AHU KIT
MCM-D201N

Air Conditioner
installation manual

imagine the possibilities

Thank you for purchasing this Samsung product.

SAMSUNG

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Safety Information

When installing the product, the following safety precautions must be taken for the safety of an installer and user.

Use R-410A refrigerant.

- ▶ When using R-410A, the inflow of moisture or foreign substances may greatly affect the capacity and reliability of the product. Safety precautions must be taken when installing the refrigerant pipe.
- ▶ When charging mixed refrigerant, you should use liquid refrigerant (If you charge gaseous refrigerant, it may affect the capacity and reliability of the product as a result of change in formation of the refrigerant.)

ENGLISH

FOR INSTALLATION

⚠ WARNING

Disconnect all the power supplies before installation, service, and cleaning.

The installation must be done by the manufacturer or a qualified person.

- ▶ Installation by an unqualified person may result in a water leakage, electric shock or fire.

Install the unit correctly according to the installation manual.

- ▶ An incorrect installation may result in a water leakage, electric shock or fire.

Manufacturer of AHU KIT is not responsible for accidents due to incorrect installation by an unqualified person. Also, you should use only supplied or designated parts and tools for installation.

- ▶ If you don't use the designated parts and tools, product fall, water leakage, electric shock, or fire may occur.

When adding refrigerant, use the R-410A refrigerant only.

- ▶ Using other types of refrigerant may result in product malfunction, explosion etc.

Do not use the pipe for R-22 refrigerant or flare parts.

When there is refrigerant leakage during installation, you must ventilate the area.

- ▶ Toxic gas may be generated when refrigerant gas contacts with fire.

If the power cable or cord is damaged, it should be replaced by manufacturer or qualified person. The electric work must be done by a certified person according to code and standard about electric installation, regulation for indoor wiring and installation manual. In addition, the electric work must be in compliance with rated electric specification.

- ▶ Voltage drop, shortage of supply voltage, incorrect power supply work and use of uncertified cables may result in electric shock or fire.

Arrange the cables between the AHU-KIT and outdoor unit so that the cover of electric part does not rise and then fix the cover of the electric box to the product firmly.

- ▶ If the cover is attached incompletely, a heat generation, electric shock or fire of the terminal may occur.

The Power supply to the kit should be through dedicated MCCB/ELB or ELCB.

- ▶ If dedicated MCCB/ELB or ELCB is not provided, electric shock or fire may occur because of overcurrent or leakage current.

Install the supplied cables firmly. Fix them securely so that external force is not applied to the terminal.

- ▶ If the connection or fixing is incomplete, heat generation, spark and fire may occur.

Make sure that the power for AHU-KIT is under maximum, and over minimum voltage.

- ▶ Failure to do so may result in product malfunction due to electrical component damage and functional degradation of a part.

Use rated copper wire for the power cable.

Make sure electric wiring is correctly connected.

- ▶ Failure to do so may result in fire with overheating.

Make sure there is no leakage of refrigerant gas after finishing installation.

- ▶ When leakage of refrigerant gas contacts with fire, toxic gas may be generated.

Safety Information

FOR INSTALLATION

⚠ CAUTION

Proper earthing should be done as per the rating.

- ▶ Do not connect the ground wire to the gas pipe, water pipe, lightning rod or a ground wire of a telephone.
- ▶ If the grounding is incomplete, electric shock may occur.

Follow the instructions in this manual to make sure that the condensed water dripping from the drain hose runs out properly and insulate the drain pipe so that dew condensation is not generated.

- ▶ If the drain work is incomplete, property damage may occur due to water leakage.

Install the power cable and communication cable of the AHU-KIT at least 1 m away from other electric appliances and 2 m away from lightning conductor.

- ▶ However, even 1 m away from an electric appliance, noise may be heard depending on radio wave condition.

Do not install the AHU-KIT in following places.

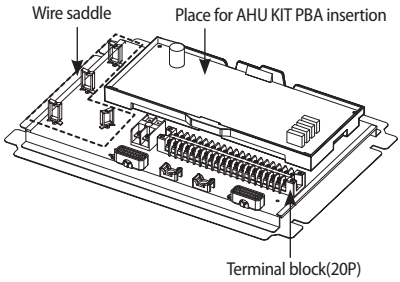
- ▶ **The place where much mineral oil, arsenic acid or steam exist.**
  The resin parts may be burned, which can result in falling part or water leakage.
- ▶ **The place where corrosive gas such as sulfurous acid gas from an exhaust pipe or air outlet can be generated.**
  The copper pipe or connection part may corrode, which may result in refrigerant leakage.
- ▶ **The place where there is a machine that generates electromagnetic waves.**
  The control system may have a problem which can result in abnormal operation.
- ▶ **The place where inflammable gas can leak, carbon fiber or inflammable dust floats, or volatile flammables are handled.**
  If the gas leaks and stays around the main valve of the product, fire may occur.
- ▶ **The place where indoor unit corrosion may occur such as seashore or spa.**
- ▶ **The place where external environment such as sunlight, rain, temperature, humidity, dust can directly affect the product.**

❋ **The manufacturer is not responsible for the damage occurred by not keeping standard of the installation. (The cost of the service will be charged.)**

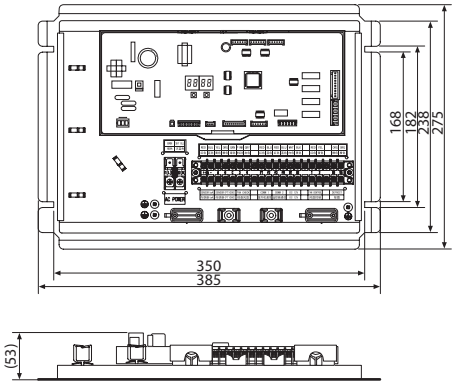
Name of each part and product dimension

Name of each part and product dimension

ASS'Y Control(Control part)



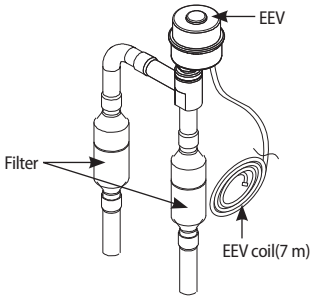
(Unit : mm)



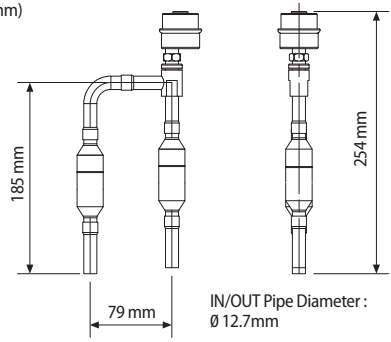
ASS'Y EEV(Electronic Expansion Valve): Accessory (Ordered separately)

For detailed information of EEV installation, refer to the installation manual of ASS'Y EEV (MXD-A64K100E) which you need to purchase additionally.

MXD-A64K100E



(Unit : mm)



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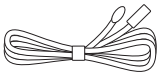
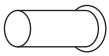
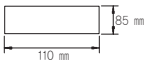
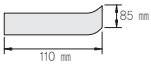
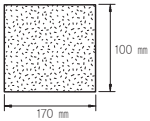
Parts

Accessories (supplied)

Name	Pipe inlet/outlet sensor(7 m)	Inlet sensor holder (OD Ø6.8 mm)	Outlet sensor holder (OD Ø7.8 mm)	Sensor fixing spring
Quantity	1	1	1	2
Shape				

Name	Aluminum tape	Rubber tape	Insulator	Cable tie
Quantity	4	2	2	8
Shape				

Additional accessory (not included)

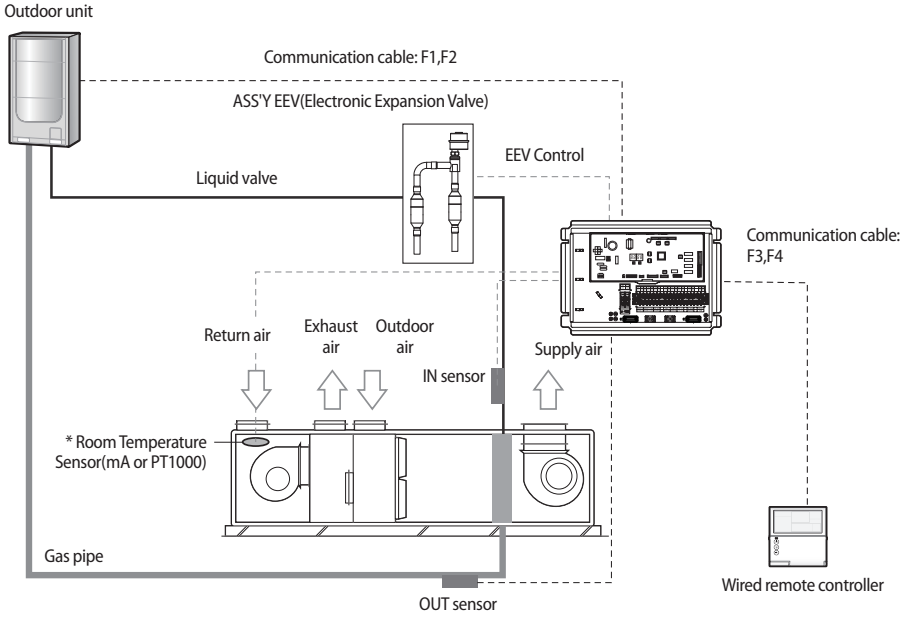
*Wired remote controller (MWR-WE10✳N)
1

❋ You need to purchase the wired remote controller additionally.

❋ Room temperature sensor is not provided. It should be provided additionally on the field.

Checking before using an AHU KIT

Structure diagram of an AHU-KIT



* Room temperature sensor is not provided. It should be provided additionally on the field.

