

Programmable Wired Controller Installation manual

VSTAT04P-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 Information

California Proposition 65 Warning (US)

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

This installation manual explains how to install a programmable wired controller connected to the indoor unit of your Lennox. Please read this manual thoroughly before installing the product. (Please refer to appropriate installation for any optional product installation.)

⚠ WARNING

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

⚠ CAUTION

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

⚠ WARNING

Contact a service centre for installation.

- Potential risk of malfunction, water leak, electric shock and fire.

Install the product on a hard and even place that can support its weight.

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

Install the product with proper power supply.

- Potential risk of fire or product damage.

Do not move or reinstall the product on your discretion.

- Potential risk of electric shock or fire.

Consult the place of purchase or a contact centre to disassemble or repair the product.

- Potential risk of malfunction, electric shock, or fire.

Check if the installation work is done correctly according to the installation manual.

- Incorrect installation may cause electric shock or fire.

The electric work must be done by qualified person according to national wiring regulations and installation guide.

- If an unauthorized person performs the installation, any resulting defects can cause malfunctions, electrical shocks, or fire accidents.

When you want to dispose your programmable wired controller, ask the service centre.

⚠ CAUTION

Do not install the product where there's combustible gas.

- Potential risk of fire and explosion.

Do not install the product in areas exposed to oil or vapor.

- Potential risk of product damage or malfunction.

Ensure no water gets into the programmable wired controller.

- Potential risk of electric shock or fire.

Do not put undue stress on the power cable.

- Potential risk of broken cable and fire.

Install the air conditioner away from direct exposure to sunlight, in room temperature range of 32 ~ 102 °F (0 ~ 39 °C).

- Potential risk of electric shock or malfunction.

Do not install the product in areas with frequent use of acid or alkali spray.

- Potential risk of electric shock or product malfunction.

Do not handle the product with sharp objects.

- Potential risk of electric shock or product damage.

Do not connect power cable to a communication terminal.

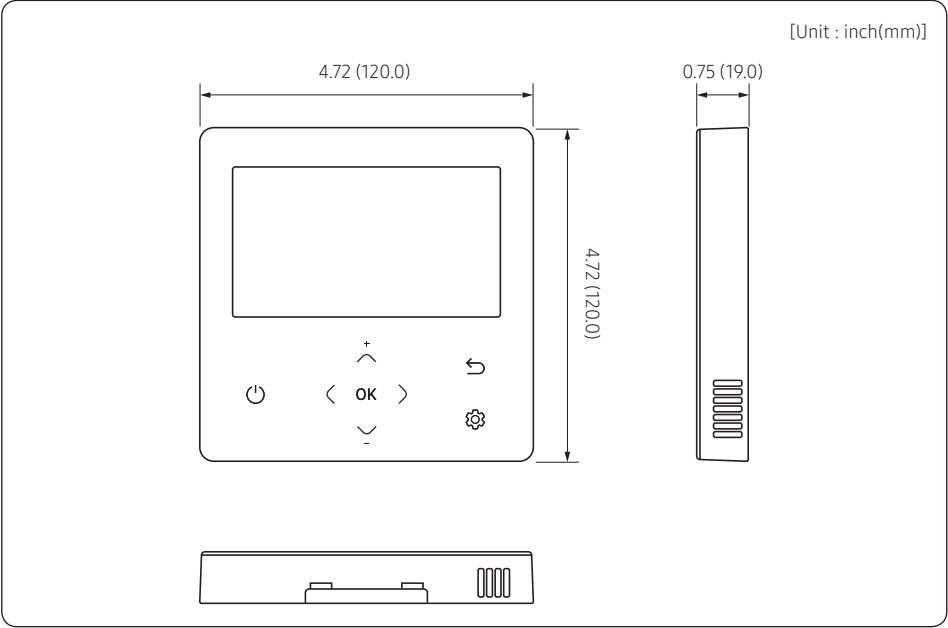
- Potential risk of fire.

Be cautious not to interfere any other electrical devices if the product is installed in a place such as hospital.

- Potential risk of product malfunction.

