DOAS Interface Module
Installation manual

V1UCK01

- Thank you for purchasing this Lennox Product.
- Before operating this unit, please read this manual carefully and retain it for future reference.

LENNOX Powered by SAMSUNG

Contents

Safety Information

California Proposition 65 Warning (US)

WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

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.)

※ The manufacturer is not responsible for accidents due to incorrect installation. Any claims caused by failing to keep the safety precautions are installer's responsibility. (The installer is responsible for the service cost.)

※ This appliance is not intended for use by persons (including children) with reduced physical, sensory or mental capabilities, or lack of experience and knowledge, unless they have been given supervision or instruction concerning use of the appliance by a person responsible for their safety.
Children should be supervised to ensure that they do not play with the appliance.

※ If the supply cord is damaged, it must be replaced by the manufacturer, its service agent or similarly qualified persons in order to avoid a hazard.

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 DOAS Interface Module 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 DOAS Interface Module 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.

Safety Information

FOR INSTALLATION | ⚠ WARNING

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 DOAS Interface Module 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.

Wear protective equipment (such as safety gloves, goggles, and headgear) during installation and maintenance works. Installation/repair technicians may be injured if protective equipment is not properly equipped.

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 DOAS Interface Module at least 3.28ft (1m) away from other electric appliances and 6.56ft (2m) away from lightning conductor.

▶ However, even 3.28ft (1m) away from an electric appliance, noise may be heard depending on radio wave condition.

Do not install the DOAS Interface Module 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.**

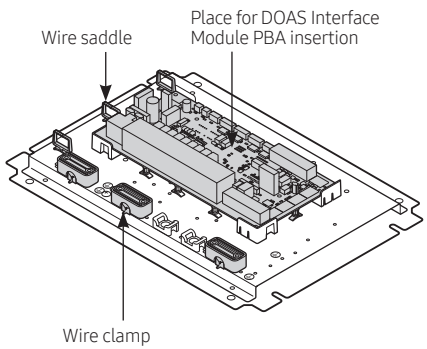
▶ **The place where external environment such as sunlight, rain, temperature, humidity, dust can directly affect the product.**

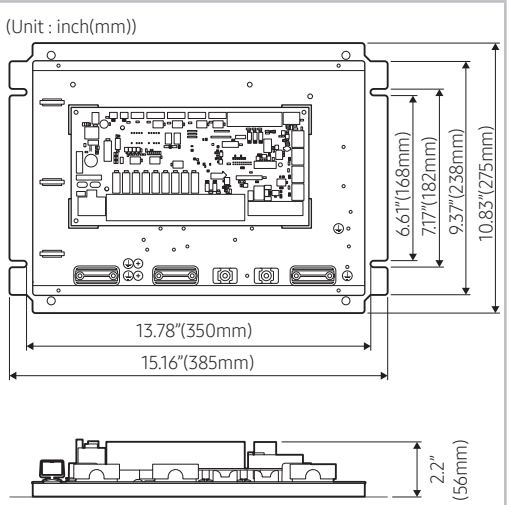
※ **The manufacturer is not responsible for the damage occurred by not keeping standard of the installation. (The cost of the service will be charged.)**

Name of each part and product dimension

Name of each part and product dimension

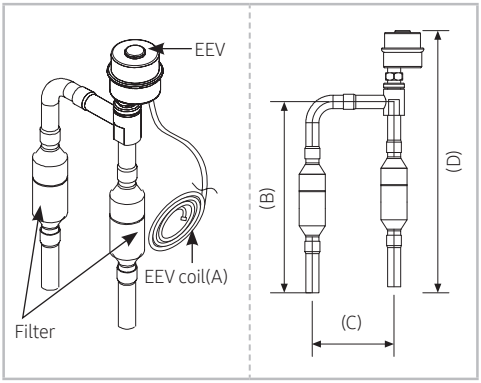
Control assembly (Control part)

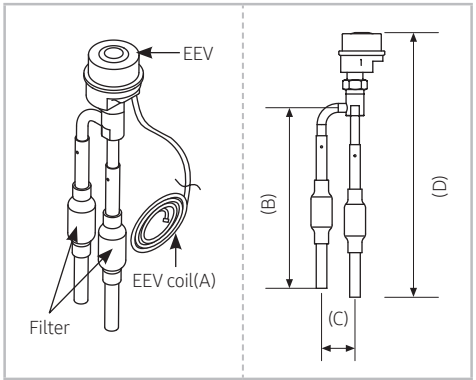




EEV (Electronic Expansion Valve) Assembly: Accessory (Ordered separately)

For detailed information of EEV installation, refer to the installation manual of EEV Assembly which you need to purchase additionally. (Model : V1EEVK04UC, V1EEVK03UC, V1EEVK02UC, V1EEVK01UC)

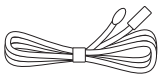
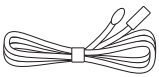
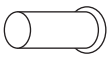
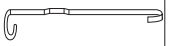


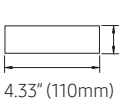
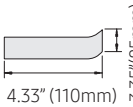
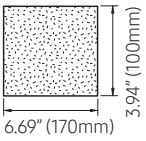


MODEL	A (ft(m))	B (inch(mm))	C (inch(mm))	D (inch(mm))
V1EEVK04UC	22.97' (7)	7.28"(185)	3.03"(77)	10.04"(255)
V1EEVK03UC	6.56' (2)	6.57"(167)	1.34"(34)	9.65"(245)
V1EEVK02UC	6.56' (2)	7.28"(185)	2.91"(74)	9.96"(253)
V1EEVK01UC	3.28' (1)	6.38"(162)	1.18"(30)	9.33"(237)

Parts

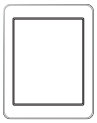
Accessories (supplied)

Name	Pipe inlet/outlet sensor Room temperature sensor 32.8'(10m)	Discharge air temperature sensor 32.8'(10m)	Inlet sensor holder (OD Ø 0.27"(6.8mm))	Outlet sensor holder (OD Ø 0.31"(7.8mm))	Sensor fixing spring
Quantity	1	1	1	1	2
Shape					

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

※ It is not mandatory to connect discharge air temperature sensor.
If discharge air temperature control is required, install the sensor at the air outlet and set SEG 21 of 01 series product option to "1."

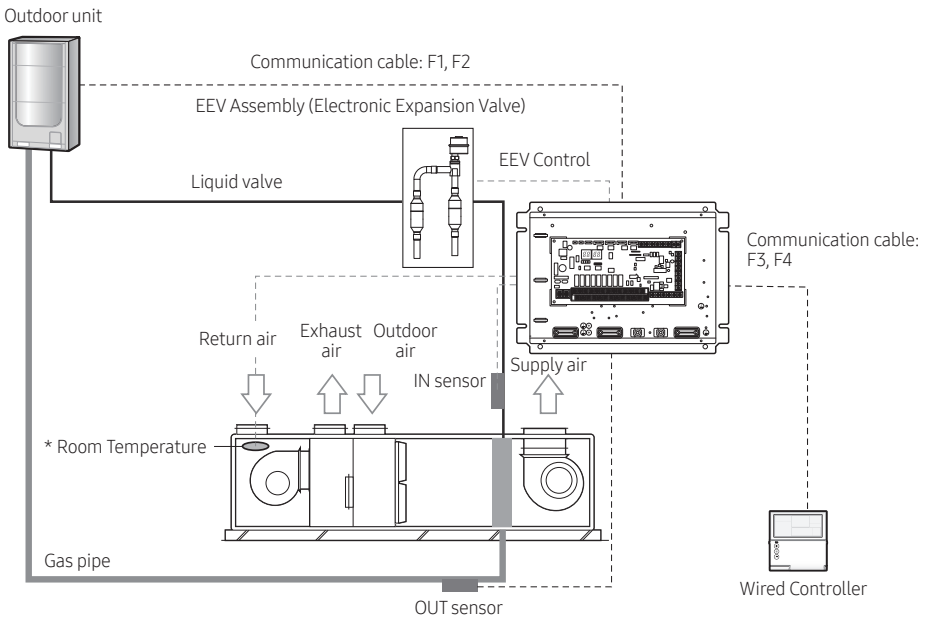
Additional accessory (not included)

* Programmable Wired Controller (VSTAT04P-1)	* Wired controller (VSTAT02P-1)
1	1
	

※ You need to purchase the Wired Controller additionally.

Checking before using a DOAS Interface Module

Structure diagram of a DOAS Interface Module



Installing a DOAS Interface Module

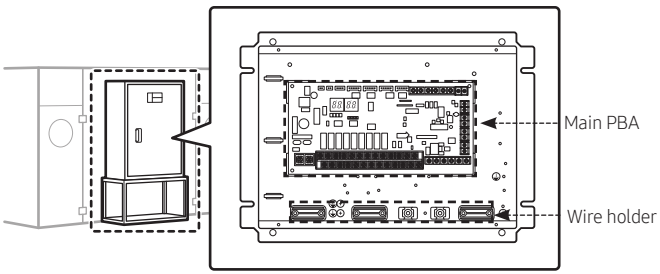
Installing Control assembly

1. **Check the installation location of Control assembly.**

▶ You can choose either indoor unit attachment type or indoor unit separation type depending on the installation environment.

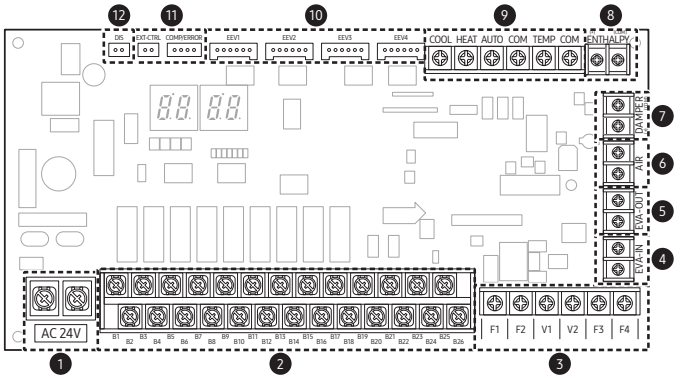
2. **Make sure the location has waterproof and fire prevention structure.**

▶ Make sure that the Control assembly is not exposed to sunlight by covering with a case which has waterproof and fire prevention structure.



Functions of Control assembly

- ▶ Control assembly adjusts EEV for refrigerant flow rate and performs control functions through communication with an indoor unit or Wired Controller.
- ▶ The contact signal for indoor unit fan operation is sent from Control assembly. When indoor unit is in Cool/Heat/Fan mode, terminal block B1~B8 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.21)
- ▶ The terminal block B20/B21 will receive the signal for fan operation status and the signal is the input signal which DOAS Interface Module 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.9, 15)
  - When the fan operates normally: The terminal block B20/B21 are SHORT status.
  - When the fan does not operate: The terminal block B20/B21 are OPEN status.
  - Set SEG21 of installation option 05 series to '1(Use)' to use fan feedback for system protection. (Refer to p. 42)
- ▶ The terminal block B11/B12 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 24V 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 DOAS Interface Module, the communication (F1, F2) should be connected with the communication (F1,F2) of DOAS Interface Module which is additionally installed.
- ▶ The communication cable (F3, F4) is the communication group of Wired Controller.
- ▶ For capacity setting, refer to SEG20 of 05 series in installation option section. (Refer to p.42)
- ▶ Connect room temperature sensor and discharge temperature sensor (optional).
  - When using the PT1000Ω sensor, connect to the terminal block B24/B25/B26.
  - Set the types of room temperature sensor and discharge temperature sensor in SEG24 of 05 series installation option.



No.	CONNECTOR		SIGNAL	FUNCTION	CONTACT SHORT	CONTACT OPEN	*SCREW
1	TB100		-	AC24V/60Hz	-	-	M4
2	TB800	B1	*DRY CONTACT	FAN HIGH	FAN STEP HIGH ON	FAN OFF	M3.5
		B2					
		B3	*DRY CONTACT	FAN MID	FAN STEP MID ON	FAN OFF	M3.5
		B4					
		B5	*DRY CONTACT	FAN LOW	FAN STEP LOW ON	FAN OFF	M3.5
		B6					
		B7	*DRY CONTACT	FAN OUT	FAN ON	FAN OFF	M3.5
		B8					
		B9	*DRY CONTACT	HEATER	HEATER ON	HEATER OFF	M3.5
		B10					
		B11	*DRY CONTACT	DEFROST	DEFROST ON	DEFROST OFF	M3.5
		B12					
		B13	*DRY CONTACT	COOL_T	COOL THERMO ON	COOL THERMO OFF	M3.5
		B14					
		B15	*DRY CONTACT	THERMO	THERMO ON	THERMO OFF	M3.5
		B16					
		B17	*DRY CONTACT	OPERATION	OPERATION ON	OPERATION OFF	M3.5
		B18					
		B19	-	-	-	-	-
		B20	ZERO Voltage CONTACT	FAN CHECK	FAN CHECK ON	FAN CHECK OFF	M3.5
		B21					
		B22	ZERO Voltage CONTACT	FREE COOL_IN	FREE COOL ON	FREE COOL OFF	M3.5
		B23					
		B24	INPUT	PT1000	-	-	M3.5
		B25	INPUT				
		B26	COM				
3	CN301	F1	-	IN-OUT COMMUNICATION	-	-	M3.5
		F2	-				
		F3	DC	DC 12V	-	-	
		F4					
		F5	-	WIRED REMOTE COMMUNICATION	-	-	
		F6	-				
4	CN400		-	EVA IN SENSOR	-	-	M3
5	CN401		-	EVA OUT SENSOR	-	-	M3
6	CN402		-	AIR SENSOR	-	-	M3
7	CN804	(+)	LEVEL OUT	DAMPER ALNALOG LEVEL	-	-	M3
		COM	COM	-			
8	CN810	(+)	LEVEL IN	ENTHALPY IN	-	-	M3
		COM	COM	-			
9	CN305	COOL	ZERO Voltage CONTACT	SIMPLE BMS MODE IN	-	-	M3.5
		HEAT					
		AUTO			-	-	
		COM					
		TEMP	LEVEL IN	SIMPLE BMS TEMP IN	-	-	
		COM	-				
10	CN800~803		-	EEV	-	-	
11	CN81,CN83		-	EXTERNAL CONTROL	-	-	
12	CN403		-	DISCHARGE SENSOR	-	-	

※ Use the rated current capacity for the dry contact within AC 250 V/1 A.

