Thermostat adapter
User manual

VSTAT09P-1

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

LENNOX Powered by SAMSUNG

Contents

Safety Information

California Proposition 65 Warning (US)

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

This installation manual provides details on how to install the Thermostat adapter on the indoor unit of your Lennox System Air Conditioner.

Make sure you read this manual thoroughly to ensure the proper installation of the product. (When installing other accessories, refer to their respective manuals.)

⚠ **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

Before installing the product, contact the Service Center.
- Improper installation creates the risk of product malfunction, water leakage, electric shock or fire.

Safely install the product on a stable surface that can bear its weight.
- If the product is installed on a surface that is not stable, it may fall and become damaged.

When connecting to power, check the rated voltage.
- Incorrect power connection may damage the product or cause a fire.

Do NOT move or reinstall a product that has been installed.
- This creates the risk of electric shock or fire.

Do NOT arbitrarily repair or modify the product.
- This creates the risk of damage to the product, electric shock or fire. If the product requires repair, contact the Service Center.

Make sure the product has been installed properly according to this installation manual.
- If the product is not installed properly, there is a risk of electric shock or fire.

Wiring must be done by qualified personnel according to the instructions specified herein.
- If the product is not installed properly due to a failure to follow the instructions herein, there is a risk of product malfunction, electric shock or fire.

To dispose of the product, contact the Service Center.

⚠ CAUTION

Do NOT install the product in a location where flammable gas may leak.
- This creates the risk of fire or explosion.

Do NOT install the product in a location where oil or moisture may leak.
- If the product is used in a location where oil, moisture or sulfurous acid gas has leaked, the product may malfunction or components of the product may become damaged.

Make sure no liquid enters the product.
- This creates the risk of electric shock or fire.

Safety Information

⚠ CAUTION

Do NOT pull any of the electrical wires during installation.
- This creates the risk of wire disconnection, which may result in a fire.

Install the product in a location with a temperature between 0°C(32°F) and 50°C(122°F), away from direct sunlight.
- The product may malfunction if it is installed in a location that does not meet the above conditions.

Do NOT install the product in a location where any special spray or acid/alkaline solution is used.
- This creates the risk of electric shock or malfunction.

Do NOT press any button with a sharp object.
- This creates the risk of electric shock or damage to accessories.

Do NOT connect the power cable to the communications line port.
- This creates the risk of fire.

Section 15.105 Information to the user.

(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception,

Section 15.21 Information to user

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that from.
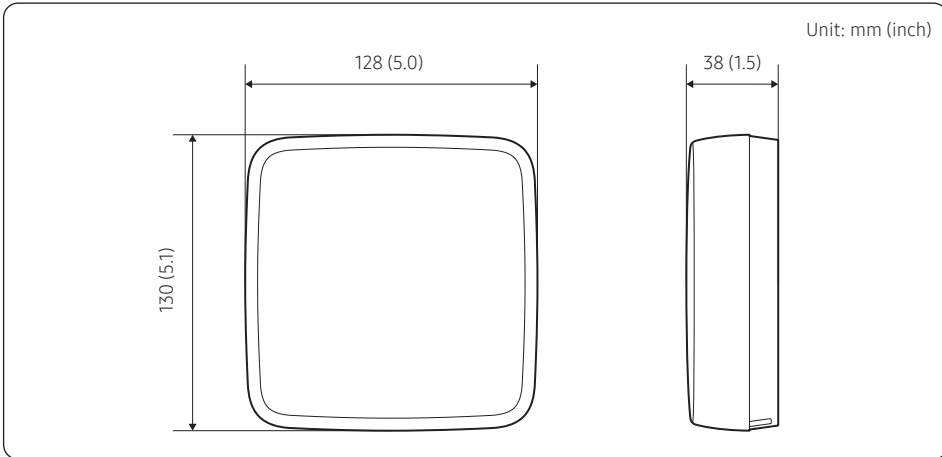
Checklist Prior to Installation