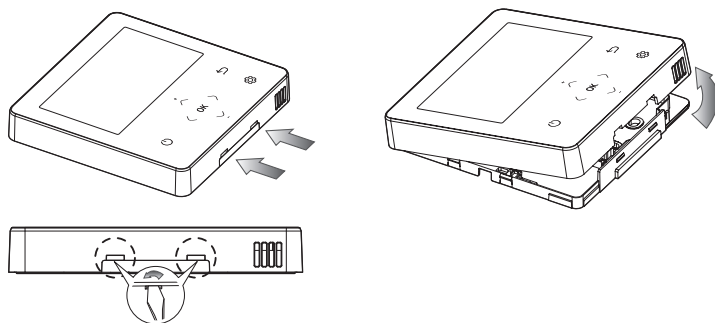
Programmable Wired Controller Installation

External Dimensions

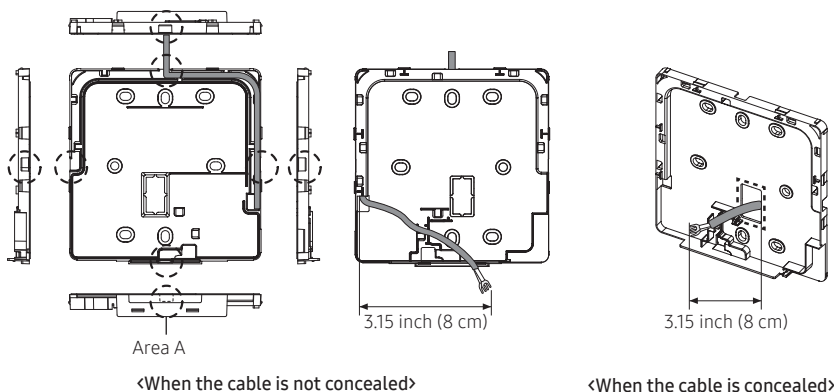


Programmable Wired Controller Installation

- 1 Insert the flat-head screwdriver into two square grooves at the bottom of the programmable wired controller and rotate it to lift the front cover for removal from the rear cover.



- 2 Arrange the power cable and the communication cable so that they fit in the housing along the edges of the rear cover.

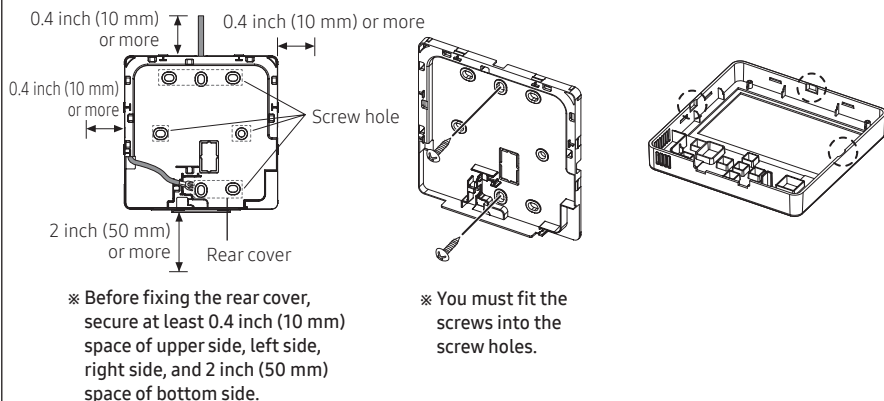


NOTE

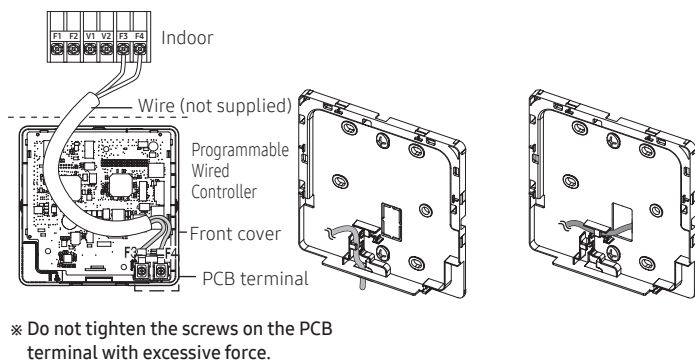
- When connecting the power and communication cables to the bottom of the programmable wired controller, first cut off the area A.

Programmable Wired Controller Installation

- Using two or more screws, firmly affix the rear cover of the remote controller to the wall, and then cut off the grooves of the front covers for communication and power cables, making sure these cables have reasonable length.