Installing an AHU KIT

Installing ASS'Y Control

1. **Check the installation location of ASS'Y Control.**

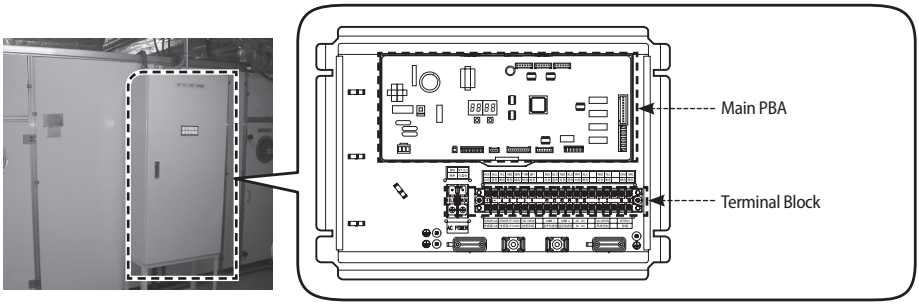
► You can choose either AHU attachment type or AHU separation type depending on the installation environment.

2. **Check the length of connection cable of ASS'Y Control.**

► The length of provided connection cable is 7 m.

3. **Make sure the location has waterproof and fire prevention structure.**

► Make sure that the ASS'Y Control is not exposed to sunlight by covering with a case which has waterproof and fire prevention structure.



Functions of ASS'Y Control

► When using the ASS'Y Control alone, you can use EEV of 10~40 HP Capacity.

► ASS'Y Control adjusts rate of flow for EEV refrigerant and performs control functions through communication with an indoor unit or wired remote controller.

► The contact signal for AHU fan operation is sent from ASS'Y Control. When AHU is in Cool/Heat/Fan mode, terminal block No.1 and No.2 will output contact signal to turn the fan on. At this time, the output is contact signal and not be used for power supply of motor. (Refer to p.12~13)

► The terminal block No.3 and No.4 will receive the signal for fan operation status and the signal is the input signal which AHU KIT control part receives. At this time, the input signal sholud be input as only OPEN/SHORT signal not the signal that has separate voltage level. (Refer to p.10)

- When the fan operates normally: The terminal block No.3 and No.4 are SHORT status.
- When the fan does not operate: The terminal block No.3 and No.4 are OPEN status.
- Set SEG 21 of installation option 05 series to '1(Use)' to use fan feedback for system protection. (Refer to p. 26)

► The terminal block Vd/Vd is output defrost signal. (There exist some time delay.)

- When installing a defrost bypass valve, set SEG22 of 05 series installation option as "1".

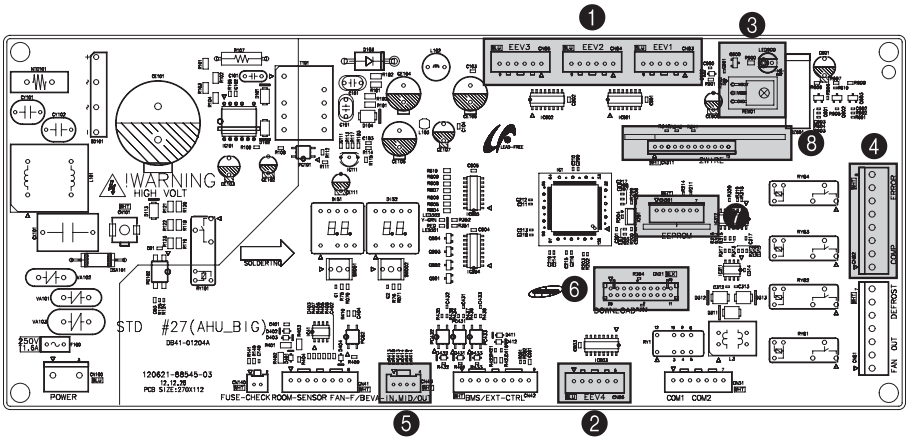
► Connect 220~240 V to the terminal block 1(L)/2(N).

► The terminal block of communication cable (F1, F2) is connected with communication of Outdoor Unit. When installing additional AHU KIT, the communication (F1, F2) should be connected with the communication (F1,F2) of AHU KIT which is additionally installed. (Refer to p.12~13)

► The communication cable(F3, F4) is the communication group of wired remote controller. (Refer to p.12~13)

► When installing 10 HP of ASS'Y Control, you shouldn't perform additional control of ASS'Y Control.

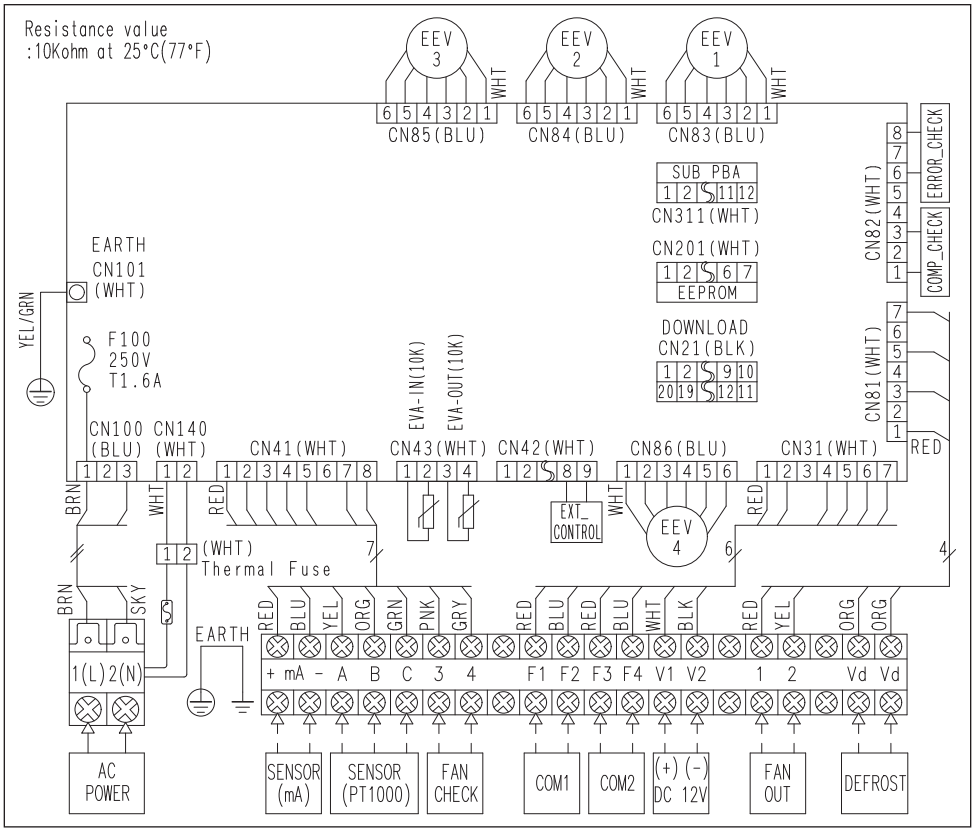
- ▶ For HP setting, refer to SEG20 of 05 series in installation option section. (Refer to p.26)
- ▶ Connect room temperature sensor and discharge temperature sensor(optional) as mA or PT1000Ω type.
  - When using the mA type sensor, connect to the terminal block +/-(mA).
  - When using the PT1000Ω sensor, connect to the terminal block A/B/C .
  - Set the types of room temperature sensor and discharge temperature sensor in SEG24 of 05 series installation option. The types of the sensors must be same.



No.	CONNECTOR	FUNCTION	NOTE
1	CN83/84/85	EEV	EEV 1/2/3
2	CN86	EEV	EEV 4
3	REM01	REMOCON RECEIVER	OPTION INPUT
4	CN82	EXTERNAL CHECK	1/3 PIN : COMP CHECK OUT
			6/8 PIN : ERROR CHECK OUT
5	CN43	SENSOR	1/2 PIN : EVA IN
			3/4 PIN : EVA OUT
6	CN21	DOWNLOAD	S/W UPGRADE
7	CN201	EEPROM PBA	
8	CN311	2WIRE SUB PBA	

Installing an AHU KIT

Wiring diagram for ASS'Y Control



✻ AHU KIT sensor displays about 10 KΩ of resistance value at room temperature.

Working on power supply

Connecting power/communication cable

- ▶ Turn the power off before working on the power supply.
- ▶ Maximum cable length and the amount of voltage drop for AHU KIT power/communication cables should be within 10 %.
- ▶ When installing the MCCB/ELB or ELCB, consider Power Rating of the AHU motor for correct capacity.
- ▶ Connect F3, F4 of AHU KIT terminal to Wired Remote Control.
- ▶ Use the appropriate tools for wiring and make sure the wiring is connected tightly within the tightening torque to withstand the external pressure. Arrange the wires so that cover or other parts does not get loose. Otherwise, it may cause overheating, electric shock or fire.

Tightening torque (kgf•cm)	
M4	12.0~14.7

- ▶ To protect the product from external shock or water, put the power and communication cable into a power cable protection box.
- ▶ Connect the power cable through MCCB/ELB or ELCB.
- ▶ Maintain more than 50 mm distance between the power cable and communication cable.

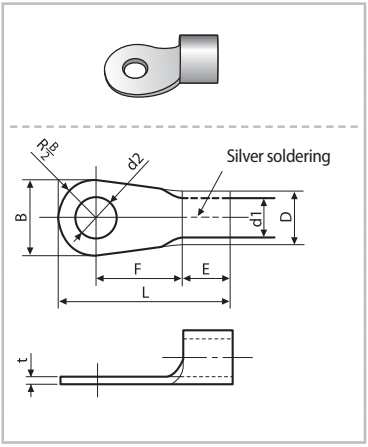
CAUTION

- The circuit diagram for wiring represents only an outline so the detailed information about actual installation work is not described.
- In principle, AHU KIT power supply should be provided separately from an outdoor unit.
- Do not distribute the communication cable as communication error may occur.
- Do not distribute the power cable of terminal block for 2 AHU KITs from 1 AHU KIT.
- When peeling the sheath of power cable, use the appropriate tools to prevent damage inside the wire.
- Make sure that more than 20 mm of power and communication cable of AHU KIT is inside the electric parts.
- Communication cable should be installed separately from power cable or other communication cables.

