

VCTRL04P-1

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







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Safety precautions

These safety precautions are for owner's safety and preventions of property damage. Therefore, please read this manual thoroughly before installing or using your product. (Please refer to appropriate installation for any optional product installation.)

California Proposition 65 Warning (US)

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

⚠ WARNING

Hazards or unsafe practices that may result in severe personal injury or death.

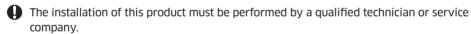
! CAUTION

Hazards or unsafe practices that may result in minor personal injury or property damage.

- Follow directions.
- O Do NOT attempt.
- ⚠ Make sure the machine is grounded to prevent electric shock.
- Unplug the power plug from the wall socket.
- Do NOT disassemble.

For installation

↑ WARNING



• Failure to do so may result in electric shock, fire, product malfunction, or injury.

Connect the power with rated voltage when installing.

• Failure to do so may result in electric shock, fire, or product malfunction.

Check if the installation was done correctly according to the installation manual.

• There is risk of electric shock or fire if the product is installed incorrectly.

Make sure that all wiring work is done by qualified person complying regional standards and instructions in this manual.

• If the installation is done by unqualified person, there is risk of product malfunction, electric shock or fire caused by incorrect installation.

Contact the service center when you need to dispose the product.







Safety precautions

- O Do not install this product near a heater, inflammable material. Do not install this product in a humid, oily or dusty location, in a location exposed to direct sunlight and water (rain drops). Do not install this product in a location where gas may leak.
 - Potential risk of electric shock or fire

Do not attempt to move or re-install the product that is already installed.

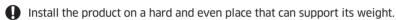
There is risk of electric shock or fire.

Do not attempt to repair, disassemble, or modify the product yourself.

• There is risk of product damage, electric shock or fire. When repair is needed, consult service center.

For installation

↑ CAUTION



 If the place cannot support its weight, the product may fall down and it may cause product damage.

Make sure there is no tension to the cable during installation.

Cable may get cut and cause fire.

Install the product in a place with temperature between 0 ~ 39 °C (32 ~ 102 °F) with no direct sunlight.

• If not, there is risk of fire or product malfunction.

Do not install the product in a place where special spray or acid/alkali solution is used.

• If not, there is risk of fire or product malfunction.

Do not connect the power cable to the communication cable terminal.

- · There is risk of fire.
- When installing the product in hospitals or other places, make sure that the product does not interrupt with other products.
 - If not, there is risk of product malfunction.

Do not allow water to enter the product.

If not, there is risk of electric shock or fire.

Do not press the buttons with any sharp objects.

There is risk of electric shock or damage to the parts.

4 English _





For power supply

⚠ WARNING



Do not pull or excessively bend the power cord. Do not twist or tie the power cord.

Potential risk of electric shock or fire.

For operation

⚠ WARNING



If the product generates a strange noise, a burning smell or smoke, disconnect the power supply immediately and contact a service center.

• Potential risk of electric shock or fire.

Contact a service center to reinstall the product.

- If not, there is risk of product malfunction, water leakage, electric shock or fire.
- A delivery service for the product is not provided. If you reinstall the product in another location, additional construction costs and installation fee will be charged.

When an error appears or the product malfunctions, stop the operation immediately.

- If the product generates a burning smell or it malfunctions, turn it off and disconnect the power supply immediately, and then contact a service center. If not, there is risk of electric shock, fire, or damage to the product.
- Do not attempt to repair, disassemble, or modify the product yourself.
 - This may result in electric shock, fire, a product malfunction or injury.

For operation

↑ CAUTION



Do not allow water to enter the product.

• There is risk of fire or explosion.





Safety precautions



• There is risk of electric shock.

Do not spray volatile material such as insecticide onto the product.

 As well as being harmful to humans, this may also result in electric shock, fire or a product malfunction.

Do not hit or apply excessive force of any kind to the product.

Do not use this product for other purposes.

• This product is designed to be used only for VRF CHILLER.

Do not press the buttons with any sharp objects.

• Electric shock or part damage may occur.

For cleaning

⚠ WARNING

- O not clean the product by spraying water directly onto it. Do not use benzene, thinner, acetone or alcohol to clean the product.
 - This may result in discoloration, deformation, damage, electric shock or fire.









Checking before the installation

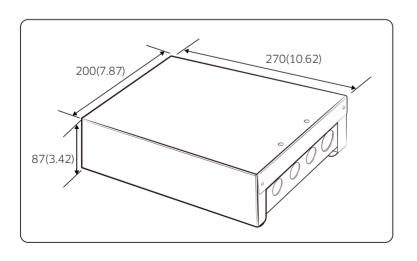
Accessories

Name	Pipe temperature sensor [10 m(32.8 ft)]	Aluminum tape	Rubber tape	M4x16 screws
Quantity	2	4	2	4
Image				<i>₹111111111</i>

Name	Insulator	Cable tie	Programmable Wired Controller (Purchased separately)
Quantity	2	6	1
Image		9	, b

Net dimension

[Unit:mm(inch)]









Name of the parts

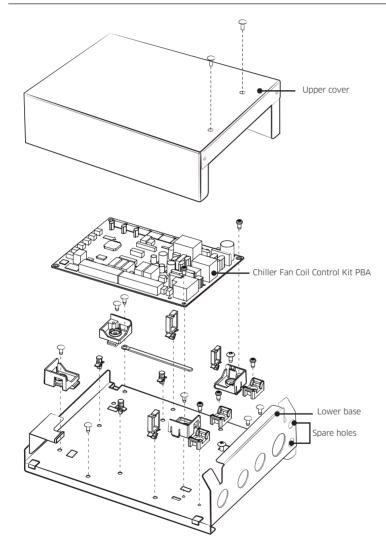
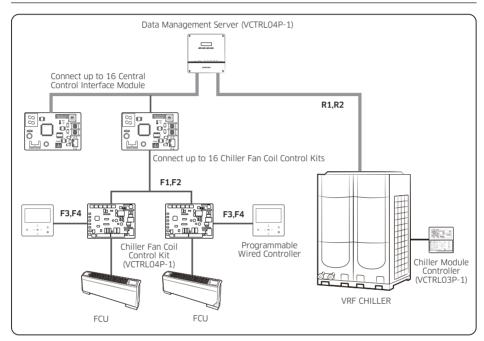








Diagram of Data Management Server and VRF CHILLER & FCU



- Chiller Fan Coil Control Kit and Central Control Interface Module is for integrated control
 of FCU with VRF CHILLER by Data Management Server.
- Maximum number of Central Control Interface Module that can be installed to a Data Management Server, and maximum number of Chiller Fan Coil Control Kits that can be installed to a Central Control Interface Module is both 16.
- Maximum number of Central Control Interface Module that can be installed to a channel of DMS2.5 is 16 (Max. 128 Chiller Fan Coil Control Kits).
- Some functions of Programmable Wired Controller may not work. (Refer to page 47.)
- Control logic of Data Management Server should be set to interlock Chiller Fan Coil Control Kit and VRF CHILLER. Refer to user manual of Data Management Server for setting control logic.