Accessories

Thermostat Adapter	Screws (4)	Installation Manual

⚠ CAUTION

- Make sure the Thermostat adapter is installed by a professional installation technician.
- Make sure you turn off power before installation.
- Install the electrical wires for the Thermostat adapter in accordance with relevant wiring rules. Make sure the wires cannot come into contact with the user's hands.
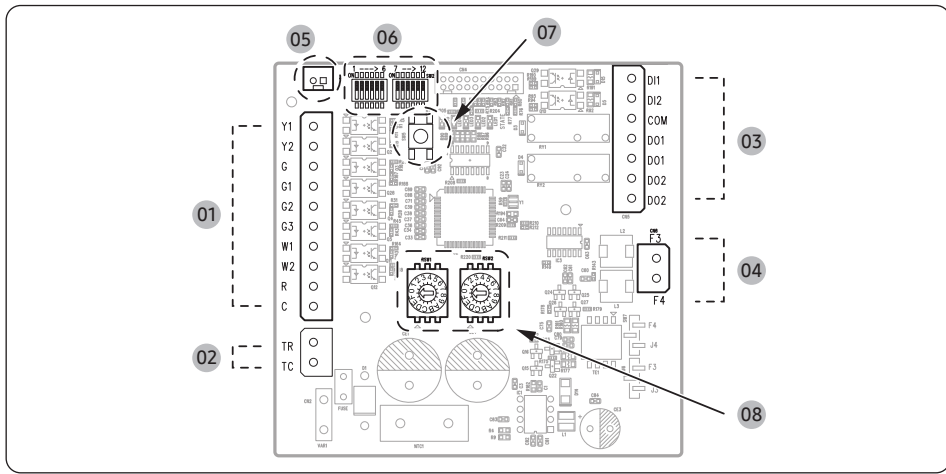
External Dimensions

Unit: mm (inch)

128 (5.0)   38 (1.5)

130 (5.1)

Checklist Prior to Installation

Product layout

No.	Name	Description
01	Y1	Stage 1 cooling input
	Y2	Stage 2 cooling input
	G	Fan
	G1	Low Fan input when thermostat has multiple Fan outputs.
	G2	Mid Fan input when thermostat has multiple Fan outputs.
	G3	High Fan input when thermostat has multiple Fan outputs.
	W1	Stage 1 heating input
	W2	Stage 2 heating input
	R	24VAC (out) to Thermostat
	C	Common (out) to Thermostat
02	TR	24VAC (In) from Transformer
	TC	Common (In) from Transformer

No.	Name	Description
03	DI1	Emergency Input (Optional)
	DI2	Not Used
	COM	Input Common (Optional)
	DO1	Error Feedback Output (Optional)
	DO1	Error Feedback Output (Optional)
	DO2	Emergency External Heat Output (Optional)
	DO2	Emergency External Heat Output (Optional)
04	F3	F3, F4 Communication
	F4	
05	CN7	External Thermistor Sensor (Optional)
06	DIP SW	DIP Switch (Setting Option Mode)
07	SW5	Reset Switch
08	RSW1,2	Rotary Switch (Setting Y1/Y2/W1/W2 Temperature)

⚠ WARNING

- Some indoor units are not supported. Please visit www.lennox.com for homeowners, and www.lennoxpros.com for dealers/contractors for compatibility details.

Installing the Thermostat Adapter

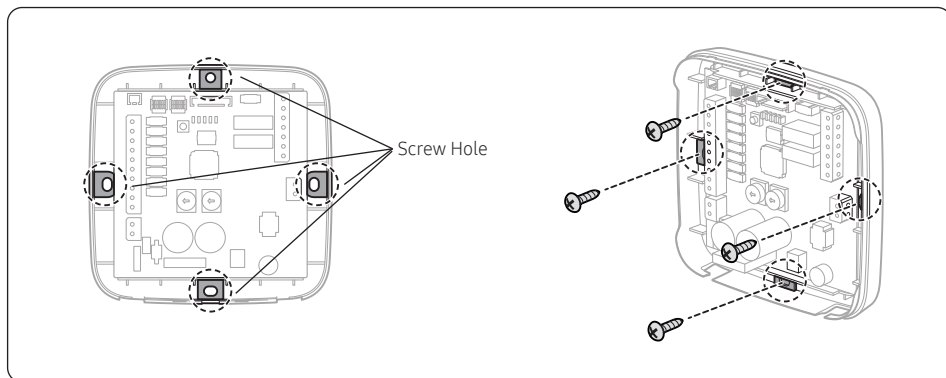## Thermostat adapter installation

⚠ CAUTION

- When installing the Thermostat adapter, take care while separating the top and bottom sections of the case.
- Do not install the Kit in a location where it may be exposed to moisture or impact.
- Operating temperature: 0°C (32°F) ~ 50°C (122°F) / Relative operating humidity: 10~85%

1 Insert a flathead ("-") screwdriver into the gap at the lower part of the Thermostat adapter indicated in the picture below, turn the screwdriver, and then remove the back cover.