※ Use the ring terminal that fits the screw.

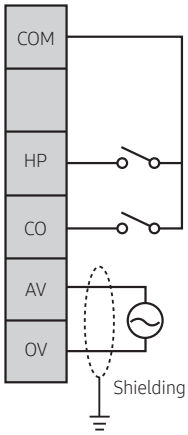
Installing a DOAS Interface Module

Simple BMS

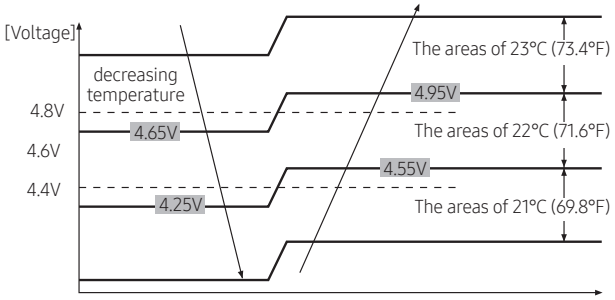
Simple BMS setting

- ▶ Simple BMS can control Room temperature or Discharge temperature by setting SEG17 of 05 series Installation option.
  - For controlling Room temperature : SEG17 of 05 series Installation option → 0
  - For controlling Discharge temperature : SEG17 of 05 series Installation option → 1
  - For controlling Target Pressure : SEG17 of 05 series Installation option → 2
- ▶ Discharge temperature can be set by DMS.
- ▶ Simple BMS control is not influenced by DMS's restrictions on operation mode, set temperature or remote controller usage.
- ▶ If you want to set Room temperature or Discharge temperature by using Simple BMS, setting Buzzer control option as "Disuse buzzer" is recommended.

Circuit diagram of Simple BMS



Ex) setting up 22°C (71.6°F) (Simple BMS : Room temperature setting)



CAUTION

- Hysteresis is applied to the end of voltage range in order to stabilize the analog input.
  The amount of Hysteresis
  - Room temperature setting: 0.15 V
  - Discharge temperature setting: 0.08 V

Operational Voltage range against Setting temperature

▶ Room temperature setting (05 Series Install Option SEG17=0)

Simple BMS Voltage Range	Set Temperature	
	Heating	Cooling
10.0 V ~ 9.6 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
9.6 V ~ 9.2 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
9.2 V ~ 8.8 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
8.8 V ~ 8.4 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
8.4 V ~ 8.0 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
8.0 V ~ 7.6 V	30 ˚C (86.0 ºF)	30 ˚C (86.0 ºF)
7.6 V ~ 7.2 V	29 ˚C (84.2 ºF)	29 ˚C (84.2 ºF)
7.2 V ~ 6.8 V	28 ˚C (82.4 ºF)	28 ˚C (82.4 ºF)
6.8 V ~ 6.4 V	27 ˚C (80.6 ºF)	27 ˚C (80.6 ºF)
6.4 V ~ 6.0 V	26 ˚C (78.8 ºF)	26 ˚C (78.8 ºF)
6.0 V ~ 5.6 V	25 ˚C (77.0 ºF)	25 ˚C (77.0 ºF)
5.6 V ~ 5.2 V	24 ˚C (75.2 ºF)	24 ˚C (75.2 ºF)
5.2 V ~ 4.8 V	23 ˚C (73.4 ºF)	23 ˚C (73.4 ºF)
4.8 V ~ 4.4 V	22 ˚C (71.6 ºF)	22 ˚C (71.6 ºF)
4.4 V ~ 4.0 V	21 ˚C (69.8 ºF)	21 ˚C (69.8 ºF)
4.0 V ~ 3.6 V	20 ˚C (68.0 ºF)	20 ˚C (68.0 ºF)
3.6 V ~ 3.2 V	19 ˚C (66.2 ºF)	19 ˚C (66.2 ºF)
3.2 V ~ 2.8 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
2.8 V ~ 2.4 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
2.4 V ~ 2.0 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
2.0 V ~ 1.6 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
1.6 V ~ 1.2 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
1.2 V ~ 0.8 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
0.8 V ~ 0.4 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)
0.4 V ~ 0.0 V	18 ˚C (64.4 ºF)	18 ˚C (64.4 ºF)

Installing a DOAS Interface Module

▶ Discharge temperature setting (05 Series Install Option SEG17=1)

Simple BMS Voltage Range	Set Temperature	
	Heating	Cooling
10.00 V ~ 9.75 V	43 ˚C (109.40 °F)	43 ˚C (109.40 °F)
9.75 V ~ 9.50 V	42 ˚C (107.60 °F)	42 ˚C (107.60 °F)
9.50 V ~ 9.25 V	41 ˚C (105.80 °F)	41 ˚C (105.80 °F)
9.25 V~ 9.00 V	40 ˚C (104.00 °F)	40 ˚C (104.00 °F)
9.00 V ~ 8.75 V	39 ˚C (102.20 °F)	39 ˚C (102.20 °F)
8.75 V ~ 8.50 V	38 ˚C (100.40 °F)	38 ˚C (100.40 °F)
8.5 V ~ 8.25 V	37 ˚C (98.60 °F)	37 ˚C (98.60 °F)
8.25 V ~ 8.00 V	36 ˚C (96.80 °F)	36 ˚C (96.80 °F)
8.00 V ~ 7.75 V	35 ˚C (95.00 °F)	35 ˚C (95.00 °F)
7.75 V ~ 7.50 V	34 ˚C (93.20 °F)	34 ˚C (93.20 °F)
7.50 V ~ 7.25 V	33 ˚C (91.40 °F)	33 ˚C (91.40 °F)
7.25 V ~ 7.00 V	32 ˚C (89.60 °F)	32 ˚C (89.60 °F)
7.00 V ~ 6.75 V	31 ˚C (87.80 °F)	31 ˚C (87.80 °F)
6.75 V ~ 6.50 V	30 ˚C (86.00 °F)	30 ˚C (86.00 °F)
6.50 V ~ 6.25 V	29 ˚C (84.20 °F)	29 ˚C (84.20 °F)
6.25 V ~ 6.00 V	28 ˚C (82.40 °F)	28 ˚C (82.40 °F)
6.00 V ~ 5.75 V	27 ˚C (80.60 °F)	27 ˚C (80.60 °F)
5.75 V ~ 5.50 V	26 ˚C (78.80 °F)	26 ˚C (78.80 °F)
5.50 V ~ 5.25 V	25 ˚C (77.00 °F)	25 ˚C (77.00 °F)
5.25 V ~ 5.00 V	24 ˚C (75.20 °F)	24 ˚C (75.20 °F)
5.00 V ~ 4.75 V	23 ˚C (73.40 °F)	23 ˚C (73.40 °F)
4.75 V ~ 4.50 V	22 ˚C (71.60 °F)	22 ˚C (71.60 °F)
4.50 V ~ 4.25 V	21 ˚C (69.80 °F)	21 ˚C (69.80 °F)
4.25 V ~ 4.00 V	20 ˚C (68.00 °F)	20 ˚C (68.00 °F)
4.00 V ~ 3.75 V	19 ˚C (66.20 °F)	19 ˚C (66.20 °F)
3.75 V ~ 3.50 V	18 ˚C (64.40 °F)	18 ˚C (64.40 °F)
3.50 V ~ 3.25 V	17 ˚C (62.60 °F)	17 ˚C (62.60 °F)
3.25 V ~ 3.00 V	16 ˚C (60.80 °F)	16 ˚C (60.80 °F)
3.00 V ~ 2.75 V	15 ˚C (59.00 °F)	15 ˚C (59.00 °F)
2.75 V ~ 2.50 V	14 ˚C (57.20 °F)	14 ˚C (57.20 °F)
2.50 V ~ 2.25 V	13 ˚C (55.40 °F)	13 ˚C (55.40 °F)
2.25 V ~ 2.00 V	12 ˚C (53.60 °F)	12 ˚C (53.60 °F)
2.00 V ~ 1.75 V	11 ˚C (51.80 °F)	11 ˚C (51.80 °F)
1.75 V ~ 1.50 V	10 ˚C (50.00 °F)	10 ˚C (50.00 °F)
1.50 V ~ 1.25 V	9 ˚C (48.20 °F)	9 ˚C (48.20 °F)
1.25 V ~ 1.00 V	8 ˚C (46.40 °F)	8 ˚C (46.40 °F)
1.00 V ~ 0.75 V	8 ˚C (46.40 °F)	8 ˚C (46.40 °F)
0.75 V ~ 0.50 V	8 ˚C (46.40 °F)	8 ˚C (46.40 °F)
0.50 V ~ 0.25 V	8 ˚C (46.40 °F)	8 ˚C (46.40 °F)
0.25 V ~ 0.00 V	8 ˚C (46.40 °F)	8 ˚C (46.40 °F)

CAUTION

- Range of Discharge temperature setting
  - Cooling : 8 ˚C (46.5 °F) ~ 25 ˚C (77.0 °F)
  - Heating : 18 ˚C (64.4 °F) ~ 43 ˚C (109.4 °F)
  - If the voltage value is beyond the range of discharge temperature setting, the temperature is controlled by maximum/minimum value which meets the setting range.
    (Ex : The voltage value of cooling discharge temperture 30 ˚C (86 °F) → the controlled value : 25 ˚C (77 °F))

▶ Target Pressure Setting (05 Series Install Option SEG17=2)

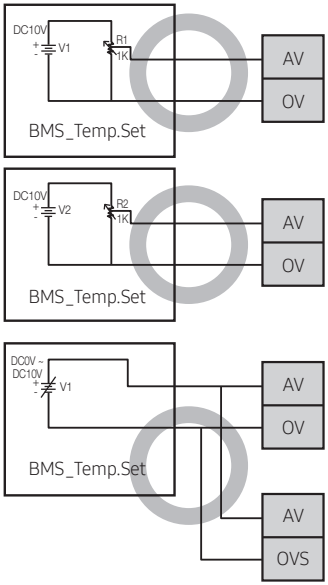
Simple BMS Voltage Range	Set Refrigerant Pressure	
	Heating (Condensing Pressure)	Cooling (Evaporating Pressure)
10.00 V ~ 9.75 V	33kg/cm²G (469psig)	6.2kg/cm²G (88.2psig)
9.75 V ~ 9.50 V	32.5kg/cm²G (462psig)	6.4kg/cm²G (91psig)
9.50 V ~ 9.25 V	32kg/cm²G (455psig)	6.6kg/cm²G (93.9psig)
9.25 V~ 9.00 V	31.5kg/cm²G (448psig)	6.8kg/cm²G (96.7psig)
9.00 V ~ 8.75 V	31kg/cm²G (441psig)	7kg/cm²G (99.6psig)
8.75 V ~ 8.50 V	30.5kg/cm²G (434psig)	7.2kg/cm²G (102.4psig)
8.5 V ~ 8.25 V	30kg/cm²G (427psig)	7.4kg/cm²G (105.3psig)
8.25 V ~ 8.00 V	29.5kg/cm²G (420psig)	7.6kg/cm²G (108.1psig)
8.00 V ~ 7.75 V	29kg/cm²G (412psig)	7.8kg/cm²G (110.9psig)
7.75 V ~ 7.50 V	28.5kg/cm²G (405psig)	8kg/cm²G (113.8psig)
7.50 V ~ 7.25 V	28kg/cm²G (398psig)	8.2kg/cm²G (116.6psig)
7.25 V ~ 7.00 V	27.5kg/cm²G (391psig)	8.4kg/cm²G (119.5psig)
7.00 V ~ 6.75 V	27kg/cm²G (384psig)	8.6kg/cm²G (122.3psig)
6.75 V ~ 6.50 V	26.5kg/cm²G (377psig)	8.8kg/cm²G (125.2psig)
6.50 V ~ 6.25 V	26kg/cm²G (370psig)	9kg/cm²G (128psig)
6.25 V ~ 6.00 V	25.5kg/cm²G (363psig)	9.2kg/cm²G (130.9psig)
6.00 V ~ 5.75 V	25kg/cm²G (356psig)	9.4kg/cm²G (133.7psig)
5.75 V ~ 5.50 V	24.5kg/cm²G (348psig)	9.6kg/cm²G (136.5psig)
5.50 V ~ 5.25 V	24kg/cm²G (341psig)	9.8kg/cm²G (139.4psig)
5.25 V ~ 5.00 V	23.5kg/cm²G (334psig)	10kg/cm²G (142.2psig)
5.00 V ~ 4.75 V	23kg/cm²G (327psig)	10.2kg/cm²G (145.1psig)
4.75 V ~ 4.50 V	22.5kg/cm²G (320psig)	10.4kg/cm²G (147.9psig)
4.50 V ~ 4.25 V	22kg/cm²G (313psig)	10.6kg/cm²G (150.8psig)
4.25 V ~ 4.00 V	21.5kg/cm²G (306psig)	10.8kg/cm²G (153.6psig)
4.00 V ~ 3.75 V	21kg/cm²G (299psig)	11kg/cm²G (156.5psig)
3.75 V ~ 3.50 V	20.5kg/cm²G (292psig)	11.2kg/cm²G (159.3psig)
3.50 V ~ 3.25 V	20kg/cm²G (284psig)	11.4kg/cm²G (162.1psig)
3.25 V ~ 3.00 V	19.5kg/cm²G (277psig)	11.6kg/cm²G (165psig)
3.00 V ~ 2.75 V	19kg/cm²G (270psig)	11.8kg/cm²G (167.8psig)
2.75 V ~ 2.50 V	18.5kg/cm²G (263psig)	12kg/cm²G (170.7psig)
2.50 V ~ 2.25 V	18kg/cm²G (256psig)	12.2kg/cm²G (173.5psig)
2.25 V ~ 2.00 V	17.5kg/cm²G (249psig)	12.4kg/cm²G (176.4psig)
2.00 V ~ 1.75 V	17kg/cm²G (242psig)	12.6kg/cm²G (179.2psig)
1.75 V ~ 1.50 V	16.5kg/cm²G (235psig)	12.8kg/cm²G (182.1psig)
1.50 V ~ 1.25 V	16kg/cm²G (228psig)	13kg/cm²G (184.9psig)
1.25 V ~ 1.00 V	15.5kg/cm²G (220psig)	13.2kg/cm²G (187.7psig)
1.00 V ~ 0.75 V	15kg/cm²G (213psig)	13.4kg/cm²G (190.6psig)
0.75 V ~ 0.50 V	15kg/cm²G (213psig)	13.4kg/cm²G (190.6psig)
0.50 V ~ 0.25 V	15kg/cm²G (213psig)	13.4kg/cm²G (190.6psig)
0.25 V ~ 0.00 V	15kg/cm²G (213psig)	13.4kg/cm²G (190.6psig)