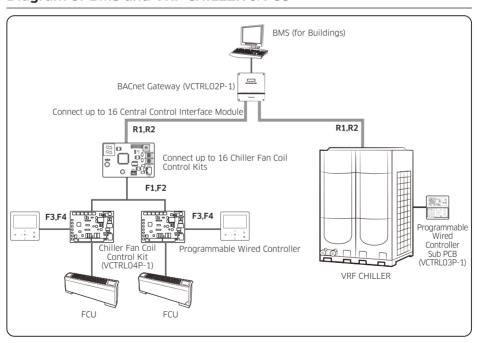
Checking before the installation

- Central Control Interface Module should be installed inside of Chiller Fan Coil Control Kit.
- Data Management Server is not supported.
- Cabel Max length
 - Data Management Server Central Control Interface Module: max 1000 m(3280.8 ft)
 - Central Control Interface Module -Chiller Fan Coil Control Kit :max 1000 m(3280.8 ft)

∴ CAUTION

 Install FCU that has terminal block to fix power cable by screw. Do not connect power cable by cutting.

Diagram of BMS and VRF CHILLER & FCU





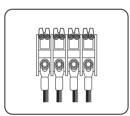




- Chiller Fan Coil Control Kit and Central Control Interface Module is for integrated control of FCU with VRF CHILLER by Data Management Server.
- Maximum number of Central Control Interface Module that can be installed to a BACnet and maximum number of Chiller Fan Coil Control Kits that can be installed to a Central Control Interface Module is both 16.
- Maximum number of Central Control Interface Module that can be installed to a channel of BACnet is 16.
- Some functions of Programmable Wired Controller may not work. (Refer to page 47.)
- Central Control Interface Module should be installed inside of Chiller Fan Coil Control Kit.

CAUTION

• Install FCU that has terminal block to fix power cable by screw. Do not connect power cable by cutting.







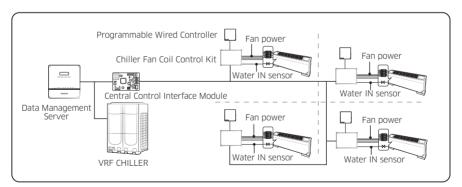
Chiller Fan Coil Control Kit installation

Chiller Fan Coil Control Kit installation

- 1 Check the location of Chiller Fan Coil Control Kit installation.
- Select the installation location that FCU can be fixed (such as wall, etc.) according to structure of FCU.
- 2 Select FCU product that has terminal block, and connect power cable of Chiller Fan Coil Control Kit to the terminal block
- 3 Select the control type (individual control or integrated control) and install Chiller Fan Coil Control Kit and FCU.
- In case of direct power output from Chiller Fan Coil Control Kit to FCU fan motor, select the fan motor which maximum current is not over 1 A (RMS).
- In case of installing multiple FCU to a Chiller Fan Coil Control Kit, install relay for power supply.

Individual control of FCU

- Install FCU and Chiller Fan Coil Control Kit by 1 to 1.
- Maximum number of Chiller Fan Coil Control Kits that can be installed to a FCU interface module is 16.



- Indoor temperature sensor must be installed to control FCU. Use either Programmable Wired Controller built-in sensor or external temperature sensor (VCTRL11P-1).
 - Option setting value should be changed in service setting mode of Programmable Wired Controller after installing the remote controller. (Main menu 1, Sub menu 1, SEG1, value 1)
 - In case of using external temperature sensor (optional), value of SEG24 (Chiller Fan Coil Control Kit external indoor temperature sensor) of 05 series installation option should be set as 1.



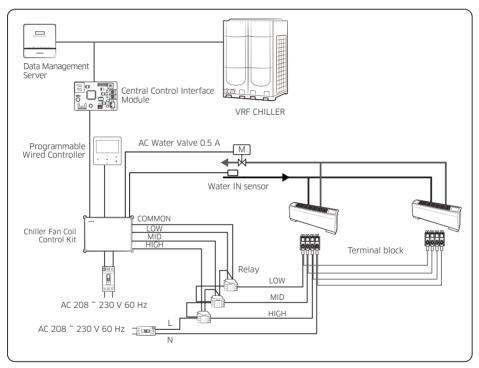




- Water sensor should be attached to inlet pipe (1) for 2 pipe system (Water In), and each inlet pipe (2) for 4 pipe system (Cooling pipe In/Heating pipe In).
- Maximum number of Chiller Fan Coil Control Kits that can be installed and controlled simultaneously by a Programmable Wired Controller is 16.

Integrated control of FCU

• Install FCUs and Chiller Fan Coil Control Kit by multiple FCUs to 1 Chiller Fan Coil Control Kit.



 National electric appliance safety standard should be applied for relay installation and capacity and power cable connection of FCU terminal block.

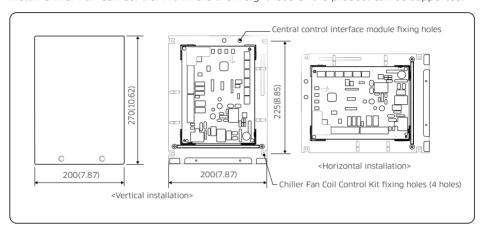




Chiller Fan Coil Control Kit installation

Chiller Fan Coil Control Kit installation

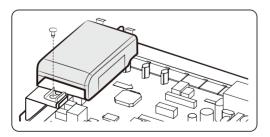
Install Chiller Fan Coil Control Kit where the weight load of the product can be supported.



- 1 Unscrew 2 screws of Chiller Fan Coil Control Kit cover, and separate cover.
- 2 Fix the Chiller Fan Coil Control Kit on the wall by 4 screws.
- Chiller Fan Coil Control Kit may be installed vertically or horizontally as shown in the figure.
 - When installing horizontally, install Chiller Fan Coil Control Kit at right angles to prevent entering water.

Central Control Interface Module installation

Before installing the Central control interface module, complete connecting DC power and communication of Central control interface module and sensor cables of Chiller Fan Coil Control Kit.



