indoor unit / Interlocked unit	Any address within the range specified at right.	1~50
Outdoor unit	The smallest address of indoor unit in same refrigerant system + 50	51~100
Remote controller	Any address within the range specified at right.	101~200
Group remote controller	The smallest group No. to be managed + 200	201~250

NOTE: The only indoor unit this device can be used to operate is an M-NET control indoor unit. It will not operate a K control indoor unit, even with a K transmission converter (PAC-SC25KAA).

Note the following when connecting to central management transmission line (Caution 3)

Number of system controllers per system which may be supplied with power	Power supply unit model
1~5	PAC-SC34KUA

⚠CAUTION
1. This diagram shows the configuration of transmission wiring, and omits power supply wiring for clarity.
2. Establish one shield ground for M transmission wiring within the system.
3. The number of system controllers which may be supplied with power are found by multiplying the given number by the appropriate capacity coefficient in the following table (decimal fractions are rounded up).

Capacity coefficient	
Group remote controller	Central controller
0.5	1

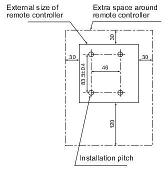
Example: The following applies for 2 group remote controllers and 1 central controller.
$2 \times 0.5 + 1 \times 1 = 2$
- 2 — Number of system controllers which may be supplied with power
- 1 × 1 — Number of central controllers × capacity coefficient
- 2 × 0.5 — Group remote controllers × capacity coefficient

4. The eight groups are allocated automatically (group remote controller setup address -200~group remote controller setup address -200+7 is the management group).
Examples: Group 1~8 is the management group when the group remote controller setup address is 201.
Group 9~16 is the management group when the group remote controller setup address is 209.
5. As current consumption is twice that with remote controller when this equipment is connected to indoor or outdoor transmission wiring, assume two remote controllers for each of these units when calculating connections.

4 How To Install

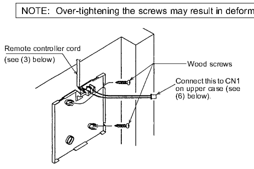
(1) Choose a location in which to install the group remote controller (switch box) in accordance with the following requirements:

① The space as shown in the diagram at right is required whether the controller is installed on the wall or in the switch box (except when used with the program timer (PAC-SC32PTA)).
② Procure the following parts locally.
Switch box for two units
Thin-copper wiring pipe
Locknut and bushing

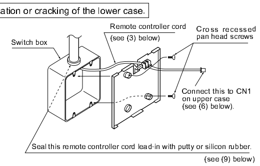


(2) Attach the lower case to the wall or the switch box.

NOTE: Over-tightening the screws may result in deformation or cracking of the lower case.

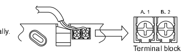


When Installing Directly on the Wall

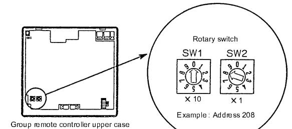


When Installing the Switch Box

(3) Connect the remote controller cord to the terminal block on the lower case.
Install wiring correctly in accordance with the diagram at right.



(4) Set the group remote controller address with the rotary switches.

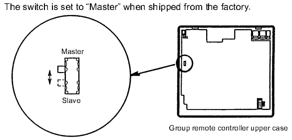


⚠CAUTION Addresses between 201 and 250 may be set with the group remote controller. The place of 100 is fixed to "2".

Rotary switch setting	Address
01~50	201~250

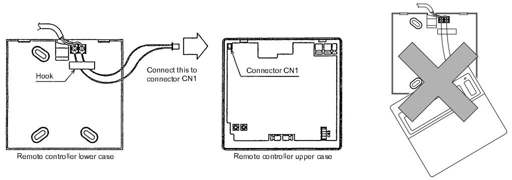
• The rotary switch is set to 01 when shipped from the factory.

(5) When used in conjunction with the master system controller (centralized controller), set the group remote controller to "Slave" with the switch as shown in the diagram below.
• The switch is set to "Master" when shipped from the factory.

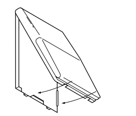


(6) Connect this connector on the lower case to the connector CN1 on the upper case.

⚠CAUTION
• Connect firmly as shown below. The system will not operate unless these connections are made.
• After connecting the wiring, ensure that the upper case does not hang off the cord as shown in the diagram below at the right. This may result in a break in the cord, and thus cause problems with operation.
• Always pass the cord through the hook to hold it in place.

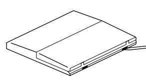


(7) Fitting the upper case.
First hook the upper case to the two upper claws and then fit it as shown at right.



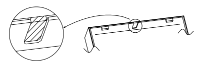
⚠CAUTION
• Press the case until it snaps shut.
• A protective sheet has been affixed to the control panel. Remove it before starting.

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 diagram at right.

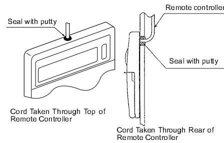


⚠CAUTION
Do not turn the screwdriver while it is inserted into the open slot. Doing so can result in damage to the claws.

(8) Wiring hole for fitting directly onto the wall.
• Cut out the thin-wall portion of the upper case (shaded area) using a knife or nipper.
• Take out the remote controller cord connected to the terminal block via this portion.