※ Push the (single) latch.
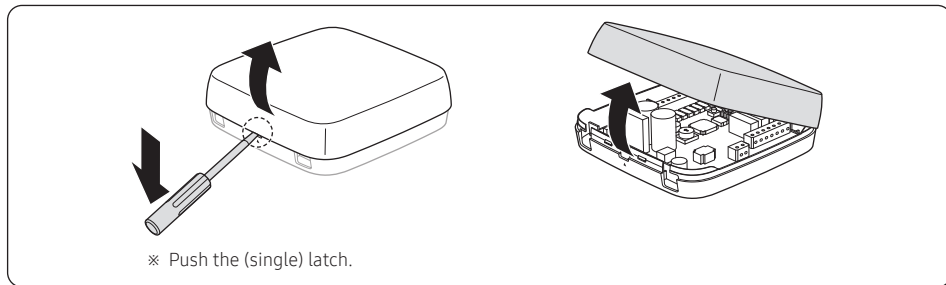
📄 NOTE

- The cover can be easily removed by inserting a flathead ("-") screwdriver into the gap above the locking hook and turning the screwdriver.

2 Select an installation position after considering the length of the power and communication wires.
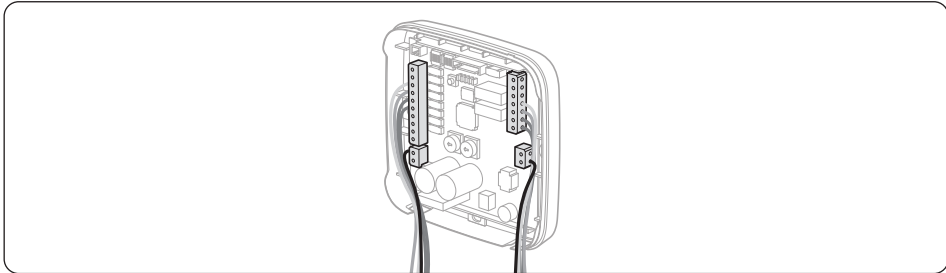   Use two or more screws to fix the case to the wall.


Screw Hole

Installing the Thermostat Adapter

3   Insert the power and communication wires as shown in the figure below, and use a flathead ("-") screwdriver to fix the wires.
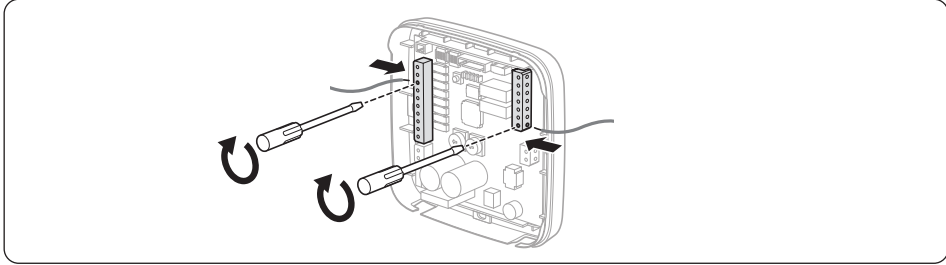
4   Insert all of the wires into the holders and secure them together, as shown in the figure.

5   Configure settings according to the environment where the Kit is installed, and confirm that the Kit operates properly.
(※ Refer to "Configuring operation options" and confirm that the Kit operates properly. Turn on or reset after setting.)
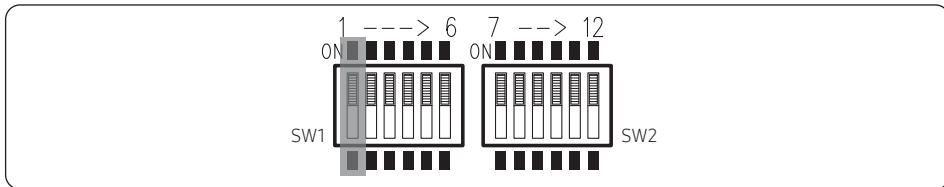