- Connect the communication cables (F3, F4) to the terminals of the back of the front cover, and then fix the wires so that they do not get stuck during connection.



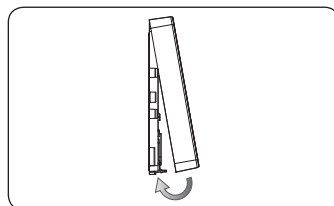
⚠ CAUTION

- When using an electric screwdriver, tighten the screws to the standard torque because the top of screws may be worn out if you use a strong torque.

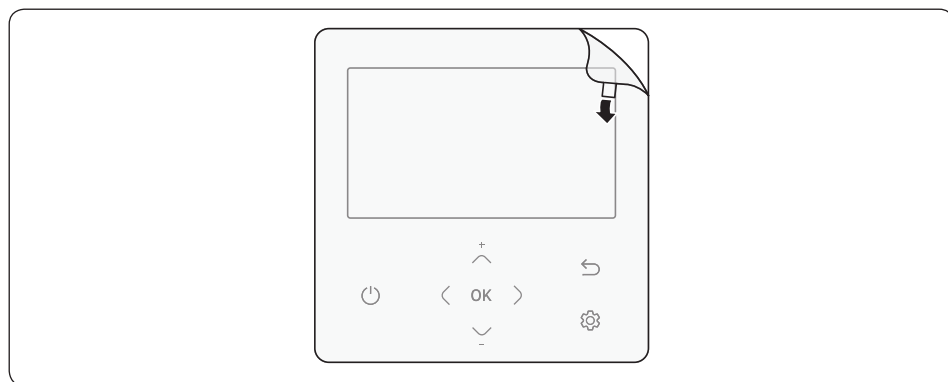
- 5 Reassemble the programmable wired controller.

NOTE

- Align the controller with the upper groove first, and then insert it by turning it downwards as shown in the figure.
After assembly, check and confirm that no wires are stuck in the gap between the back and front covers.



- 6 Remove the front protective film.

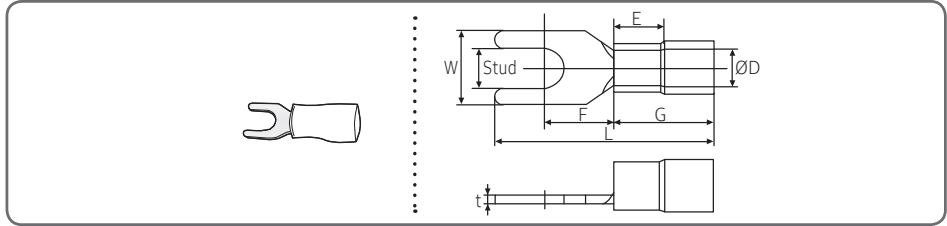


CAUTION

- When installing a programmable wired controller by using a cable longer than 32.80 ft (10 m), you must install the communication cable and the power cable separately. (Electrical interference can cause the programmable wired controller to malfunction.)
- When installing your programmable wired controller on the wall, consider the size of the wire hole, and select a wire with a proper thickness.
- Wire that is connectable to programmable wired controller PCB.
 - If you install the programmable wired controller by reclaiming, install it according to U-terminal cable specification.
 - If you install the programmable wired controller by using two pieces of PVC wire, remove the 12 inch (30 cm) of the sheath of the cable and install it only with the two pieces of wires. (Recommended specification: AWG20)

Programmable Wired Controller Installation

- The following are the specs of the compression ring terminal connected to your programmable wired controller PCB.





Range of Permitted Wires		Rated Size	Stud Size	Basic Size [inch (mm)]						
AWG	inch ² (mm ²)	inch ² (mm ²)	inch (mm)	t	ØD	G	E	F	W	L
22~16	0.0003 ~ 0.0025 (0.25~1.65)	0.0023 (1.5)	0.1181 (3)	0.0275 (0.7)	0.1496 (3.8)	0.3937 (10.0)	0.1771 (4.5)	0.2559 (6.5)	0.2362 (6.0)	0.8346 (21.2)



※ Maximum distance for connecting communication and power cable: 328 ft (100 m)

- Screws on the PCB terminal must be tightened with less than 0.04 lbf·ft (6 N·cm) tightening torque. If the tightening torque is greater, it may damage the screw thread.