Selecting a solderless terminal

1. **Select a solderless terminal on the basis of nominal sectional area for a connecting power cable.**
2. **Insulate the solderless terminal and connection part of the connecting power cable with sheath.**

Nominal sectional area for cables (mm^2)		1.5		2.5		4
Nominal diameter for screws (mm)		4	4	4	4	4
B	Standard dimension (mm)	6.6	8	6.6	8.5	9.5
	Allowance (mm)	±0.2		±0.2		±0.2
D	Standard dimension (mm)	3.4		4.2		5.6
	Allowance (mm)	+0.3 -0.2		+0.3 -0.2		+0.3 -0.2
d1	Standard dimension (mm)	1.7		2.3		3.4
	Allowance (mm)	±0.2		±0.2		±0.2
E	Min.	4.1		6		6
F	Min.	6		6		5
L	Max.	16		17.5		20
d2	Standard dimension (mm)	4.3		4.3		4.3
	Allowance (mm)	+0.2 0		+0.2 0		+0.2 0
t	Min.	0.7		0.8		0.9



ENGLISH

Installing an AHU KIT

Specification of electronic wire

Power supply	MCCB	ELB	Power cable	Earth cable	Communication cable
Max : 242V Min : 198V	XA	XA, 30 mmA 0.1 s	2.5 mm²	2.5 mm²	0.75~1.5 mm²

▶ Decide the capacity of ELB and MCCB by below formula.

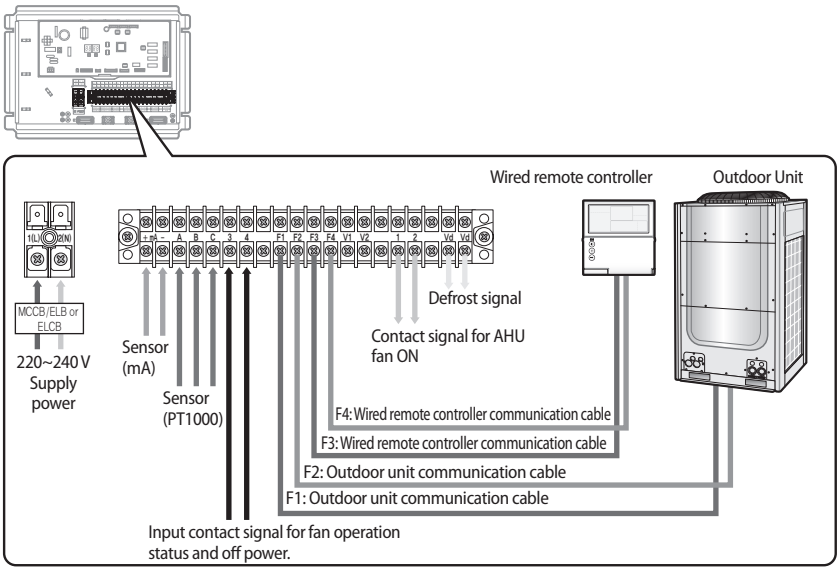
The capacity of ELB, MCCB X [A] = 1.25 X 1.1 X ∑Ai

❋ X : The capacity of ELB, MCCB
❋ ∑Ai : Sum of Rating currents of each indoor unit.
❋ Refer to each installation manual about the rating current of indoor unit.
❋ Rating current

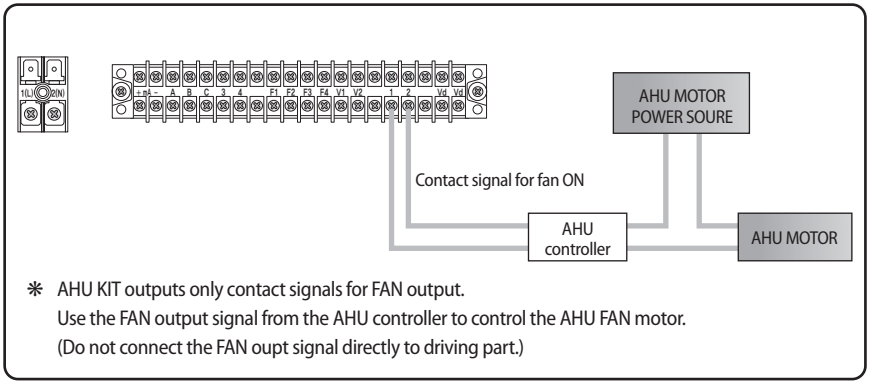
Unit	Model	Rating current
AHU KIT	MCM-D201N	0.5A

Connection diagram of ASS'Y Control

Installation example 1) Connection diagram of 1 outdoor unit + 1 AHU

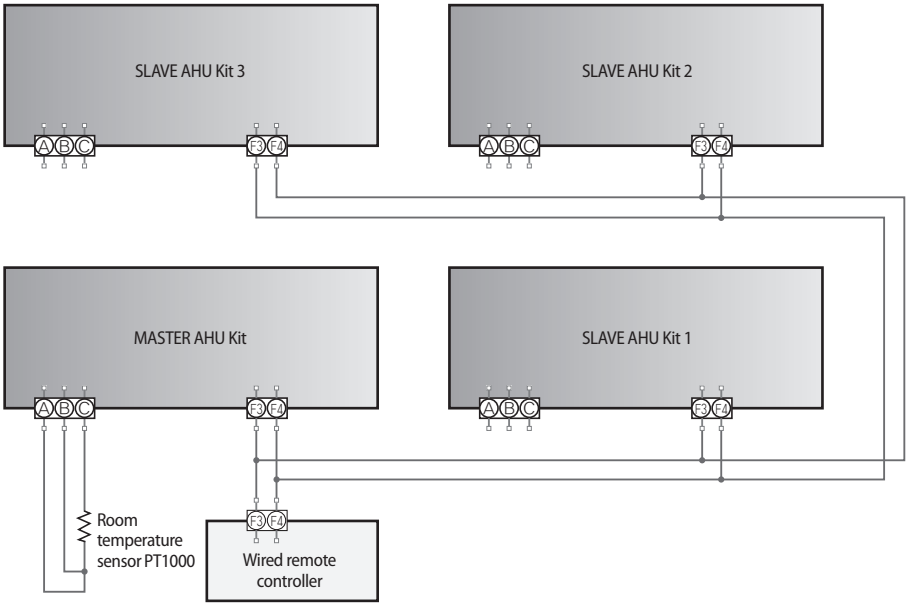


Installation example 2) AHU KIT + contact signal for AHU fan ON



✳ AHU KIT outputs only contact signals for FAN output.
Use the FAN output signal from the AHU controller to control the AHU FAN motor.
(Do not connect the FAN oupt signal directly to driving part.)

Installation example 3) Setting a room temperature sensor for installing multiple AHU KITs



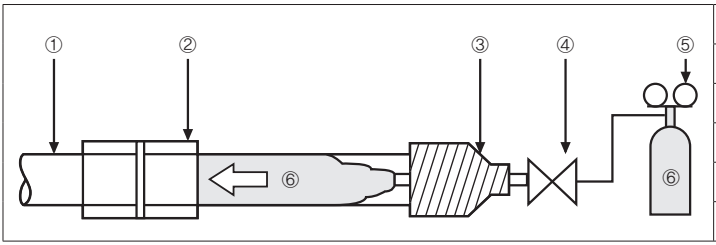
CAUTION

- For common AHU with multiple AHU KITS, sharing with 1 room temperature sensor is possible. The room temperature sensor sharing uses the communication of wired remote controller, so Wired remote controller should be installed. mA temperature sensor is the same as well. (Refer to SEG 24 of installation option 05 series on page 26.)
- If one room temperature sensor is used for multiple AHU kits, MCM-D201N should only be used.

ENGLISH

Installing an AHU KIT

Welding with nitrogen blowing

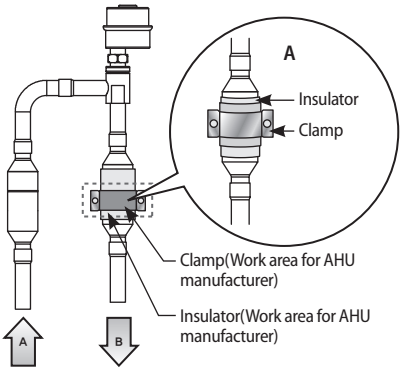


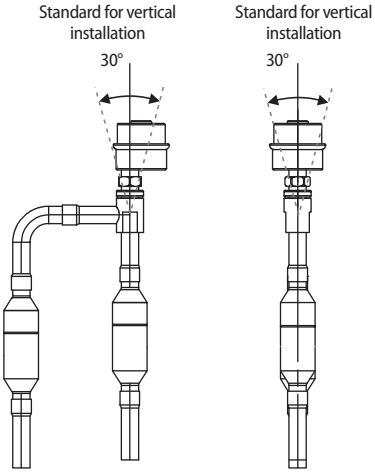
①	Refrigerant pipe
②	Location for welding
③	Tape
④	Hands valve
⑤	Reducing valve
⑥	Nitrogen gas

1. **When welding a pipe, perform nitrozen blowing work.**
   - If you didn't blow the nitrogen for pipe welding, many oxides would be accumulated inside the pipe, which may cause the valve of refrigerant system and compressor to operate abnormally.
2. **When inputting the nitrogen gas, the rate of flow for nitrogen gas should be less than 0.02 MPa using the reducing valve. (You should be able to feel the degree on your skin.)**

Installing ASS'Y EEV(Not provided)

1. **Check that ASS'Y EEV is installed inside the AHU.**
   - Since dew condensation may occur around the ASS'Y EEV pipe, install the ASS'Y EEV at a place where condensate water can be drained.
2. **Check whether IN and OUT pipe connection is correct.**
3. **Essential to check the ASS'Y EEV main body is installed vertically.**
   - ASS'Y EEV main body should be installed within the range of +/- 15˚ of standard for vertical installation. Otherwise, the reliability of ASS'Y EEV cannot be guranteed.
4. **Fix the EEV to AHU fixing groove firmly as shown in the image A below.**





A: High pressure pipe from outdoor unit(IN)
- Diameter : Ø12.7 mm

B: Low pressure pipe to AHU heat exchanger(OUT)
- Diameter : Ø12.7 mm

5. **For checking EEV service, please attach a label sticker.**

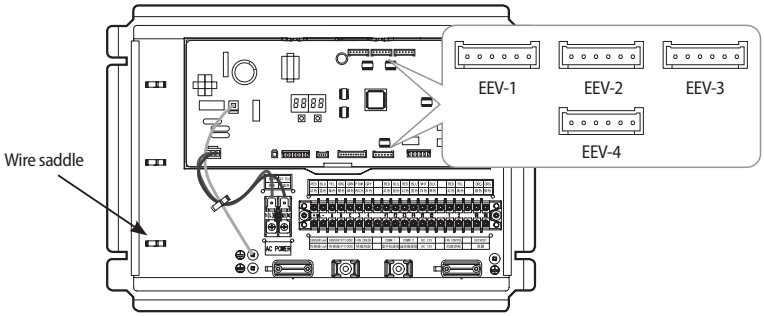
▶ Attach one label to upper middle part of ASS'Y EEV valve body and attach the same color of a lable sticker to valve wire housing.

