VRF (Variable Refrigerant Flow) **Installation manual**

VSCC***S4-4P / VSEC***S4-4P

- 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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WARNING

► Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

(Carefully follow the precautions listed below because they are essential to guarantee the safety of the equipment.)



- Always disconnect the product from the power supply before servicing it or accessing its internal components.
- Verify that installation and testing operations are performed by qualified personnel.
- · Verify that the product is not installed in an easily accessible area.

General information

- ► Carefully read the content of this manual before installing the product and store the manual in a safe place in order to be able to use it as reference after installation.
- For maximum safety, installers should always carefully read the following warnings.
- ▶ Store the operation and installation manual in a safe location and remember to hand it over to the new owner if the product is sold or transferred.
- ▶ This manual explains how to install an indoor unit with a split system with two Lennox units. The use of other types of units with different control systems may damage the units and invalidate the warranty. The manufacturer shall not be responsible for damages arising from the use of non compliant units.
- ▶ The manufacturer shall not be responsible for damage originating from unauthorized changes or the improper connection of electric and hydraulic lines. Failure to comply with these instructions or to comply with the requirements set forth in the "Operating limits" table, included in the manual, shall immediately invalidate the warranty.
- ▶ The product should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- ▶ Do not use the units if damaged. If problems occur, switch the unit off and disconnect it from the power supply.
- ▶ In order to prevent electric shocks, fires or injuries, always stop the unit, disable the protection switch and contact Lennox's technical support if the unit produces smoke, if the power cable is hot or damaged or if the unit is very noisy.
- ▶ Always remember to inspect the unit, electric connections, refrigerant tubes and protections regularly. These operations should be performed by qualified personnel only.
- ▶ The unit contains moving parts, which should always be kept out of the reach of children.
- ▶ Do not attempt to repair, move, alter or reinstall the unit. If performed by unauthorized personnel, these operations may cause electric shocks or fires.
- ▶ Do not place containers with liquids or other objects on the unit.
- ▶ All the materials used for the manufacture and packaging of the product are recyclable.
- ▶ The packing material and exhaust batteries of the remote control(optional) must be disposed of in accordance with current laws.
- ▶ The product contains a refrigerant that has to be disposed of as special waste. At the end of its life cycle, the product must be disposed of in authorized centers or returned to the retailer so that it can be disposed of correctly and
- ▶ 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.









Installing the unit

IMPORTANT: When installing the unit, always remember to connect first the refrigerant tubes, then the electrical lines. Always disassemble the electric lines before the refrigerant tubes.

- ▶ Upon receipt, inspect the product to verify that it has not been damaged during transport. If the product appears damaged, DO NOT INSTALL it and immediately report the damage to the carrier or retailer (if the installer or the authorized technician has collected the material from the retailer.)
- ▶ After completing the installation, always carry out a functional test and provide the instructions on how to operate the product to the user.
- ▶ Do not use the product in environments with hazardous substances or close to equipment that release free flames to avoid the occurrence of fires, explosions or injuries.
- ▶ The product should be used only for the applications for which it has been designed: the indoor unit is not suitable to be installed in areas used for laundry.
- ▶ Our units must be installed in compliance with the spaces indicated in the installation manual to ensure either accessibility from both sides or ability to perform routine maintenance and repairs. The units' components must be accessible and that can be disassembled in conditions of complete safety either for people or things. For this reason, where it is not observed as indicated into the Installation Manual, the cost necessary to reach and repair the unit (in safety, as required by current regulations in force) with slings, trucks, scaffolding or any other means of elevation won't be considered in-warranty and charged to end user.

Power supply line, fuse or circuit breaker

- ▶ Always make sure that the power supply is compliant with current safety standards. Always install the product in compliance with current local safety standards.
- ► Always verify that a suitable grounding connection is available.
- ▶ Verify that the voltage and frequency of the power supply comply with the specifications and that the installed power is sufficient to ensure the operation of any other domestic appliance connected to the same electric lines.
- ▶ Always verify that the cut-off and protection switches are suitably dimensioned.
- ▶ Verify that the product is connected to the power supply in accordance with the instructions provided in the wiring diagram included in the manual.
- ▶ Always verify that electric connections (cable entry, section of leads, protections...) are compliant with the electric specifications and with the instructions provided in the wiring scheme. Always verify that all connections comply with the standards applicable to the installation of products.









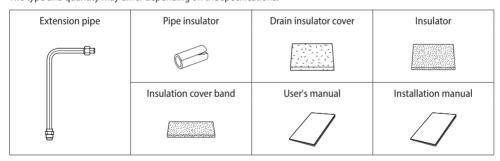


- Make sure that you earth the cables.
 - Do not connect the earth wire to the gas pipe, water pipe, lighting rod or telephone wire. If earthing is not complete, electric shock or fire may occur.
- · Install the circuit breaker.
 - If the circuit breaker is not installed, electric shock or fire may occur.
- Make sure that the condensed water dripping from the drain hose runs out properly and safely.
- Install the power cable and communication cable of the indoor and outdoor unit at least 1m away from the electric appliance.
- Install the indoor unit away from lighting apparatus using the ballast.
 - If you use the wireless remote control, reception error may occur due to the ballast of the lighting apparatus.
- Do not install the product in following places.
 - Place where there is mineral oil or arsenic acid.
 Resin parts flame and the accessories may drop or water may leak.
 The capacity of the heat exchanger may reduce or the product may be out of order.
 - The place where corrosive gas such as sulfurous acid gas generates from the vent pipe or air outlet. The copper pipe or connection pipe may corrode and refrigerant may leak.
 - The place where there is a machine that generates electromagnetic waves. The product may not operate normally due to control system.
 - The place where there is a danger of existing combustible gas, carbon fiber or flammable dust. The place where thinner or gasoline is handled. Gas may leak and it may cause fire.

Accessories

The following accessories are supplied with the indoor unit.

The type and quantity may differ depending on the specifications.



Extension pipe type	Liquid pipe	Gas pipe
006/009/012/018	Ф 6.35 (1/4")	Φ 12.7 (1/2")
024	Ф 9.52 (3/8″)	Ф 15.88 (5/8″)

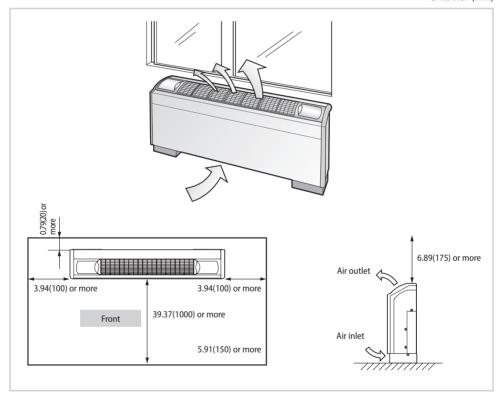
Selecting the installation location

Decide the installation location, with the consideration of the following conditions, under user's approval.

