

# Base Heater Control KIT

## Installation manual

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### V1BPNC03

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



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# Safety Information

## WARNING

- Cancer and Reproductive Harm - [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov).

## WARNING

Before installation, service or maintenance of this product ensure that all power sources are disconnected and properly locked out and tagged.

- Failure to do so may result in electric shock, fire and/or water leakage/damage.

Installation must be performed according to the instructions in this manual.

- Failure to do so may result in electric shock, fire and/or water leakage/damage.

The manufacturer does not assume responsibility for careless installation by a unqualified person.

During installation, be sure to use the provided or specified genuine parts along with the designated tools.

- Failure to do so may result in electric shock, fire and/or water leakage/damage.

When a power cable is damaged, ensure that is replaced by a qualified mechanic or electrician.

Wiring must be performed by a qualified mechanic or electrician in accordance with local, state and federal codes.

- Voltage drop/shortage, careless power wiring, or use of non-regulated power cable may cause electric shock or fire.

Tidy up cables for the control box, outdoor units, and power supply so that the structures (e.g. electrical part's cover) do not float and be sure to fix the electrical part's cover.

- Otherwise, it may cause heating of terminals, electric shock, or fire.

Perform wiring with the designated cables and be sure to fix them so that external force may not apply to terminal contacts.

- Otherwise, it may cause heating or fire.
- Be careful not to supply power over the maximum voltage or less than the minimum voltage.

- Damage or function degradation to electrical parts may cause product malfunction.

Be sure to use copper wire as the power cable and use only the regulated parts for wiring.

Be sure to check whether wiring has been properly made.

- Otherwise, it may cause heating to result in fire.

## CAUTION

Be sure to perform grounding work.

- Do not connect the ground wire to another one for gas pipe, water pipe, or telephone line.
- When grounding is not proper, it may cause electric shock.

The power and Transmission wires of the control box must be installed at least 1 m away from other devices and at least 2 m away from the conducting wire of the lightning rod.

- However, depending on the radio wave, noise may be generated from other devices even at the distance of over 1 m.

Never install the control box at the following places:

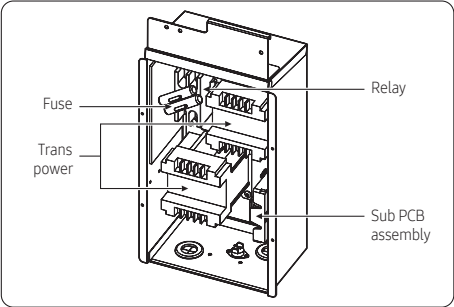
- Where mineral oil is full or scattering (e.g. cooking area or steamy place):  
The resin parts may deteriorate, causing the parts to fall or cause leakage.
- Where corrosive gas such as sulfur dioxide is generated (e.g. toilet exhaust system or vent outlet):  
Corrosion of copper pipes and joints may cause refrigerant leakage.
- Where any radio wave equipment is located:  
The control system may malfunction.
- Where flammable gas may leak, carbon fiber or flammable dust may float, or volatile materials (e.g. thinner, gasoline) are handled:  
If gas leaks and remains in the main valve, it may cause ignition.
- Where there is concern about indoor unit corrosion such as coastal area or hot spring
- Where the product is directly affected by external environment (temperature, humidity, dust, etc.)

※ The installer is responsible for all customer CLAIMs for installation caused by non-compliance. (Service cost is charged to the installer)

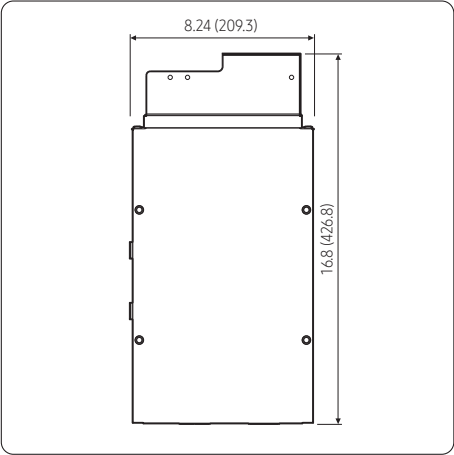


# Parts and Dimensions

## Control box parts diagram



Unit: inch (mm)