Tracking Your Indoor Unit from the programmable wired controller [See the image

- 1 Tracking of your programmable wired controller will automatically start when you turn on the power after installation.
- 2 If you want to perform tracking again after installation, then press the  and  buttons at the same time for more than 5 seconds.
 - The system will reset, and tracking will start again.
- 3 During tracking, the total number of currently searched indoor units will be displayed.
- 4 It may take about 5 minutes at initial installation or when you re-set the Power Master setting.

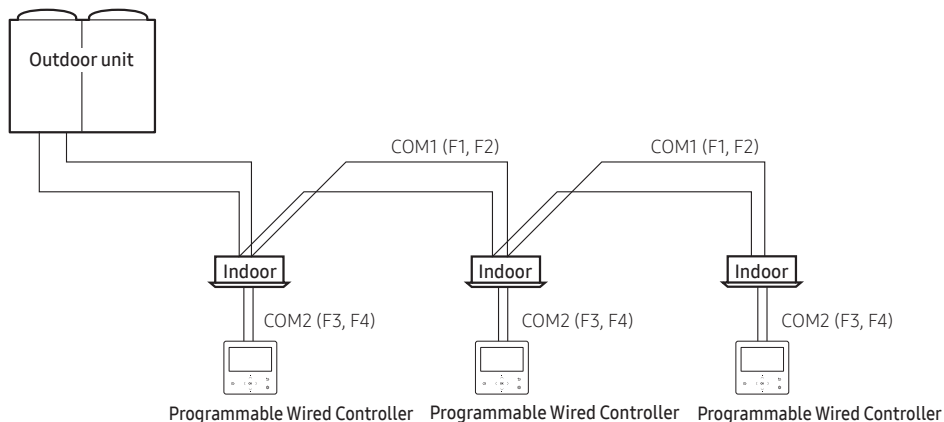
NOTE

- The operation displays on the programmable wired controller may differ depending on the selected language.
- If you want to perform tracking again after installation, then press the  and  buttons at the same time for more than 5 seconds.

Individual Control with Your programmable wired controller

Individual control means that you are using one remote controller to control one indoor unit.

When connected to an indoor unit only



NOTE

- Regardless of the indoor group address (RMC address) only the indoor unit connected to COM2 is individually controlled.
- For air conditioners that use R-32 (VRF R-32 indoor units), make sure to install individual programmable wired controller for the indoor units for individual control.

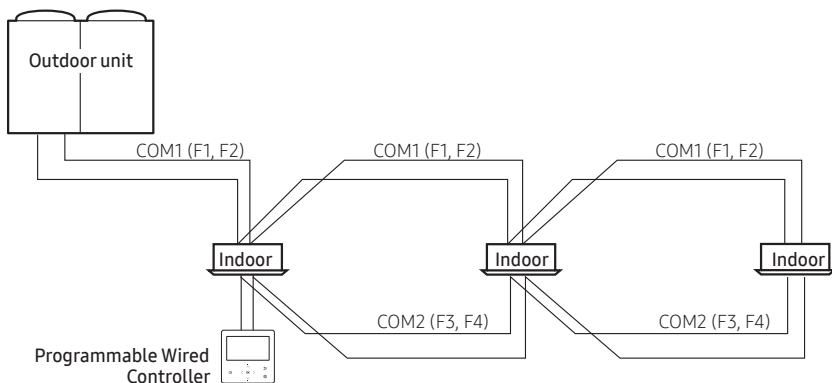
Programmable Wired Controller Installation

Group Control with Your programmable wired controller

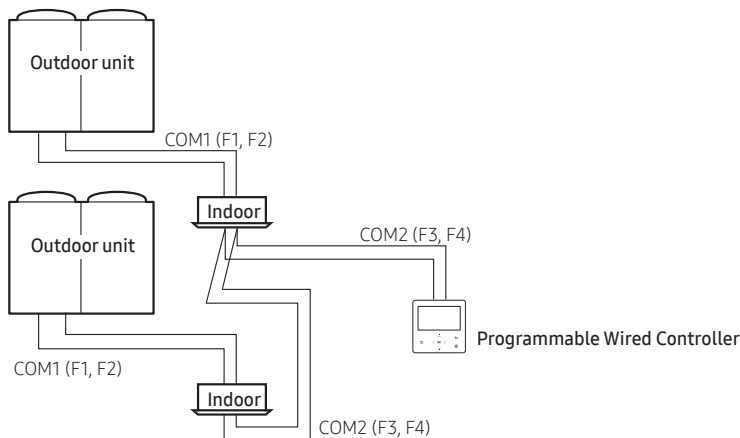
Group control means that you are using one programmable wired controller to control two or more indoor units at the same time.