Installing a DOAS Interface Module

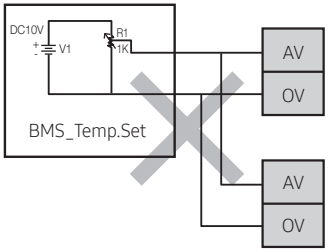
Setting the temperature

- Keep the power supply of Simple BMS in 10 V ± 0.2 V.
- If the Simple BMS uses variable resistor(VR), make the electric resistance of VR under 1 kΩ.
- Simple BMS which uses variable resistor(VR) need to be connected to the DOAS Interface Module with 1:1 link.
- Use the Simple BMS which outputs voltage so that one Simple BMS controls several DOAS Interface Module at the same time.

※ Available



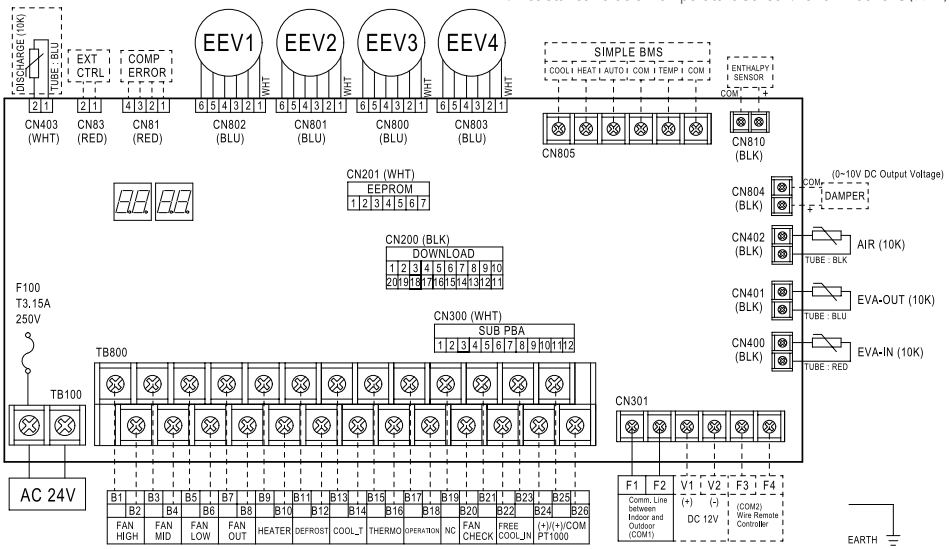
※ Not Available



CAUTION

- Make sure that Simple BMS is connected to DC power supply before installing.
- Never connect Simple BMS to AC power supply.

Wiring diagram for Control assembly



USE COPPER SUPPLY WIRES.
UTILISER DES FILS D'ALIMENTATION EN CUIVRE

※ DOAS Interface Module sensor displays about 10 KΩ of resistance value at room temperature.

ENGLISH

Installing a DOAS Interface Module

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 DOAS Interface Module power/communication cables should be within 10 %.
- ▶ Connect F3, F4 of DOAS Interface Module 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 (lb•in)	
M4	10.42~12.76

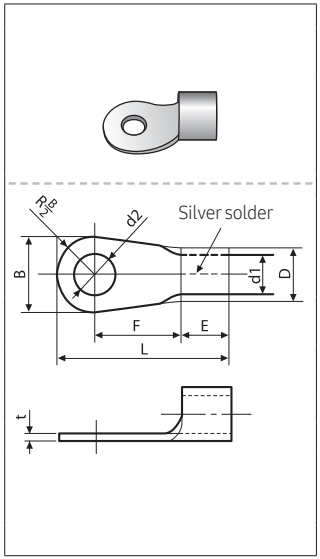
- ▶ To protect the product from external shock or water, put the power and communication cable into a power cable protection box.
- ▶ Maintain more than 1.97"(50mm) distance between the power cable and communication cable.

CAUTION

- The circuit diagram for wiring represents only an outline so the detailed information about actual installation work is not described.
- In principle, DOAS Interface Module 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 DOAS Interface Modules from 1 DOAS Interface Module.
- When peeling the sheath of power cable, use the appropriate tools to prevent damage inside the wire.
- Make sure that more than 0.79"(50mm) of power and communication cable of DOAS Interface Module is inside the electric parts.
- Communication cable should be installed separately from power cable or other communication cables.

Selecting a solderless terminal

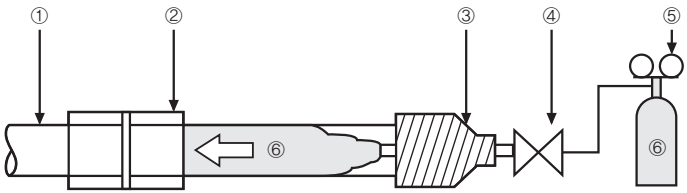
1. **Select a solderless terminal on the basis of nominal sectional area for a connecting power cable.**
2. **Insulate the solderless terminal and connection part of the connecting power cable with sheath.**



Norminal dimensions for cable [mm²(inch²)]		1.5 (0.002)		2.5 (0.003)		4 (0.006)
Norminal dimensions for screw [mm(inch)]		4 (0.15")	4 (0.15")	4 (0.15")	4 (0.15")	4 (0.15")
B	Standard dimension [mm(inch)]	6.6 (0.25")	8.0 (0.31")	6.6 (0.25")	8.5 (0.33")	9.5 (0.37")
	Allowance [mm(inch)]	±0.2 (±0.007")		±0.2 (±0.007")		±0.2 (±0.007")
D	Standard dimension [mm(inch)]	3.4 (0.13")		4.2 (0.16")		5.6 (0.22")
	Allowance [mm(inch)]	+0.3 (+0.011") -0.2 (-0.007")		+0.3 (+0.011") -0.2 (-0.007")		+0.3 (+0.011") -0.2 (-0.007")
d1	Standard dimension [mm(inch)]	1.7 (0.06")		2.3 (0.09")		3.4 (0.13")
	Allowance [mm(inch)]	±0.2 (±0.007")		±0.2 (±0.007")		±0.2 (±0.007")
E	Min. [mm(inch)]	4.1 (3/16")		6 (1/4")		6 (1/4")
F	Min. [mm(inch)]	6 (1/4")		6 (1/4")		6 (1/4")
L	Max. [mm(inch)]	16 (5/8")		17.5 (3/4")		20 (3/4")
d2	Standard dimension [mm(inch)]	4.3 (0.16")		4.3 (0.16")		4.3 (0.16")
	Allowance [mm(inch)]	+0.2 (+0.007") 0 (0")		+0.2 (+0.007") 0 (0")		+0.2 (+0.007") 0 (0")
t	Min. [mm(inch)]	0.7 (0.02")		0.8 (0.03")		0.9 (0.035")

ENGLISH

Welding with nitrogen blowing



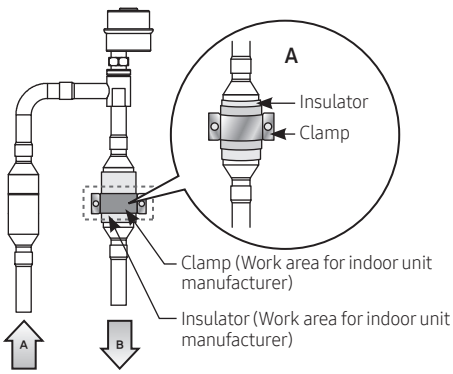
①	Refrigerant pipe
②	Location for welding
③	Tape
④	Hands valve
⑤	Reducing valve
⑥	Nitrogen gas

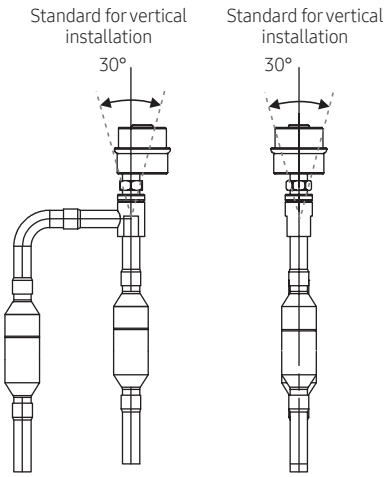
1. **When welding a pipe, perform nitrozen blowing work.**
   - If you didn't blow nitrogen through the refrigerant pipe during welding, many oxides will accumulate inside the pipe, which may cause the expansion valves and compressor to operate abnormally.
2. **When inputting the nitrogen gas, the rate 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 a DOAS Interface Module

Installing EEV Assembly (Not provided)

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





A: High pressure pipe from outdoor unit (IN)
- Diameter : Φ12.7mm (1/2")

B: Low pressure pipe to indoor unit heat exchanger (OUT)
- Diameter : Φ12.7mm (1/2")

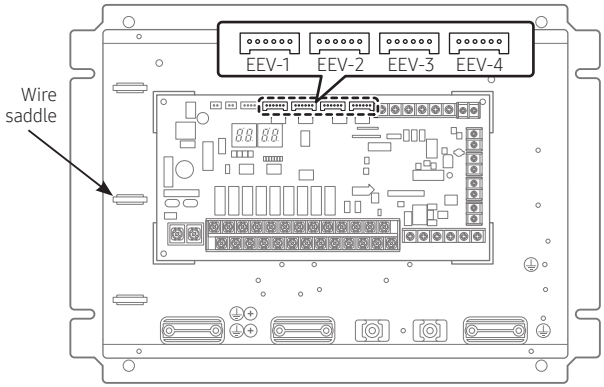
※ In case of V1EEVK01/02/03UC, diameter of (A/B) is 9.52mm (3/8")

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

▶ Attach one label to upper middle part of EEV Assembly 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 capacity.**

▶ When there is an EEV: Connect EEV-1.
▶ When there are 2 EEV's: Connect EEV-1 and EEV-2.
▶ When there are 3 EEV's: Connect EEV-1, EEV-2, and EEV-3.
▶ When there are 4 EEV's: Connect EEV-1, EEV-2, EEV-3, and EEV-4.



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

CAUTION
- Be careful when setting the number of the indoor unit installation with an outdoor unit.
- When setting DOAS Interface Module capacity, refer to the SEG 20 of Installation option 05 series on page 42.
- Regardless of the DOAS Interface Module capacity setting, one indoor unit will be recognized.