## Accessories

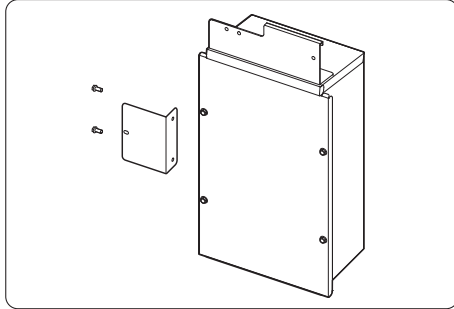
Product Body (1)	Installation Guide (1)
Bracket Holder (1)	M4 x L12 Screw (5)



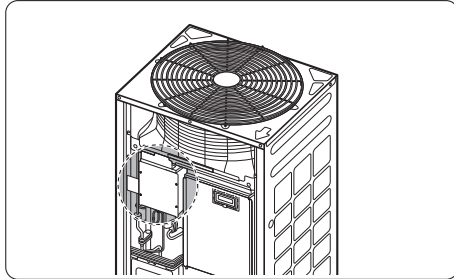
# Control Box Installation

## Installing the control box [VRF 575V Series]

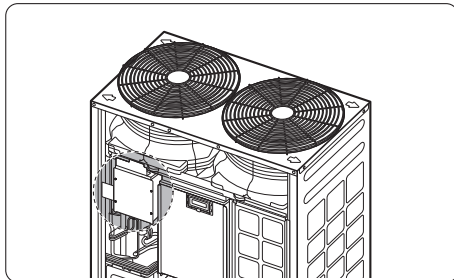
- 1 Fasten the bracket to the control box's body using the supplied screws. The bracket should be installed on the left of the control box.



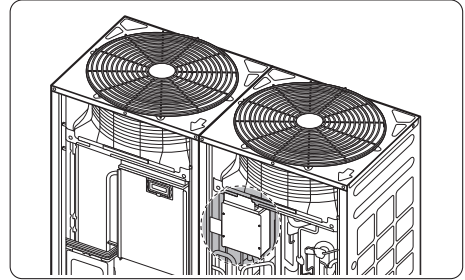
- 2 Mount the control box in the outdoor unit as below figure.
- Installation in a VRF Small model



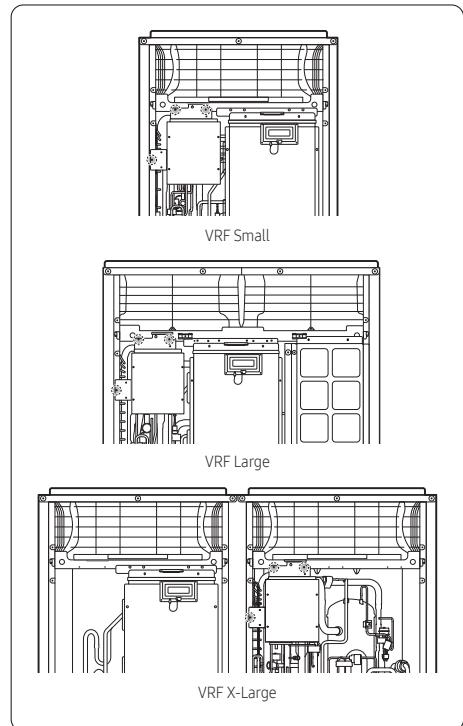
- Installation in a VRF Large model



- Installation in a VRF X-Large model



- 3 Fasten the control box to the outdoor unit with supplied screws (3EA) for assembly.