When connected to an indoor unit only

- Using One programmable wired controller to control three indoor Units



- Using One programmable wired controller to control indoor units connected to different outdoor unit



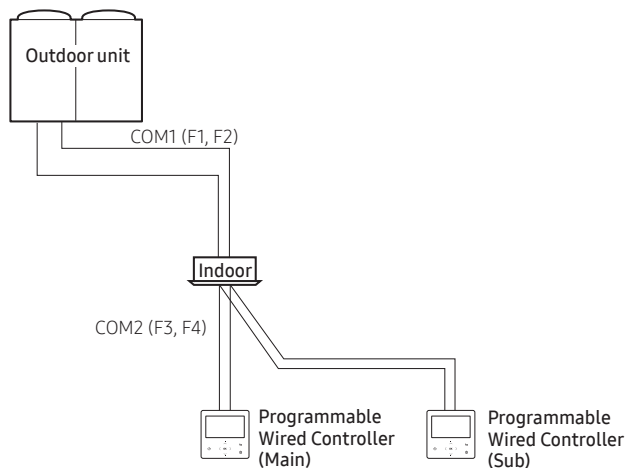
NOTE

- Regardless of the indoor unit's group address (RMC address), only the indoor units connected to COM2 are controlled in group.
- Regardless of your outdoor units, you can control a maximum of 16 indoor units as a group.
- Address of each outdoor units must be set differently when group control indoor units connected to the other outdoor unit.
- For air conditioners that use R-32 (VRF R-32 indoor units), group control using a programmable wired controller is not possible.

Controlling the 2-remote controller

2-Remote controller is controlling one indoor unit, one group of indoor units with two remote controllers.

When connected to an indoor unit only





NOTE

- Air conditioners that use R-32 also support connecting two remote controls to a single indoor unit.

Programmable Wired Controller Installation

Initializing Your Programmable Wired Controller Communication

Programmable wired controller must be initialized if installation status changes.

- Changing number of indoor unit or their address
- 1 Press the  and  buttons at the same time for more than 5 seconds.
 - Your programmable wired controller will be initialized, and the device will search for the indoor units connected to your programmable wired controller again.

Errors displayed on the Programmable Wired Controller

Error codes for the programmable wired controller and the product connected to your programmable wired controller will be displayed in the LCD display.

Programmable wired controller error codes







Indication	Description	Remarks
601	Communication error between programmable wired controller and indoor units after successful communication. (communication stop for 3 minutes after detection)	
602	No communication between Main and Sub programmable wired controller. (communication stop for 3 minutes after detection)	
604	When tracking between the programmable wired controller and indoor units is not complete for more than 5 minutes (Including communication error between indoor units and outdoor units)	
618	Over 16 indoor units installed. Reset is required after checking the number of installed indoor units.	
653	Temperature sensor Open/Short error	Can be detected by the product with a temperature sensor.
654	EEPROM error	

NOTE


- For the error codes for your indoor/outdoor units, refer to the installation manual of each device.

Installation/Service mode

Additional functions of the programmable wired controller [See the image

- 1 If you want to use the various additional functions for your programmable wired controller, press the  and  buttons at the same time for more than 3 seconds.
 - The password entry screen appears.
- 2 Enter the password, "0202," and then press the **OK** button.
 - The settings screen for installation/service mode appears.
- 3 See the list of additional functions for the programmable wired controller on the next page, and then select the desired menu.
 - Once you have entered the setting screen, the current setting appears.
 - Refer to the chart for data setting.
 - Using the   buttons, change the settings and press the  button to move to the next setting.
 - Press the **OK** button to save the new setting.
 - Press the  button to move to the Home screen.

NOTE

- While setting the data, you can press the  button to move to the Home screen after checking the saving status at a pop-up screen.

Installation/Service mode

Installation/Service mode

NOTE


- Unavailable functions are marked inactive and they cannot be set.
- If communication initialization is needed after the setting, the system will reset automatically and communication will be initialized.