6. **Connect the EEV termial block to exact places on PCB according to set HP.**

▶ When the set HP of AHU KIT is set as 40 HP: Connect EEV-1, EEV-2, EEV-3 and EEV-4

▶ When the set HP of AHU KIT is set as 30 HP: Connect EEV-1, EEV-2, and EEV-3.

▶ When the set HP of AHU KIT is set as 20 HP: Connect EEV-1 and EEV-2



✻ EEV connector connection should be fixed to the wire saddle as shown in the image.

CAUTION

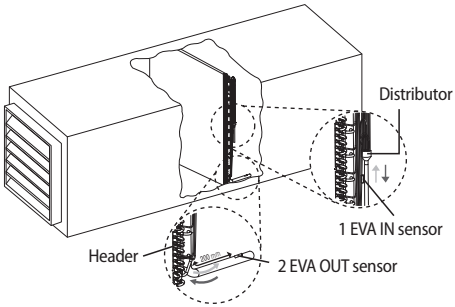
- New AHU KIT (ACM-D201N) has a different way to set the number of the indoor unit installation from the previous AHU KIT (ACM-D201) and an outdoor unit.
- Be careful when setting the number of the indoor unit installation with an outdoor unit.
- When setting AHU KIT HP, refer to the SEG 20 of Installation option 05 series on page 26.
- Regardless of the AHU KIT HP setting, one indoor unit will be recognized.

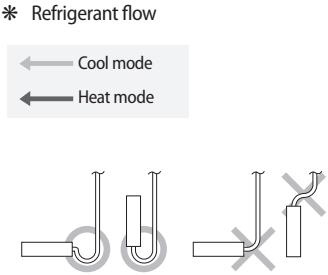
Installing an AHU KIT

Installing IN/OUT sensor

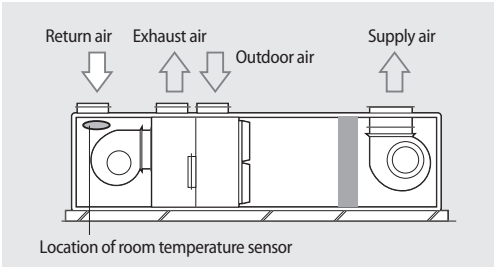
1. **Attach the EVA IN sensor after the distributor and on the lowest temperature pipe of a heat exchanger.**
2. **Install the EVA OUT sensor 200 mm after the header of AHU heat exchanger as shown in the picture.**
3. **Insulate the EVA IN and OUT sensor so that it is not affected by wind.**
4. **Install the ROOM temperature sensor on the RA(Return Air) path of AHU.**

Selecting the location of EVA_IN/OUT sensor





Example of ROOM temperature sensor installation



NOTE

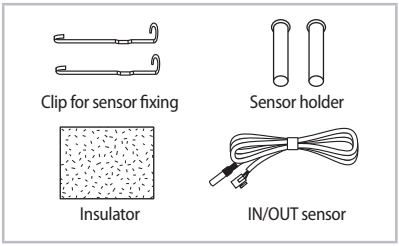
- In principle, the sensor holder of EVA IN/OUT sensor should be welded at the designated place and then the EVA IN/OUT sensor should be fixed with a clip.
- EVA IN/OUT sensor should be installed at the place where temperature of the heat exchanger air inlet or outlet can be measured accurately.

Example of IN/OUT sensor installation 1

1. **Chcek the sensor and sensor holder you will attach.**

NOTE

Type	Diameter of a sensor (mm)	Diameter of a sensor holder (mm)
IN sensor(Blue)	ø 6	ø 6.8
OUT sensor(Red)	ø 7	ø 7.8

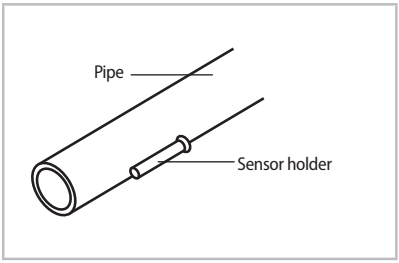


2. **Attach the sensor holder to the selected location of a pipe.**

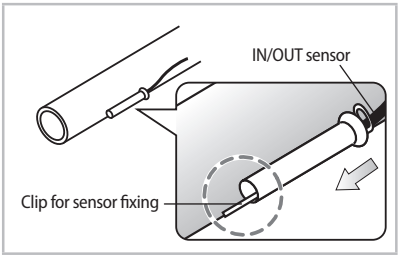
NOTE

Attaching a sensor

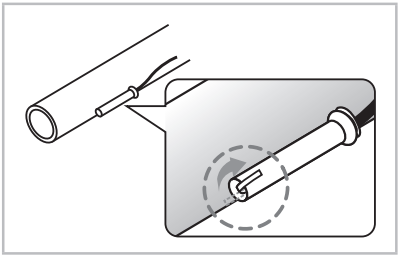
- Attach the sensor at the place where temperature detection is easily available. (Refer to p.16)
- Attach the sensor holder as closely as possible on the surface of the pipe.
- Check whether the sensor you will attach is IN or OUT sensor. (The size of IN/OUT sensor is different.)



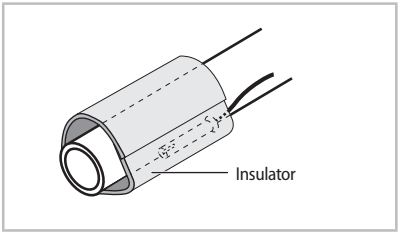
3. **Insert the sensor and the clip into the sensor holder.**



4. **Bend the clip to fix it.**



5. **Attach the insulator around the attached sensor.**



ENGLISH

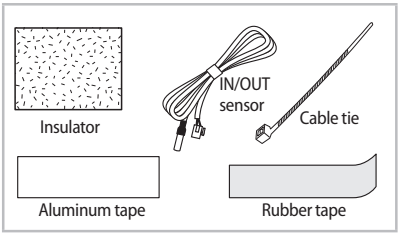
Installing an AHU KIT

Example of IN/OUT sensor installation 2

1. **Chcek the sensor and sensor holder you will attach.**

NOTE

Type	Diameter of a sensor (mm)	Diameter of a sensor holder (mm)
IN sensor(Blue)	ø 6	ø 6.8
OUT sensor(Red)	ø 7	ø 7.8

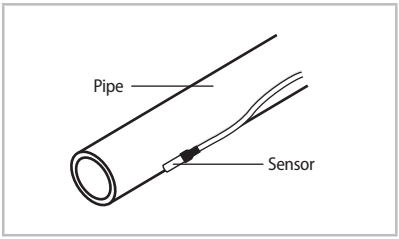


2. **Attach the sensor closely to the pipe.**

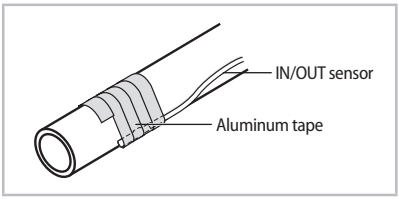
NOTE

Attaching a sensor

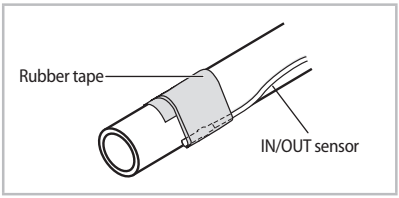
- Attach the sensor at the place where temperature detection is easily available. (Refer to p.16)
- Attach the sensor as closely as possible on the surface of the pipe.
- Do not use a sensor holder.



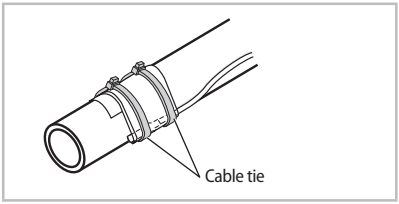
3. **After attaching the sensor on the pipe, cover it with aluminum tape.**



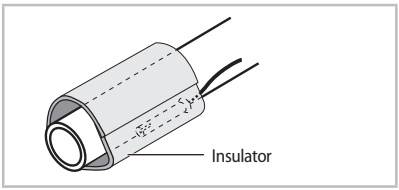
4. **Cover the sensor with rubber tape.**



5. **Fix the sensor with cable ties.**



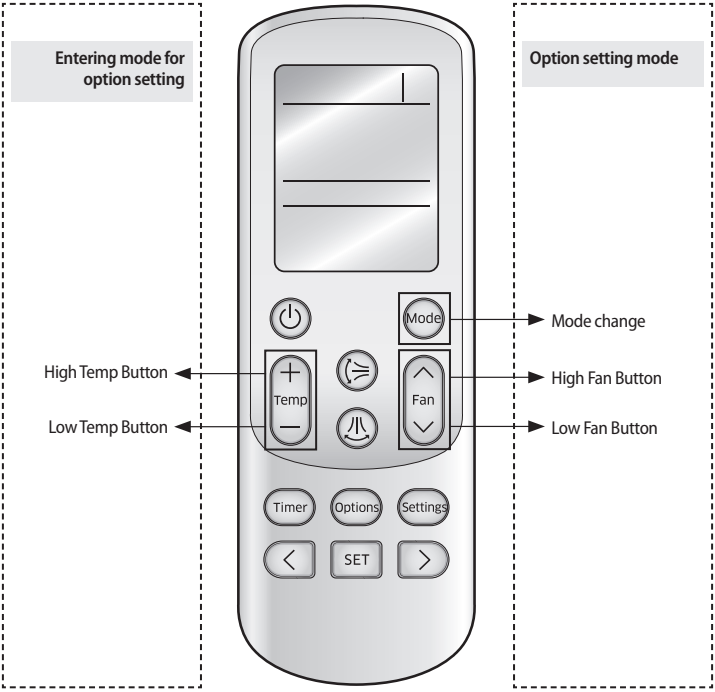
6. **Attach the insulator around the attached sensor.**



Setting an address and installation option of AHU KIT

- Set the address of an AHU KIT and installation option with remote controller options. Set each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time. You need to set twice when setting the address of an AHU KIT and installation option.
- The reception part of a remote controller is built in the AHU KIT PBA.