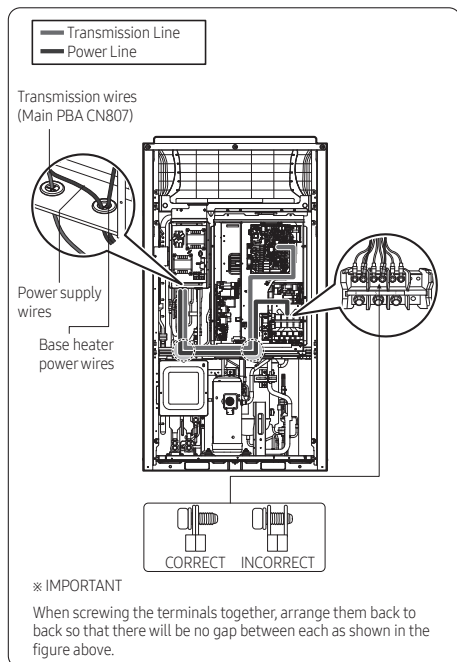




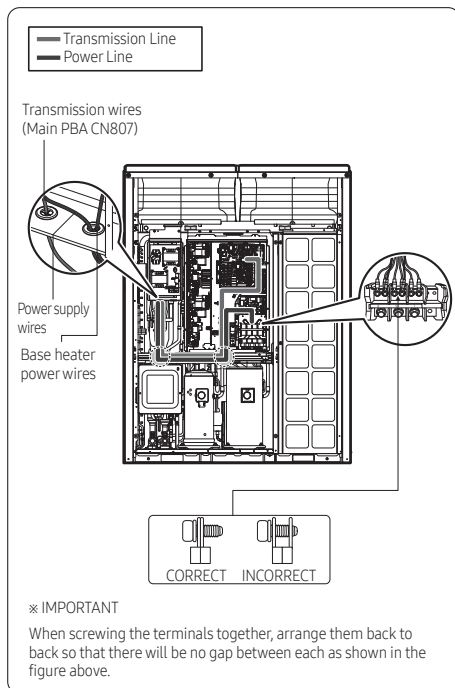
# Control Box Installation

- 4 Connect the transmission and power wires between the base heater control box and the outdoor unit control box. Secure the wires with the factory installed wire holders.

## VRF Small

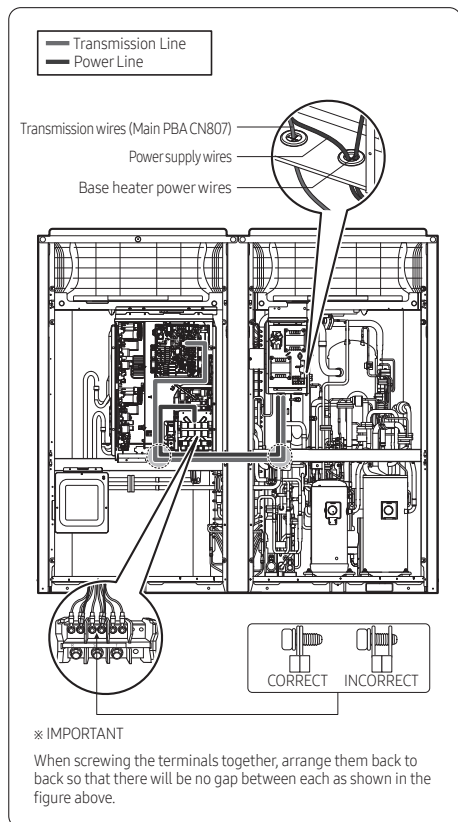


## VRF Large





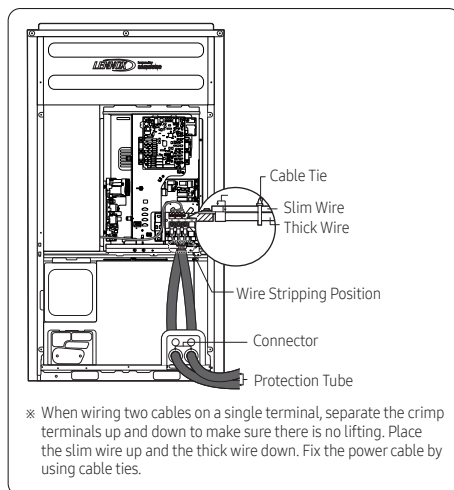
## VRF X-Large



## Connecting the power terminals

- Secure the base heater wires as shown in the figure.
- When wiring the base heater control box, use wire connectors with compression connection.
- Perform wiring using the designated cables. Secure the cables to avoiding external force.
- When fastening the terminals, use a screwdriver and wrench to apply the rated torque.