- · Place where air flow is not disturbed.
- Place with flat surface and where structure can bear the weight and vibration of the indoor unit. (If the structure is not strong enough, indoor unit may fall and get damaged or cause personal injury.)
- Place where sufficient space can be guaranteed for maintenance and other services.
- · Place where condensation can be drained easily.
- Place that allows refrigerant pipe connection within allowable distance.
- · Place where indoor unit will not be exposed to direct sunlight.
- Place that can keep the distance of at least 3.28 ft (1 m) between power/communication cable and any electronic devices. (Depending on the circumstances, problem may occur even if you secure 3.28 ft (1 m) of distance.)

Exposed Type

Unit: inch (mm)





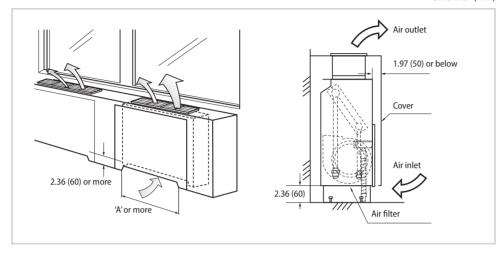




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Concealed Type





Model	A
006/009/012	27.56 (700)
018/024	38.58 (980)



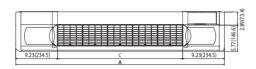


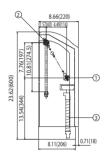


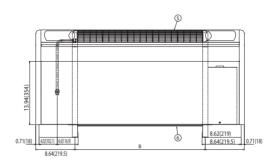
Drawing of the indoor unit

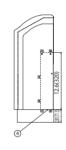
Exposed Type

Unit:inch (mm)







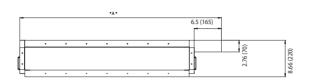


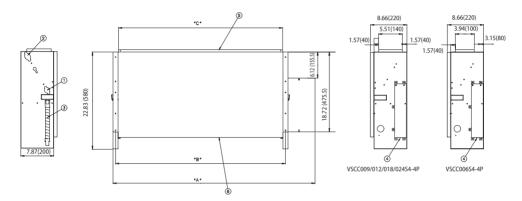
Model	"A"	"B"	"C"		
006/009/012	**006/009/012** 46.02 inch (1169mm)		27.56 inch (700 mm)		
018/024	57.05 inch (1449mm)	39.76 inch (1010 mm)	38.58 inch (980 mm)		

No.	Name	Description			
1	Liquid pipe connection	**006/009/012/018**: ø6.35 (1/4") **024**: ø9.52 (3/8")			
2	Gas pipe connection	**006/009/012/018**: ø12.7 (1/2") **024**: ø15.88 (5/8")			
3	Drain pipe connection	ID ø 18 (0.709") Hose			
4	Power wiring	-			
5	Air outlet	-			
6	Air intake	-			

Concealed Type

Unit: inch (mm)





Model	"A"	"B"	"C"		
006/009/012	**006/009/012** 37.2 inch (945 mm)		27.56 inch (700 mm)		
018/024 48.23 inch (1225 m		39.76 inch (1010 mm)	38.58 inch (980 mm)		

No.	Name	Description
1	Liquid pipe connection	**006/009/012/018**: ø6.35 (1/4") **024**: ø9.52 (3/8")
2	Gas pipe connection	**006/009/012/018**: ø12.7 (1/2") **024**: ø15.88 (5/8")
3	Drain pipe connection	ID ø 18 (0.709") Hose
4	Power wiring	-
5	Air outlet	-
6	Air intake	-

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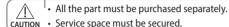


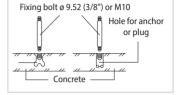




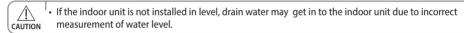
Refrigerant pipe work must be done before installing the indoor unit.

- 1. Check the product and the location where it will be installed.
- 2. Check the required installation conditions.
- 3. Drill a hole on a floor or a wall and insert bolt anchors as shown in the figure.
 - Use a ø 9.52 (3/8") or M10 bolts for installation.
 - At least 2 anchor bolts must be used for fixing the indoor unit.





- 4. Select a location with no obstacles in surrounding area while allowing easy pipe and electrical installation, and also consider a place where it may not fall or get shaken by vibration or any other external force.
- 5. Drill a hole for the drain on the bottom or rear side of the indoor unit with a diameter between 2.36~2.56 inch (60~65 mm).
- 6. Make sure that product is in level.
 - Check the horizontality by using a level or a vinyl tube with water etc.



7. Fix the indoor unit by connecting it to the anchor bolt.

Purging the unit

On delivery, the indoor unit is loaded with inert gas.

All this gas must therefore be purged before connecting the assembly piping.

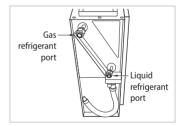
To purge the inert gas, proceed as follows.

Unscrew the pinch pipe at the end of each refrigerant pipe.

Result: All inert gas escapes from the indoor unit.



 To prevent dirt or foreign objects from getting into the pipes during installation, do NOT remove the pinch pipe completely until you are ready to connect the piping.



The designs and shape are subject to change according to the model.

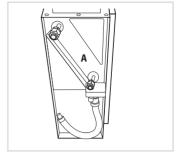
Connecting the refrigerant pipe

There are two refrigerant pipes of differing diameters:

- · A smaller one for the liquid refrigerant
- A larger one for the gas refrigerant
- The inside of copper pipe must be clean & has no dust.

The connection procedure for the refrigerant pipes varies according to the exit position of the pipes from the indoor unit, as seen when facing the indoor in the "A" side.

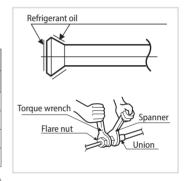
- · Liquid refrigerant port
- Gas refrigerant port
- · Drain hose port



The designs and shape are subject to change according to the model.

1. Remove the pinch pipe on the pipes and connect the assembly pipes to each pipe, tightening the nuts, first manually and then with a torque wrench, a spanner applying the following torque.