The procedure of option setting



Step 1. Entering mode for option setting

1. Remove batteries from the remote controller.
2. While pressing the button of high temp and low temp at the same time, insert the batteries.
3. Check if you have entered the option setting status.

Step 2. The procedure of option setting

After entering the option setting status, select the option as listed below.

CAUTION

- Option setting is available from SEG1 to SEG 24
- SEG1, SEG7, SEG13, and SEG19 are not set as page option.
- Set the SEG2~SEG6, and SEG8~SEG12 as ON status and SEG14~18, and SEG20~24 as OFF status.

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
0	X	X	X	X	X	1	X	X	X	X	X
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18	SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
2	X	X	X	X	X	3	X	X	X	X	X

On(SEG1~12)	Off(SEG13~24)

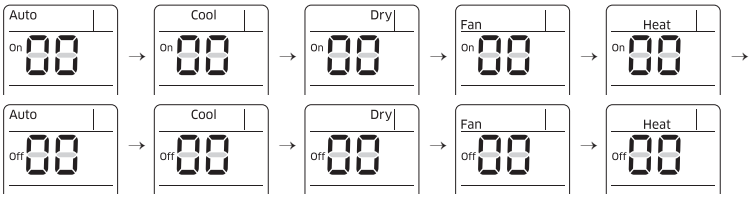
Setting an address and installation option of AHU KIT

Option setting	Status	
1. Setting SEG2, SEG3 option Press Low Fan button(∨) to enter SEG2 value. Press High Fan button(∧) to enter SEG3 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Auto On 0 SEG2	Auto On 0 SEG3
2. Setting Cool mode Press Mode button to be changed to Cool mode in the ON status.	Cool On 00	
3. Setting SEG4, SEG5 option Press Low Fan button(∨) to enter SEG4 value. Press High Fan button(∧) to enter SEG5 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Cool On 0 SEG4	Cool On 0 SEG5
4. Setting Dry mode Press Mode button to be changed to DRY mode in the ON status.	Dry On 00	
5. Setting SEG6, SEG8 option Press Low Fan button(∨) to enter SEG6 value. Press High Fan button(∧) to enter SEG8 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Dry On 0 SEG6	Dry On 0 SEG8
6. Setting Fan mode Press Mode button to be changed to FAN mode in the ON status.	Fan On 00	
7. Setting SEG9, SEG10 option Press Low Fan button(∨) to enter SEG9 value. Press High Fan button(∧) to enter SEG10 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Fan On 0 SEG9	Fan On 0 SEG10
8. Setting Heat mode Press Mode button to be changed to HEAT mode in the ON status.	Heat On 00	
9. Setting SEG11, SEG12 option Press Low Fan button(∨) to enter SEG11 value. Press High Fan button(∧) to enter SEG12 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Heat On 0 SEG11	Heat On 0 SEG12
10. Setting Auto mode Press Mode button to be changed to AUTO mode in the OFF status.	Auto Off 00	
11. Setting SEG14, SEG15 option Press Low Fan button(∨) to enter SEG14 value. Press High Fan button(∧) to enter SEG15 value. Each time you press the button, 0 → 1 → … E → F will be selected in rotation.	Auto Off 0 SEG14	Auto Off 0 SEG15

Option setting	Status
12. Setting Cool mode Press Mode button to be change to Cool mode in the OFF status.	Cool Off 00
13. Setting SEG16, SEG17 option Press Low Fan button(∨) to enter SEG16 value. Press High Fan button(∧) to enter SEG17 value. Each time you press the button, 0 → 8 → … E → F will be selected in rotation.	Cool Off 08 SEG16 / Cool Off 80 SEG17
14. Setting Dry mode Press Mode button to be change to Dry mode in the OFF status.	Dry Off 00
15. Setting SEG18, SEG20 option Press Low Fan button(∨) to enter SEG18 value. Press High Fan button(∧) to enter SEG20 value. Each time you press the button, 0 → 8 → … E → F will be selected in rotation.	Dry Off 08 SEG18 / Dry Off 80 SEG20
16. Setting Fan mode Press Mode button to be change to Fan mode in the OFF status.	Fan Off 00
17. Setting SEG21, SEG22 option Press Low Fan button(∨) to enter SEG21 value. Press High Fan button(∧) to enter SEG22 value. Each time you press the button, 0 → 8 → … E → F will be selected in rotation.	Fan Off 08 SEG21 / Fan Off 80 SEG22
18. Setting Heat mode Press Mode button to be change to HEAT mode in the OFF status.	Heat Off 00
19. Setting SEG23, SEG24 mode Press Low Fan button(∨) to enter SEG23 value. Press High Fan button(∧) to enter SEG24 value. Each time you press the button, 0 → 8 → … E → F will be selected in rotation.	Heat Off 08 SEG23 / Heat Off 80 SEG24

Step 3. Checking the option you have set

After setting option, press Mode button to check whether the option code you have entered is correct or not.



Step 4. Entering an option

Press the operation button ⏻ with the direction of a remote controller to set.
For the correct option setting, you must enter the option twice.

Step 5. Checking operation

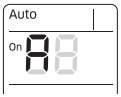
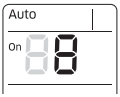
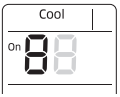
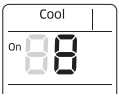
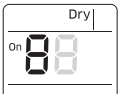
1) Press the power reset button or the reset button of an outdoor unit to reset the settings.
2) Take the batteries out of the remote controller and insert them again and then press the ⏻ button.

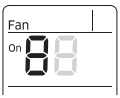
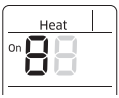
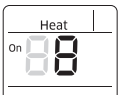
Setting an address and installation option of AHU KIT

Setting an AHU KIT address (MAIN/RMC)

1. Check whether power is supplied or not.
   - When the AHU KIT is not plugged in, there should be additional power supply.
2. The reception part of a remote controller is built in the AHU KIT PBA.
3. Each address of AHU KIT(MAIN/RMC) should be set according to installation conditions.
4. Assign each AHU KIT address(MAIN/RMC) with a remote controller.
   - The default setting value of an AHU KIT address(MAIN/RMC) is "0A0000-100000-200000-300000".

Option No. : 0AXXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Setting Main address		Hundreds' digit of an address		Tens' digit of an address		Unit digit of an address	
Remote Controller Display												
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		A		0	No Main address	0~9	Hundred's digit	0~9	Tens' digit	0~9	A unit digit
					1	Main address setting mode						

Option	SEG7		SEG8	SEG9		SEG10	SEG11		SEG12	
Explanation	PAGE		-	Setting RMC address		-	Group channel(*16)		Group address	
Remote Controller Display										
Indication and Details	Indication	Details		Indication	Details		Indication	Details	Indication	Details
	1			0	No RMC address		RMC1	0~2	RMC2	0~F
				1	RMC address setting mode					

CAUTION

- When "A"~"F" is entered to SEG5~6, the main address of AHU KIT will not be changed.
- If you set the SEG 3 as 0, the AHU KIT will maintain the existing MAIN ADDRESS even if you have entered the option value of SEG5~6.
- If you set the SEG 9 as 0, the AHU KIT will maintain the existing RMC ADDRESS even if you have entered the option value of SEG11~12.

Setting the installation option of an AHU KIT (suitable for the condition of each installation location)

1. Check whether power is supplied or not.
   - When the AHU KIT is not plugged in, there should be additional power supply.
2. The reception part of a remote controller is built in the AHU KIT PBA.
3. Set the installation option of an AHU KIT according to installation conditions.
   - The default setting of an AHU KIT installation option is “020010-100000-200000-300000”.
4. Set the AHU KIT option with a remote controller.

ENGLISH

■ 02 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	-	External room temperature sensor/ Minimizing fan operation when thermostat is off	Central control	-
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	-	-	-	EEV Step when heating stops	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	External control	External control output	-	Buzzer	-
SEG19	SEG20	SE21	SEG22	SEG23	SEG24
3	-	Compensation of heating setting	Oil return/EEV step of stopped defrost mode	-	-

▶ SEG5 central control option is basically set as 1 (Use), so you don’t need to set the central control option additionally. When you exclude the indoor unit control from central control, change the setting as 0(Disuse).

▶ When you set the value other than the SEG setting values, it will be set as "0".

Option No. : 02XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3		SEG4(*1)			SEG5		SEG6	
Explanation	PAGE		MODE		Use of robot cleaning		Use of external room temperature sensor/Minimizing fan operation when thermostat is off			Use of central control		FAN RPM compensation	
Remote Controller Display			Auto On 2		Auto On 8		Cool On 8			Cool On 8			
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details		Indication	Details		
	0		2		0	Disuse		Use of External room temperature sensor	Minimizing fan operation when thermostat is off	0	Disuse		
							0	Disuse	Disuse				
							1	Use	Disuse	1	Use		
							2	Disuse	Heating Use				
							3	Use	Heating Use				
							4	Disuse	Cooling Use				
							5	Use	Cooling Use				
							6	Disuse	All Use				
							7	Use	All Use				

Setting an address and installation option of AHU KIT

Option	SEG7		SEG8		SEG9		SEG10		SEG11		SEG12	
Explanation	PAGE		Use of drain pump		Use of hot water heater		Use of electronic heater		EEV Step when heating stops		Master / Slave	
Remote Controller Display									Heat On 8			
Indication and Details	Indication	Details							Indication	Details		
	1								0	Default value		
									1	Noise decreasing setting		

Option	SEG13		SEG14		SEG15		SEG16		SEG17		SEG18	
Explanation	PAGE		Use of external control		Setting the output of external control		S-Plasma ion		Buzzer control		Number of hours using filter	
Remote Controller Display			Auto Off 8		Auto Off 8				Cool Off 8			
Indication and Details	Indication	Details	Indication	Details	Indication	Details			Indication	Details		
	2		0	Disuse	0	Thermo on			0	Use buzzer		
			1	ON/OFF control	1	Operation on			1	Disuse buzzer		
			2	OFF control								

Option	SEG19		SEG20		SEG21		SEG22		SEG23		SEG24	
Explanation	PAGE				Offset of compensation for heating installation		Oil return/EEV step of stopped defrost mode				-	
Remote Controller Display					Fan Off 0		Fan Off 0				Heat Off 0	
Indication and Details	Indication	Details			Indication	Details	Indication	Details			Indication	Details
	3				0	Default	0	Default value			0	-
					1	2°C(35.6°F)						
					2	5°C(41°F)	1	Noise decreasing setting				

(*1) Minimizing fan operation when thermostat is off

- Fan operates for 20 seconds at an interval of 5 minutes in heating mode.
- Fan stops when thermostat is off in cooling mode.
- Make sure to connect the wired remote controller or the external room temperature sensor if you use the function of external room temperature sensor or minimizing fan operation. (In order to implement the functions the option of using temperature sensor inside the wired remote controller must be set. Refer to the installation manual of the wired remote controller.