- Failure to tighten these connections properly may result in a loose connection causing potential overheating and subsequent damage.



Screw	Tightening torque for terminal		Remarks
	N·m	lbf·ft	
M4	1.2-1.8	0.9-1.3	Single phase 208~230V power cable
M8	5.5-7.3	4.1-5.4	3 phase 575V power cable

## ⚠ CAUTION

- When stripping the wires, be sure to use the correct tools to prevent damage to the inner wire insulators.
- Have the outer sheath of the indoor unit's power and Transmission wires inserted into the electrical system by 0.79 inch (20 mm) or more.
- Separate the power and communication wires.



## Wiring diagram

- [illegible]

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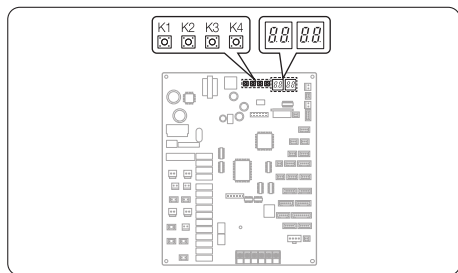


## Configure outdoor unit option settings

When installing Base heater and control box, be sure to enable the Base heater function for the outdoor unit.

When installing in modules on modular systems (more than one outdoor unit), enable the function on the main outdoor unit.

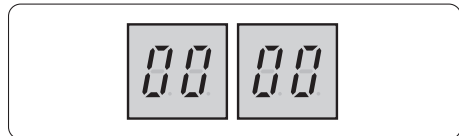
### Configuring outdoor unit options



#### Installation and configuration settings at the outdoor unit PCB

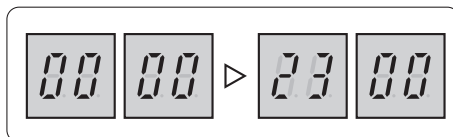
Configuring the options>

- 1 Press and hold K2 to enter the setup. (the system must be stopped to modify)
  - The following appears. If the compressor cut-off setting is enabled, 1 or 2 appears in Segment 4.

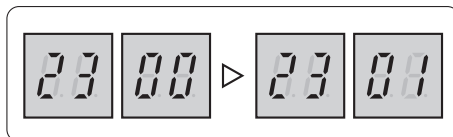


- In Segment 1 and Segment 2, the number of the selected option appears.
- In Segment 3 and Segment 4, the setting value of the selected option appears.

- 2 In the option setup menu, when you shortly press the K1 switch, the values for Segment 1 and Segment 2 change. You can select the desired option. (e.g. The value for Segment 1 is 2 and the value for Segment 2 is 1.)



- 3 In the desired option, if you shortly press the K2 switch, the values for Segment 3 and Segment 4 change. You can select the desired option. (e.g. The value for Segment 3 is 0 and the value for Segment 4 is 1.)



- 4 After selecting an option, hold the K2 button for 2 seconds. All 7-segment displays blink. If you enter the tracking mode, the option setting is saved.

#### CAUTION

- If the settings are not set and saved as noted above, the option setting is not saved.
  - ※ If you want to return to the previous setting before saving, press and hold the K1 switch to cancel.
  - ※ If you want to reset to the factory defaults, in the option setting mode, press and hold the K4 switch.
  - If you press and hold the K4 switch, all the settings are reset to the factory defaults but the values are not saved yet. Only when the 7-segment display goes to the tracking mode by pressing and holding the K2 switch, the setting is saved.