Major	Step 1	Step 2	Step 3	Description	Default
General	Indoor Unit option	Power button	-	Default/Indoor unit	Indoor unit
		Auto mode	-	ON/OFF	ON
		Cool/Heat selection	-	Cool Only/Cool & Heat	Cool & Heat
		Wireless remote controller	-	ON/OFF	ON
		MAIN/SUB wired remote	-	Main/Sub	Main
		Temperature unit	Temperature unit	Celsius(°C)/Fahrenheit(°F)	Fahrenheit(°F)
			Set temp. Unit	Celsius(°C): 1°C/0.5°C/0.1°C, Fahrenheit(°F): 1°F	1°F
		Temperature sensor selection	-	Indoor/Wired remote controller	Wired remote controller
		Average temperature	-	ON/OFF	OFF
		Set Temperature Type	-	ON/OFF	ON
	Connection Information	Number of Connection	Indoor	0 to 16	-
		Master Indoor Unit Information	Serial No.		-
			Model No.		-
			Indoor unit room temp.	Temperature	-
			Indoor unit EVA IN temp.	Temperature	-
			Indoor unit EVA OUT temp.	Temperature	-
			Indoor unit EEV step	EEV step	-
		View master Indoor Unit	Indoor	Address	-
		Mode master indoor unit	Mode master indoor unit 1)*	Address	-

Major	Step 1	Step 2	Step 3	Description	Default
General	Indoor Unit option	Address	Main Address	00 to 4F	-
			RMC Address	00 to FE	-
		Product option 3)*	-	Refer to the installation manual of the connected indoor unit.	-
		Installation option 1 3)*	-		-
		Installation option 2 3)*	-		-
		MCU Port	MCU Address	00 to 15	-
			MCU Port	A to F	-
	Device Information (Wired Remote Controller)	Micom code	-	Micom code	-
		Program Version	-	Modified date	-
		Touch Code	-	Touch IC code	-
		Program Version	-	Modified date	-
		Graphic Image	-	Graphic image code	-
		Program Version	-	Modified date	-
	Reset All Service modes	Erase All Service mode data			
		Initialize a remote controller	-	-	-
	Initialize Unit Information	-	-	-	-
	R32	Supervisor mode	-	ON/OFF	OFF
		R32 Sensor Reset	-	-	-
	Power Master Reset 2)*	-	-	-	-
	ODU K3 reset	-	-	-	-
	Outdoor capacity	-	-	ON/OFF	

Installation/Service mode

Major	Step 1	Step 2	Step 3	Description	Default
Indoor	Blade lock 4)*	Blade1	-	Unlock/Lock	Unlock
		Blade2	-	Unlock/Lock	Unlock
		Blade3	-	Unlock/Lock	Unlock
		Blade4	-	Unlock/Lock	Unlock
	Room Temperature Calibration	Reference Temperature	-	-9 to 40°C	-
		Calibration value	-	-9.9 to 9.9°C	0°C
	Indoor unit status information	Central Control	-	ON/OFF	-
		Drain Pump	-	ON/OFF	-
		Electric Heater	-	ON/OFF	-
		Hot Water Coil	-	ON/OFF	-
		External control	-	ON/OFF	-
		RPM Compensation	-	ON/OFF	-
		Filter Replacement cycle	-	2000 hr/1000 hr	-
		Heating calibration Value	-	2°C/5°C	-
		EEV Stop Step in Heating	-	0/80 Steps / 80 Steps	-
	Discharge temperature	Indoor unit	-	Enable/Disable	-
			Cooling discharge temp.	8 to 18°C (AHU : 8 to 25°C)	-
			Heating discharge temp.	30 to 43°C (AHU : 18 to 43°C)	-
		Fresh Duct	Cooling discharge temp.	13 to 25°C	-
			Heating discharge temp.	18 to 30°C	-
	Automatic Air-Volume	Status	-	OFF/Complete/Running	-
		Operation	-	Stop/Run	-
		Voltage	-	220V/230V/240V	-

- 1)* Setting is available when there is only 1 indoor unit connection and while the indoor unit operation is not operating.
- 2)* Power Master Reset is a setting needed to supply optimized power to programmable wired controller when multiple indoor units are connected to programmable wired controller in a group.
- 3)* The total option codes are 24 digits. You can set six digits at a time and it is distinguished by page number. Press the **OK** button to move to the next page. [See the image 

NOTE

- Address is displayed in hexadecimal. Please refer to the following table.