1 Fix the case with one screw.







Wiring work

Connecting a power cable and communication cable

- Make sure to cut-off the power before connecting the power cable.
- The power cable and communication cable of Chiller Fan Coil Control Kit should be within 10% of the maximum allowable length of the cable or voltage drop.
- Install circuit breaker (ELCB) concerning total power consumption of connected Chiller Fan Coil Control Kit.
- Connect F3, F4 of Chiller Fan Coil Control Kit terminal block to communication terminal block (F3, F4) of Programmable Wired Controller. (Refer to page 19.)
- Use appropriate tools to connect the cables firmly within rated torque range so that it
 can withstand external forces, and arrange the cables neatly so that cover or any other
 parts won't get loose. If the cable is connected loosely, overheat, electric shock or fire
 may occur.
- Install the power and communication cable in a protection tube to protect them from water or external shock.
- Connect power cable to ELCB.

Tightening part	Tightening torque			
rigillering part		N·m	lbf∙ft	
Interface module, Programmable Wired Controller connection	M3	0.5 ~ 0.75	0.37 ~ 0.55	
AC FAN, 2/3 WAY VALVE connection	M3.5	0.8 ~ 1.2	0.59 ~ 0.89	
2P TERMINAL BLOCK for power supply	M4	1.2 ~ 1.8	0.89 ~ 1.33	



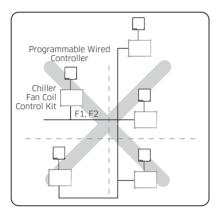




Chiller Fan Coil Control Kit installation

! CAUTION

- The circuit diagram on the cables as shown above represents only outline and it does not describe detailed instruction on the actual installation work.
- The communication cable should not branch due to possible communication error.



- When peeling off outer sheath of the power cable, be careful not to damage the inner sheath of the cable by using a correct tool.
- The unpeeled sheath of the power and communication cable must be inserted more than 20 mm(0.78 inch) to inside of Chiller Fan Coil Control Kit holder.
- The installation of communication cable should be separated from power cable or other communication cables

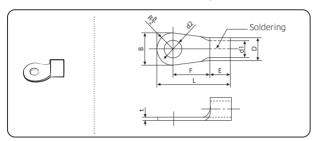






Selecting solderless ring terminal

- **1** Select the solderless ring terminal depending on the nominal dimension of the power cable.
- **2** Cover and insulate the solderless ring terminal and connection part of the power cable.



Nominal	Nominal		В		D		d1	Е	F	L		d2	t
dimensions for cable	dimensions for screw	Basic size	Allowance	Basic size	Allowance	Basic size	Allowance	Min.	Min.	Max.	Basic size	Allowance	Min.
1.5	4 (0.15")	6.6 (0.25")	±0.2	3.4	+0.3 (+0.011")	1.7	±0.2	4.1	6	16	4.3	+0.2 (+0.007")	0.7
(0.002)	4 (0.15")	8 (0.31")	(±0.007")	(0.13")	-0.2 (-0.007")	(0.06")	(±0.007")	(3/16")	(1/4")	(5/8")	(0.16")	0 (0")	(0.02")
2.5	4 (0.15")	6.6 (0.25")	±0.2	4.2	+0.3 (+0.011")	2.3	±0.2	6	6	17.5	4.3	+0.2 (+0.007")	0.8
(0.003)	4 (0.15")	8.5 (0.33")	(±0.007")	(0.16")	-0.2 (-0.007")	(0.09")	(±0.007")	(1/4")	(1/4")	(3/4")	(0.16")	0 (0")	(0.03")
4 (0.006)	4 (0.15")	9.5 (0.37")	±0.2 (±0.007")	5.6 (0.22")	+0.3 (+0.011") -0.2 (-0.007")	3.4 (0.13")	±0.2 (±0.007")	6 (1/4")	5 (1/4")	20 (3/4")	4.3 (0.16")	+0.2 (+0.007") 0 (0")	0.9 (0.035")







Chiller Fan Coil Control Kit installation

Chiller Fan Coil Control Kit power cable specification

This specification is when installing a Chiller Fan Coil Control Kit.

USA

Power supply	MCA	МОР
AC 208 - 230 V~ 60 Hz, 1 Ph	2.75	15 A

Part	Rated Capacity
Fan (High, Mid, Low)	AC 208 - 230 V~ 60 Hz, 1 Ph, 1 A
Water Valve	AC 208 - 230 V~ 60 Hz, 1 Ph, 0.5 A

DC Wire

Part	Rated Capacity
Remote controller	DC 12 V
External contact	Zero voltage contact input
Sensor cable	NTC ./10 kΩ 25 °C

- Purpose of control: Operating control
- Construction of control: Independently mounted control
- Rated impulse voltage: 2500 V



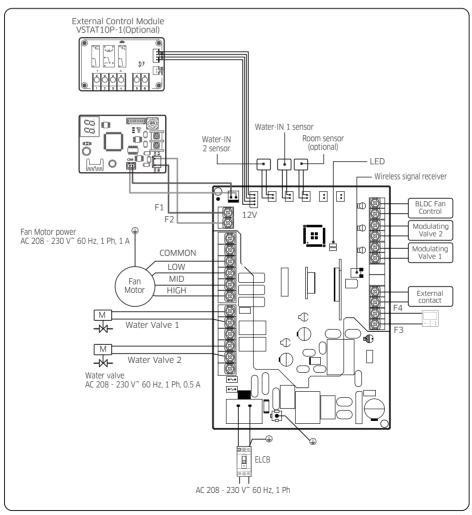






Functions of Chiller Fan Coil Control Kit

- Fan control (Auto, High, Mid, Low), valve control, setting indoor temperature, sensing inlet
 water pipe temperature is possible by Chiller Fan Coil Control Kit. (Room temperature sensor
 must be installed.)
- For direct power supply from Chiller Fan Coil Control Kit, fan motor must work at AC 208 230
 V~ 60 Hz and 1 A or low. Otherwise, install relay for external power supply to the fan motor.
- 2/3 way solenoid valve is a type that works at AC 208 230 V~ 60 Hz and supports product with 0.5 A or low.

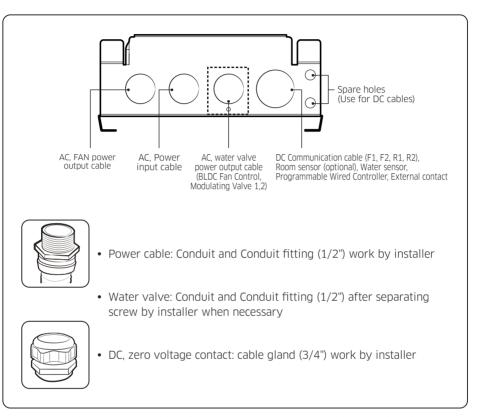






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Chiller Fan Coil Control Kit installation



- Use conduit (1/2") and fitting (1/2") for power cable, and use cable gland (3/4") for DC cables.
- Each parts must be certified by national authority.
 - USA: UL certified products (UL514B)
- Withdraw DC cables by spare holes if the DC cable wire holder is too tight.
- Use double-sheathed cables when using DC spare holes.
- Fix the power and communication cable at internal mount tie by using cable ties.
- Do not unscrew water valve cable wire holder if not used.
- Installation may be more simple by inserting sensor connector before connecting communication cable.
- The Water Valve and Modulating Valve cannot be used at the same time.