[EEV Models and Quantities for each Capacity]

▶ SEG 20 of the installation option 05 series

Disaply	Rated Capacity (Btu/h)	Capacity Range (Btu/h)	Heat Exchanger Volume(in³)	Assy EEV	Number of EEVs
0	12k	7k≤ capacity ≤18k	28≤ volume ≤71	V1EEVK01UC	1
1	12k	7k≤ capacity ≤18k	28≤ volume ≤71	V1EEVK01UC	1
2	24k	18k< capacity ≤30k	71< volume ≤118	V1EEVK02UC	1
3	36k	30k< capacity ≤42k	118< volume ≤165	V1EEVK03UC	1
4	48k	42k< capacity ≤60k	165< volume ≤236	V1EEVK03UC	1
5	60k	60k< capacity ≤72k	236< volume ≤283	V1EEVK04UC	1
6	72k	72k< capacity ≤96k	283< volume ≤378	V1EEVK04UC	1
7	96k	96k< capacity ≤144k	378< volume ≤566	V1EEVK04UC	2
8	144k	144k< capacity ≤192k	566< volume ≤755	V1EEVK04UC	2
9	192k	192k< capacity ≤240k	755< volume ≤944	V1EEVK04UC	3
A	240k	240k< capacity ≤288k	944< volume ≤1133	V1EEVK04UC	3
B	288k	288k< capacity ≤336k	1133< volume ≤1322	V1EEVK04UC	4
C	336k	336k< capacity ≤384k	1322< volume ≤1510	V1EEVK04UC	4
D	384k	384k< capacity ≤480k	1510< volume ≤1725	V1EEVK04UC	4

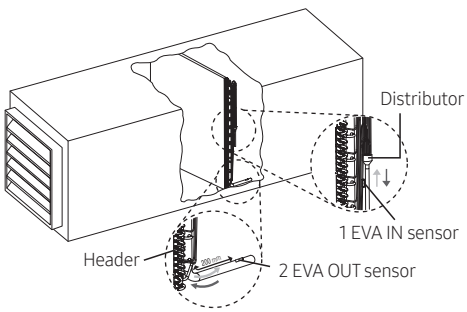
Installing a DOAS Interface Module

Installing IN/OUT sensor

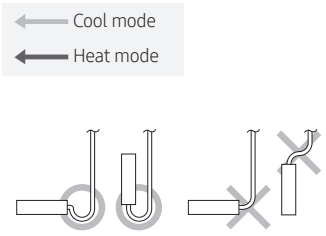
1. **Attach the EVA IN sensor after the distributor and on the lowest temperature pipe of a heat exchanger.**
2. **Install the EVA OUT sensor 200 mm (7.87”) after the header of Indoor unit heat exchanger as shown in the picture.**
3. **Insulate the EVA IN and OUT sensor so that it is not affected by airflow.**
4. **Install the ROOM temperature sensor on the RA (Return Air) path of Indoor unit.**

※ In case of DOAS, install ROOM temperature sensor and enthalpy sensor (optional) on the OA (Outdoor Air) path in front of indoor unit heat exchanger

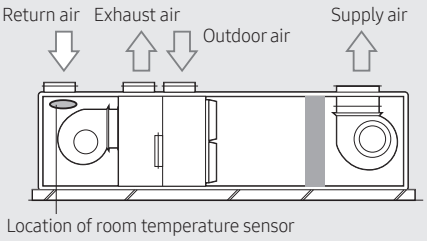
Selecting the location of EVA_IN/OUT sensor



※ Refrigerant flow



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 inlet or outlet can be measured accurately.

Setting an indoor unit type

In the 02 series installation option SEG 24, configure the settings depending on the indoor unit.

No.	Item	Type	Description	Control Item
1	Indoor Unit Type	Common	Circulates indoor air in and out of indoor unit	Refer to the below table
		Dedicated Outdoor Air System (DOAS)	Provides and conditions 100% outside air	
2	Fan Motor Type	Fixed	Cannot change the Fan speed.	H/M/L setting and display are not possible on the controller.
		Variable	Can change the Fan speed to H, M, and L.	H/M/L setting and display are possible on the controller.
3	Enthalpy Sensor	Disuse	Does not use the enthalpy sensor.	
		use	Uses the enthalpy sensor.	When the enthalpy sensor value is greater than the reference value even though the current temperature satisfies the setting for cooling, it performs cooling operation.

No.	Control logic	Installation option 02 series SEG 24	
		'Common' setting	'DOAS' setting
1	Preventing cold wind	Fan off when average evaporator temperatrue is below 28°C (82.4°F)	Fan off when average evaporator temperatrue is below 5°C (41°F)
2	Discharge air temperature control in HR mode	impossible	Possible (Main cooling only) While outdoor unit keeps main cooling mode, only heating unit can control discharge temperature Heating unit controls EEV step depending on target discharge temperature
3	Thermo OFF decision	depending on room temperature only	depending on room temperature or discharge temperature
4	Operation restriction depending on outdoor temperature	use	disuse

Fan Motor

In the installation option SEG 24, set the fan motor type.

1. **In case of the fixed type setting**

▶ Connect the PBA Fan out to the motor control signal.

▶ While the contact output for fan out is generated in contact closed, the contact output for fan out is not generated in contact open.

2. **In case of the variable type setting**

▶ Connect the PBA H/M/L to the motor control signal.

▶ Depending on the fan out (H/M/L), the corresponding contact output is generated.

CAUTION

• Do not power the motor with the fan speed output contacts. If it is not the motor control signal but the motor drive power, be sure to connect an external relay.

ENGLISH

Installing a DOAS Interface Module

Economizer (optional)

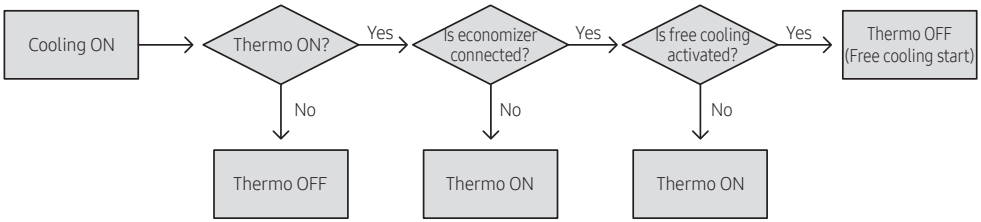
1. Function

1) Purpose
   - Energy saving is possible by intaking 100% outdoor air during cooling operation when outdoor temperature is low.
     → This is free cooling operation : Thermo off occurs even though room temperture is higher than set temperature.
2) How to work
   - It works by means of contact signal(input/output) between DOAS Interface Module PBA and economizer.
     → PBA has each contact signal : Input non voltage contact signal and output non valtage contact signal
   - Installation option setting is not required for this function, but in case of DOAS setting, this function is not activated.

NOTE

- When the contact for free cooling is shorted, free cooling is enabled. When the contact is open, free cooling is not available.
- After checking the input/output specifications of the economizer, connect a suitable relay.

2. Control Logic

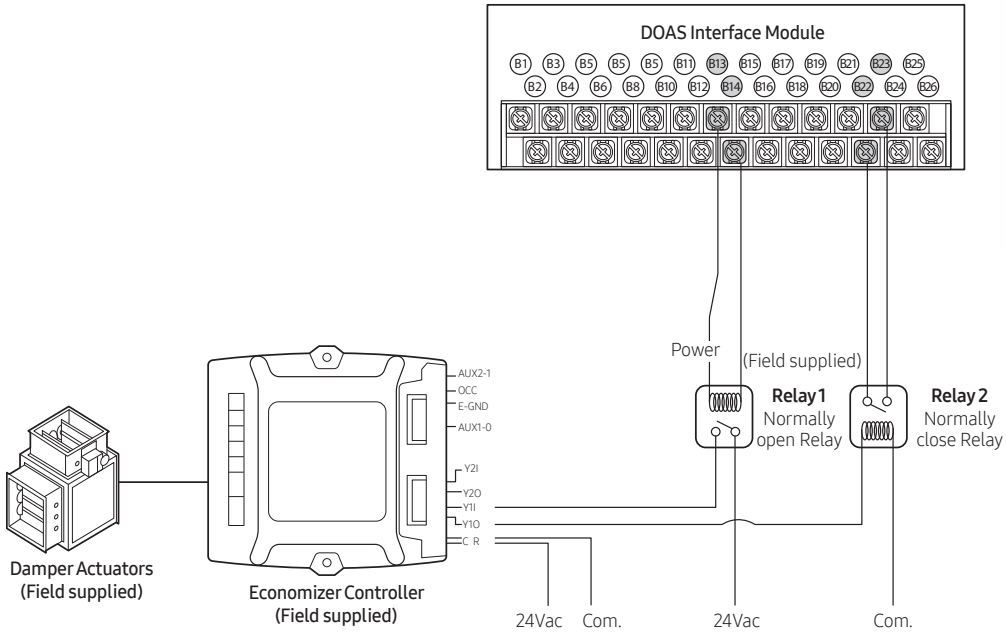


3. Wiring Connection

1) [B13/B14]
- Cooling thermo contact signal(output)
- Contact short : Cooling thermo on
- Contact open : Coollng thermo off or stop

2) [B22/B23]
- Free cooling contact signal(input)
- Contact short : Free cooling available
- Contact open : Mechanical cooling available

3) [Operation by Economizer controller]
- Cooling thermo on → Relay1 Close → Y1I Activate → Economizer decide mechanical cooling → Y1O Activate → Relay 2 Open(due to normally close relay) → Mechanical cooling start
- Cooling thermo on → Relay1 Close → Y1I Activate → Economizer decide free cooling → Y1O Deactivate → Relay 2 Close(due to normally close relay) → Free cooling start



Installing a DOAS Interface Module

Damper (optional)

For control by the connected damper, the wiring between DOAS Interface Module PBA and ventilation damper and its installation option setting are required.

1. Installation Option Setup

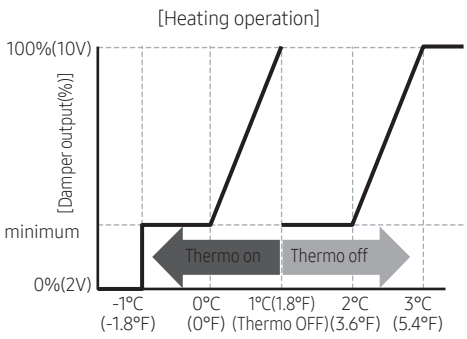
	Item	Description	Option Code	Default
Step 1	Use of the damper	Use or Disuse	05 series installation option SEG 16	Use
	Use of the damper in Fan mode	In Fan mode, whether or not to use the damper		Use
	Use of variable control of the damper	Damper output fixed or variable		Heating variable Cooling fixed
Step 2	Minimum output setting for the damper	Range of 10 to 100%	05 series installation option SEG 14	30%
Step 3	Minimum temperature setting of the damper	Avaiable when the temperature exceeds the setting	05 series installation option SEG 15	0°C (32°F)

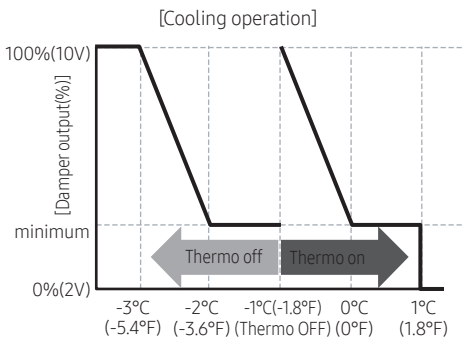
NOTE

- For more information, refer to the installation options.

2. Damper Output Control

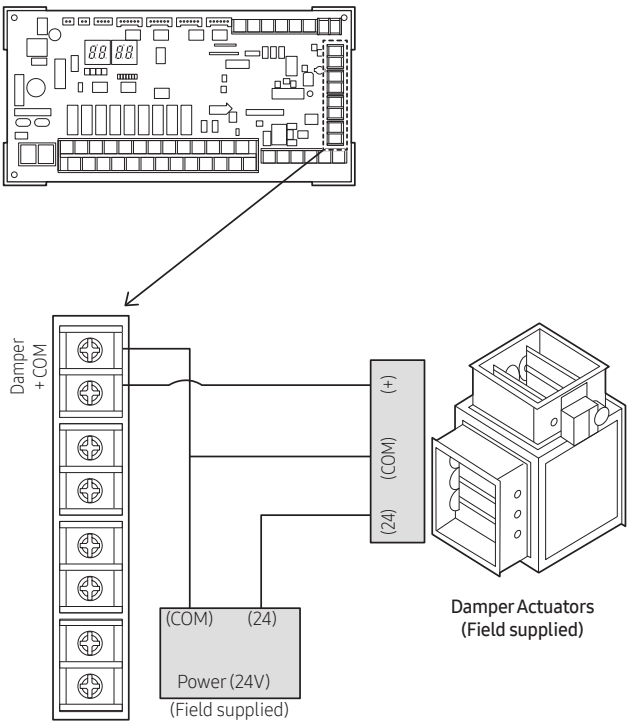
1) Variable output control
   - Depending on the room temperature and setting, the varialbe output (2 to 10 Vdc) is generated. As the temperature is closer to the setting, the damper output increases.
   - Output (2 to 10 Vdc): 0 to 100%





2) Fixed output control
   - Regardless of the room temperature and setting, the fixed output is generated.
   - Operation is available with the minimum output set as the installation option.
3) If free cooling is available by economizer controller, damper output is 100%
   (Contact input signal of the 'free cool in' on PBA is required)

3. **Wiring Connection**



NOTE
- Use the ventilation damper that satisfiles the specification for the DOAS Interface Module PBA output (2 to 10 Vdc).

Enthalpy Sensor (optional)

In order to perform heating operation by connecting the enthalpy sensor in DOAS, the wiring between DOAS Interface Module PBA and enthalpy sensor and its installation option setting are required.

1. Enthalpy sensor specification
   1) Output current: 4 to 20 mA
   2) Manufacturer/Model Name: Honeywell / C7400A

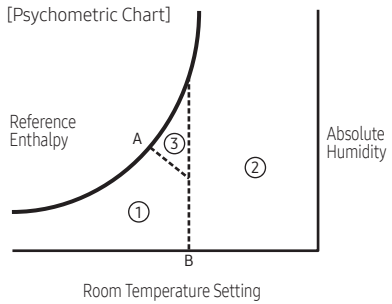
NOTE
- Be sure to use the model name above.

