

# MITSUBISHI ELECTRIC



Air-Conditioning For Building Application

## Remote Operation Adaptor

PAC-SF40RM-E

### Installation Manual

#### Applications

- \* This adaptor is for packaged air conditioners A control models.
- \* This adaptor cannot be used in combination with wireless remote controller.
- \* This adaptor cannot display leaking water errors on PDH and other such models.

This installation manual contains only the description of how to install the Remote Operation Adaptor PAC-SF40RM-E. 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 Remote Operation Adaptor PAC-SF40RM-E correctly.

## 1 Safety Precautions

- The following two symbols are used to denote dangers that may be caused by incorrect use and their degree:

<b>⚠ WARNING</b>	This symbol denotes what could lead to serious injury or death if your misuse the PAC-SF40RM-E.
<b>⚡ CAUTION</b>	This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAC-SF40RM-E.

- 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-SF40RM-E, 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.

**Ensure that installation work is done correctly following this installation manual.**  
Any deficiency caused by installation may result in an electric shock or fire.

**Install in a place which is strong enough to withstand the weight of the PAC-SF40RM-E.**  
Any lack of strength may cause the PAC-SF40RM-E to fall down, resulting in personal injury.

**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.

**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.

**Do not move and re-install the PAC-SF40RM-E yourself.**  
Any deficiency caused by installation may result in an electric shock or fire.  
Ask your distributor or special vendor for moving and installation.

**Never modify or repair the PAC-SF40RM-E by yourself.**  
Any deficiency caused by your modification or repair may result in an electric shock or fire.  
Consult with your dealer about repairs.

**Do not turn on the main power until installation has been completed.**  
Fail to do so may cause an electric shock or fire.

### ⚡ CAUTION

**Do not install in any place exposed to flammable gas leakage.**  
Flammable gases accumulated around the body of PAC-SF40RM-E may cause an explosion.

**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.

**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.

**Use standard wires in compliance with the current capacity.**  
A failure to this may result in an electric leakage, heating or fire.

**Wire so that it does not receive any tension.**  
Tension may cause wire breakage, 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.

**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 install in any place at a temperature of more than 40°C or less than 0°C or exposed to direct sunlight.**

**Do not wash with water.**  
Doing so may cause an electric shock or a malfunction.

**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.

**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) Parts Provided

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

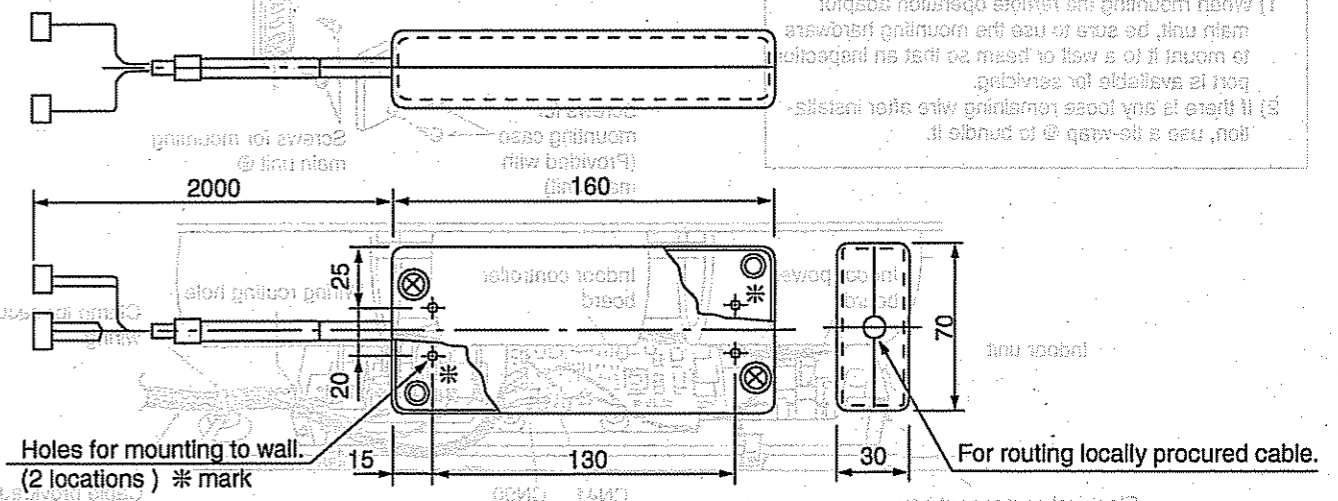
Parts	① Remote operation adaptor unit	② Cord clamp	③ Wall mount bracket
Shape	(with 2 meter wire for connecting with indoor unit) 	(Use this clamp if the local wiring is too thick to be held by the clamp inside the main unit.) 	
Quantity	1	1	1
Parts	④ Screws for mounting	⑤ Cushion material	⑥ Tie-wrap
Shape	 3.5 x 12 (Black)	(With adhesive on both sides.) 	(Use this for bundling lead wires.) 
Quantity	4	1	5
Parts	⑦ Cord clamp	⑧ Screws for mounting	⑨ Screws for mounting main unit
Shape		 3.5 x 12 (Black)	 3.5 x 12 (Black)
Quantity	5	5	2