∴ WARNING

• Be sure to use the conduits and conduit fittings when extracting the wires for safety.

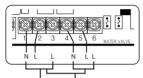
NOTE

• Arrange communication cables (F1, F2, R1, R2) to the opposite way of power cable.

Diagram of ASS'Y control

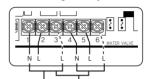
1 Water valve contact output status for operation mode.

When using a 2-way valve (normal close type)



Terminals for 2-pipe type Terminals for 4-pipe type

When using a 3-way valve



Terminals for 2-pipe type Terminals for 4-pipe type

A CAUTION

When connecting the valve power cable, be sure to connect the wires (N, L) to the correct terminals (N, L).
 Failure to do so may damage the PBA.

Pipe type	Operation power output		AC power output (Max. 0.5 A)	Remarks
2 nino	Cooling/	Thermo ON	1-2	Normal Close Type
2-pipe	2-pipe Heating	Thermo OFF	1-3	Normal Open Type
	Cooling	Thermo ON	1-2	Normal Close Type
4 nino		Thermo OFF	1-3	Normal Open Type
4-pipe —	Lloating	Thermo ON	4-5	Normal Close Type
	Heating	Thermo OFF	4-6	Normal Open Type

- Connect 3 Way valve power cable according to value of operation mode power output.
- Select each valve that is below 0.5 A of operation current.
- Installation option setting(05series, SEG14) is required to define 2 pipe or 4 pipe system.

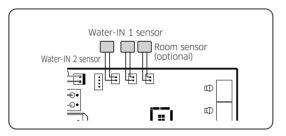


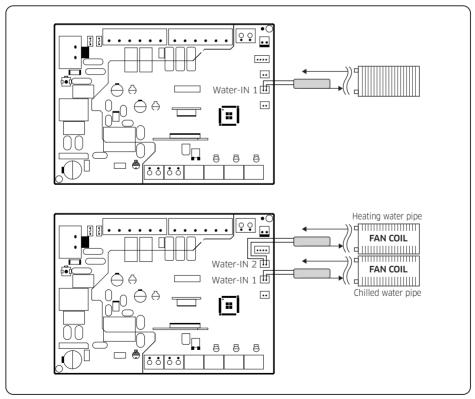


Chiller Fan Coil Control Kit installation

2 Sensor connection by FCU type

- Install water pipe sensor at inlet within 1 m from FCU.
- Connect the sensor after checking the installing location. (Refer to page 26~27 for sensor connection.)







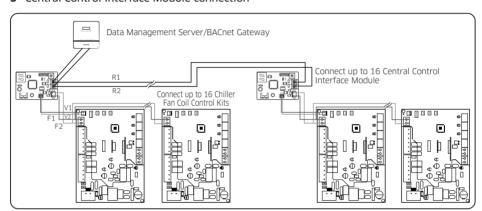




Pipe type	Location of Sensor Connector	Location of pipe
2-pipe	Water-IN 1	Water inlet pipe
4-pipe	Water-IN 1	Chilled water inlet pipe
	Water-IN 2	Heating water inlet pipe

- When using 4-pipe system, set SEG14 of 05 series installation option as 1.
- In case of opposite installation of water pipe 1, 2 sensor in 4 pipe system, error(pipe block) will be occurred in 30minutes of operation(E992 or E993).

3 Central Control Interface Module connection



• Maximum number of Central Control Interface Module and Chiller Fan Coil Control Kit that can be installed to a channel of DMS is 16 and 128.

CAUTION

• Make sure that the Central Control Interface Module must be installed even though the Chiller Fan Coil Control Kit is installed solely (single or multiple installation) without its upper level controller.



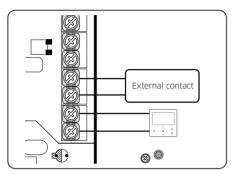




Chiller Fan Coil Control Kit installation

4 External contact connection

• In case of connecting external contact, set SEG14 of installation option according to the table.



Installation	External contact status				
option SEG14	Open	Close			
0	Disuse	Disuse			
1	FCU OFF, remote control possible	ON, remote control possible			
2	FCU OFF, remote control impossible	Remain OFF, remote control possible			
3	FCU OFF, remote control impossible	Remain operation status of FCU before external contact open • Operation ON of FCU before external contact open: FCU ON • Operation OFF of FCU before external contact open: FCU OFF • Remote control possible			

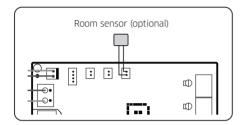






5 Option room sensor (Model: VCTRL11P-1)

In case of installing room sensor as option, set installation option according to the table.
 (05series, SEG24 = 1)

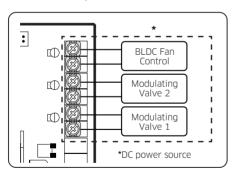


! CAUTION

• Use either Programmable Wired Controller with built-in room sensor or external room sensor (VCTRL11P-1) must be installed.

6 Controlling the BLDC Fan and Modulating Valve

- When you have installed BLDC fan and modulating valve, set SEG8 for the 02 series installation
 option.
- When you set the modulating valve and BLDC valve to USE, the Fan Motor power step and water valve do not operate.



Pipe Type	Operating mode	Valve
2-Pipe	Cooling / Heating	Modulating Valve 1
4-Pipe	Cooling	Modulating Valve 1
4-Pipe	Heating	Modulating Valve 2

• When using 4-pipe system, set SEG14 of 05 series installation option as 1.

A CAUTION

• As the area marked with an asterisk is for DC power output, do not connect to an AC power source.

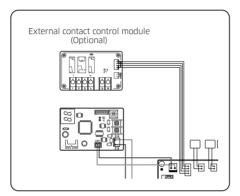




Chiller Fan Coil Control Kit installation

7 Optional external contact control module (VSTAT10P-1)

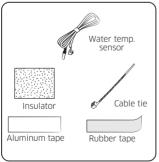
 If you need an external contact control (for indoor unit ON/OFF, external heater control, or pump control), use an external contact interface module.



! CAUTION

• If the provided connection wire (370 mm) is not lengthy enough when installing the VSTAT10P-1 external contact control module outside, be cautious not to touch between wires while in extension.