SW1   SW2   RSW1   RSW2   External thermistor (NTC)
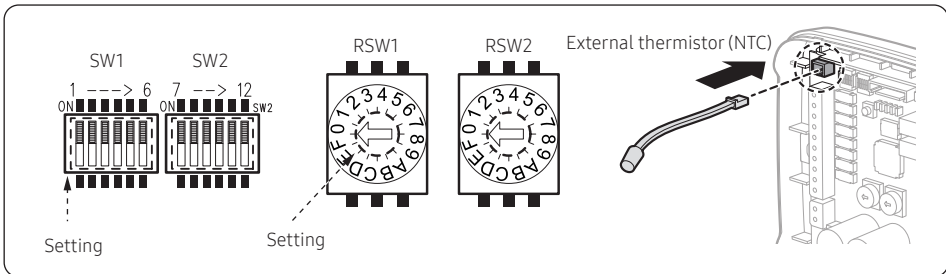
Setting   Setting

Configuring operation options

DIP Switch Settings

1) Operation priority setting
   - DIP Switch SW1-1: Adjust the operation priority setting according to the follow table.

SW1-1	Operation priority setting
ON	Thermostat priority
OFF	Basic priority (default)

⚠ WARNING

- Basic priority: Central control and wireless remote control will operate normally. If the indoor unit is controlled by central control or wireless remote control, the displayed indoor status on the thermostat and the actual status of the indoor unit may be different.
- Thermostat priority: The thermostat control will be applied first and will control the indoor unit based on the thermostat demand. Indoor units with this option set to ON will ignore wireless remote control and central control commands including central controller schedule, logic control, etc. Central controllers will only monitor indoor unit status.
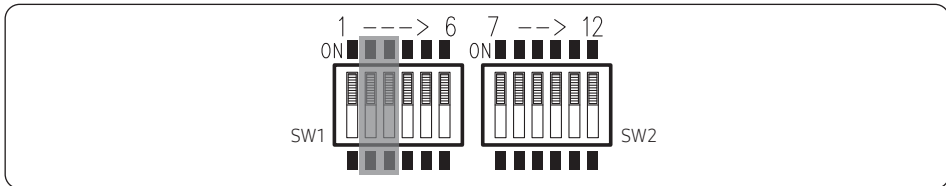
Installing the Thermostat Adapter

2) External DI / DO Function Setting
- DIP Switch SW1-2/SW1-3 : Adjusts the initial setting according to the following table.

 Select whether to use external input and output.

SW1-2	Use External DI Function
ON	DI Function enable (dry contact)
OFF	DI Function disable (default)

SW1-3	Use External DO Function
ON	DO Function enable
OFF	DO Function disable (default)

3) Error Feedback and External Heater Function Setting
- The digital output function must be enabled (SW1-3 in ON position)
- Enable Error Feedback to provide a dry output signal when the system is in error status.
- Enable Emergency External Heater function to enable external heating devices when an error occurs while the system is in heating thermal-ON. Use when an external "emergency" heater is required.
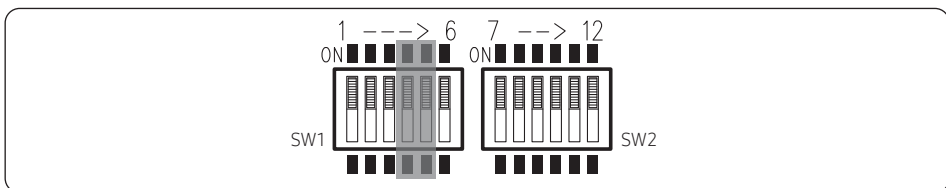
SW1-4	Select Error Feedback Function
ON	Enable Error Feedback
OFF	Disable Error Feedback (default)

SW1-5	Select External Heater Function
ON	Enable support for external heat
OFF	Disable support for external heat (default)

4) External Thermistor (NTC) setting
- This setting allows connection of an optional external thermistor to allow the thermostat adapter / Lennox indoor unit to sense room temperature near the 24VAC thermostat.
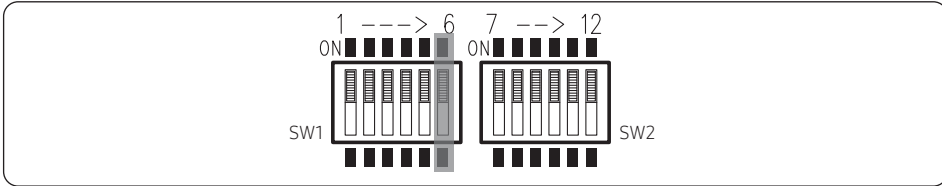

SW1-6	External Thermistor (NTC) setting
ON	Use External Thermistor
OFF	Do not use External Thermistor (default)

⚠ CAUTION

- For the external thermistor, use the External Temperature Sensor(VCTRL11P-1) supplied by Lennox.