Outer Diameter		Torque					
inch mm		N • m	ibf•ft				
1/4	6.35	14~18	10.3~13.3				
3/8	9.52	34~42	25.1~31.0				
1/2	12.70	49~61	36.1~45.0				
5/8	15.88	68~82	50.2~60.5				





- Must apply refrigerant oil on the flaring area to prevent a
- 2. Be sure that there must be no crack or kink on the bended area.







- 1. Make sure that you prepared the required tools. (pipe cutter, reamer, flaring tool and pipe holder)
- 2. If you want to shorten the pipe, cut it using a pipe cutter ensuring that the cut edge remains at 90° with the side of the pipe. There are some examples of correctly and incorrectly cut edges below.











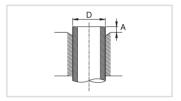
- 3. To prevent a gas leak, remove all burrs at the cut edge of the pipe using a reamer.
- **4.** Carry out flaring work using flaring tool as shown below.











				Depth of flaring part (A)						
Outer diameter (D)		Using flari	ng tool for	Using conventional flaring tool						
	R-410A		Clutch	ı type	Wing nut type					
inch	mm	inch	mm	inch	mm	inch	mm			
1/4	6.35	0~0.02	0~0.5	0.04~0.06	1.0~1.5	0.06~0.08	1.5~2.0			
3/8	9.52	0~0.02	0~0.5	0.04~0.06 1.0~1.5		0.06~0.08	1.5~2.0			
1/2	12.70	0~0.02	0~0.5	0.04~0.06 1.0~1.5		0.06~0.08	1.5~2.0			
5/8	15.88	0~0.02	0~0.5	0.04~0.06 1.0~1.5		0.06~0.08	1.5~2.0			







5. Check if you flared the pipe correctly. There are some examples of incorrectly flared pipes below.









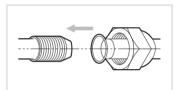


Correct Inclined

Damaged Surface

Cracked Uneven Thickness

6. Align the pipes and tighten the flare nuts first manually and then with a torque wrench, applying the following torque.



Outer diameter		Connecti	on Torque	Flare di	mension	Flare shape
inch	mm	kgf•cm	lbf • ft inch		mm	[inch (mm)]
1/4	6.35	14~18	10.3~13.3	0.34~0.36	8.7~9.1	R0.016~0.032
3/8	9.52	34~42	25.1~31.0	0.50~0.52	12.8~13.2	(0.4~0.8)
1/2	12.70	49~61	36.1~45.0	0.64~0.65	16.2~16.6	8 41-
5/8	15.88	68~82	50.2~60.5	0.76~0.78	19.3~19.7	
3/4	19.05	100~120	73.8~88.5	0.93~0.94	23.6~24.0	



• In case of needing brazing, you must work with Nitrogen gas blowing.







Performing leak test & insulation

Leak test

LEAK TEST WITH NITROGEN (before opening valves)

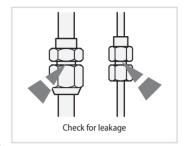
In order to detect basic refrigerant leaks, before recreating the vacuum and recirculating the R-410A, it's responsible of installer to pressurize the whole system with nitrogen (using a pressure regulator) at a pressure above 4.1MPa (gauge).

LEAK TEST WITH R-410A (after opening valves)

Before opening valves, discharge all the nitrogen into the system and create vacuum. After opening valves check leaks using a leak detector for refrigerant R-410A.



Discharge all the nitrogen to create a vacuum and charge the



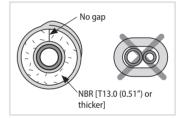
Insulation

Once you have checked that there are no leaks in the system, you can insulate the piping and hose.

1. To avoid condensation problems, place T13.0 (0.51") or thicker Acrylonitrile Butadien Rubber separately around each refrigerant pipe.



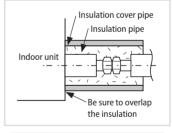
Always make the seam of pipes face upwards.



- 2. Wind insulating tape around the pipes and drain hose avoiding to compress the insulation too much.
- 3. Finish wrapping insulating tape around the rest of the pipes leading to the outdoor unit.
- 4. The pipes and electrical cables connecting the indoor unit with the outdoor unit must be fixed to the wall with suitable ducts.



· All refrigerant connection must be accessible, in order to permit either unit maintenance or removing it completely.



Must fit tightly against body without any gap. CAUTION





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- 5. Select the insulation of the refrigerant pipe.
- Insulate the gas side and liquid side pipe referring to the thickness according to the pipe size.
- Indoor temperature of 86 °F(30 °C) and humidity of 85% is the standard condition. If install in a high humidity condition, use one grade thicker insulator by referring to the table below. If installing in an unfavorable conditions, use thicker one.
- Insulator's heat-resistance temperature should be more than 248 °F (120 °C).

			Insula				
Pipe	Outer	liameter	Gen [86 °F (30			umidity °C), 85 %]	Remarks
	inch	mm	inch	mm	inch	mm	
1:	1/4~3/8	6.35~9.52	3/8	9	3/8	9	
Liquid pipe	1/2~2	12.7~50.8	1/2	13	1/2	13	Internal
	1/4	6.35	1/2	13	3/4	19	temperature
Gas pipe	3/8~1	9.52~25.4	3/4	19	1	25	is higher than
	1 1/8~1 3/4	28.58~44.45	3/4	19	1 1/4	32	248 °F (120 °C)
	2	50.8	1	25	1 1/2	38	

• When installing insulation in places and conditions below, use the same insulation that is used for high humidity conditions.

<Geological condition>

- High humidity places such as shoreline, hot spring, near lake or river, and ridge (when the part of the building is covered by earth and sand.)
- <Operation purpose condition>
 - Restaurant ceiling, sauna, swimming pool etc.
- <Building construction condition>
 - The ceiling frequently exposed to moisture and cooling is not covered. e.g. The pipe installed at a corridor of a dormitory and studio or near an exit that opens and closes frequently.
- The place where the pipe is installed is highly humid due to the lack of ventilation system.

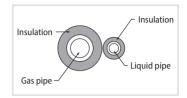






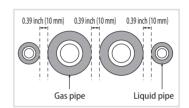
Refrigerant pipe before EEV kit and MSB or without EEV kit and MSB

- You can contact the gas side and liquid side pipes but the pipes should not be pressed.
- When contacting the gas side and gas side pipe, use 1 grade thicker



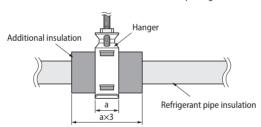
Refrigerant pipe after EEV kit and MSB

- Install the gas side and liquid side pipes, leave 0.39 inch (10 mm) of
- When contacting the gas side and liquid side pipe, use 1 grade thicker insulator.