Installing water temperature sensor



1 Check the sensor and sensor holder.

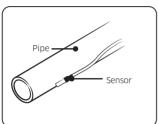


Pipe type	Location of Sensor Connector	Classification	Diameter of sensor	Location of pipe
2-pipe	Water-IN 1			Water inlet
		Dino	~-	pipe
	Water-IN 1	Pipe		Chilled water
	Water IIV 1	temperature	Ø7	inlet pipe
4-pipe	Water-IN 2	sensor (Blue)		Heating water inlet pipe

26 English -





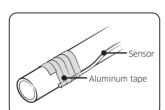


2 Stick the sensor to the pipe.

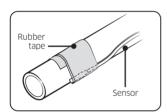
∴ CAUTION

Attaching sensor

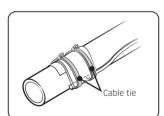
- Attach the sensor where temperature sensing is performed best.
- Stick the sensor as close as possible to attaching area.
- Do not use sensor holder.



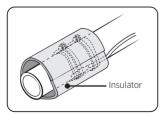
3 After fixing the sensor, stick the sensor to the pipe by using aluminum tape.



4 Cover the sensor by rubber tape.



5 Fix the sensor by cable tie.



6 Attach insulator around sensor attached area.

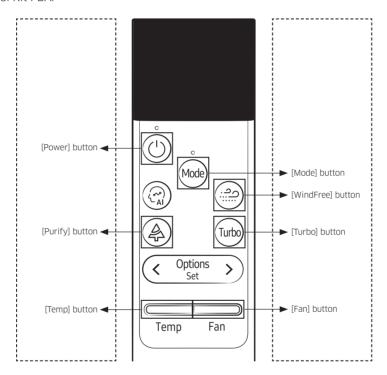




Setting address of Chiller Fan Coil Control Kit and installation option

Procedure of option setting

- Setting address of Chiller Fan Coil Control Kit and installation option is set by wireless remote controller option. It is also possible by Programmable Wired Controller and Lennox Service Software.
- Remote controller receiver of wireless remote controller is included in Chiller Fan Coil Control Kit PBA.



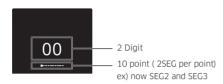
NOTE

- The remote control display and buttons may vary depending on the model.
- **1** Enter the mode for setting the options.
 - 1) Reset remote control: button Down + button Down + Press for 10 seconds
 - 2) You can see "SW Reset" message and enter the following in 5 seconds.
 - 3) Press button and button.

28 English -



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, SEG1, SEG13, SEG19) SEG2 \rightarrow ... \rightarrow SEG6 \rightarrow SEG8 \rightarrow \rightarrow SEG12 \rightarrow SEG14 \rightarrow ... \rightarrow SEG18 \rightarrow SEG20 \rightarrow ... \rightarrow SEG24

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

- You can set the next SEG by pressing the 🔊 button.
- You can change the digit value through the following operation.

Take the steps presented in the following table:

Steps	Remote control display		
1 Set the SEG2 and SEG3 values:			
Set the SEG2 value by pressing the temp button repeatedly until the value you want to set appears on the remote control display.	00	00	
2) Set the SEG3 value by pressing the button repeatedly			
until the value you want to set appears on the remote control display.	SEG2	SEG3	
When you press the part or temp button, values appear in the following order: □ → □ → □ → □			
2 Press the button to move to next page.	0	0	







Setting address of Chiller Fan Coil Control Kit and installation option

	Steps	Remote con	trol display
3	 Set the SEG4 and SEG5 values: Set the SEG4 value by pressing the button repeatedly until the value you want to set appears on the remote control display. Set the SEG5 value by pressing the button repeatedly until the value you want to set appears on the remote control display. When you press the or button, values appear in the following order: or button, values appear in the following order: or set F 	0 0 SEG4	00 SEG5
4	Press the 💩 button to move to next page.	0	0
5	 Set the SEG6 and SEG8 values: Set the SEG6 value by pressing the	00 SEG6	00 SEG8
6	Press the button to move to next page.	0	0
7	Set the SEG9 and SEG10 values: 1) Set the SEG9 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG10 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. When you press the putton, values appear in the following order:	00 SEG9	00 SEG10
8	Press the button to move to next page.	0	0

30 English -





Steps	Remote con	trol display
 Set the SEG11 and SEG12 values: Set the SEG11 value by pressing the	00 SEG11	00
10 Press the button to move to next page.	0	0
 Set the SEG14 and SEG15 values: Set the SEG14 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. Set the SEG15 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. When you press the por putton, values appear in the following order:	00 SEG14	00 SEG15
12 Press the button to move to next page.	0	0
 Set the SEG16 and SEG17 values: Set the SEG16 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. Set the SEG17 value by pressing the Fean button repeatedly until the value you want to set appears on the remote control display. When you press the Fean or Temp button, values appear in the following order: Temp + Temp + Temp + Temp + Temp 	00 SEG16	00 SEG17
14 Press the button to move to next page.	0	0



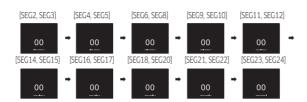


Setting address of Chiller Fan Coil Control Kit and installation option

Steps	Remote con	trol display
 Set the SEG18 and SEG20 values: Set the SEG18 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. Set the SEG20 value by pressing the putton repeatedly until the value you want to set appears on the remote control display. When you press the part or putton, values appear in the following order:	00 SEG18	0 0 SEG20
16 Press the ee button to move to next page.	0	0
 17 Set the SEG21 and SEG22 values: Set the SEG21 value by pressing the	00 SEG21	00 SEG22
18 Press the button to move to next page.	0	0
 19 Set the SEG23 and SEG24 values: Set the SEG23 value by pressing the fremp button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG24 value by pressing the fremp button repeatedly until the value you want to set appears on the remote control display. When you press the fremp or fremp button, values appear in the following order:	00 SEG23	00 SEG24



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



EX) 020010-100000-200000-300000

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 (h) 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 for operation
 - 1) Check automatic reset when entering Chiller Fan Coil Control Kit option, and check if it operates normally using Programmable Wired Controller.
 - 2) Reset the power of Central Control Interface Module after setting address. Unplug the V1, V2 connectors connected to Central Control Interface Module and plug them again.







Setting address of Chiller Fan Coil Control Kit and installation option

Setting address (MAIN/RMC) of Chiller Fan Coil Control Kit

- 1 Check if power is supplied to Chiller Fan Coil Control Kit.
- When the power is not supplied to Chiller Fan Coil Control Kit, there should be additional power supply to it.
- 2 Remote controller receiver of wireless remote controller is included in Chiller Fan Coil Control Kit PBA.
- 3 Depending on the installation condition of Chiller Fan Coil Control Kit, address (MAIN/RMC) to each Chiller Fan Coil Control Kit should be set.
- **4** Set the Chiller Fan Coil Control Kit address (MAIN/RMC) by using a remote controller.
- The default setting value of the Chiller Fan Coil Control Kit address (MAIN/RMC) is "0A0000-100000-200000-300000".