5) SW2-7, SW2-8 - Two stage heating option when applying hydronic or electric heaters
- Configure the operation of the Lennox indoor unit when there is a heating demand (W1/W2) from the 24VAC thermostat.
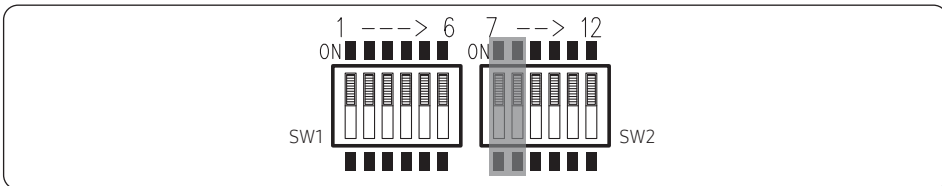
| SW2-7	SW2-8	Stage 1, 2 Heat sources option
ON	ON	W1 (Stage 1 heat) energized: Lennox AC OFF
		W2 (Stage 2 heat) energized: Lennox AC OFF
ON	OFF	W1 (Stage 1 heat) energized: Lennox AC OFF
		W2 (Stage 2 heat) energized: Turn on Lennox AC with Heat Mode
OFF	ON	W1 (Stage 1 heat) energized: Turn on Lennox AC with Fan Mode
		W2 (Stage 2 heat) energized: Turn on Lennox AC with Heat Mode
OFF	OFF	W1 (Stage 1 heat) energized: Turn on Lennox AC with Heat Mode (default)
		W2 (Stage 2 heat) energized: Turn on Lennox AC with Heat Mode (default)

Installing the Thermostat Adapter

6) SW2-9, SW2-10 - Fan speed setting for 'G' terminal during thermal-ON
   - When using a single fan input (G), set the fan speed of the Lennox indoor unit when there is a heating or cooling demand from the 24VAC thermostat (not fan mode only).
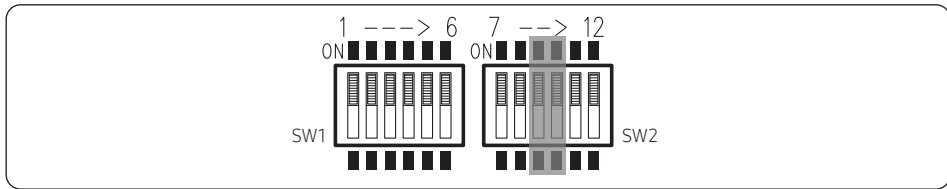

SW2-9	SW2-10	If using 'G' Input
ON	ON	FAN Speed (LOW)
ON	OFF	FAN Speed (MID)
OFF	ON	FAN Speed (HIGH)
OFF	OFF	FAN Speed : Auto (default)

⚠ WARNING

- The "FAN speed: Auto" mode may not work depending on the connected indoor unit. In this situation, use a fixed fan speed (e.g. "HIGH," "MID" or "LOW").

7) SW2-11, SW2-12 - Fan speed setting for 'G' terminal during thermal-OFF
   - When using a single fan input (G), set the fan speed of the Lennox indoor unit when there is not a heating or cooling demand from the 24VAC thermostat (fan mode).
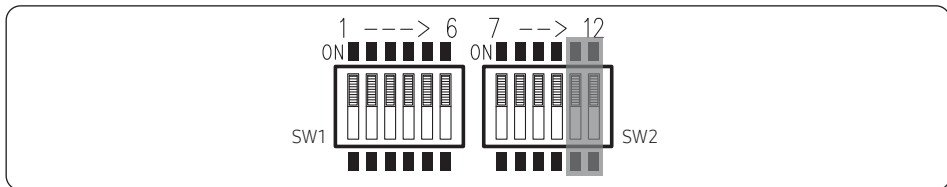
| SW2-11	SW2-12	If using 'G' Input under thermal off condition
ON	ON	FAN Speed (HIGH)
ON	OFF	FAN Speed (LOW)
OFF	ON	FAN Speed (MID)
OFF	OFF	FAN Speed (HIGH) (default)

Rotary Switch Functions

- RSW1 sets the indoor unit set temperature for first and second stage cooling inputs (Y1/Y2)
- RSW2 sets the indoor unit set temperature for first and second stage heating inputs (W1/W2)
- Determine average user cooling and heating set temperatures and adjust RSW1 and RSW2 accordingly for optimal comfort after installation.