Hexadecimal	Decimal	Hexadecimal	Decimal	Hexadecimal	Decimal
00	0	10	16	20	32
01	1	11	17	21	33
02	2	12	18	22	34
03	3	13	19	23	35
04	4	14	20	24	36
05	5	15	21	25	37
06	6	16	22	26	38
07	7	17	23	27	39
08	8	18	24	28	40
09	9	19	25	29	41
0A	10	1A	26	2A	42
0B	11	1B	27	2B	43
0C	12	1C	28	2C	44
0D	13	1D	29	2D	45
0E	14	1E	30	2E	46
0F	15	1F	31	2F	47

Hexadecimal	Decimal	Hexadecimal	Decimal
30	48	40	64
31	49	41	65
32	50	42	66
33	51	43	67
34	52	44	68
35	53	45	69
36	54	46	70
37	55	47	71
38	56	48	72
39	57	49	73
3A	58	4A	74
3B	59	4B	75
3C	60	4C	76
3D	61	4D	77
3E	62	4E	78
3F	63	4F	79

- 4)* The airflow blades that you can select may differ depending on the indoor unit model.

Installation/Service mode

The example of programmable wired controller option setting method

- 1 Press the \wedge and \vee buttons at the same time for more than 3 seconds.
- 2 Enter the password, "0202," and then press the **OK** button.
- 3 Press the \wedge and \vee buttons to select "Indoor Unit option," and then press the **OK** button.
- 4 Press the \wedge and \vee buttons to select "Cool/Heat selection," and then press the **OK** button.
 - The menu with the \triangleright shape can be selected using the \triangleright button.
- 5 Press the \wedge and \vee buttons to select "Cool Only," and then press the **OK** button to finish the setting.
- 6 Press the \hookrightarrow button to move to the Home screen.

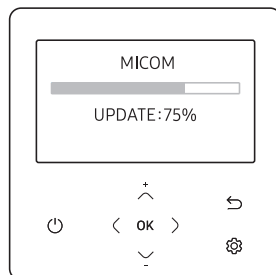
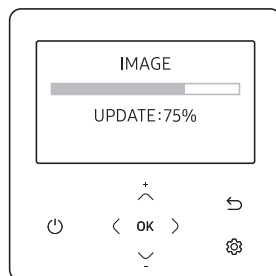
How to download to microSD Card

- 1 Download the programmable wired controller image, change the file name to "IMAGE.BIN," and then download to microSD Card.
- 2 Download the programmable wired controller program, change the file name to "MICOM.BIN," and then download to microSD Card.
- 3 Insert the microSD Card with the programmable wired controller active, and then reset the system.



For system reset, press the \triangleleft and \otimes buttons at the same time for more than 5 seconds.
- 4 The download to microSD Card is performed as follows:
 - Download proceeds in the order of IMAGE and MICOM.
 - When the update fails, the programmable wired controller is reset automatically and the update proceeds again.
- 5 When the download is finished, tracking starts automatically. When tracking is completed, remove the microSD Card.

CAUTION

- Be sure to use the microSD Card after formatting in FAT16 or FAT32.
- The microSD Card supports the SD or SDHC with the capacity of 1 GB to 32 GB.
- The update is performed only when the file version in the microSD Card differs from the one of the programmable wired controller.
- When the screen is frozen for more than 3 minutes after completing the microSD card update by 100%, product inspection is required.
- Delete the files except for the ones for download.
(Only IMAGE.BIN and MICOM.BIN are required.)



When the microSD Card is removed during download

- 1 When you remove the microSD Card during download, the "INSERT MICROSD CARD AND SYSTEM RESET" screen appears and the download is stopped.
- 2 When you insert the microSD Card and press the  and  buttons for system reset, download starts again after finishing the reset.

NOTE

- When you reset the programmable wired controller while the microSD Card is removed, the above message appears on the screen in standby mode.
- When you reset the programmable wired controller while the microSD Card is removed and then inserted, the following actions are performed.
 - If the reinserted microSD Card contains all the files for update, update proceeds regardless of the version of the file.
 - If the reinserted microSD Card contains any missing files for update, the above message appears in standby mode.