- · Install the insulation not to get wider and use the adhesives on the connection part of it to prevent moisture from entering.
- Wind the refrigerant pipe with insulation tape if it is exposed to outside sunlight.
- · Install the refrigerant pipe respecting that the insulation does not get thinner on the bent part or hanger
- · Add the additional insulation if the insulation plate gets thinner.







Drain pipe and drain hose installation

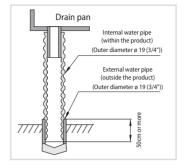
- 1. Install a drain pipe according to following instruction.
- 2. When you complete the drain hose installation, pour water to make sure water is drained properly.

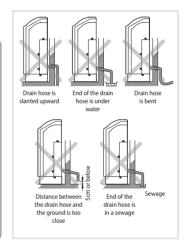


- Make sure to keep the drain hose from getting tangled or loosed (on the connection part).
- If it is necessary, connect a extension hose (drain hose) to drain hose for indoor unit and insulate the external surface of the extension hose if it is connected in indoor.
- If you installed a drain pipe underneath the refrigerant pipe, make sure to fix the drain hose firmly.
- If you install the drain hose by drilling a hole on a wall, make sure that slope is downward.
- 3. When passing the drain hose through the hole drilled in the wall, make sure to avoid following cases.



- Since the draining is of natural drain type, install the drain hose in downward direction.
- If you do not tie the drain hose with a cable tie, leakage may
- Drain pipe may get clogged if there is any foreign substances within the drain pan, so you must remove any foreign substances after completing the installation.
- · Do not use the drain hose (extension hoses) that is connected by number of hoses together.
- Water may leak from the connection part, therefore install the drain hose in one piece. However, if the length is too short and you cannot avoid connecting number of drain hoses together, make sure to use silicone sealant or other material for water-proofing measures. (Do not use insulating tape.)







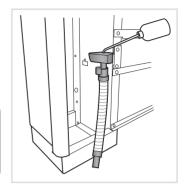




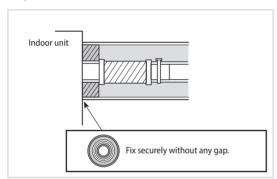
- 1. Pour water to the hole for the drain test or drain pan of the indoor unit as shown in the figure. (About 1ℓ)
- 2. Make sure that draining is done properly by checking end of the drain
- 3. If water leakage occurs, check the horizontality of the indoor unit, connection part of the drain hose/drain pipe and take measure to stop the leakage.



- After connecting the drain pipe to the indoor unit, you must perform leakage test. If the drain test has not done properly, water may get into the indoor and cause property damage.
- · Empty the condensation water in the drain pan before any repair/maintenance service.



Pipe insulation





- You must insulate refrigerant pipes, branch joints, distribution header and the pipe connection part.
- Make sure to prevent any gap between the insulation on the bent part of the pipes.
- · Make sure that insulation is overlapped when fixing it.









Wiring Work

Power and communication cable connection

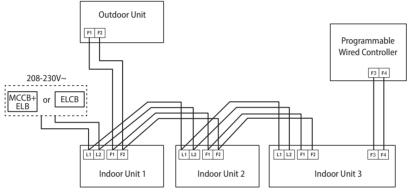
- 1. Before wiring work, you must turn off all power source.
- 2. Indoor unit power should be supplied through the breaker (ELCB or MCCB+ELB) separated by the outdoor power.

ELCB: Earth Leakage Circuit Breaker

MCCB: Molded Case Circuit Breaker

ELB: Earth Leakage Breaker

- 3. The power cable should be used only copper wires.
- 4. Connect the power cable (L1, L2) among the units within maximum length and communication cable(F1, F2) each.
- 5. Connect F3, F4(for communication) when installing the programmable wired controller.



* ELCB: Essential Installation

* When Installing ELCB (MCCB + ELB) indoor unit, do not connect with other indoor units attached to other outdoor units (system A/C).

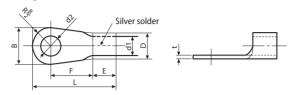






Selecting compressed ring terminal

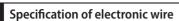




Norminal	Norminal		В		D d1		E	F	L	d	2	t		
dimensions for cable (inch²)	dimensions for screw (inch)	Standard dimension (inch)	Allowance (inch)	Standard dimension (inch)	Allowance (inch)	Standard dimension (inch)	Allowance (inch)	Min.	Min.	Max.	Standard dimension (inch)	Allowance (inch)	Min.	
0.0022	0.16	0.26	±0.0079	0.13	+0.012	0.067	±0.0079	0.16	0.24	0.63	0.17	±0.0079	0.028	
0.0023	0.16	0.31	±0.00/9	79 0.13	-0.0079	9 0.007	0.007	±0.00/9	0.10	0.24	4 0.03	0.17	0	0.026
0.0039	0.16	0.26	. 0 0070	10.0070	0.17	+0.012	0.091	±0.0079	0.24	0.24	0.69	0.17	±0.0079	0.031
0.0039	0.16	0.33	±0.0079	0.17	-0.0079	0.091	±0.00/9	0.24	0.24	0.09	0.17	0	0.031	
0.0062	0.16	0.37	±0.0079	0.22	+0.012	0.134	±0.0079	0.24	0.20	0.79	0.17	±0.0079	0.035	







Power supply	МССВ	ELB or ELCB	Power cable	Earth cable	Communication cable
Max: 253V	XA	XA, 30 mA	0.0039 inch ²	0.0039 inch ²	0.0012~0.0023 inch ²
Min: 187V		0.1 sec	(2.5 mm ²)	(2.5 mm ²)	(0.75~1.5 mm ²)

- * Run transmission wiring between the indoor and outdoor units through a conduit to protect against external forces, and feed the conduit through the wall together with refrigerant piping.
- · Decide the capacity of ELCB(or MCCB+ELB) by below formula.