Installing a DOAS Interface Module

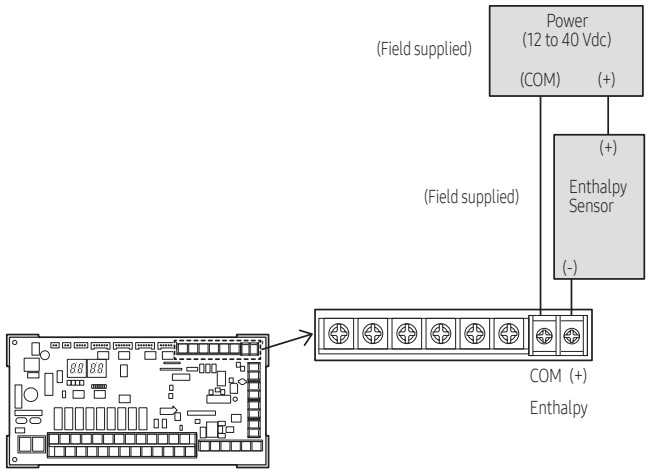
2. Enthalpy sensor control

1) Operate the product after comparison between the intake enthapy of indoor unit and reference enthalpy.
   - Reference enthalpy (installation option code; selectable according to the site)
   - Cooling Thermo OFF & (enthalpy > reference enthalpy): Cooling T-ON
2) The reference enthalpy for cooling T-ON can be set depending on the site.
   - If it is required to keep a lower humidity, decrease the reference enthapy. For a higher humidity, increase the reference enthalpy.
   - Can set in the 05 series installation option SEG12 (reference enthalpy default: 50 kJ/kg (21.5 Btu/lb).
3) Comparison of cooling operations depending on the enthalpy sensor availability

Intake Temp.	Enthalpy Sensor Not Applicable	Enthalpy Sensor Applicable
B or above	②: Thermo ON	②: Thermo ON
Below B	①: Thermo OFF ③: Thermo OFF	①: Thermo OFF ③: Thermo ON



3. Wiring example



Setting the Temperature Sensor

Depending on the 05 series installation option SEG24, the temperature sensor type and temperature sensor main can be configured.

1. Setup of the room/discharge temperature sensor type

▶ Room temperature sensor: Select any of Supplied temperature sensor, PT1000, and Wired Remote Control.
▶ Discharge temperature sensor: Select any of Supplied temperature sensor and PT1000.
▶ PT1000 cannot use both room sensor and discharge temperature sensor.
▶ Upon use of PT1000, the values and errors of Supplied temperature sensor are ignored and the values and errors of PT1000 are applied.

2. Setup of room and discharge temperature sensor main

▶ No setting for the temperature sensor main: Temperature setting of the indoor unit is applied. (Main temperature sensor's value is not applied.)
▶ Setting for the temperature sensor main: The value of the temperature sensor for the indoor unit is applied.
▶ Temperature Sensor Main Value Sharing: The value of the temperature sensor for the indoor unit is not applied but the value of the temperature sensor main is applied.

3. Error handling

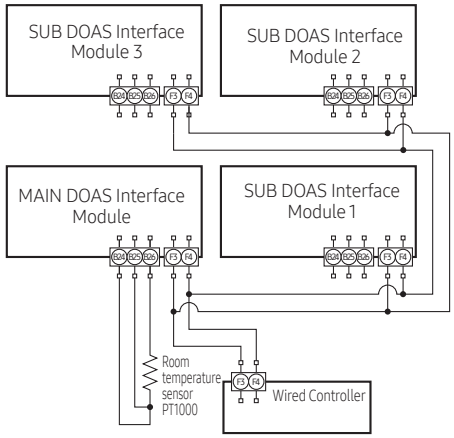
▶ When two or more temperature sensor mains are set or the sub indoor unit does not receive information of the temperature sensor main for 2 minutes, E149 is generated.

NOTE

• The temperature setting methods for AHU EEV Kit and DOAS Interface Module are different. For setting for the AHU EEV Kit temperature sensor, refer to the AHU EEV Kit installation manual.

4. Wiring example (setting a temperature sensor for installation of multiple DOAS Interface Modules)

▶ In case of room temperature sensor PT1000



CAUTION

• For common AHU with multiple DOAS Interface Modules, sharing 1 room temperature sensor is possible. Room temperature sensor sharing uses the communication of Wired Controller, So a Wired Controller must be installed.

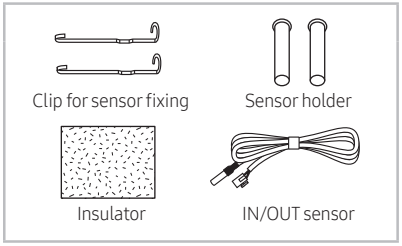
Installing a DOAS Interface Module

Example of IN/OUT sensor installation 1

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

NOTE

Type	Diameter of a sensor (in(mm))	Diameter of a sensor holder (in(mm))
IN sensor (Red)	Φ0.24" (Φ6)	Φ0.27" (Φ6.8)
OUT sensor (Blue)	Φ0.28" (Φ7)	Φ0.31" (Φ7.8)

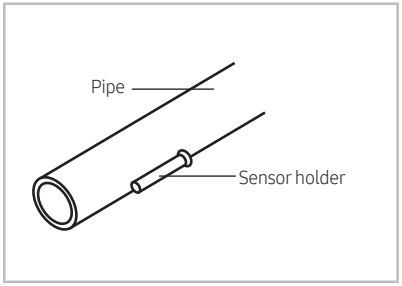


2. **Brazing the sensor holder to the selected location of a pipe.**

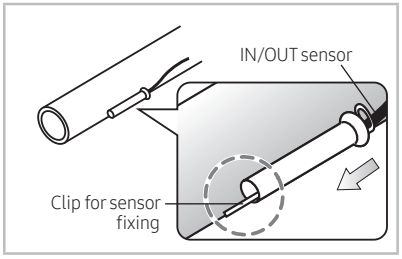
NOTE

Brazing a sensor

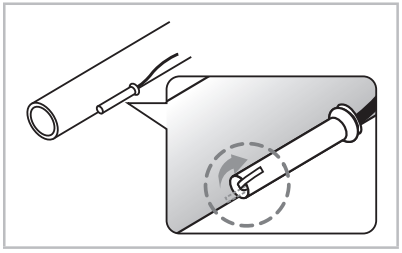
- Brazing the sensor at the place where temperature detection is easily available. (Refer to p.20)
- Brazing the sensor holder as closely as possible on the surface of the pipe.
- Check whether the sensor you will attach is IN or OUT sensor. (The size of IN/OUT sensor is different.)
- The Brazing must be coated more than '2/3' of sensor holder length.



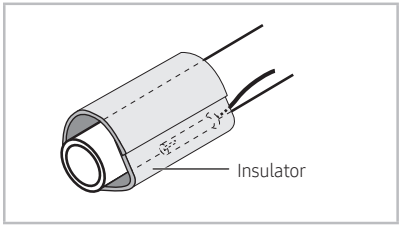
3. **Insert the sensor and the clip into the sensor holder.**



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



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

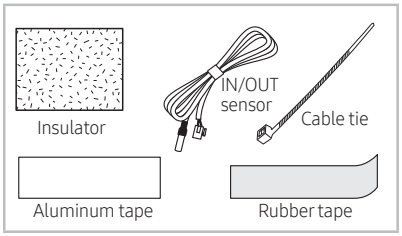


Example of IN/OUT sensor installation 2

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

NOTE

Type	Diameter of a sensor (in(mm))	Diameter of a sensor holder (in(mm))
IN sensor (Red)	Φ0.24" (Φ6)	Φ0.27" (Φ6.8)
OUT sensor (Blue)	Φ0.28" (Φ7)	Φ0.31" (Φ7.8)

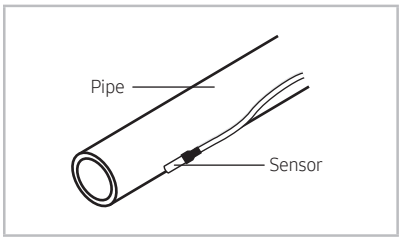


2. **Attach the sensor closely to the pipe.**

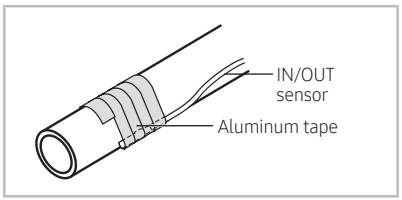
NOTE

Attaching a sensor

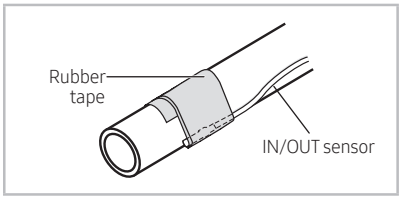
- Attach the sensor at the place where temperature detection is easily available. (Refer to p.20)
- Attach the sensor as closely as possible on the surface of the pipe.
- Do not use a sensor holder.



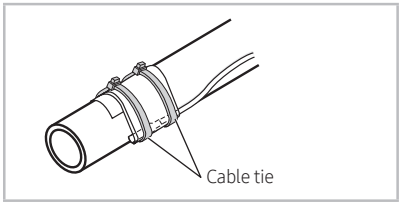
3. **After attaching the sensor on the pipe, cover it with aluminum tape.**



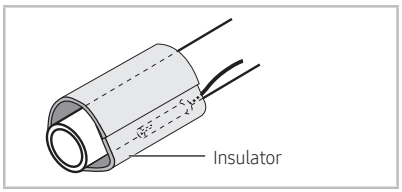
4. **Cover the sensor with rubber tape.**



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



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

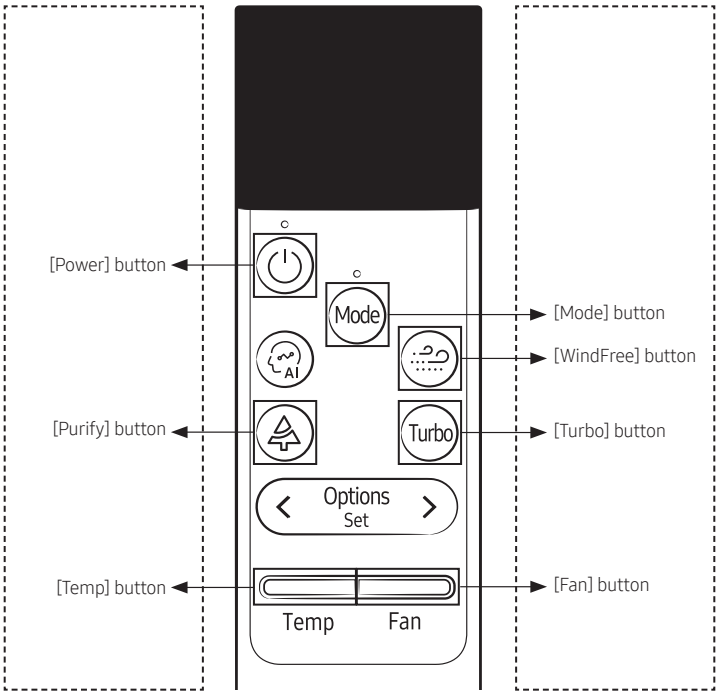


ENGLISH

Setting an address and installation option of DOAS Interface Module

- Set the address of an DOAS Interface Module 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 DOAS Interface Module and installation option.
- The reception part of a remote controller is built in the DOAS Interface Module PBA.

The procedure of option setting

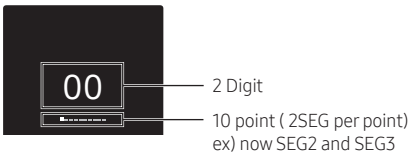


NOTE

• The remote control display and buttons may vary depending on the model.

1. Enter the mode for setting the options.

1) Reset remote control: Temp button Down + Fan button Down + Mode Press for 10 seconds
2) You can see "SW Initialization" message and enter the following in 5 seconds.
3) Press 22 button and Turbo button.
4) Make sure that you are entered into the mode for setting options.



2. Set the option values.

CAUTION
- The total number of available options is 24 : SEG1 to SEG24
- Because SEG1, SEG7, SEG13 and SEG19 are the page options used by the previous remote control models, the modes to set values for these options are skipped automatically.
- Set a 2-digit value for each option pair in the following order.
- You can see 20 SEG (except SEG1, SEG7, SEG13, SEG19) SEG2 → ...→ SEG6 → SEG8 → .....→ SEG12 → SEG14 → .... → SEG18 → SEG20 → ... → SEG24

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

- You can set the next SEG by pressing the (Mode) button.
- You can change the digit value through the following operation.
  Left value: Temp up or down, range : 0 ~ F
  Right value: Fan up or down, range : 0 ~ F

Take the steps presented in the following table:

Steps	Remote control display
1. Set the SEG2 and SEG3 values: 1) Set the SEG2 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG3 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG2 SEG3
2. Press the (Mode) button to move to next page.	
3. Set the SEG4 and SEG5 values: 1) Set the SEG4 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG5 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG4 SEG5
4. Press the (Mode) button to move to next page.	
5. Set the SEG6 and SEG8 values: 1) Set the SEG6 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG8 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG6 SEG8

Setting an address and installation option of DOAS Interface Module

Steps	Remote control display
6. Press the Mode button to move to next page.	
7. Set the SEG9 and SEG10 values: 1) Set the SEG9 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG10 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG9  SEG10
8. Press the Mode button to move to next page.	
9. Set the SEG11 and SEG12 values: 1) Set the SEG11 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG12 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG11  SEG12
10. Press the Mode button to move to next page.	
11. Set the SEG14 and SEG15 values: 1) Set the SEG14 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG15 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG14  SEG15
12. Press the Mode button to move to next page.	
13. Set the SEG16 and SEG17 values: 1) Set the SEG16 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG17 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG16  SEG17

Steps	Remote control display
14. Press the Mode button to move to next page.	
15. Set the SEG18 and SEG20 values: 1) Set the SEG18 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG20 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG18 SEG20
16. Press the Mode button to move to next page.	
17. Set the SEG21 and SEG22 values: 1) Set the SEG21 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG22 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG21 SEG22
18. Press the Mode button to move to next page.	
19. Set the SEG23 and SEG24 values: 1) Set the SEG23 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG24 value by pressing the Fan button repeatedly until the value you want to set appears on the remote control display. When you press the Fan or Temp button, values appear in the following order: 0 → 1 → ··· E → F	 SEG23 SEG24

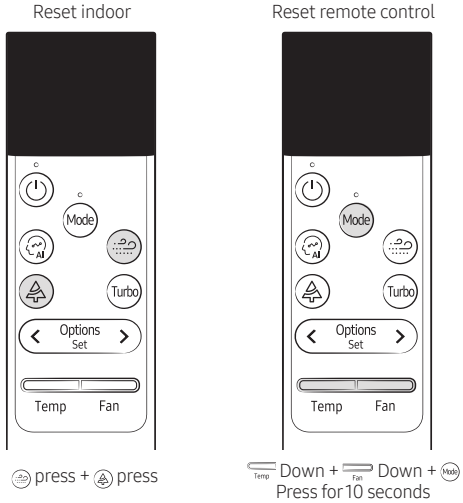
Setting an address and installation option of DOAS Interface Module

3. Check whether the option values you have set are correct by pressing the (Mode) button repeatedly.

EX) 100000-200000-300000-400000

4. Save the option values into the indoor unit:
Point the remote control to the remote control sensor on the indoor unit and then press the (⏻) button on the remote control twice.
Make sure that this command is received by the indoor unit. When it is successfully received, you can hear a short sound from the indoor unit. If the command is not received, press the (⏻) button again.