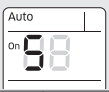
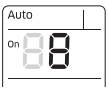
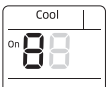
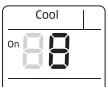
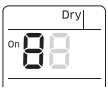
ENGLISH

■ 05 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	Use of Auto Change Over for HR only in Auto mode	(When setting SEG3) Standard heating temp. Offset	(When setting SEG3) Standard cooling temp. Offset	(When setting SEG3) Standard for mode change Heating → Cooling
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	(When setting SEG3) Standard for mode change Cooling → Heating	(When setting SEG3) Time required for mode change	Compensation option for Long pipe or height difference between indoor units	-	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	-	-	-	Temperature control by using simple BMS	-
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	HP setting	Fan Feedback	Defrost signal	Skip the prevention of cold air	Sensor

■ 05 series installation option(Detailed)

Option No. : 05XXXX-1XXXXX-2XXXXX-3XXXXX

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Use of Auto Change Over for HR only in Auto mode		(When setting SEG3) Standard heating temp. Offset		(When setting SEG3) Standard cooling temp. Offset		(When setting SEG3) Standard for mode change Heating → Cooling	
Remote Controller Display												
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		5		0	Follow product options	0	0	0	0	0	1
					1	Use Auto Change Over for HR only	1	0.5	1	0.5	1	1.5
							2	1	2	1	2	2
							3	1.5	3	1.5	3	2.5
							4	2	4	2	4	3
							5	2.5	5	2.5	5	3.5
							6	3	6	3	6	4
							7	3.5	7	3.5	7	4.5

Setting an address and installation option of AHU KIT

Option	SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
Explanation	PAGE	(When setting SEG3) Standard for mode change Cooling → Heating mode	(When setting SEG3) Time required for mode change	Compensation option for Long pipe or height diffference between indoor units		
Remote Controller Display		Dry On 8	Fan On 8	Fan On 8		
Indication and Details	Indication / Details	Indication / Details	Indication / Details	Indication / Details		
	1	0 / 1	0 / 5 min.	0 / Use default value		
		1 / 1.5	1 / 7 min.	1 / 1) Height difference[1] is more than 30 m or 2) Distance[2] is longer than 110 m		
		2 / 2	2 / 9 min.			
		3 / 2.5	3 / 11 min.			
		4 / 3	4 / 13 min.	2 / 1) Height difference[1] is 15~30 m or 2) Distance[2] is 50~110 m		
		5 / 3.5	5 / 15 min.			
		6 / 4	6 / 20 min.			
		7 / 4.5	7 / 30 min.			

Option	SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
Explanation	2	-	-	-	Simple BMS temperature control	-
					Cool Off 8	
					Indication / Details	
					0 / Room temperature	
					1 / Discharge temperature	

Option	SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
Explanation	PAGE	HP setting	Fan Feedback	Defrost signal	Skip the prevention of cold air	Sensor
Remote Controller Display		Dry Off 8	Fan Off 0	Fan Off 0	Heat Off 0	Heat Off 0
Indication and Details	Indication / Details	Indication / Details	Indication / Details	Indication / Details	Indication / Details	Indication / Details
		0 / Default (10 HP)	0 / Disuse	0 / Disuse	0 / Disuse	0 / Sharing the room and discharge temperature value of a master indoor unit
		1 / 10 HP	1 / Use	1 / Use	1 / Use	1 / Master indoor unit - Room temperature : PT1000 Ω - Discharge temperature : 4~20 mA
	3)	2 / 20 HP				2 / Master indoor unit - Room temperature : 4~20 mA - Discharge temperature : PT1000 Ω
		3 / 30 HP				3 / Master indoor unit - Room temperature : a wired remote controller's sensor - Discharge temperature : 4~20 mA
		4 / 40 HP				

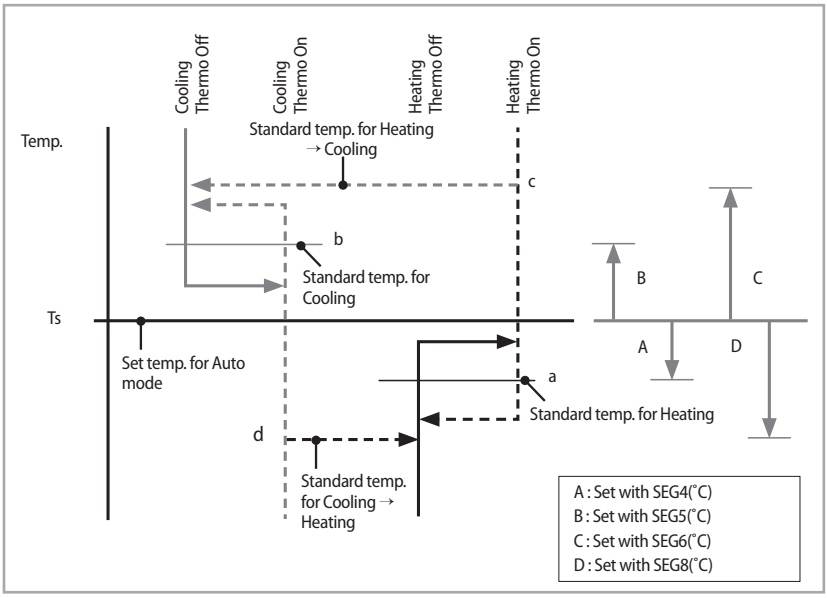
1) Height difference : The difference of the height between the corresponding indoor uint and the indoor unit installed at the lowest place.
For example, When the indoor unit is installed 40 m(131.23 ft) higher than the indoor unit installed at the lowest place, select the option "1".

2) Distance : The difference between the pipe length of the indoor unit istalled at the farthest place from an outdoor unit and the pipe length of the corresponding indoor unit from an outdoor unit. For example, when the farthest pipe length is 100 m(328 ft) and the corresponding indoor unit is 40 m(131.23 ft) away from an outdoor unit, select the option "2". (100 m(328 ft) - 40 m(131.23 ft) = 60 m(196.85 ft))

3) Regardless of the AHU KIT HP setting, one indoor unit will be recognized. Therefore, be careful when setting the number of the indoor unit installation with an outdoor unit.

Additional information for SEG 3,4,5,6,8,9

When the SEG 3 is set as "1" and follow Auto Change Over for HR only operation, it will operate as follows.



Cooling/Heating mode can be changed when Thermo Off status is maintained during the time with SEG9.

Changing a particular option

You can change each digit of set option.

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Option mode to change		Tens' digit of an option SEG to change		Unit digit of an option SEG to change		Changed value	
Remote Controller Display			Auto On d		Auto On 8		Cool On 8		Cool On 8		Dry On 8	
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		D		Option mode	0~F	Tens' digit of SEG	0~9	Unit digit of SEG	0~9	Changed value	0~9

NOTE

- When changing a digit of an AHU KIT address setting option, set the SEG3 as 'A'.
- When changing a digit of an AHU KIT installation option, set the SEG3 as '2'.

Ex) When setting the 'buzzer control' into disuse status.

Option	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Explanation	PAGE	MODE	Option mode to change	Tens' digit of an option SEG to change	Unit digit of an option SEG to change	Changed value
Indication	0	D	2	1	7	1

Setting discharge temperature control

1. In service mode of a wired remote control, you can set whether to use "Discharge temperature control" or not and also can set targeted temperature of heating and cooling. Refer to "Installation/service setting mode" in a wired remote controller's installation manual.
2. If you set to use "Discharge temperature control", a thermostat of a product is turned on or off according to room set temperature and room temperature. Discharge temperature control is carried out while thermostat is on.

❋ The discharge temperature control can be set using DMS, also.

❋ Discharge temperature may not meet the desired temperature(set value) depending on conditions of the external air.

3. When the discharge temperature control is used, SEG21 of 01 series installation option must be set as "1".

Trouble shooting

Initial check-up

1. **Check the connection status between an outdoor unit and the AHU-KIT.**

▶ Check that you have followed wiring method according to the circuit diagram or installation manual.

▶ Check that AHU-KIT PBA is installed in a place where there is no influence from outdoor humidity, dust and temperature.

2. **Check the power voltage is AC198 V~AC264 V.**

3. **Check the voltage of each part has a problem.**

▶ 5 V-GND both terminals: DC 4.5~5.5 V

▶ 12 V-GND both terminals: DC 11~13 V

Error on EEPROM

Outdoor unit display	E162
Description	Communication problem between EEPROM of AHU KIT and micom.
Reason	- EEPROM PBA OF AHU KIT ERROR(Physical problem of parts/circuit) - Replace EEPROM PBA

NOTE

- Wired remote controller will display the same error shown in the outdoor unit.

Error on the option of a remote controller

Outdoor unit display	E163
Description	The remote controller option of AHU KIT is not the same.
Reason	Enter the remote controller option again.

