MULTI Air Conditioner

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Technical Information

Mitsubishi Electric Co.
AC & R System Works

Title: Handling the return air temperature sensor (TH1) according to the return duct structure

1. Symptom

When a bend in the return duct is very close to the unit connected to the duct, actual return air temperature is different from the return air temperature detected by the sensor on the unit (TH1).

2. Reason

Since a bend in the return duct causes an uneven airflow distribution, the temperature difference occurs between actual return air temperature and the return air temperature detected by the sensor when the return air temperature is measured at a single point.

When the unit has a straight return duct or no return duct, there is no temperature difference between actual return air temperature and the return air temperature detected by the sensor.

3. Remedy

If there is a problem with room temperature control, apply the following remedies.

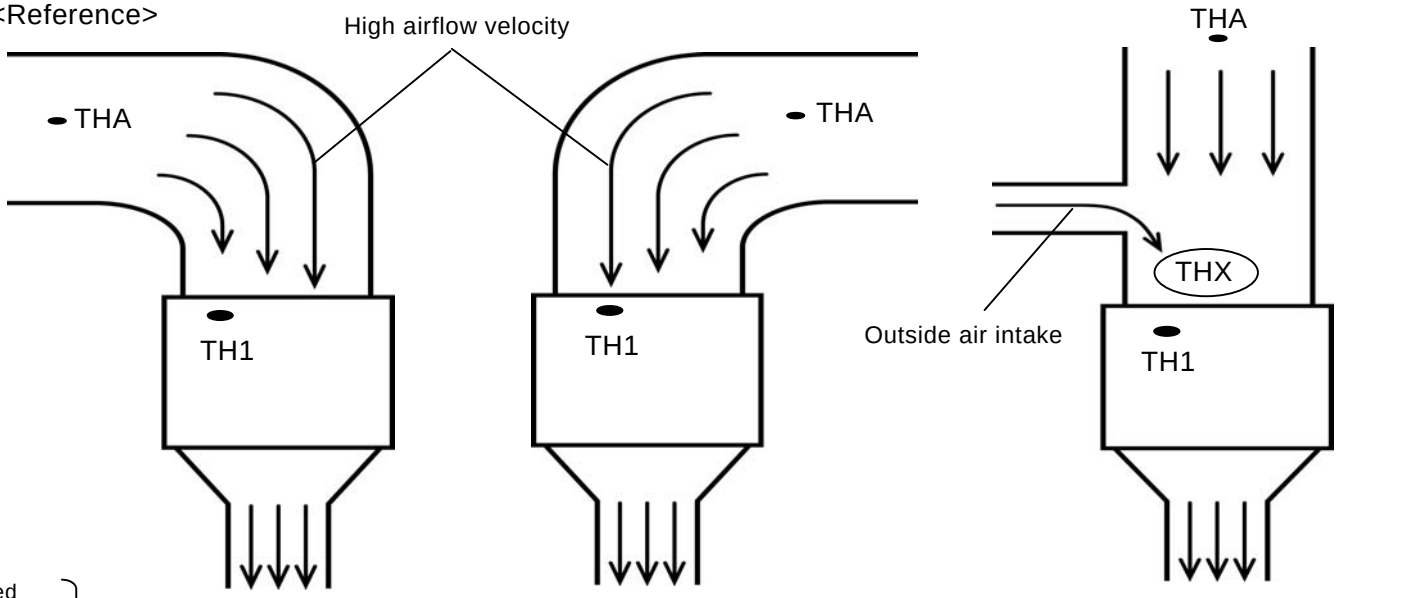
1) When using a remote controller with a temperature sensor, AND installing the controller in a location where an average room temperature can be detected,
Use the sensor on the remote controller to control the room temperature.

2) Other than section 1) above
Use a Remote Sensor (sold separately) (PAC-SE41TS-E). (Refer to the attached document.)
1. Install this sensor inside the room.
2. Install this sensor in a location where an actual return air temperature can be detected inside the duct.

4. Additional notes

When using a standard unit that takes in outside air through a return duct, apply the remedies shown in section 3.

<Reference>



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MITSUBISHI ELECTRIC CE

Air-Conditioners For Building Application

Remote Sensor PAC-SE41TS-E

Installation Manual

For your safety, first be sure to read "1 Safety Precautions" described below thoroughly and then install the Remote Sensor PAC-SE41TS-E 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 your misuse the PAC-SE41TS-E.
⚠ CAUTION	This symbol denotes what could lead to a personal injury or damage to your property if you misuse the PAC-SE41TS-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-SE41TS-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.

Install in a place which is strong enough to withstand the weight of the PAC-SE41TS-E.
Any lack of strength may cause the PAC-SE41TS-E 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-SE41TS-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.

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-SE41TS-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.

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-SE41TS-E 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 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 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 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 install in any place at a temperature of more than 40℃ or less than 0℃ or exposed to direct sunlight.

2 Confirming the Supplied Parts

Confirm that following parts are enclosed in the box in addition to this Installation Manual.

(1)Remote sensor unit ·····1
(2)2-core cable (12m) ·····1
(3)Wood screw 4.1X16 ·····2
(4)Post for connection ·····1
(5)Convert cable ·····2

3 How to Install

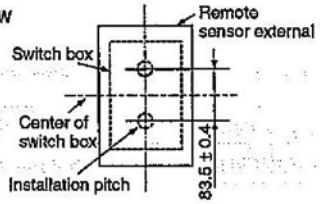
(1)Determine the installation of the remote sensor (switch box). The follwing items must be observed.