### (2) Locally Procured Parts

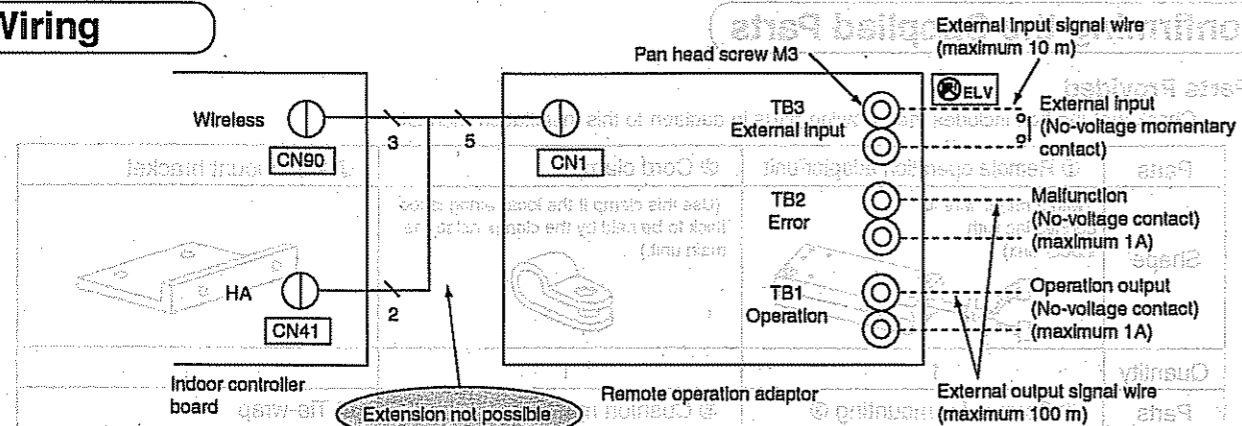
Note : Please keep LVD. LVD:Low Voltage Directive (EC Directive of Europe)  
Apply some countermeasure for wiring and relay not to be touched from outside.  
① Wiring should be covered by the insulation tube. ② Use relay with EU regulation.

Item	Part Name	Model & Specifications
External output function	External signal output wire	Use a vinyl cord with sheath or cable Electric wire type: CV, CVS or equivalent Electric wire size: 0.5 mm <sup>2</sup> to 1.25 mm <sup>2</sup> Single wire: φ0.65 mm to φ1.2 mm
	Display lamp, etc.	No-voltage contact AC 220 to 240 V (DC30V), 1A or less
External input function	External signal input wire	Use a vinyl cord with sheath or cable Electric wire type: CV, CVS or equivalent Electric wire size: 0.5 mm <sup>2</sup> To 1.25 mm <sup>2</sup> (Single wire: φ0.65 mm to φ1.2 mm)
	Switch	No-voltage momentary contact (Operation ⇄ Stop is switched by input of a pulse of 200 ms or more)

## 3 External Dimension Drawing



## 4 Wiring



### ⚠ Caution

- 1) TB3 is a dedicated terminal for contact input. Do not apply voltage. Applying voltage will cause damage to the circuit board inside the for the indoor unit controller.
- 2) Always use the cable provided for connecting the unit to the indoor unit. Never make modifications to extend this cable. Extensions could cause the cable to be affected by external noise which could lead to mis-operation. If an extension is needed, refer to specification chart in "6. Product Specifications" a follow it when extending the external signal wire.