Trouble shooting

Error on a sensor

Error on the detachment of AHU-KIT heat exchanger EVA IN sensor

Outdoor unit display	E128 ↔ A^xxx (xxx: Address of an indoor unit with an error)
Description	Refer to the description below.
Reason	Detachment of indoor heat exchanger EVA IN piping sensor

1. **Description**
   - In Cool mode

Tcond, out-Tair, out > 3°C	OK
Tair, in-TEVA, in > 4°C	NO
Tair, in-TEVA, out > 4°C	NO
Indoor unit operation or thermo ON during operation of a compressor	OK
Error message	Error on the detachment of indoor unit heat exchanger EVA IN sensor

2. **Checking method**
   - After checking the detachment status of AHU KIT heat exchanger EVA IN sensor, assemble the sensor.

Error on the detachment of AHU KIT heat exchanger EVA OUT sensor

Outdoor unit display	E129 ↔ A^xxx (xxx: Address of an indoor unit with an error)
Description	Refer to the description below.
Reason	Detachment of indoor heat exchanger EVA OUT piping sensor

1. **Description**
   - In Cool mode

Tcond, out-Tair, out > 3°C	OK
Tair, in-TEVA, in > 4°C	OK
Tair, in-TEVA, out > 4°C	NO
Indoor unit operation or thermo ON during operation of a compressor	OK
Error message	Error on detachment of indoor unit heat exchanger EVA OUT sensor

2. **Checking method**
   - After checking the detachment status of AHU KIT heat exchanger EVA OUT sensor, assemble the sensor.

NOTE
- Wired remote controller will display the same error shown in the outdoor unit.

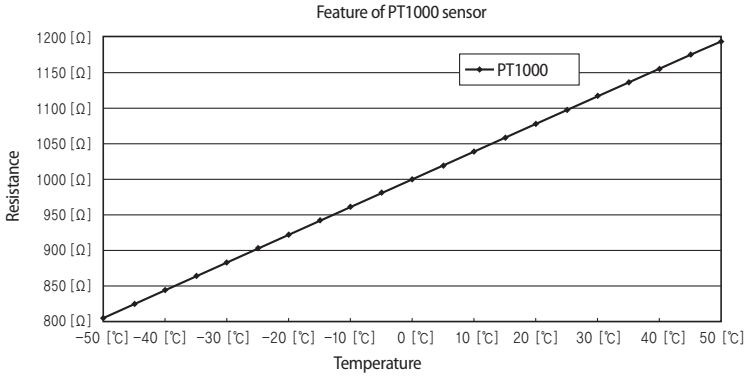
Error on AHU KIT temperature sensor OPEN/SHORT

1. **Checking method**

Outdoor unit display	E121 (Room temperature sensor OPEN/SHORT) E126 (Discharge temperature sensor OPEN/SHORT)
Description	When the temperature sensor part of AHU KIT is detected as OPEN/SHORT
Reason	Incorrect installation of PT1000 temperature sensor or mA thermometer

Temperature feature table of PT1000

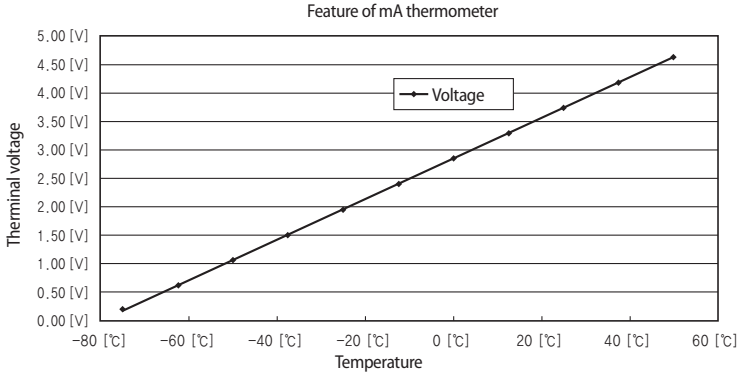
▶ After detaching the connector(CN41), measure the electric resistance between terminal A and terminal C, and between terminal B and terminal C and then compare the table below. If the resistance is out of -30 ℃ ~ +50 ℃ section, it will be displayed as error indication area.



Feature table of mA thermometer

▶ After measuring the DC voltage of mA+/- terminal in connector(CN41) connection status, compare the voltage with the table below. If the voltage is out of -50 ℃ ~ +50 ℃ section, it will be displayed as error indication area.

▶ The range of 4 ~ 20 mA current temperature sensor : -50 ~ +50 ℃



NOTE

- Wired remote controller will display the same error shown in the outdoor unit.

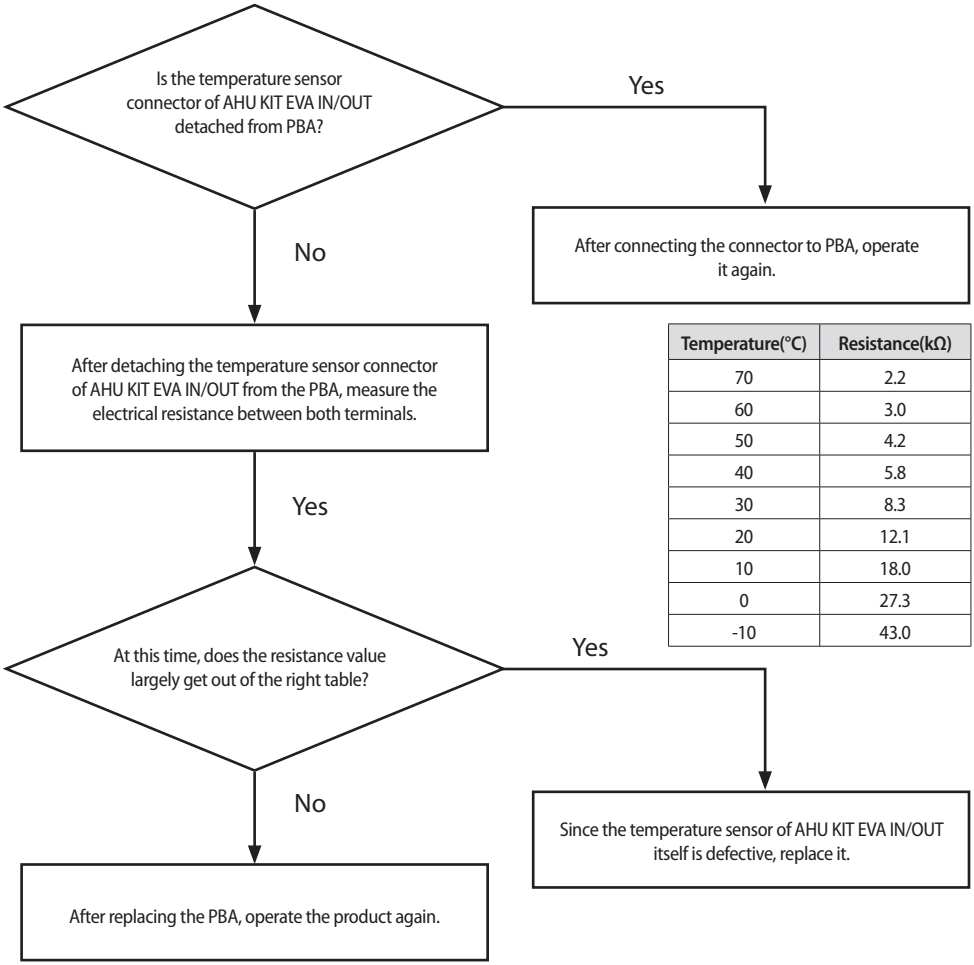
ENGLISH

Trouble shooting

Error on AHU KIT temperature senor OPEN/SHORT

1. **Checking method**

Outdoor unit display	E122 (EVA IN sensor OPEN/SHORT) E123 (EVA OUT sensor OPEN/SHORT)
Description	When the temperature sensor part of AHU KIT is OPEN/SHORT
Reason	Loose contact between a sensor and PBA and defective sensor



Temperature(°C)	Resistance(kΩ)
70	2.2
60	3.0
50	4.2
40	5.8
30	8.3
20	12.1
10	18.0
0	27.3
-10	43.0

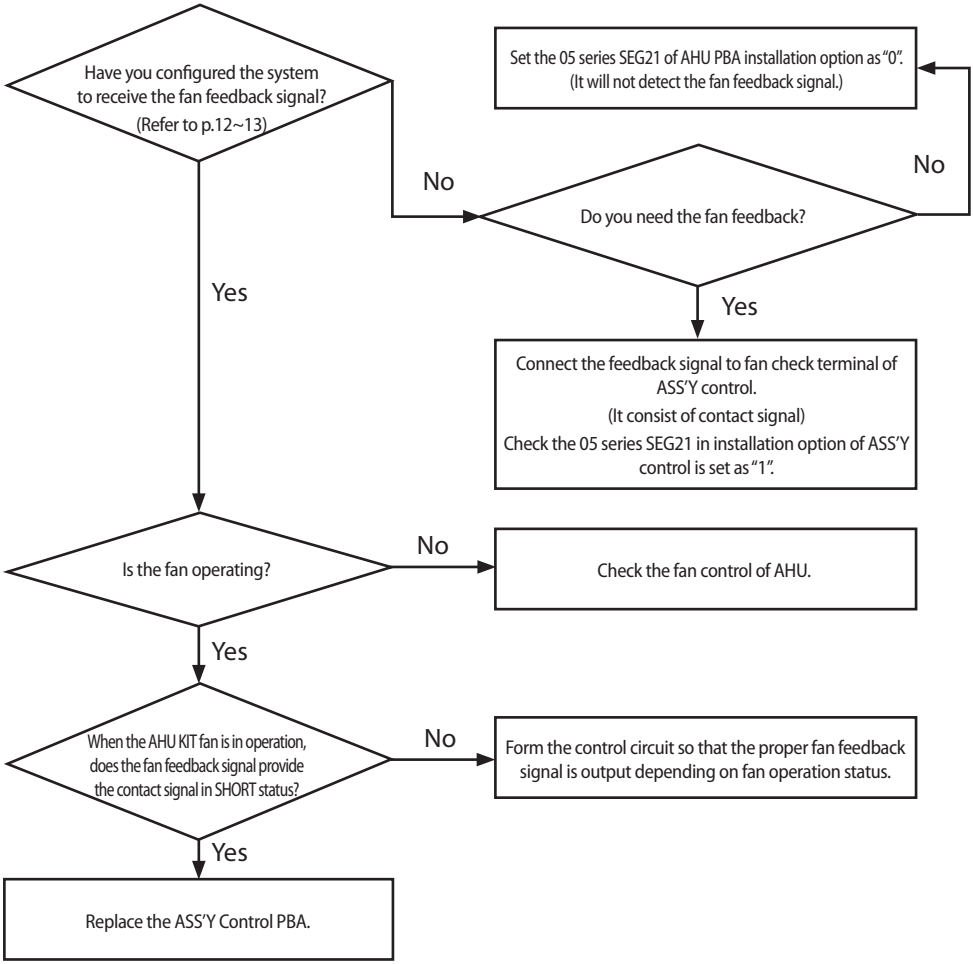
NOTE

- Wired remote controller will display the same error shown in the outdoor unit.