5. Check whether the air conditioner operates following the option values you have set:
1) Reset the indoor or outdoor unit.
   - Indoor Unit : Press (≋) button + (▲) button for 5 seconds
   - Outdoor Unit: Press the K3 button
2) Reset remote control: (Temp) button Down + (Fan) button Down + (Mode) Press for 10 seconds You can see the "SW Initialization" message.



Setting an DOAS Interface Module address (MAIN/RMC/MSB port)

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

CAUTION

- Also set the MSB and DOAS Interface Module address by using Add-on > **Change address** on Lennox Service Software. (For more information, see the Lennox Service Software Help.)

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

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Setting Main address		100-digit of indoor unit address		10-digit of indoor unit		The unit digit of an indoor unit	
Indication and Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
	0		A		0	No Main address	0~9	100-digit	0~9	10-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		Group address	
Indication and Details	Indication	Details	-	Indication	Details	-	Indication	Details	Indication	Details
	1			0	No RMC address		RCM1	0~F	RCM 2	0~F
				1	RMC address setting mode					

ENGLISH

Setting an address and installation option of DOAS Interface Module

Option	SEG13		SEG14	SEG15		SEG16		SEG17		SEG18	
Explanation	PAGE			Setting MSB PORT address		10-digit of MSB address		1-digit of MSB		MSB PORT address	
	Indication	Details		Indication	Details	Indication	Details	Indication	Details	Indication	Details
Indication and Details	2		-	0	No MSB PORT	0~1	10-digit	0~9	1-digit	A~F	PORT Location
				1	MSB PORT address setting mode						

CAUTION

- When "A"~"F" is entered to SEG5~6, the main address of DOAS Interface Module will not be changed.
- If you set the SEG 3 as 0, the DOAS Interface Module 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 DOAS Interface Module will maintain the existing RMC ADDRESS even if you have entered the option value of SEG11~12.
- If the indoor unit is connected to the MSB, you can set the SEG 15~18.
  Example› If you want to set the DOAS Interface Module to 'A' port of MSB #1.
  (0A0000 – 100000 – 20101A -30000)

Setting the installation option of an DOAS Interface Module (suitable for the condition of each installation location)

1. Check whether power is supplied or not.
   - When the DOAS Interface Module is not plugged in, there should be additional power supply.
2. The reception part of a remote controller is built in the DOAS Interface Module PBA.
3. Set the installation option of an DOAS Interface Module according to installation conditions.
   - The default setting of an DOAS Interface Module installation option (02 series) is "020010-100000-200000-300000".
   - The default setting of an DOAS Interface Module installation option (05 series) is "050000-100003-224000-340000".
4. Set the DOAS Interface Module option with a remote controller.

■ 02 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	Evaporator Drying	External room temperature sensor/ Minimizing fan operation when thermostat is off	Central control	-
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	-	Hot water heater	Contact signal	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	Forced FAN Operation for Heating and Cooling	Indoor unit type

▶ 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(*5)		SEG4(*1)			SEG5		SEG6	
Explanation	PAGE		MODE		Evaporator Drying		Use of external room temperature sensor/ Minimizing fan operation when thermostat is off			Use of central control		FAN RPM compensation	
	Indication	Details	Indication	Details	Indication	Details	Indication	Details		Indication	Details		
Indication and 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				
					2	Use (5min) (*1)	3	Use	Heating Use				
							4	Disuse	Cooling Use				
							5	Use	Cooling Use				
					4	Use (10min) (*1)	6	Disuse	All Use				
							7	Use	All Use				
							8	Disuse	Use (Cooling Ultra Low Fan)				
					6	Use (30min) (*1)	9	Use	Use (Cooling Ultra Low Fan)				
							A	Disuse	Use (Heating / Cooling Ultra Low Fan)				
							B	Use	Use (Heating / Cooling Ultra Low Fan)				

Setting an address and installation option of DOAS Interface Module

Option	SEG7		SEG8		SEG9		SEG10			SEG11		SEG12	
Explanation	PAGE				Use of hot water heater		Contact Signal(*4)			EEV Step when heating stops			
Indication and Details	Indication	Details			Indication	Details	Indication	Details: Thermal ON : Fan operation connection	Details: Cooling thermal ON : Dehumidification including	Indication	Details		
	1				0	Disuse	0	No	not including	0	Default value		
					1	Use(*2)							
					2	-	1	Yes	not including	2	-		
					3	Use(*2)	2	No	including				
					4	Use(*2)	3	Yes	including				

Option	SEG13		SEG14		SEG15			SEG16		SEG17			SEG18	
Explanation	PAGE		Use of external control		Setting the output of external control/External heater On/Off signal					Buzzer control				
Indication and Details	Indication	Details	Indication	Details	Indication	Details: Setting the output of external control	Details: External heater On/Off signal			Indication		Details		
	2		0	Disuse	0	Thermo on	-			0		Use buzzer		
			1	ON/OFF control	1	Operation on	-			1		Disuse buzzer		
					2	-	Use(*3)							
					3	-	Use(*3)							
			2	OFF control	4	Cooling operation								
					5		Use(*3)							

Option	SEG19		SEG20		SEG21		SEG22		SEG23			SEG24			
Explanation	PAGE				Offset of compensation for heating installation		Oil return/EEV step of stopped defrost mode		Forced FAN Operation for Heating and Cooling			Indoor unit type			
										Details			Details		
	Indication	Details			Indication	Details	Indication	Details	Indication	Cooling Fan Setting	Heating Fan Setting	Indication	Model type	Enthalpy S/S	Fan Motor
Indication and Details	3				0	Default	0	Default value	0	Disuse	Disuse	0	Common	Disuse	Fixed
					1	2°C (3.6°F)			1	Disuse	Use (Fan: User setting)				
									2	Disuse	Use (Fan: High)	1	DOAS	Disuse	Fixed
									3	Disuse	Use (Fan: Low)				
					2	5°C (9.0°F)	1	Noise decreasing setting	4	Use (Fan: User setting)	Disuse	2	Common	Use	Fixed
									5	Use (Fan: User setting)	Use (Fan: User setting)				
									6	Use (Fan: User setting)	Use (Fan: High)	3	DOAS	Use	Fixed
									7	Use (Fan: User setting)	Use (Fan: Low)				
									8	Use (Fan: High)	Disuse	4	Common	Disuse	Variable
									9	Use (Fan: High)	Use (Fan: User setting)				
									A	Use (Fan: High)	Use (Fan: High)	5	DOAS	Disuse	Variable
									B	Use (Fan: High)	Use (Fan: Low)				
									C	Use (Fan: Low)	Disuse	6	Common	Use	Variable
									D	Use (Fan: Low)	Use (Fan: User setting)				
									E	Use (Fan: Low)	Use (Fan: High)	7	DOAS	Use	Variable
									F	Use (Fan: Low)	Use (Fan: Low)				

(*1) Minimizing fan operation when thermostat is off
- Fan operates for 20 seconds at an interval of 5 minutes in Heat mode.
- Fan stops when thermostat is off in Cool mode.
- Make sure to connect the Wired 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 Controller must be set. Refer to the installation manual of the Wired Controller.

(*2) 1: Fan is turned on continually when the hot water heater is turned on,
3: Fan is turned off when the hot water heater is turned on with cooling only indoor unit
Cooling only indoor unit: To use this option, install the Multi Tenant Function controller (VCTRL07P-1) on the outdoor unit and fix it as Cool mode.
4: Fan speed is high mode continually when the hot water heater is turned on

(*3) When the following 2 or 3 is used as external heater On/Off signal, the signal for monitoring external contact control will not be output.
2: Fan is turned on continually when the external heater is turned on,
3: Fan is turned off when the external heater is turned on with cooling only indoor unit
Cooling only indoor unit: To use this option, install the Multi Tenant Function controller (VCTRL07P-1) on the outdoor unit and fix it as Cool mode
4: The cooling operation status is displayed.
5: Fan speed stays in the high mode continuously when the hot water heater is turned on.

(*4) Thermal ON contact signal(VCTRL02P-1) is related to fan operation : when the fan is stopped, the contact output for Thermo ON is not generated (e.g. defrosting operation).
Thermal ON contact signal(VCTRL02P-1) is not related to fan operation : Regardless of Fan ON/OFF, the contact output is generated with Thermo ON.
Cooling thermal ON contact(VSTAT10P-1) includes dehumidification thermal ON : The contact output is generated with cooling or dehumidification Thermo ON.
Cooling thermal ON contact(VSTAT10P-1) don't include dehumidification thermal ON : The contact output is generated with cooling Thermo ON.

(*5) When Cool or Dry mode is off. The indoor fan operate in setting minutes.

Setting an address and installation option of DOAS Interface Module

■ **05 series installation option**

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	Use of Auto Change Over or Cooling only for HR only	(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	-	Criterion enthalpy
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	Damper minimum output	Damper opening minimum temperature	Damper control setting	Control Method by using simple BMS	Control variables when using hot water/external heater
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	Capacity 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 or Cooling only for HR only		(When setting SEG3) Standard heating temp. Offset		(When setting SEG3) Standard cooling temp. Offset		(When setting SEG3) Standard for mode change Heating → Cooling	
	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
Indication and 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
					2	Use Cooling only indoor unit for HR	5	2.5	5	2.5	5	3.5
							6	3	6	3	6	4
							7	3.5	7	3.5	7	4.5

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 difference between indoor units				Criterion enthalpy	
Indication and Details	Indication / Details	Indication	Details	Indication	Details	Indication	Details			Indication	Details
	1	0	1	0	5 min.	0	Use default value			0	35 kJ/kg (15.0 Btu/lb)
		1	1.5	1	7 min.	1	1) Height difference[1] is more than 30 m (98.4ft) or 2) Distance[2] is longer than 100 m (328.1ft)			1	40 kJ/kg (17.2 Btu/lb)
		2	2	2	9 min.					2	45 kJ/kg (19.3 Btu/lb)
		3	2.5	3	11 min.					3	50 kJ/kg (21.5 Btu/lb)
		4	3	4	13 min.	2	1) Height difference[1] is 15~30 m (49.2~98.4ft) or 2) Distance[2] is 15~110 m (49.2~360.9ft)			4	55 kJ/kg (23.6 Btu/lb)
		5	3.5	5	15 min.						
		6	4	6	20 min.					5	60 kJ/kg (25.8 Btu/lb)
		7	4.5	7	30 min.						

Option	SEG13	SEG14		SEG15		SEG16				SEG17		SEG18		
Explanation	2	Damper minimum output		Damper opening minimum temperature		Damper control setting				Control Method by using simple BMS		-		
		Indication	Details	Indication	Details	Indication	Details			Indication	Details	Indication	Details	
							Damper operation (Fan mode)	Damper output (Cooling)	Damper output (Heating)				Set temp. for heater On/Off	Delay time for heater On
		0	10%	0	20 °C (68 °F)	0	Damper Disuse			0	Room Temerature	0	At the same time as thermo on	No delay
		1	20%	1	15 °C (59 °F)	1	ON	Variable	Variable			1	At the same time as thermo on	10 minutes
		2	30%	2	10 °C (50 °F)	2	ON	Fixed	Variable			2	At the same time as thermo on	20 minutes
		3	40%	3	5 °C (41 °F)	3	ON	Variable	Fixed	1	Discharge Temperature	3	1.5 °C (2.7 °F)	No delay
												4	1.5 °C (2.7 °F)	10 minutes
												5	1.5 °C (2.7 °F)	20 minutes
												6	3.0 °C (5.4 °F)	No delay
		4	50%	4	0 °C (32 °F)	4	ON	Fixed	Fixed	2	Target Pressure (Cooling Mode : Evaporating Pressure Heating Mode : Condensing Pressure)	7	3.0 °C (5.4 °F)	10 minutes
		5	60%	5	-5 °C (23 °F)	5	OFF	Variable	Variable			8	3.0 °C (5.4 °F)	20 minutes
												9	4.5 °C (8.1 °F)	No delay
		6	70%	6	-10 °C (14 °F)	6	OFF	Fixed	Variable			A	4.5 °C (8.1 °F)	10 minutes
		7	80%	7	-15 °C (5 °F)	7	OFF	Variable	Fixed	F	Only Operation Mode Control (Temperature/ Pressure Control Not applied)	B	4.5 °C (8.1 °F)	20 minutes
		8	90%	8	-20 °C (-4 °F)	8	OFF	Fixed	Fixed			C	6.0 °C (10.8 °F)	No delay
		9	100%									D	6.0 °C (10.8 °F)	10 minutes
												E	6.0 °C (10.8 °F)	20 minutes