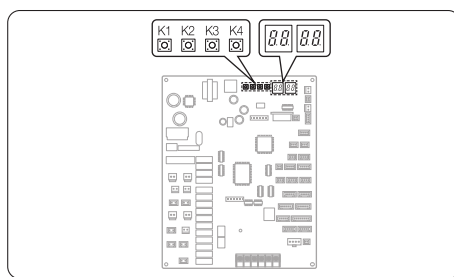
# Control Box Installation

Option	Entry Unit	SEG1	SEG2	SEG3	SEG4	Function
Base Heater	Main	2	3	0	0	Disabled (Factory default)
				0	1	Enabled

## Cautions for base heater and control box

- If the option is not set, an error occurs so normal operation may not be possible.
- To obtain the updated outdoor unit firmware, please reach out to your local Lennox service or distribution center.
- ※ While the ODU is in "Base Heater testing mode" or while the base heater is on under normal operation, never touch the heater or parts near the base plate to prevent serious burns.

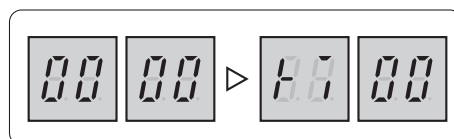
## Test running the base heater



**After the installation, test run the outdoor unit by using the tact switch.**

Test run procedure

- 1 Test run the base heater by using the K2 button.
  - Press the K2 button 14 times to display the following.



- 2 Check whether the control box relay operates properly.
- 3 Check whether the surface temperature of the base heater has increased.
  - Be sure to use a non-contact thermometer when checking the temperature.

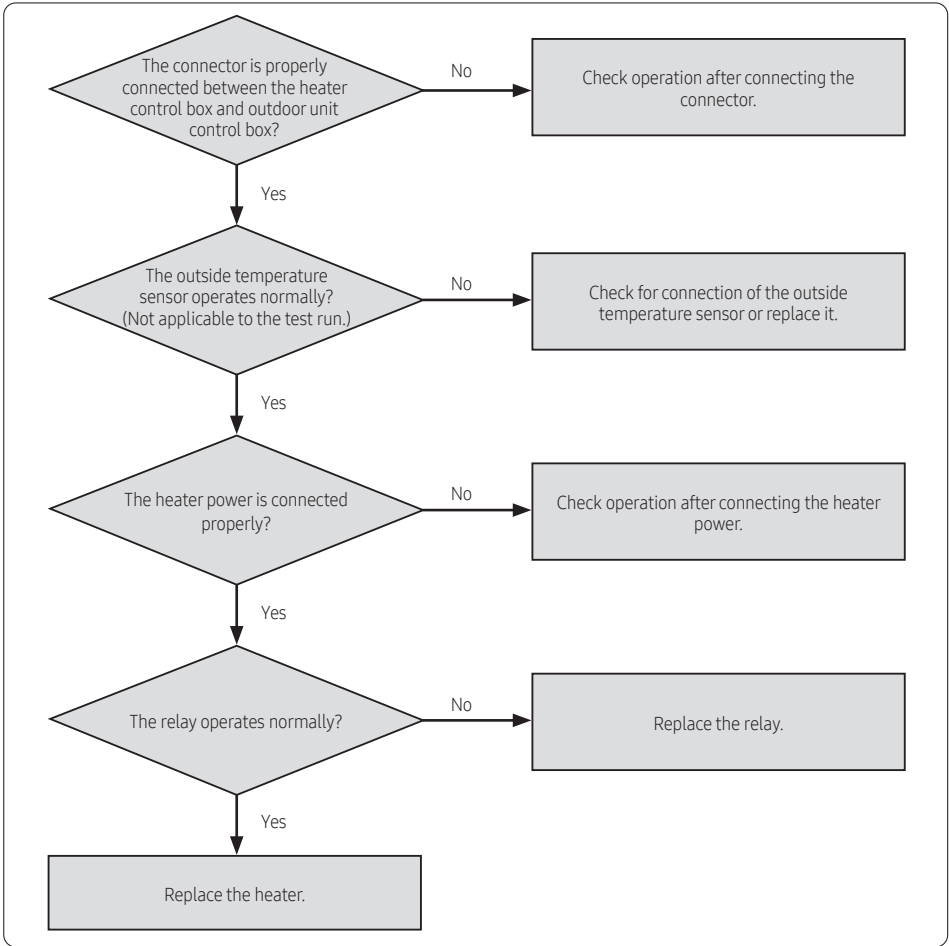
## ⚠ CAUTION

- Do not touch base pan heater as it may cause serious burns.
- 4 The test run finishes after 3 minutes.