Option	SE	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6		
Description	Pa	ige	Mo	Mode Setting main address		in address	Hundreds digit of address		Tens digit of address		Ones digit of address			
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail		
Display/detail		0			0	No main address								
	(А		Address setting mode	0	Hundreds digit	0~9	Tens digit	0~9	Ones digit		
Option	SE	G7	SEG8		SEG9		SEG10		SEG11		SEG12			
Description	Pa	ige			Setting RN	1C address					Group chi	annel(*16)	Group	address
	Display	Detail	1			Detail			Display	Detail	Display	Detail		
Display/detail		1		No function 0		No main address	No function	RMC1 0°F						
	:					Address setting mode			0~F	RMC2	0~F			







A CAUTION

- Main address (SEG5 \sim SEG6) can be set in range of 0 \sim 47.
- When using automatic address setting, Central Control Interface Module automatically assigns Chiller Fan Coil Control Kit address between 00 $^{\sim}$ 15.
- If you set the SEG3 as 0, the Chiller Fan Coil Control Kit will maintain the existing main address even if you input the option value of SEG5 ~ SEG6.
- If you set the SEG9 as 0, the Chiller Fan Coil Control Kit will maintain existing RMC address even if you input the option value of SEG11 $^{\sim}$ SEG12.

Setting Chiller Fan Coil Control Kit installation option

- 1 Check if power is supplied to Chiller Fan Coil Control Kit.
- When the power is not supplied to Chiller Fan Coil Control Kit, there should be additional power supply to it.
- 2 Remote controller receiver of wireless remote controller is included in Chiller Fan Coil Control Kit PBA.
- 3 Depending on the installation condition of Chiller Fan Coil Control Kit, installation option to each Chiller Fan Coil Control Kit should be set.
- 4 Set the Chiller Fan Coil Control Kit installation option by using a remote controller.
- The default setting value of the Chiller Fan Coil Control Kit installation option is "020010-100000-200000-300000".







Setting address of Chiller Fan Coil Control Kit and installation option

02 series installation option

02 Series installation option										
SEG1	SEG2	SEG3	SEG4	SEG5	SEG6					
0	2	-	Fan control when Thermo Off	Central control	-					
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12					
1	Set to Enable BLDC Fan and Modulating Valve	Set BLDC Fan Speed to High	Set BLDC Fan Speed to Mid	Set BLDC Fan Speed to Low	-					
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18					
2	External control	External control output	Operation voltage of Modulating Valve	Temperature difference of the Modulating Valve Step Control Output	Modulating Valve Control Coefficient					
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24					
3	-	Heating setting compensation	-	-	-					

- SEG5 (Central control) is set as 1 (Use) in default setting. Setting option is not necessary
 when using central control. Error will not occur even when central control is not
 connected, and change the value to 0 (Disuse) when excluding indoor unit from central
 control.
- When setting the option other than above SEG values, the option will be set as "0".









Option	SE	G1		SEG2		SEG3 SEG4 (*1)			SEG5			SEG6				
Description	Pa	ige		Mode				Fan	control wh	nen Thermo	Off	Use of cen	tral control		-	
										Detail						
	Display Detail		Display	lay Detail		Display	Detail	Display	Fan stop when Cool/Heat Thermo Off	Minimal fan operation when Heat Thermo Off	Minimal fan operation when Cool Thermo Off	Display	Detail	Display	Detail	
Display/detail								0	Disuse	Disuse	Disuse	0	Disuse			
								1	Enable	-	-					
	0		2				2	Disuse	Enable	Disuse						
							3	Enable	-	-				-		
								4	Disuse	Disuse	Enable	1	Enable			
								5	Enable	-	Faabla					
								6 7	Disuse Enable	Enable	Enable					
Option	SE			SEG8		SEG9 SEG10		-	SEG1	1 (*2)		SEG12				
Description		ige		nable BLDC			Speed to High	Set BLDC Fan Speed to Mid		Mid	Set BLDC Fan Speed to Low			-		
			Detail		Cianal college							Signal				
	Display	Detail D	Display	BLDC Fan	Modulating Valve	Display	Signal voltage = 7.5 + α	Display	Signal	voltage =	5.0 + β	Display	voltage = 2.5 + y	Display	Detai	
					VdIVE		α (V)			β (V)			γ (V)			
			0	Disuse	Disuse	0	0	0		0		0	0			
			1	Use	Disuse	1	0.3	1		0.3		1	0.3			
			2	Disuse	Use	2	0.7	2		0.7		2	0.7			
						3	1	3		1		3	1	ļ		
n: 1. /1						4	1.4	4		1.4		4	1.4	ļ		
Display/detail						5	1.7	5		1.7		5	1.7	ļ		
						6 7	2.1 2.5	6 7		2.1		6 7	2.1	ļ		
					}	8	-0.3	8		-0.3		8	2.5 -0.3		-	
	1	1	3	Use	Use	9	-0.3	9		-0.3		9	-0.3	ł		
					}	A	-0.7	A		-0.7		A	-1			
					}	В	-1.4	В		-1.4		В	-1.4	1		
						C	-1.7	C		-1.7		C	-1.7			
						D	-2.1	D		-2.1		D	-2.1	1		
					1 }	E	-2.5	Е		-2.5		E	-2.4	1		





(

Setting address of Chiller Fan Coil Control Kit and installation option

Option	SEC	13		SEG14	SE	G15		SEG16 (*3)		SEG1	7 (*4)		SEG18 (*5)
Description	Pa	ge	Use o	Use of external control		tput of external ntrol	Operatio	n voltage of Mod	dulating Valve	Temperature difference of the Modulating Valve Step Control Output		Modulat C	ing Valve oefficien	
	Display Detail		Display	Detail	Display	Detail	Display	De	tail	Display	Detail	Display	Detail	
			Dishiga		Dishigh	Detail	Display	Min. (V)	Max. (V)	Dishiga	C(°C)	Dishiga	D	E
			0	Disuse	0	Thermo ON	0	5	10	0	2	0	2	1
			1	ON/OFF control			1	4	10	1	2.5	1	2.5	1
			2	OFF control			2	3	10	2	3	2	3	1
						_	3	2	10	3	3.5	3	1	1
							4	5	9	4	4	4	2	1.5
	2			Window ON/OFF control			5	4	9	5	4.5	5	2.5	1.5
Display/detail							6	3	9	6	5	6	3	1.5
							7	2	9	7	1.5	7	1	1.5
			3		1	Operation ON	8	5	8	8	1	8	2	0.5
					1	Operation on	9	4	8	9	0.5	9	2.5	0.5
							A	3	8			А	3	0.5
							В	2	8			В	1	0.5
							C	5	7	A	0	С	2	2
							D	4	7			D	2.5	2
							E	3	7			E	3	2
Option	SEC	119		SEG20	SE	G21		SEG22		SEC	123		SEG24	
Description	Pa	пе		-		g compensation		-						
Description						fset						•		
	Display	Detail	Display	Detail	Display	Detail	Display	De	tail	Display	Detail	Display	De	tail
Display/detail					0	0 °C (0 °F)								
5.5pisy/detail	3	3		=	1	2 °C (3.6 °F)		-			-		-	
					2	5 °C (9 °F)								