### <Connecting to the indoor unit>

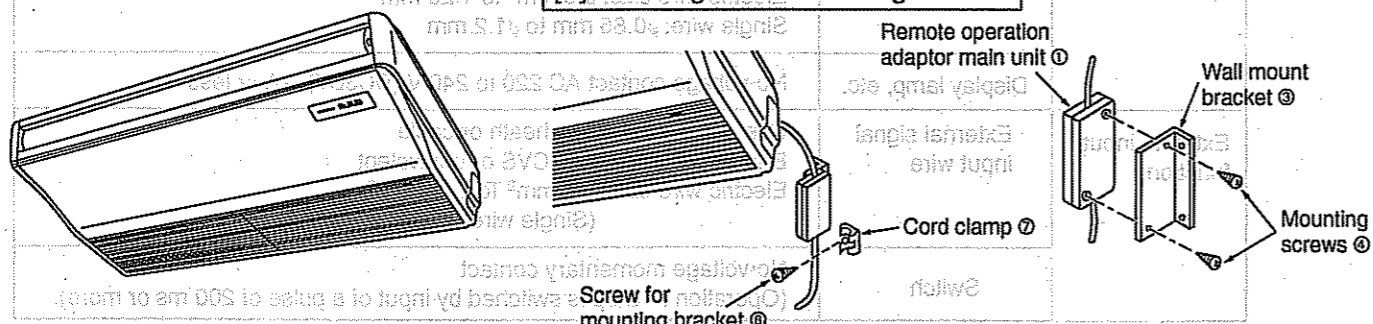
- ① If external output functions are used ..... Insert the 9-electrode (3 core) side of the cable provided into CN90 on the controller circuit board for the indoor unit.
  - ② If external input functions are used ..... Insert the 4-electrode (2 core) side of the cable provided into CN41 on the controller circuit board for the indoor unit.
- ※ The connector can only be inserted in one direction. Be sure to check that the connector is in the proper direction before inserting. Forcing the connector will cause damage.

## 5 How to Install

There are three ways to mount the remote operation adaptor main unit: [A] Using mounting bracket, [B] Mounting directly, and [C] Using the cushion material.

### (1) Installation Example (Suspended Type)

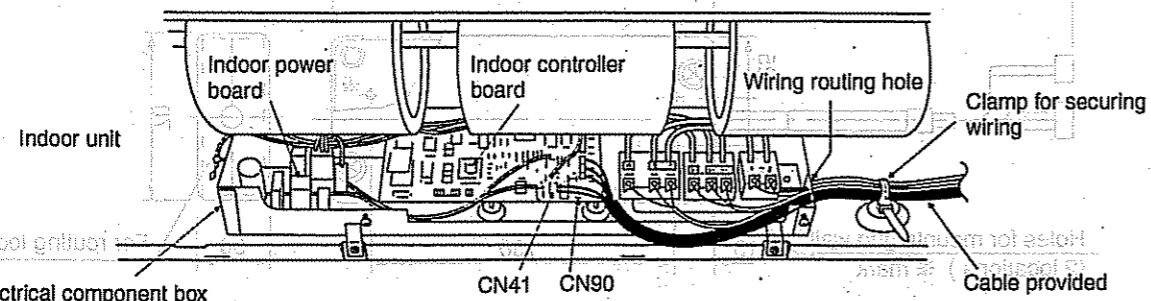
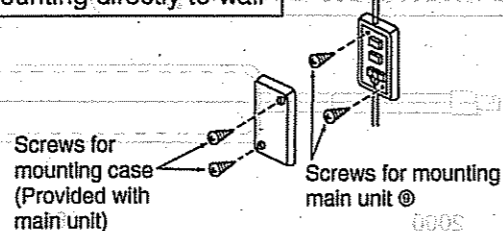
#### [A] Mounting to wall mounting bracket



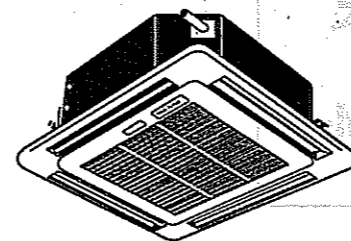
### ⚠ Caution

- 1) When mounting the remote operation adaptor main unit, be sure to use the mounting hardware to mount it to a wall or beam so that an inspection port is available for servicing.
- 2) If there is any loose remaining wire after installation, use a tie-wrap to bundle it.