The capacity of ELCB (or MCCB+ELB) X [A] =
$$1.25 \text{ X} 1.1 \text{ X} \Sigma \text{Ai}$$

- * X: The capacity of ELCB(or MCCB+ELB).
- * ∑Ai: Sum of Rating currents of each indoor unit.
- * Refer to each installation manual about the rating current of indoor unit.
- · Decide the power cable specification and maximum length within 10% power drop among indoor units.

n Coef×35.6×
$$L_k$$
× i_k
 Σ (10% of input voltage[V]
k=1 1000× A_k

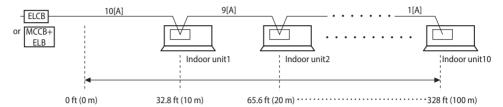
- * Coef: 1.55
- * Lk: Distance among each indoor unit[m]
- Ak: Power cable specification[mm²]
- ik: Running current of each unit[A]



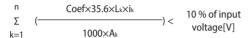


Example of Installation

- Total power cable length L = 328 ft (100 m), Running current of each units 1[A]
- Total 10 indoor units were installed

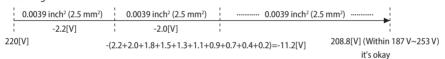


· Apply following equation.

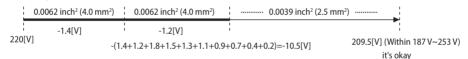


*** Calculation**

• Installing with 1 sort wire.



• Installing with 2 different sort wire.











- Select the power cable in accordance with relevant local and national regulations.
 - Wire size must comply with local and national code.
- Power supply cords of parts of appliances for outdoor use shall not be lighter than polychloroprene sheathed flexible cord. (Code designation H07RN-F or H05RN-F)
- You should connect the power cable into the power cable terminal and fasten it with a clamp.
- The unbalanced power must be maintained within 10 % of supply rating among whole indoor units.
- If the power is unbalanced greatly, it may shorten the life of the condenser. If the unbalanced power is exceeded over 10% of supply rating, the indoor unit is protected, stopped and the error mode indicates.
- To protect the product from water and possible shock, you should keep the power cable and the connection cord of the indoor and outdoor units in the iron pipe.
- Connect the power cable to the auxiliary circuit breaker.

An all pole disconnection from the power supply must be incorporated in the fixed wiring $[\ge 1/8" (3 \text{ mm})]$.

- · You must keep the cable in a protection tube.
- Keep distances of 2" (50 mm) or more between power cable and communication cable.
- Maximum length of power cables are decided within 10% of power drop. If it exceeds, you must consider another power supplying method.
- The circuit breaker(ELCB or MCCB+ELB) should be considered more capacity if many indoor units are connected from one breaker.
- Use round pressure terminal for connections to the power terminal block.
- For wiring, use the designated power cable and connect it firmly, then secure to prevent outside pressure being exerted on the terminal board.
- Use an appropriate screwdriver for tightening the terminal screws.
 A screwdriver with a small head will strip the head and make proper tightening impossible.
- Over-tightening the terminal screws may break them.
- See the table below for tightening torque for the terminal screws.

	Tightening torque						
	N•m	lbf•ft					
M3.5	0.8~1.2	0.59~0.89					
M4	1.2~1.8	0.89~1.33					

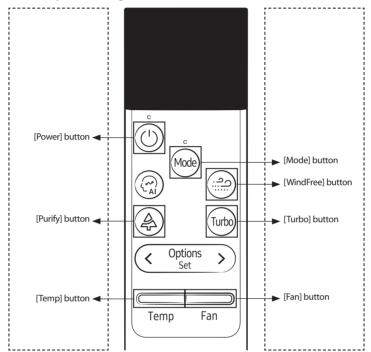






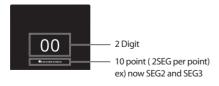
Set the indoor unit address and installation option with wireless remote control option. Set the each option separately since you cannot set the ADDRESS setting and indoor unit installation setting option at the same time. You need to set twice when setting indoor unit address and installation option.

The procedure of option setting





- 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 + button Down + Press for 10 seconds
 - 2) You can see "SW Initialization" message and enter the following in 5 seconds.
 - 3) Press button and button.
 - 4) Make sure that you are entered into the mode for setting options.







2. Set the option values.



- 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	Χ	Χ	Χ	Χ	Χ	1	Χ	Χ	Χ	Χ	Χ
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18	SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
2	Χ	Х	Χ	Χ	Χ	3	Х	Χ	Χ	Χ	Χ

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

Take the steps presented in the following table:

	Steps	Remote cor	ntrol 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 Fam button repeatedly until the value you want to set appears on the remote control display. When you press the Fam or Temp button, values appear in the following order: □ → □ → □ → □ 	00 SEG2	00 SEG3
2.	Press the www button to move to next page.	0	0
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 Fam button repeatedly until the value you want to set appears on the remote control display. When you press the Fam or Temp button, values appear in the following order: □ → □ → □ → □ 	00 SEG4	0 0
4.	Press the was button to move to next page.	0	0

Setting an indoor unit address and installation option

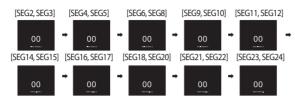
	Steps	Remote con	trol display
5.	Set the SEG6 and SEG8 values: 1) Set the SEG6 value by pressing the button repeatedly until the value you want to set appears on the remote control display. 2) Set the SEG8 value by pressing the button repeatedly until the value you want to set appears on the remote control display. When you press the or button, values appear in the following order:	00 SEG6	00 SEG8
6.	Press the button to move to next page.	0	0
7.	 Set the SEG9 and SEG10 values: Set the SEG9 value by pressing the	00 SEG9	00 SEG10
8.	Press the ee button to move to next page.	0	0
9.	 Set the SEG11 and SEG12 values: 1) Set the SEG11 value by pressing the remote control display. 2) Set the SEG12 value by pressing the remote control display. When you press the remote control display. When you press the remote control display. When you press the remote control display. The remote control display. The remote control display. The remote control display. 	00 SEG11	00 SEG12
10	. Press the 🖦 button to move to next page.	0	0
11	 Set the SEG14 and SEG15 values: Set the SEG14 value by pressing the Temp button repeatedly until the value you want to set appears on the remote control display. Set the SEG15 value by pressing the Fear button repeatedly until the value you want to set appears on the remote control display. When you press the Fear or Temp button, values appear in the following order: ★ ★ ★ ··· E ★ E 	00 SEG14	00 SEG15
12.	Press the (house) button to move to next page.	0	0



Steps	Remote control display
 Set the SEG16 and SEG17 values: Set the SEG16 value by pressing the	00 00 SEG17
14. Press the we button to move to next page.	00
 Set the SEG18 and SEG20 values: Set the SEG18 value by pressing the	00 00 SEG18 SEG20
16. Press the web button to move to next page.	00
 Set the SEG21 and SEG22 values: Set the SEG21 value by pressing the	00 00 SEG22
18. Press the (hose) button to move to next page.	00
 Set the SEG23 and SEG24 values: Set the SEG23 value by pressing the button repeatedly until the value you want to set appears on the remote control display. Set the SEG24 value by pressing the button repeatedly until the value you want to set appears on the remote control display. When you press the button, values appear in the following order: button button control display. 	00 00 SEG23 SEG24

Setting an indoor unit address and installation option

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



EX) VS*C***S4-4P

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 ③ 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 ③ button again.