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Setting an address and installation option of DOAS Interface Module

Option	SEG19		SEG20		SEG21		SEG22		SEG23		SEG24			
Explanation	PAGE		Capacity setting		Fan Feedback		Defrost signal		Skip the prevention of cold air		Sensor			
	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details		
												Room temp. sensor	Discharge temp. sensor	Temp. sensor main
			0	12k Btu/h	0	Disuse	0	Disuse	0	Disuse				
			1	12k Btu/h	1	Use	1	Use	1	Use	0	Supplied	Supplied	No
			2	24k Btu/h							1	PT1000[3]	Supplied	No
			3	36k Btu/h							2	Supplied	PT1000	No
			4	48k Btu/h[5]							3	Wired Controller[4]	Supplied	No
			5	60k Btu/h							4	Wired Controller	PT1000	No
Indication and Details	3		6	72k Btu/h							5	Supplied	Supplied	Yes
			7	96k Btu/h							6	PT1000	Supplied	Yes
			8	144k Btu/h							7	Supplied	PT1000	Yes
			9	192k Btu/h							8	Wired Controller	Supplied	Yes
			A	240k Btu/h							9	Wired Controller	PT1000	Yes
			B	288k Btu/h							A	Sharing temp. value of a main indoor unit		No
			C	336k Btu/h										
			D	384k Btu/h										

1) Height difference : The difference of the height between the corresponding indoor unit 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 installed 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))

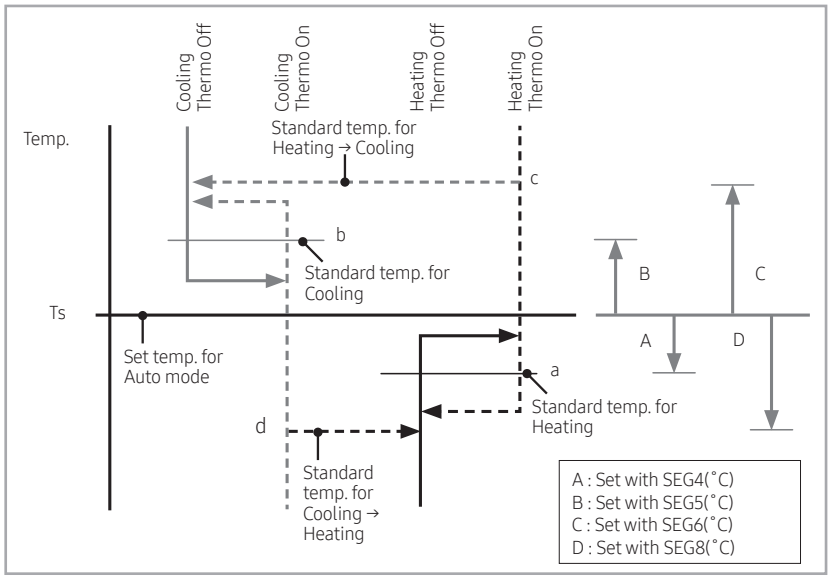
3) For use of PT1000, pay attention to the setup options and sensor connection. (In case of a setup error, normal operation is not possible.)

4) In the wired remote control mode, extra setting for the temperature sensor is required.
In case of using Wired Controller sensor, room temperature sensor does not have to be connected to PBA

5) Default setting is 48k Btu/h

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.

Setting an address and installation option of DOAS Interface Module

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	
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 DOAS Interface Module address setting option, set the SEG3 as 'A'.
- When changing a digit of an DOAS Interface Module 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 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 Product option must be set as "1".
   Disuse of discharge temperature control : 010053-105000-202323-330000
   Use of discharge temperature control : 010053-105000-202323-331000

Trouble shooting

Key function

K1 (Number of press)	Key operation	Display on segment	
		SEG1	SEG2, 3, 4
1 time	Indoor unit capacity	1	20kW → 0, 2, 0
2 times	Operation mode	2	(Auto) Cooling → C, C, C (Auto) Heating → H, H, H Dehumidification → D, D, D Fan mode → F, F, F Operation OFF → O, F, F
3 times	Room setting temperature	3	27°C → 0, 2, 7
4 times	Room temperature	4	27°C → 0, 2, 7
5 times	Discharge air setting temperature (cooling)	5	27°C → 0, 2, 7
6 times	Discharge air setting temperature (heating)	6	27°C → 0, 2, 7
7 times	Discharge air temperature	7	27°C → 0, 2, 7
8 times	EVA in temperature	8	-42°C → -, 4, 2
9 times	EVA out temperature	9	-42°C → -, 4, 2
10 times	EEV step	A	1400 → 1, 4, 0
11 times	Fan output	B	On → 0, 0, 0 Off → 0, 0, 1
12 times	Defrost Valve output	C	On → 0, 0, 0 Off → 0, 0, 1
13 times	Free cooling contact signal	D	On → 0, 0, 0 Off → 0, 0, 1
14 times	Damper output	E	50% → 050
15 times	Enthalpy value	F	50.5 kJ/kg → 505
16 times	Enthalpy control entry	H	On → 0, 0, 0 Off → 0, 0, 1
17 times	Main address	I	63 → 0, 6, 3
18 times	RMS address	J	FE → 0, F, E
19 times	Version	Version (2016/10/26) → 6A29	

※ K2(press 1 time) : Indoor unit Reset
※ Default display is room temperature when initial power is on.

Trouble shooting

Initial check-up

1. **Check the connection status between an outdoor unit and the DOAS Interface Module.**

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

▶ Check that DOAS Interface Module PBA is installed in a place where there is no influence from outdoor humidity, dust and temperature.

2. **Check the power voltage is 24VAC.**

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 DOAS Interface Module and micom.
Reason	- EEPROM PBA OF DOAS Interface Module ERROR(Physical problem of parts/circuit) - Replace EEPROM PBA

NOTE

• Wired 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 DOAS Interface Module is not the same.
Reason	Enter the remote controller option again.

Error on a sensor

Error on the detachment of DOAS Interface Module 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 DOAS Interface Module heat exchanger EVA IN sensor, assemble the sensor.

Error on the detachment of DOAS Interface Module 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 DOAS Interface Module heat exchanger EVA OUT sensor, assemble the sensor.

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

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Trouble shooting

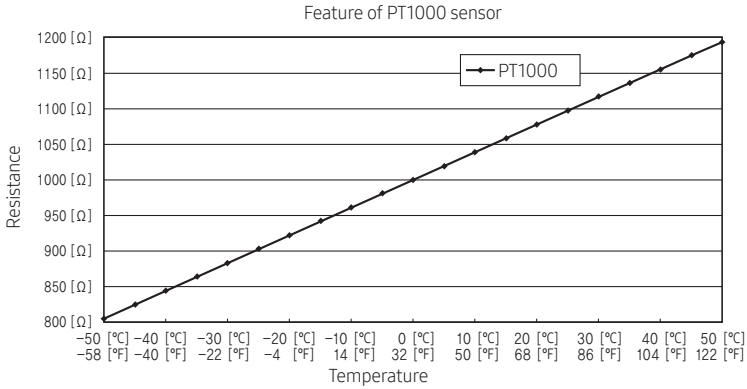
Error on DOAS Interface Module temperature sensor OPEN/SHORT

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 DOAS Interface Module is detected as OPEN/SHORT
Reason	Incorrect installation of PT1000 temperature sensor or supplied temperature sensor

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 °C (-22 °F) ~ +50 °C (122 °F) section, it will be displayed as error indication area.



Feature table of supplied temperature sensor

▶ Check the resistance value of room temperature sensor connector and the PBA after disconnecting them.

Temperature ˚C (°F)	Resistance value (kΩ)
70 (158)	2.2
60 (140)	3.0
50 (122)	4.2
40 (104)	5.8
30 (86)	8.3
20 (68)	12.1
10 (50)	18.0
0 (32)	27.3
-10 (14)	43.0

NOTE

• Wired Controller will display the same error shown in the outdoor unit.

Error on DOAS Interface Module enthalpy sensor OPEN/SHORT

Outdoor unit display	E189 (enthalpy sensor OPEN/SHORT)
Description	When the enthalpy sensor of the DOAS Interface Module is OPEN or SHORT (The enthalpy value is below 2 mA for 2 minutes.)
Reason	Loose contact between the sensor and PBA

1. Checking method

▶ Check for the enthalpy value in DOAS Interface Module view mode.

▶ Under 2 mA or below, check the following items:

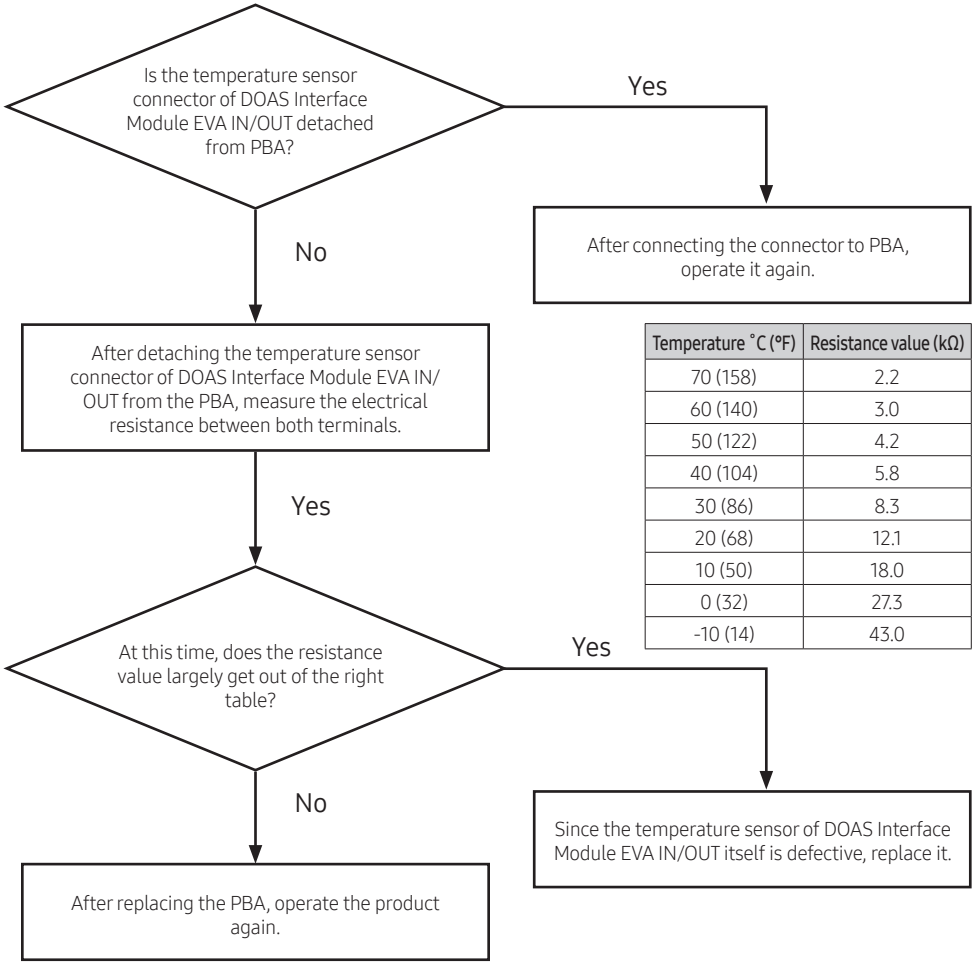
- Incorrect installation of enthalpy sensor
- Defective sensor
- Wrong setting of the 02 series installation option SEG 24

Trouble shooting

Error on DOAS Interface Module 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 DOAS Interface Module is OPEN/SHORT
Reason	Loose contact between a sensor and PBA and defective sensor



Temperature ˚C (°F)	Resistance value (kΩ)
70 (158)	2.2
60 (140)	3.0
50 (122)	4.2
40 (104)	5.8
30 (86)	8.3
20 (68)	12.1
10 (50)	18.0
0 (32)	27.3
-10 (14)	43.0

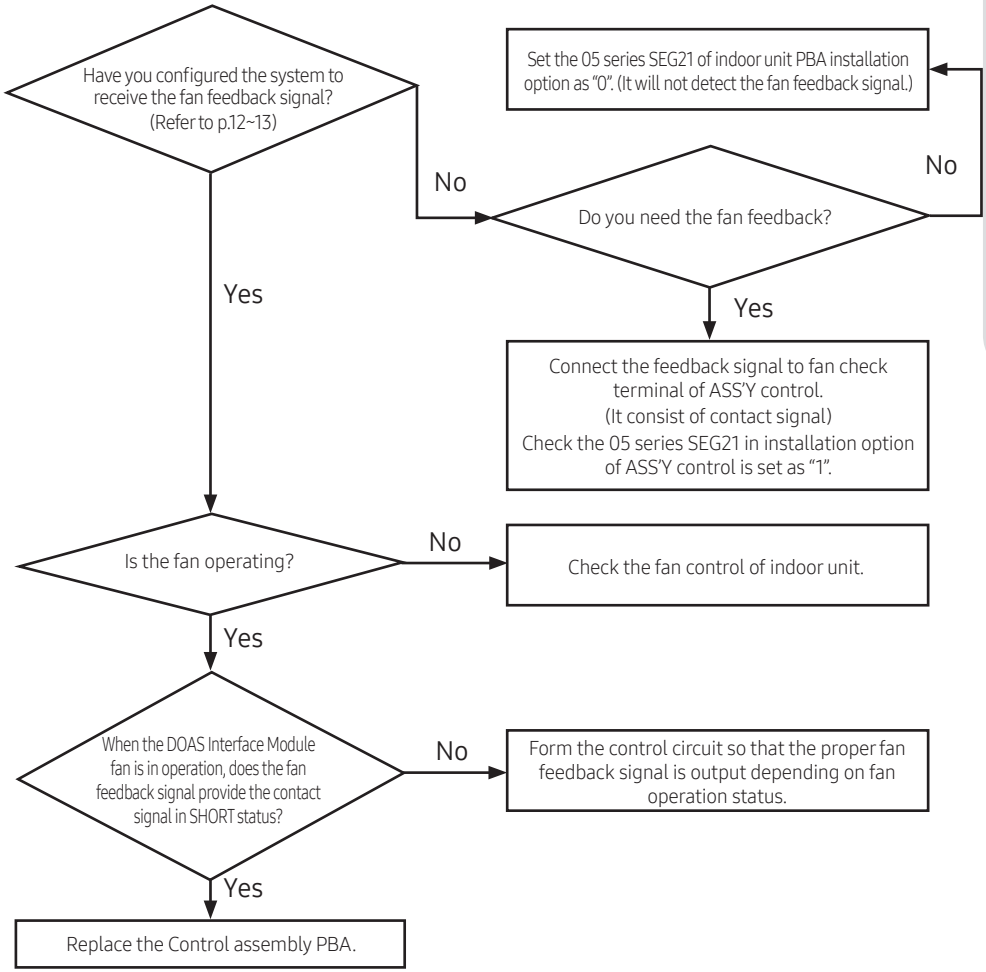
NOTE

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

Error on a fan

Outdoor unit display	E854
Description	When the feedback signal is maintained as OPEN status for 10 seconds after outputting the fan operation signal from Control assembly (For DOAS Interface Module)
Reason	• Fan operation of DOAS Interface Module is abnormal. • The circuit to detect the fan feedback signal of DOAS Interface Module is not formed or misconnected.