(*1) Minimal fan operation when Thermo Off

- Fan operates for 20 seconds every 5 minutes in Heat mode.
- Fan stops in Cool mode.

(*2)

- If the voltage of the low fan speed is set higher than that of the high fan speed, the voltage of the low fan speed is restricted by the voltage of the high fan speed. e.g. If the setting is High 5 V and Mid 6 V,
 - → the actual voltage becomes High 5 V and Mid 5 V.

(*3)

- Recommended: If it is the maximum voltage, the valve must be wide open.
- Required: If it is the minimum voltage, the valve must be open.





(*4)

- [Cool mode]
 - Err= Indoor temperature Set temperature
 - If Err > C+2, the modulating valve operates at the maximum voltage defined with SEG16, the O2 series installation option. In other cases, the valve step is adjusted in accordance with the formula given above.
- [Heat mode]
 - Err= Set temperature Indoor temperature + f
 - * f = Heating compensation (correction) temperature (default : 2)
 - If Err > C+2, the modulating valve operates at the maximum voltage defined with SEG16, the O2 series installation option. In other cases, the valve step is adjusted in accordance with the formula given above.

(*5)

- Cycle: 1 minute
- $\Delta Err = Err_n Err_{n-1}$
- $-\Delta V = D * \Delta Err + E * Err_n$
- New DCV output = Current DCV output + ΔV

05 series installation option

05 series insta	liation option				
SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	Use Auto Change Over for 4-pipe 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) Required time for mode change	-	-	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	Chiller Fan Coil Control Kit pipe installation structure	-	Valve open control when Thermo Off	-	FCU cool air prevention compensation temperature
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	-	-	-	Setting cool/heat air prevention skip	Chiller Fan Coil Control Kit external room sensor





Setting address of Chiller Fan Coil Control Kit and installation option

Option	1 No. : (D5XXXX	K-1XXX	XX-2XX	XXXX-:	3XXXXX	(
Option	SI	EG1	S	EG2	9	EG3	SEG4		SI	EG5		SEG6	
Description	Page		Mode			Use Auto Change Over for 4-pipe only		(When setting SEG3) Standard heating temp. offset		SEG3) Standard emp. offset	(When setting SEG3) Standard for mode change Heating → Cooling		
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	
						Follow product option	0	0 °C (0 °F)	0	0 °C (0 °F)	0	1 °C (1.8 °F)	
							1	0.5 °C (0.9 °F)	1	0.5 °C (0.9 °F)	1	1.5 °C (2.7 °F)	
Display/							2	1 °C (1.8 °F)	2	1 °C (1.8 °F)	2	2 °C (3.6 °F)	
detail		0		5		Use Auto	3	1.5 °C (2.7 °F)	3	1.5 °C (2.7 °F)	3	2.5 °C (4.5 °F)	
					1	Change Over	4	2 °C (3.6 °F)	4	2 °C (3.6 °F)	4	3 °C (5.4 °F)	
						for 4-pipe only	5	2.5 °C (4.5 °F)	5	2.5 °C (4.5 °F)	5	3.5 °C (6.3 °F)	
							6	3 °C (5.4 °F)	6	3 °C (5.4 °F)	6	4 °C (7.2 °F)	
							7	3.5 °C (6.3 °F)	7	3.5 °C (6.3 °F)	7	4.5 °C (8.1 °F)	
Option	SI	EG7	S	EG8	9	EG9	S	EG10	SE	G11		SEG12	
Description	P	age	for mode cha	SEG3) Standard ange Cooling → ating	(When setting SEG3) Required time for mode change			-		-		-	
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	
			0	1 °C (1.8 °F)	0	5 min.							
			1	1.5 °C (2.7 °F)	1	7 min.							
Display/			2	2 °C (3.6 °F)	2	9 min.							
detail		1	3	2.5 °C (4.5 °F)	3	11 min.				_			
uctan		1	4	3 °C (5.4 °F)	4	13 min.							
			5	3.5 °C (6.3 °F)	5	15 min.							
			6	4 °C (7.2 °F)	6	20 min.							
			7	4.5 °C (8.1 °F)	7	30 min.							





Option	SE	G13	SE	G14	SI	G15	S	EG16	SE	G17	S	EG18								
Description	Pi	age		Chiller Fan Coil Control Kit pipe installation structure		-		n control when rmo Off		=		air prevention ion temperature								
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail								
			0	2-pipe			0	Valve close (normally close type)			0	0 °C (0 °F)								
					1						1	1 °C (1,8 °F)								
											2	2 °C (3,6 °F)								
											3	3 °C (5,4 °F)								
											4	4 °C (7,2 °F)								
B1 1 /											5	5 °C (9,0 °F)								
Display/ detail		2				2		2											6	6 °C (10,8 °F)
uctaii										Valve open			7	7 °C (12,6 °F)						
			1	4-pipe			1	(normally close			8	-7 °C (-12,6 °F)								
								type)			9	-6 °C (-10,8 °F)								
											A	-5 °C (-9,0 °F)								
											В	-4 °C (-7,2 °F)								
											С	-3 °C (-5,4 °F)								
											D	-2 °C (-3,6 °F)								
											Е	-1 °C (-1,8 °F)								
0.1			SEG20		SEG21		SEG22				F	0 °C (0 °F)								
Option	SE	G19	SE	G20	Si	:021	5	EG22		G23 ol/warm air		EG24								
Description	Pa	age				-		-		ition skip	Chiller Fan Coil Control Kit external room sensor									
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail								
		1			.,,,,	1	Display Detail		0	Use in cool Use in heat	0	Disuse								
Display/ detail		3							1	Disuse in cool Use in heat										
uctali		3		-		-		-		2 Use in cool Disuse in heat		Enable								
										Disuse in cool Disuse in heat										

- Valve open control when Thermo Off: Set to open valve when Thermo Off in case of applying Close type water valve (Valve closes normally if it is not set.)
- FCU cool air prevention compensation temperature: Temperature for preventing cool air can be controlled.
 - Default temp. + SEG18 ≥Water-IN temp. (°C): Heating fan On
 - Default temp. + SEG18 < Water-IN temp. (°C): Heating fan Off
- Fan speed can be various according to the water in temperature.