- 5. Check whether the product operates following the option values you have set:
 - 1) Reset the indoor or outdoor unit.
 - Indoor Unit: Press (2) button + (4) button for 5 seconds
 - Outdoor Unit: Press the K3 button
 - 2) Reset remote control: Temp button Down + Fan button Down + Wood Press for 10 seconds You can see the "SW Initialization" message.

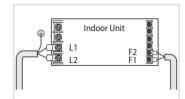






Setting an indoor unit address (MAIN/RMC/MSB)

- 1. Check whether power is supplied or not.
 - When the indoor unit is not plugged in, there should be additional power supply in the indoor unit.
- 2. The panel(display) should be connected to an indoor unit to receive option.
- 3. Before installing the indoor unit, assign an address to the indoor unit according to the air conditioning system plan.
- 4. Assign an indoor unit address by wireless remote controller.
 - The initial setting status of indoor unit ADDRESS(MAIN/RMC/MSB port) is "0A0000-100000-200000-300000."





- Also set the MSB and Indoor units address by using Add-on \rightarrow Change address on Lennox Service Software. (For more information, see the Lennox Service Software Help.)
- From SEG13 to SEG18 is for setting MSB address.
 - MSB models that can set address: V1MSBB06HR, V1MSBB02HR, V1MSBB04HR, V1MSBB01HR

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

Option	SEC	51	SEC	G2	SE	G3	SE	G4	SE	G5	SE	G6
Explanation	PAG	GE	МО	DE	Setting Ma	Setting Main address		of indoor ddress	10-digit of	indoor unit	The unit digit of an indoor unit	
	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
Indication and	0					No Main address						
Details			A		1	Main address setting mode	0~9	100 -digit	0~9	10 -digit	0~9	A unit digit
Option	SEC	3 7	SEC	SEG8		G9	SEC	510	SEC	511	SEG12	
Explanation	PAG	GE .				AC address	-		Group channel(*16)		Group address	
	Indication Details				Indication	Details			Indication	Details	Indication	Details
Indication and	1		-		0	No RMC address						
Details					1	RMC address setting mode				0~F	RMC2	0~F
Option	SEG	13	SEG	i14	SEC	515	SEC	316	SEC	517	SEC	518
Explanation	PAG	GE	-		Setting N add	ISB PORT ress	10-digit add		1-digit	of MSB	MSB POR	T address
	Indication	Details			Indication	Details	Indication	Details	Indication	Details	Indication	Details
Indication and					0	No MSB PORT						
Details	2		-		1	MSB PORT address setting mode	0~1	10-digit	0~9	1-digit	A~F	PORT Location



- When "A"~"F" is entered to SEG5~6, the indoor unit MAIN ADDRESS is not changed.
- If you set the SEG3 as 0, the indoor unit will maintain the previous MAIN ADDRESS even if you input the option value of SEG5~6.
- If you set the SEG9 as 0, the indoor unit will maintain previous RMC ADDRESS even if you input the option value of SEG11~12.
- You cannot set SEG11 and SEG12 as F value at the same time.
- If the indoor unit is connected to the MSB, you can set the SEG15~18. Ex.) If you want to set the indoor unit to 'A' port of MSB #1. (0A0000 - 100000 - 20101A -30000)

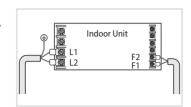




Setting an indoor unit address and installation option

Setting an indoor unit installation option (suitable for the condition of each installation location)

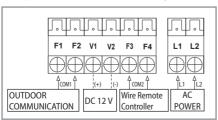
- 1. Check whether power is supplied or not.
 - When the indoor unit is not plugged in, there should be additional power supply in the indoor unit.
- 2. The panel (display) should be connected to an indoor unit to receive option.
- 3. Set the installation option according to the installation condition of an product.
 - The default setting of an indoor unit installation option is "020010-100000-200000-300000"
 - Individual control of a remote controller (SEG20) is the function that controls an indoor unit individually when there is more than one indoor unit.
- 4. Set the indoor unit option by wireless remote control.



02 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	2	Evaporator drying	Use of external room temperature sensor / Minimizing fan operation when thermostat is off	Use of central control	FAN RPM compensation
SEG7	SEG8	SEG9	SEG10	SEG11	SEG12
1	Use of drain pump	Use of hot water heater	-	EEV Step when heating stops	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	Use of external control	Setting the output of external control / External heater signal / Cooling operation signal / Free Cooling control signal	-	Buzzer control	Hours of filter usage
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	Individual control of a remote controller	Heating setting compensation	Adjusted EEV step of stopped unit during oil return /defrost mode.	-	-

- 1WAY / 2WAY / 4WAY MODEL: Drain pump(SEG8) will be set to 'USE + 3minute delay' even if the drain pump is set to 0.
- 1 WAY / 2WAY / 4WAY, DUCT MODEL: Number of hours using filter (SEG18) will be set to '1000hour' even if the SEG18 is set to exept for 2 or 6.
- When setting the option other than above SEG values, the option will be set as "0".
- SEG5 central control option is basically set as 1 (Use), so you don't need to set the central control option additionally. However, if the central control is not connected but it doesn't indicate an error message, you need to set the central control option as 0 (Disuse) to exclude the indoor unit from the central control.
- The output of hot water heater in SEG9 is generated from the hot coil part of the terminal board in duct models.



* The output of hot coil terminal is AC 220 V / 230 V (The same as Indoor Unit's input Power)

• The external output of SEG15 is generated by VSTAT10P-1 connection. (Refer to the manual of VSTAT10P-1.)