# Check items by error code

Symptom	During the Heat mode or the heater test run, the temperature on the heater does not increase.
Cause	1) Connection error 2) Outside temperature sensor error 3) Heater power connection error 4) Relay operation error



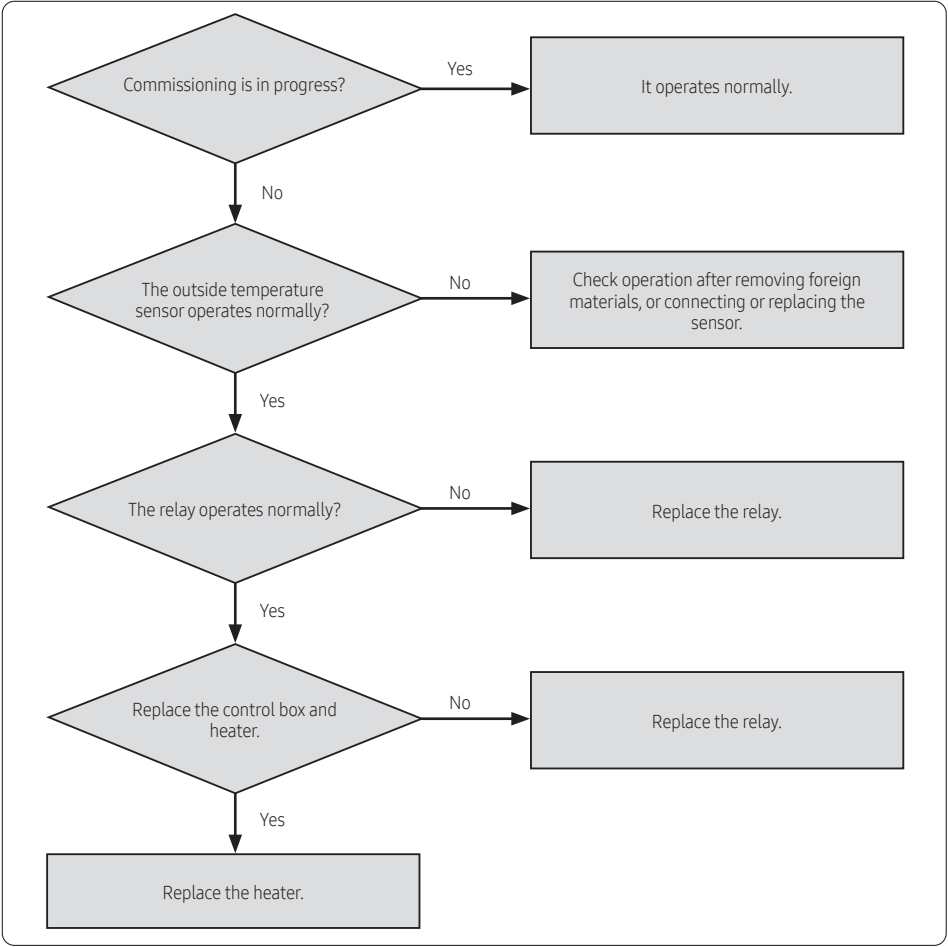
## ⚠ CAUTION

- Be sure to verify base heater functionality periodically as it has no error code.



# Check items by error code

Symptom	The heater operates normally at the outside temperature of 41 °F (5 °C) or higher?
Cause	1) Test run 2) Outside temperature sensor error 3) Relay operation error



## CAUTION

- Be sure to verify base heater functionality periodically as it has no error code.



# Memo

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