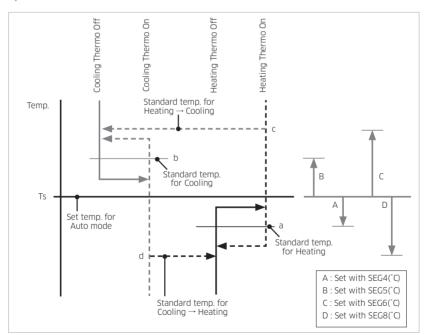


Setting address of Chiller Fan Coil Control Kit and installation option

- Warm air prevention in cooling
 - Room < Water-IN temp. (°C) 1 °C: Fan Off
 - Room > Water-IN temp. (°C): Fan On
- In case of using external temperature sensor or minimal fan operation function, external temperature sensor or Programmable Wired Controller should be connected. (Internal temperature sensor option of Programmable Wired Controller should be set "Use" to use the function. Refer to installation manual of Programmable Wired Controller.)

SEG3. 4. 5. 6. 8. 9 additional information

When the SEG3 is set as "1" and follow Auto Change Over for 4-pipe 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	SI	EG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Description	Р	age		Mode	Option mode to change		_	Tens digit of option SEG to change		Ones digit of option SEG to change		Value to be changed	
	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	Display	Detail	
Display/ detail		0		D	Option mode	0~F	Tens digit of SEG	0~9	Ones digit of SEG	0~9	Value to be changed	0~9	

■ NOTE

- Set SEG3 as "A" when changing one digit of Chiller Fan Coil Control Kit address setting option.
- Set SEG3 as "2" when changing one digit of Chiller Fan Coil Control Kit installation option.
 - Ex) When setting the 'Central control' into Use status

Option	SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
Description	Page	Mode	Option mode to change	Tens digit of option SEG to change	Ones digit of option SEG to change	Value to be changed
Setting	Λ	n	2	0	5	1







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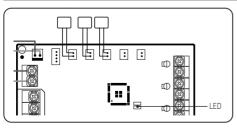
Troubleshooting

Error code

Operation and error status can be checked by LED of Chiller Fan Coil Control Kit.

Error code	R-LED	Y/G-LED	Error	Solutions		
162	162 ON C		EEPROM error	Change EEPROM		
163	163 OFF ON Option input error		Reset option			
Communication error	ON	ON	Communication error (between interface modules or Programmable Wired Controller)	Check communication status between Chiller Fan Coil Control Kit and interface module or Programmable Wired Controller		
-	- OFF		Power not supplied	Check power supply		
-	Blinking	Blinking	Normal			

Error code	Error description							
E121	Indoor temperature sensor error (Open/Short)							
E990	Water-IN 1 sensor error (Open/Short)							
E991	Water-IN 2 sensor error (Open/Short)							
E101	Communication error between indoor and outdoor unit when there is no							
LIUI	communication for 2 minutes							
	Communication error on interface module detection							
E201	 Incomplete interface module tracking in 10 minutes 							
E201	 Mixed installation of Chiller Fan Coil Control Kit and indoor unit 							
	 Exceeding maximum installation number of Chiller Fan Coil Control Kit (16) 							
E108	Error on repeated communication address							
E109	Uncomplete setting communication address							
E992	Sensor detached or water blocked in Cool mode							
E993	Sensor detached or water blocked in Heat mode							
E198	Thermal fuse open error							
E162	EEPROM error							
E163	EEPROM option error							









Inspection and test operation

Checking Chiller Fan Coil Control Kit installation

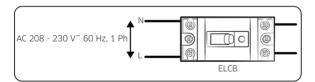
- Check if Chiller Fan Coil Control Kit is installed properly.
 - Check if cables of Chiller Fan Coil Control Kit are properly connected.
 - Check if Chiller Fan Coil Control Kit is installed vertically or horizontally.
 - Install Chiller Fan Coil Control Kit avoiding condensation area and water pipe line.
 - Tighten wire holder to fix power and communication cable.
 - Check if the locations of Chiller Fan Coil Control Kit sensor and valve is appropriate.
 - Check if the location of sensor is placed at inlet and the sensor is attached to the pipe.

Trial operation

- 1 Before supplying the power, use DC 500 V insulation resistance tester to measure the insulation resistance of power (L, N) terminal and Chiller Fan Coil Control Kit grounding.
- Measurement should be over 30 MΩ.

! CAUTION

- Do not measure the communication terminal as the communication circuit can be damaged.
- Use common circuit tester on communication terminal to check open or short.



- **2** Check the power voltage (L, N) before supplying power and then turn on the switch.
- **3** After completing the installation, check the followings to make sure Chiller Fan Coil Control Kit operates without a problem.
- · Heat resistance of water pipe insulator
- · Power connection
- · Circuit breaker connection, grounding
- Operation of each operation mode for system
- Operation of 2 Way valve according to operation mode





Inspection and test operation

A CAUTION

Solution for mixed operation prevention

- This function is to prevent VRF CHILLER and Chiller Fan Coil Control Kit from operating in different modes.
 - Ex.) The situation that cool air comes out since VRF CHILLER is operating in Cool mode and FCU is operating in Heat mode in 2-pipe system
 - If Lock function is set on Data Management Server or Centralized Touch Controller: Other operation modes cannot be operated by Chiller Fan Coil Control Kit if administrator selected Cool/Heat mode and set Lock function on Data Management Server or Centralized Touch Controller
 - If Lock function is not set on Data Management Server or Centralized Touch Controller: Refer for maintenance that it detects water outlet temperature and stops fan after 10 minutes if temperature is not appropriate, and error message will occur if the fan is stopped for more than 30 minutes (E992, E993).





Function of Programmable Wired Controller

Display



- The following function of Chiller Fan Coil Control Kit can only be used when using Programmable Wired Controller.
 - Operation On/Off
 - Auto/Cool/Fan/Heat mode
 - Setting temperature (Temperature range: Cool 18 $^{\sim}$ 30 $^{\circ}$ C (65 $^{\sim}$ 86 $^{\circ}$ F), Heat 16 $^{\sim}$ 30 $^{\circ}$ C (61 ~ 86 °F))
 - Fan speed (Auto, High, Mid, Low)
 - Timer
- *Other functions do not work when pressing the button.
- Refer to user manual of Programmable Wired Controller for more details on using.