1. Checking method



NOTE

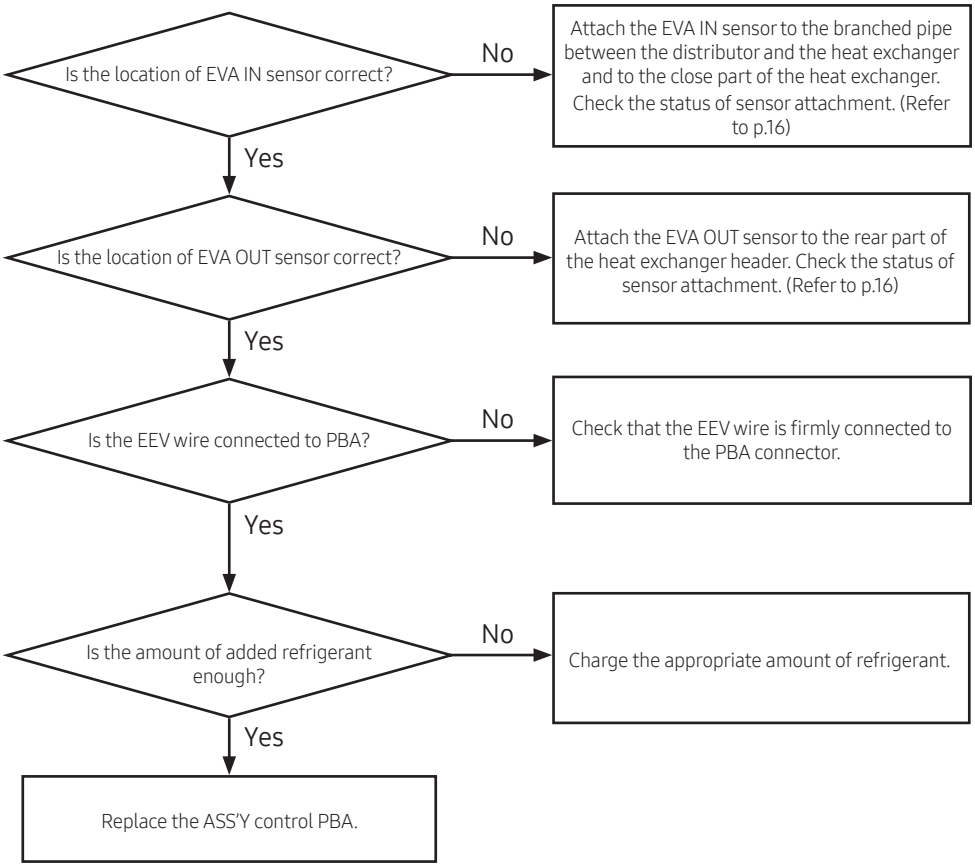
- Only the contact signal without power supply should be entered to detecting terminal of fan feedback signal. If voltage or current is connected other than the contact signal without power supply, the Control Assembly may be damaged.

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

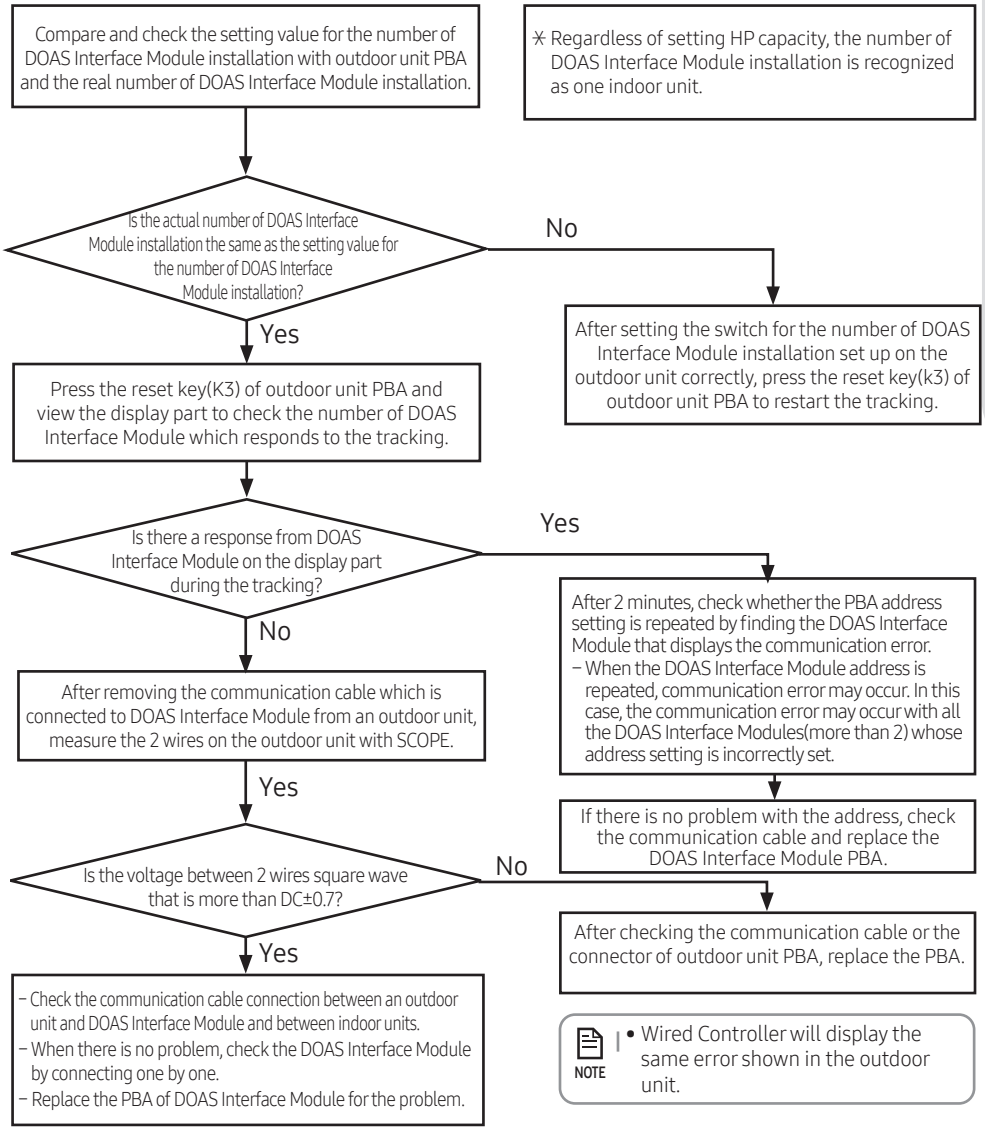


Error on tracking

Communication error between DOAS Interface Module and an outdoor unit during the tracking (During initial operation)

Outdoor unit display	E208
Description	Communication error between DOAS Interface Module and an outdoor unit
Reason	Refer to the diagram below.

1. Checking method



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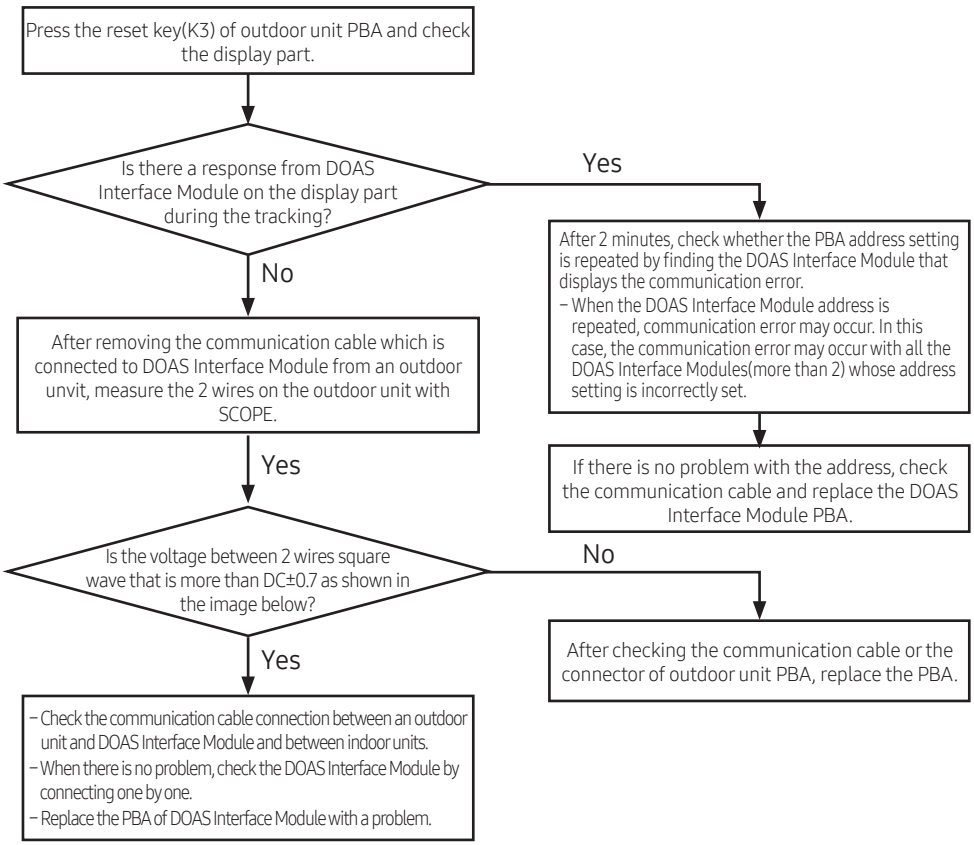
Installation check and test operation

Error on communication between DOAS Interface Module and an outdoor unit after the tracking (During operation)

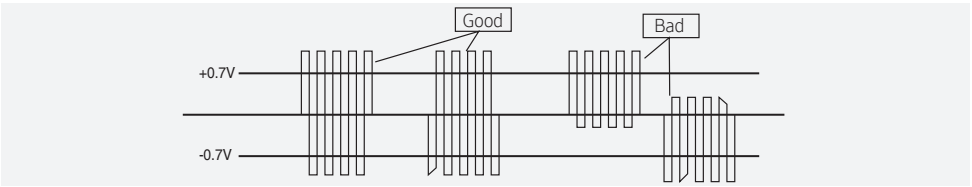
Outdoor unit display	E202
Description	When the communication between the DOAS Interface Module and an outdoor unit is not available for 2 minutes during operation. (All rooms)
Reason	The communication error between DOAS Interface Module and an outdoor unit or the problem with the setting switch for the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

1. Checking method



NOTE

• Wired Controller will display the same error shown in the outdoor unit.



Checking DOAS Interface Module installation

1. **Check that Control assembly is correctly installed.**
   - You can choose either indoor unit attachment type or indoor unit separation type.
   - Check the length of connection cable of Control assembly is correct.
   - Check that the connection of Control assembly 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 Control assembly is not exposed to sunlight or rain.

2. **Check that the EEV Assembly is correctly installed.**
   - Check that EEV Assembly is installed inside the indoor unit.
   - Check whether IN and OUT pipe connection is correct.
   - Must check the EEV Assembly main body is installed vertically.
   - Check that the EEV Assembly 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 7.87" (200mm) after the header of AHU heat exchanger, check that you have insulated the attached sensor.

4. **Amount of additional refrigerant for DOAS Interface Module:**
   - You must add 0.063kg of refrigerant for every 1 kW of the DOAS Interface Module capacity increase.

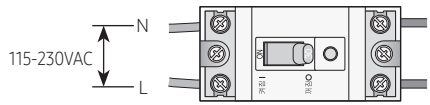
CAUTION
- Control assembly should be installed with the CASE that has water proof and fire prevention function.

Test operation

1. **Before supplying power, measure the grounding between the power terminal(1phase: L, N) and DOAS Interface Module 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 DOAS Interface Module operates correctly.**
   - The firmness of DOAS Interface Module 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