①Select a place where the remote sensor will detect an average temperature of the room, and where the sensor will not be subject to direct sunlight, heat sources, or the blow-off from the air conditioner, etc.

②Install the sensor within the length of the cable provided (12m). (The cable cannot be extented. If extented, it may cause misoperation due to noise.)

③The following parts must be procured at the site.

- •Cross-recessed pan head screw M4 .... Tow screws
- •Single switch box
- •Thin steel conduit
- •Lock nut, bushing



(2)Connect the wires.

•Connect the 2-core cable to the terminal block in the lower case. Peel the sheath of the 2-core cable as shown in Fig.1 , and correctly wire it as shown in Fig.2.

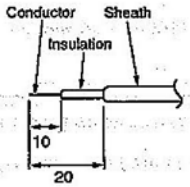


Fig.1

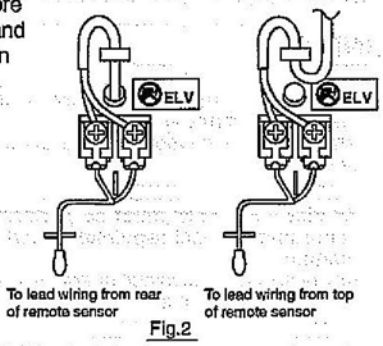


Fig.2

•The wiring connection of the indoor unit's electrical box and remote sensor is an shown in Fig.3. There are three methods of connecting the 2-core cable to the electrical box.

Exchange 2-core cable (connector 20)

①When using the connector attached to the end of the 2-core cable as it is.

②When cutting the connector attached to the end of the 2-core cable and connecting the cable to the terminal block in the I.B. (Indoor Board).

③When using the enclosed post for connection and convert cable.

The above three methods are used according to the indoor unit being used. If the 2-core cable is to be embedded in the wall, follow Fig.4.

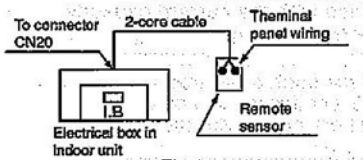


Fig.3

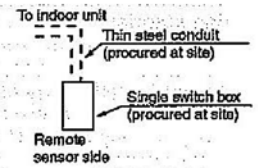
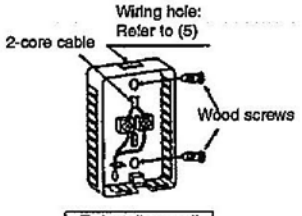


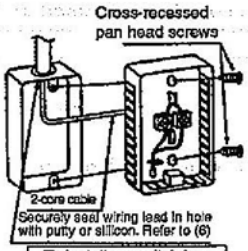
Fig.4

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

NOTE The recommended tightening torque for installing the 2-core cable to the terminal block is 1.17N·m.



To install on wall



To install on switch box

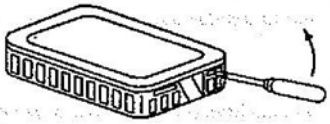
⚠CAUTION •If the screws are tightened too hard, the case may break or deform.
•Install the sensor on a flat wall. If installed on a bumpy wall, the case may break or trouble may occur.

(4)Fit the upper case.

Catch the two upper claws first, and fit the case as shown on the left.

⚠CAUTION •Securely fit the case until a catching sound is heard. It may drop off if is not fitted securely.

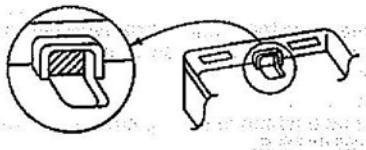
To remove the case, fit a flat-flap screwdriver into the claw section as shown below, and move the screwdriver in the direction of the arrow.



⚠CAUTION •Do not turn the screwdriver when it is fit into the claw section as the claws may be broken.

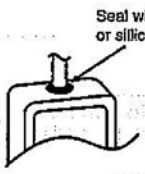
(5)Wiring hole for direction installation on wall, etc.

Cut the thin section (shaded section) of the lower case with a knife or pair of nippers, etc. The 2-core cable connected to the terminal block is led out from here.

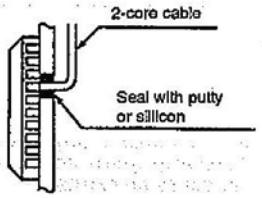


(6)Securely seal the wiring lead hole with putty or silicon to prevent dew, water drops, cockroaches and other insects from entering.

- •When installing directly on the wall, seal the section cut on the lower case with putty or silicon.
  If the wiring is to be passed through a hole in the wall (when leading the wiring from the rear of the remote sensor), seal the hole in the same manner.
- •When installing on a switch box, seal the connection of the switch box and conduit with putty or silicon.

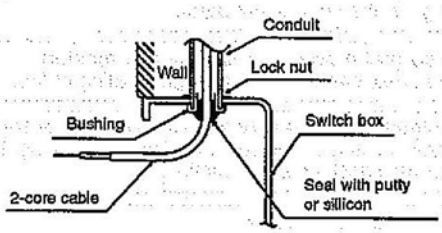


To lead wiring from top of remote sensor.



To lead wiring from rear of remote sensor.

To install directly on wall



To use switch box

4 Setting of the indoor unit

When the remote sensor is connected to the indoor unit and room temepature detection poisition is changed, reset the setting of "Set temp. 4-deg. up" in the heating mode as shown below.

① K control models : DIP switch Nos 1-6 on the control PCB of the indoor unit.
② M-NET control models : DIP switch Nos 3-8 on the control PCB of the indoor unit.
③ A control models : Refer to A-control air-conditioners SERVICE TECHNICAL GUIDE.