02 series installation option(Detailed)

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

Option	SEG	1	SE	G2	SEG3 SEG4						EG5	SE	G6	
Explanation	PAG		MC			tor drying	Use of external room temperature sensor / Minimizing fan operation when thermostat is off				ntral control	FAN	RPM nsation	
	Indication	Details	Indication	Details	Indication	Details	Indication	Use of	Details Minimizing fan operation when thermostat is off	Indication	Details	Indication	Details	
					0	Disuse	0 1 2	Default Use Disuse	Default Disuse Use (Heating) (*2)	0	Disuse	0	Disuse	
Indication and Details					2	Use (5min)	3 4 5	Use Disuse Use	Use (Heating) (*2) Use (Cooling) (*2) Use (Cooling) (*2)	, o	Disuse	0	Disuse	
	0		2		4	Use (10min) (*1)	6 7 8	Disuse Use Disuse	Use (Heating / Cooling) (*2) Use (Heating / Cooling) (*2) Use (Cooling Ultra					
						ll	9	Use	Low Fan) (*2) Use (Cooling Ultra Low Fan) (*2) Use (Heating / Cooling	1	Use	1	RPM compensation	
					6	Use (30min) (*1)	A B	Disuse Use	Ultra Low Fan) (*2) Use (Heating / Cooling Ultra Low Fan) (*2)					
Option	SEG	7	SE	G8	S	EG9	SEG10			SEG11		SEG	G12	
Explanation	PAG	E	Use of dra	ain pump	Use of hot	water heater	-			EEV Step when heating stops			-	
	Indication	Details	Indication	Details	Indication	Details				Indication				
Indication and Details	1		2	Disuse Use When an indoor unit stops, drain pump will operate for 3min	3	Use (*3) Use (*3)		-			Adjusted 1 EEV Step setting		-	
Option	SEG1	13	SEC	514		SEG15			SEG16	SEG17		SEG18		
Explanation	PAG	E	Use of e	external trol	control / I Cooling	the output of External heate operation sign ling control si	r signal / nal / Free		-	Buzzer control		Hours of filter usage		
	Indication	Details	Indication	Details	Indication	Deta				Indication	Details	Indication	Details	
			0	Disuse	0	External ((Therm				0	Use buzzer	2	1000 Hour	
			1	ON/OFF control	1	External ((Operation External	on On)							
Indication and Details	2			055	3	signa External	l (*4) heater		-					
	2		2	OFF control	4	signa Cooling or	eration			1	Disuse buzzer	6	2000 Hour	
					Window	5	signa Free Coolin (Cooling The	g control					er	
			3 Window ON/OFF control		6	Free Coolin (Cooling/Dr	g control / Thermo							



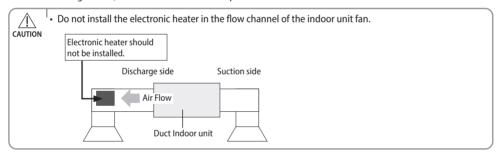




Option	SEG19		SEG20 SEG21		SEG20		SEG21		SEG22	SEG23	SEG24
Explanation	PAG	E	Individual cont	rol of a remote roller	Heating setting compensation		Adjusted EEV step of stopped unit during oil return /defrost mode.		-	-	
	Indication	Details	Indication	Details	Indication	Details	Indication	Details			
Indication and			0 or 1	channel 1	0	Default		Default	-		
Details	,		2	channel 2			. 0			-	
Details	3		3	channel 3	1	2℃					
			4	channel 4	2	5℃	1	Adjusted EEV positon			

^(*1) When COOL or DRY mode is off. The indoor fan operate in setting minutes.

- Fan operates for 20 seconds at an interval of 5 minutes in HEAT mode.
- Fan stops or operates Ultra low in Cooling when thermostat is off.
- (*3) 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
- (*4) 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
- If Fan is set to off for cooling only indoor unit by setting the SEG9=3 or SEG15=3, you need to use an external sensor or programmable wired controller sensor to detect indoor temperature exactly.
- (*5) When indoor unit is in cooling or DRY mode, The output signal is "ON"
- (*6) For free cooling control, economizer controller is required.







^(*2) Minimizing fan operation when thermostat is off



05 series installation option

SEG1	SEG2	SEG3	SEG4	SEG5	SEG6
0	5	Use of Auto Change Over for HR only in Auto mode / Use of Cooling only indoor unit of HR	(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	MTFC (*3)	-
SEG13	SEG14	SEG15	SEG16	SEG17	SEG18
2	-	-	-	-	Control variables when using hot water / external heater (*4)
SEG19	SEG20	SEG21	SEG22	SEG23	SEG24
3	-	-	-	Forcing FAN Operation for Heating and Cooling	-

05 series installation option(Detailed)

Ontion N	٠ مار	05XXXX-1XXXXX-2XXXXX-3XXXXX	V
COHOH	V().:	U	Λ.

Option	SEG1		SEG2	SEG3			SEG4		SEG5		SEG6	
Explanation	PAGE		MODE		Use of Auto Change Over for HR only in Auto mode / Use of Cooling only indoor unit of HR		(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		Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	
					Follow	0	0°€	0	0°C	0	1℃	
				0	product option	1	0.5 ℃	1	0.5 °C	1	1.5 ℃	
Indication and					Use Auto	2	1℃	2	1 °C	2	2℃	
Details	0		5		Change	3	1.5 ℃	3	1.5 ℃	3	2.5 °C	
Details	0				Over for HR only	4	2℃	4	2℃	4	3 ℃	
					Use Cooling	5	2.5 ℃	5	2.5 ℃	5	3.5 °C	
					only indoor	6	3℃	6	3 °C	6	4℃	
					unit for HR	7	3.5 ℃	7	3.5 ℃	7	4.5 °C	
Option	SEG7		SEG8		SEG9		SEG10	SEC	511	SEG12		
Explanation	PAGE	Standard f	(When setting SEG3) Standard for mode change Cooling → Heating		tting SEG3) red for mode ange	long pipe	nsation option for or height difference een indoor units	MTFC (*3)		-		
	Indication Deta			Indication	Details	Indication	Details	Indication	Details			
	mucation Details	0	1℃	0	5min	0	Default	maication	Details	1		
		1 1,5 ℃	1	7 min		(*1) Height difference	1					
		2	2°C	2	9 min	1	is more than 30m or	0	Default			
Indication and Details	1	3	2.5 ℃	3	11 min		(*2) Distance is longer than 110m				-	
		4	3℃	4	13 min	2	(*1) Height difference	2	U]		
		5	3.5 ℃	5	15 min		is 15~30m or					
		6	4℃	6 20 min		2	(*2) Distance is	2	Use			
		7	4.5 °C	7	30 min		50~110m					