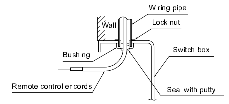


(9) Seal the remote controller cord lead-in with putty in order to prevent possible entry of dew, water droplets and other insects.
• When fitting directly to the wall as in (2), seal the cut-out in the upper case with putty.
• When cutting a hole in the wall for the remote controller cord (ie when the remote controller cord exits from the rear of the remote controller), seal this hole in the same way.



When Fitting Directly on the Wall

• When fitting to the switch box, seal the join between the switch box and the wiring conduit with putty.

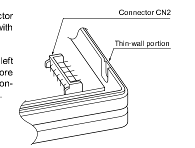


When Using the Switch Box

(10) Affix a caution label.
A caution label in English is supplied on the back surface of the upper panel. Affix another caution label in the language of a country where you use the Group remote controller over the English one.

5 Connecting 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 the program timer).
• Cut out the thin-wall portion to take the cable.
• When fitting directly onto the wall, fit the group remote controller on the left of the program timer to facilitate wiring. If you anticipate installing more program timers, leave the appropriate space to the left of the remote controller. See the program timer installation manual for installation details.



6 Initial Settings

• Initial settings is necessary before test run. Consult the user's manual for details of initial settings.

7 Test Run

• Test run is performed individually for each group, or for all groups.

Diagram A

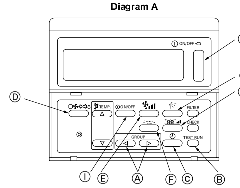
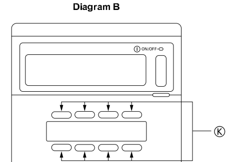


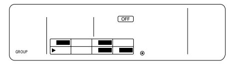
Diagram B



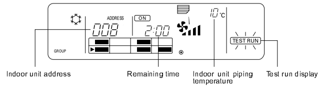
Procedure Switch layout is as shown in Diagram A.

Test Run for Each Group

① **Open the upper panel.**
② **Call out the group for which test run is to be run using the Ⓐ [GROUP] ◁ ▷ switch. Example : Group 5**
Call up Group 5 with the Ⓐ [GROUP] ◁ ▷.



③ **Begin test run.**
• Test run begins when the Ⓑ [TEST RUN] switch is pressed twice in succession.



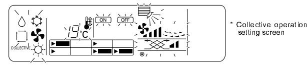
• The address of the indoor unit is displayed on the temperature setup display (3 digits).
• Displays the piping temperature (-99°C~99°C) for the indoor unit corresponding to the address displayed on the room temperature display.
• The address of indoor units registered in that group may be changed with the Ⓒ [External Timer] switch. When test run begins, the lowest address registered in the group is displayed, the address being increased each time the Ⓒ [External Timer] switch is pressed.
• The duration of test run as two hours, and is counted down in one minute intervals, until test run is terminated at 0:00 and test run is halted.
• [TEST RUN] and the group select icon flash during test run.
• Ⓓ [Operation Mode], Ⓔ [Fan Speed Adjustment], Ⓕ [Horizontal Blow], Ⓖ [Air Direction] and Ⓗ [Ventilation Setting] may be used during test run.
• Press the Ⓘ ON/OFF switch to halt test run.
• Test run is disabled during central management with ON/OFF prohibition.

④ **Close the upper panel (setup complete).**
* The screen continues when setting up individual groups. The collective operation monitor screen appears when setting up collectively. Ensure that the upper panel is fully closed.

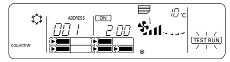
⑤ **Test run complete.**
The test run setup in ③ is completed after two hours and operation is then halted (the test run display is extinguished).
• Operation is halted only for the groups for which test run has been performed.
• Operation is halted for all groups in a batch.
Test run may be halted as follows irrespective of the remaining time (air-conditioning units halted).
• Press the Ⓙ [Collective ON/OFF] switch • Press the Ⓘ ON/OFF switch • Press the Ⓚ [ON/OFF by Group] switch.
Test run is terminated only for the relevant group when the Ⓚ [ON/OFF by Group] switch is pressed.

Test Run for All

① **Open the upper panel.**
② **Call out the collective operation setting screen using the Ⓐ [GROUP] ◁ ▷ switch.**



③ **Begin test run.**
• Test run begins when the Ⓑ [TEST RUN] switch is pressed twice in succession.



• After the Ⓑ [TEST RUN] switch has been pressed twice in succession the [ON] and time remaining display changes from flashing to lit continuously (The overall status lamp lights up). The [TEST RUN] and group select display flash during test run.
• The smallest address of indoor unit of the smallest number group is displayed on the collective operation setting screen (above).
• To check the liquid pipe temperature for the indoor units registered in each group, select the indoor unit for which the liquid pipe temperature is to be checked using the Ⓒ [External Timer] switch.
• [TEST RUN] and all select icons for the registered groups flash during test run.

④ **Close the upper panel (setup complete).**
* The screen continues when setting up individual groups. The collective operation monitor screen appears when setting up collectively. Ensure that the upper panel is fully closed.

⑤ **Test run complete.**
The test run setup in ③ is completed after two hours and operation is then halted (the test run display is extinguished).
• Operation is halted only for the groups for which test run has been performed.
• Operation is halted for all groups in a batch.
Test run may be halted as follows irrespective of the remaining time (air-conditioning units halted).
• Press the Ⓙ [Collective ON/OFF] switch • Press the Ⓘ ON/OFF switch • Press the Ⓚ [ON/OFF by Group] switch.
Test run is terminated only for the relevant group when the Ⓚ [ON/OFF by Group] switch is pressed.

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