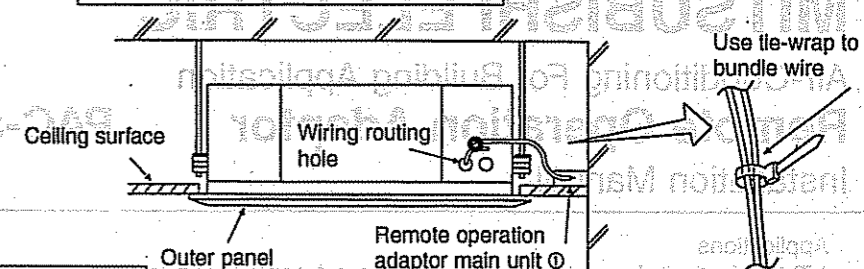
#### [B] Mounting directly to wall



### (2) Installation Example 2 [Cassette Type]



#### [A] If recess-mounted into ceiling

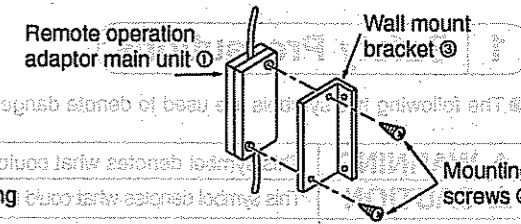
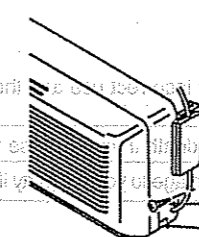
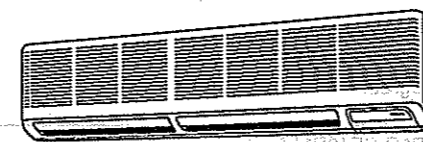


### ⚠ Caution

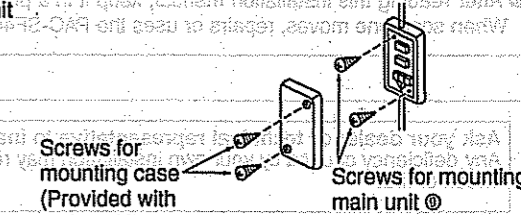
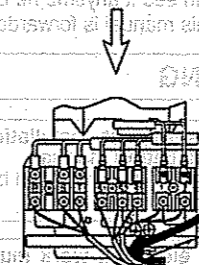
- 1) When mounting the remote operation adaptor main unit, be sure to use the mounting hardware to mount it to a wall or beam so that an inspection port is available for servicing.
- 2) If there is any loose remaining wire after installation, use a tie-wrap to bundle it.

### (3) Installation Example 3 [Wall-mounted Type]

#### [A] Mounting to wall mounting bracket



#### [B] Mounting directly to wall



#### [C] Mounting using cushion material



## 6 Product Specifications

### Specification Chart

Item	Specifications
Power Supply	Receives power package air conditioner indoor unit.
Outer Dimensions (Length x Depth x Height)	160 x 70 x 30 (mm)
Operating Environment	0 to 40 °C 35 to 85% RH (Store at 30 to 90% RH) Indoor use only.
Signal Wire	0.5 mm <sup>2</sup> to 1.25 mm <sup>2</sup> (Single wire: φ 0.65 mm to φ 1.2 mm)
Signal Wire Length	External output: max 100 m External input: max 10 m (Use a transit relay for lengths exceeding 10 meters.)
Indoor Unit Connecting Wire	5 strand (3 core + 2 core)
Weight	200 g

### Input Specifications

Item	Description
Input Points	1 point
Input Signal	Pulse (No voltage contact point)
Pulse Specifications	Close 200 ms or more Open

### Output Specifications

Item	Description
Output Points	2 points
Output Method	Relay contact type
Output Contact Specification	Voltage: DC30V - AC 220 to 240 V Maximum Amperage 1A
Output Contact Minimum Load	10 mA