Error on a fan

Outdoor unit display	E154
Description	When the feedback signal is maintained as OPEN status for 10 seconds after outputting the fan operation signal from ASS'Y Control (For AHU KIT)
Reason	• Fan operation of AHU KIT is abnormal. • The circuit to detect the fan feedback signal of AHU KIT is not formed or misconnected.

1. **Checking method**



NOTE

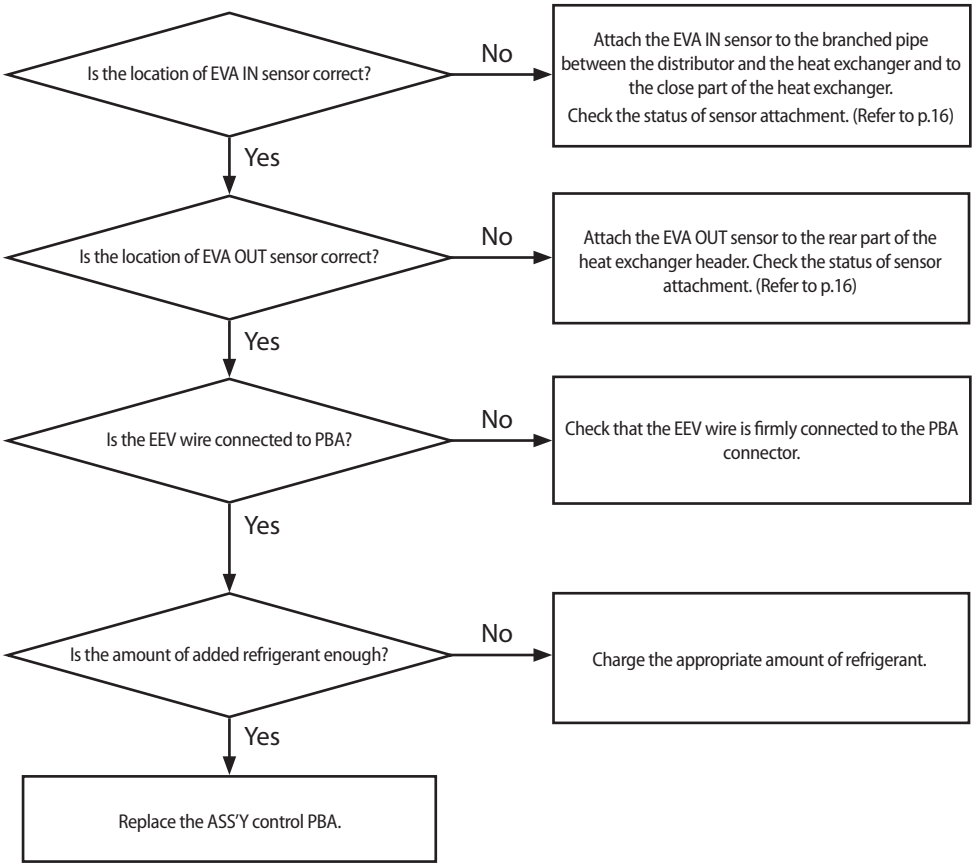
- Only the contact signal without power supply should be entered to detecting terminal of fan feedback signal. If voltage or current is connected other than the contact signal without power supply, the ASS'Y Control may be damaged.

Trouble shooting

Error on EEV step control

Outdoor unit display	N/A
Description	In cool mode, EEV step is controlled to minimum 230 steps and maximum 1700 steps. In heat mode, the EEV step is controlled to minimum 1000 steps.
Reason	• The location of EVA IN/OUT sensor is not correct. • EEV coil is reversed. • All or part of EEV coil is detached. • Refrigerant is overcharged.

1. **Checking method**



Error on tracking

Communication error between AHU KIT and an outdoor unit during the tracking (During initial operation)

Outdoor unit display	E201
Description	Communication error between AHU KIT and an outdoor unit
Reason	Refer to the diagram below.

1. **Checking method**

Compare and check the setting value for the number of AHU KIT installation with outdoor unit PBA and the real number of AHU KIT installation.

❊ Regardless of setting HP capacity, the number of AHU Kit installation is recognized as one indoor unit.

Is the actual number of AHU KIT installation the same as the setting value for the number of AHU-KIT installation?

No → After setting the switch for the number of AHU KIT installation set up on the outdoor unit correctly, press the reset key(k3) of outdoor unit PBA to restart the tracking.

Yes → Press the reset key(K3) of outdoor unit PBA and view the display part to check the number of AHU KIT which responds to the tracking.

Is there a response from AHU KIT on the display part during the tracking?

Yes → After 2 minutes, check whether the PBA address setting is repeated by finding the AHU KIT that displays the communication error.
– When the AHU KIT address is repeated, communication error may occur. In this case, the communication error may occur with all the AHU KITs(more than 2) whose address setting is incorrectly set.

If there is no problem with the address, check the communication cable and replace the AHU KIT PBA.

No → After removing the communication cable which is connected to AHU KIT from an outdoor unit, measure the 2 wires on the outdoor unit with SCOPE.

Is the voltage between 2 wires square wave that is more than DC±0.7?

No → After checking the communication cable or the connector of outdoor unit PBA, replace the PBA.

Yes →
– Check the communication cable connection between an outdoor unit and AHU KIT and between indoor units.
– When there is no problem, check the AHU KIT by connecting one by one.
– Replace the PBA of AHU KIT for the problem.

NOTE
- Wired remote controller will display the same error shown in the outdoor unit.

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Trouble shooting

Error on communication between AHU KIT and an outdoor unit after the tracking (During operation)

Outdoor unit display	E202
Description	When the communication between the AHU KIT and an outdoor unit is not available for 2 minutes during operation. (All rooms)
Reason	The communication error between AHU KIT and an outdoor unit or the problem with the setting switch for the number of AHU KIT installation.

1. **Checking method**

Press the reset key(K3) of outdoor unit PBA and check the display part.

↓

Is there a response from AHU KIT on the display part during the tracking?

Yes →

After 2 minutes, check whether the PBA address setting is repeated by finding the AHU KIT that displays the communication error.

– When the AHU KIT address is repeated, communication error may occur. In this case, the communication error may occur with all the AHU KITs(more than 2) whose address setting is incorrectly set.

↓

If there is no problem with the address, check the communication cable and replace the AHU KIT PBA.

No ↓

After removing the communication cable which is connected to AHU KIT from an outdoor unvit, measure the 2 wires on the outdoor unit with SCOPE.

↓

Is the voltage between 2 wires square wave that is more than DC±0.7 as shown in the image below?

No →

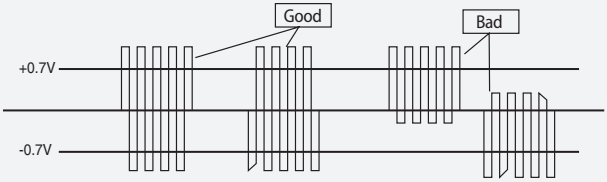
After checking the communication cable or the connector of outdoor unit PBA, replace the PBA.

Yes ↓

– Check the communication cable connection between an outdoor unit and AHU KIT and between indoor units.
– When there is no problem, check the AHU KIT by connecting one by one.
– Replace the PBA of AHU KIT with a problem.

NOTE

- Wired remote controller will display the same error shown in the outdoor unit.



Installation check and test operation

Checking AHU KIT installation

1. **Check that ASS'Y Control is correctly installed.**
   - You can choose either AHU attachment type or AHU separation type.
   - Check the length of connection cable of ASS'Y Control is correct.
   - Check that the connection of ASS'Y Control connecting cable is correct.
   - Make sure the location has waterproof and fire prevention structure with a specially designed case. (For the separation type, it is essential.)
   - Make sure the ASS'Y Control is not exposed to sunlight or rain.

2. **Check that the ASS'Y EEV is correctly installed.**
   - Check that ASS'Y EEV is installed inside the AHU.
   - Check whether IN and OUT pipe connection is correct.
   - Must check the ASS'Y EEV main body is installed vertically.
   - Check that the ASS'Y EEV is installed at the place where condensate water can be drained.

3. **Check that the EVA IN/OUT sensor is correctly installed.**
   - After attaching the EVA IN sensor after the distributor and on the lowest temperature pipe of a heat exchanger, check that you have insulated the attached sensor.
   - After installing the EVA OUT sensor 200 mm after the header of AHU heat exchanger, check that you have insulated the attached sensor.

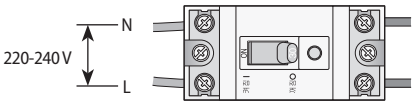
CAUTION
- ASS'Y Control should be installed with the CASE that has water proof and fire prevention function.

Test operation

1. **Before supplying power, measure the grounding between the power terminal(1phase: L, N) and AHU KIT using the DC 500 V insulation-resistance tester.**
   - Measured value should be more than 30 MΩ.

CAUTION
- Do not measure the communication terminal as the communication circuit may get damaged.
- For the communication terminal, check the short circuit using a general circuit tester.

2. **Before supplying power, check the voltage of the power(L, N), and turn the switch on.**



<MCCB/ELB or ELCB>

3. **After finishing and checking installation and the items below, check that the AHU KIT operates correctly.**
   - The firmness of AHU KIT installation environment and safety
   - Thermal resistance of insulator for refrigerant pipe
   - Leakage of refrigerant gas
   - Drainage status
   - Power connection status
   - Connection status with a circuit breaker and grounding status
   - Correct operation for each operation mode

MEMO

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