Setting an indoor unit address and installation option

Option	SEG13	SEG14	SEG15	SEG16		SEG17	SEG18				
Explanation	-	-	-	-		-	Control variables v	when using hot water / ex	en using hot water / external heater (*4)		
								Details			
	Indication Details						Indication	Set temp. for heater On/Off	Delay time for heater On		
							0	At the same time as thermo on	No delay		
							1	At the same time as thermo on	10 minutes		
							2	At the same time as thermo on	20 minutes		
							3	1.5 ℃	No delay		
Indication		_	-	-		_	4	1.5 ℃	10 minutes		
and Details							5	1.5 ℃	20 minutes		
	2						6	3.0 ℃	No delay		
							7	3.0 ℃	10 minutes		
							8	3.0 ℃	20 minutes		
							9	4.5 °C	No delay		
							A	4.5 °C	10 minutes		
							В	4.5 °C	20 minutes		
							С	6.0 °C	No delay		
							D	6.0 °C	10 minutes		
							E	6.0 ℃	20 minutes		
Option	SEG19	SEG20	SEG21	SEG22		SEG23		SEG24			
Explanation	PAGE	-	-	-	Forcing F	AN Operation for He					
	Indication Details				Indication	Indic					
						Cooling Fan Setting	Heating Fan Setting				
					0	Disuse	Disuse				
					1	Disuse	Use (Fan: User setting)				
				-	2	Disuse Use (Fan: High)					
					3	Disuse	Use (Fan: Low)				
					4	Use (Fan: User setting)	Disuse				
					5		Use (Fan: User setting)				
Indication		_	-		6	Use (Fan: User setting)	Use (Fan: High)	_			
and Details	3				7	Use (Fan: User setting)	Use (Fan: Low)				
					8	Use (Fan: High)	Disuse				
					9	Use (Fan: High)	Use (Fan: User setting)				
					A	Use (Fan: High)	Use (Fan: High)				
					В	Use (Fan: High)	Use (Fan: Low)				
					С	Use (Fan: Low)	Disuse				
					D	Use (Fan: Low)	Use (Fan: User setting)				
					E	Use (Fan: Low)	Use (Fan: High)				
					F	Use (Fan: Low)	Use (Fan: Low)				

^(*1) Height difference: The difference of the height between the corresponding indoor uint and the indoor unit installed at the lowest place.

Room temp. \leq set temp. + f(heating compensation temp.)





For example, When the indoor unit is installed 131.23 ft (40 m) higher than the indoor unit installed at the lowest place, select the option "1".

⁽¹²⁾ Distance: The difference between the pipe length of the indoor unit istalled at farthest place from an outdoor unit and the pipe length of the corresponding indoor unit from

For example, when the farthest pipe length is 328 ft (100 m) and the corresponding indoor unit is 131.23 ft (40 m) away from an outdoor unit, select the option "2". (328 ft (100 m) - 131.23 ft (40 m) = 196.85 ft (60 m))

^(*3) For MTFC option, MTFC (Multi Tenant Function Controller) kit is required.

 $l^{(4)}$ Heater operation when the SEG9 of 02 series installation option is set to using hot water heater or when SEG15 is set to using external heater

Setting 02 series SEG9 ="1"/Setting 05 series SEG18 = "0": Hot water heater is turned on at the same time as the heating thermostat is on, and e.g. 1) turned off when the heating thermostat is off.

Setting 02 series SEG15 ="2" / Setting 05 series SEG18 ="A": e.g. 2)

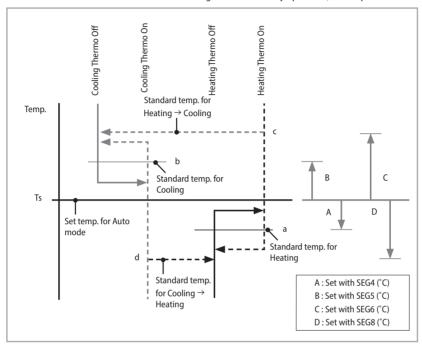
⁻ External heater is turned on when the temperature is maintained as 8.1 °F (4.5 °C) for 10 minutes.

Room temp. \leq set temp. + f(heating compensation temp.)

⁻ External heater is turned off when the temperature is maintained as 8.1 °F (4.5 °C) + 1.8 °F (1 °C) [1.8 °F (1 °C) is the Hysteresis for On/Off selection.

SEG 3, 4, 5, 6, 8, 9 additional information

When the SEG3 is set as "1" and follow Auto Change Over for HR only operation, it will operate as follows.



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







Changing a particular option

You can change each digit of set option.

Option	SEG1		SEG2		SEG3		SEG4		SEG5		SEG6	
Explanation	PAGE		МОС	ODE The option you want to			The tens' digit of an option SEG you will change		The unit digit of an option SEG you will change		The changed value	
	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details	Indication	Details
Indication and Details	0		D		Option mode	1~6	Tens' digit of SEG	0~9	Unit digit of SEG	0~9	The changed value	0~F



- When changing a digit of an indoor unit address setting option, set the SEG3 as 'A'.
- When changing a digit of indoor unit 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	The option mode you want to change	The tens' digit of an option SEG you will change	The unit digit of an option SEG you will change	The changed value
Indication	0	D	2	1	7	1



If you are using heat pump model, mixed operation mode (two or more indoor units operating in
different operation mode simultaneously) is not available when the indoor units are connected to same
outdoor unit. If you set the main indoor unit with a remote controller, outdoor unit will operate in the
mode which was set in the main indoor unit.





Final Checks and User Tips

To complete the installation, perform the following checks and tests to ensure that the product operates correctly. Check the followings.

- · Strength of the installation site
- · Tightness of pipe connection to detect a gas leak
- · Electric wiring connections
- · Heat-resistant insulation of the pipe
- Drainage
- · Earth conductor connection
- · Correct operation (follow the steps below)

Providing information for user

After finishing the installation of the product, you should explain the following to the user. Refer to appropriate pages in the User's Manual.

- 1. How to start and stop the product
- 2. How to select the modes and functions
- 3. How to adjust the temperature and fan speed
- 4. How to adjust the airflow direction
- 5. How to set the timers
- 6. How to clean and replace the filters



 When you complete the installation successfully, hand over the User's Manual and this Installation Manual to the user for storage in a handy and safe place.