RSW1   RSW2
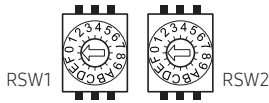
- RSW1 : Cool mode set temperature (Y1/Y2), (Cooling: 18°C(64.4°F)~28°C(82.4°F))

	0 (default)		1		2		3		4		5		6		7	
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2
°C	23	20	20	18	21	19	22	20	24	22	25	23	26	24	27	25
°F	73.4	68	68	64.4	69.8	66.2	71.6	68	75.2	71.6	77	73.4	78.8	75.2	80.6	77

	8		9		A		B		C		D		E		F	
	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2	Y1	Y2
°C	21	18	22	18	23	18	24	18	25	18	26	18	27	18	28	18
°F	69.8	64.4	71.6	64.4	73.4	64.4	75.2	64.4	77	64.4	78.8	64.4	80.6	64.4	82.4	64.4

- RSW2 : Heat mode set temperature (W1/W2), (Heating: 20°C(68°F)~30°C(86°F))

	0 (default)		1		2		3		4		5		6		7	
	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2
°C	22	25	21	24	23	26	25	28	26	29	27	30	20	30	21	30
°F	71.6	77	69.8	75.2	73.4	78.8	77	82.4	78.8	84.2	80.6	86	68	86	69.8	86

|	8		9		A		B		C		D		E		F	
	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2	W1	W2
°C	22	30	23	30	24	30	25	30	26	30	28	30	22	25	22	25
°F	71.6	86	73.4	86	75.2	86	77	86	78.8	86	82.4	86	71.6	77	71.6	77

⚠ WARNING

- The indoor unit may not operate properly if it is set to "discharge air temperature" control. If this situation is encountered, change the setting to "indoor temperature" control (default indoor unit setting).

Installing the Thermostat Adapter

Inspecting the Thermostat adapter

You can check the status of the Thermostat adapter using five LEDs.
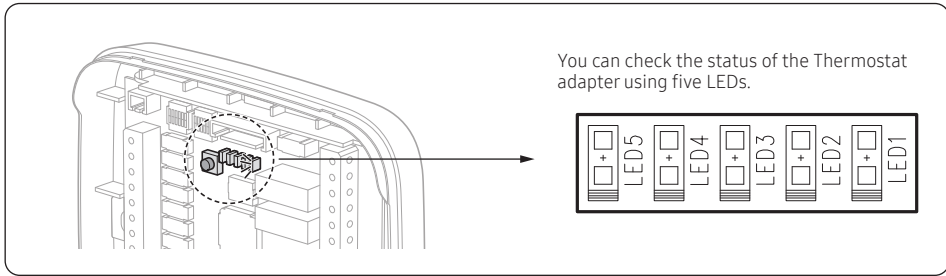
| LED 5 (Amber)	LED 4 (Amber)	LED 3 (Amber)	LED 2 (RED)	LED 1 (GRN)	Condition of thermostat adapter
Blinking	Blinking	Blinking	Blinking	Blinking	Initial Mode
Off	Off	Off	Off	**On**	Normal Mode
Off	Off	**On**	Blinking	Off	Indoor unit ↔ Thermostat adapter communication error (Communication Error)
Off	**On**	Off	Blinking	Off	Indoor unit tracking error
On	Off	Off	Blinking	Off	Error in the installation of multiple Thermostat adapters
Off	**On**	**On**	Blinking	Off	Error in the installation of multiple indoor units
On	Off	**On**	Blinking	Off	External thermistor error (External NTC Error)
Off	Off	Blinking	Blinking	Off	Abnormal thermostat signal (Abnormal W,Y Signal)
Off	**On**	Blinking	Blinking	Off	Abnormal thermostat signal (Abnormal W,Y Stage1,2 signal)
On	Off	Blinking	Blinking	Off	Abnormal thermostat signal (Abnormal G, G1, G2, G3 Signal)
On	**On**	Blinking	Blinking	Off	Dry contact Input (Close)

Resetting custom settings

To reset the Thermostat adapter settings, press the (SW5) button inside the kit.

When pressed the Thermostat adapter resets then enters "initial mode", and then returns to normal operation.

Reset (Reset switch) → Initial Mode → Normal Mode
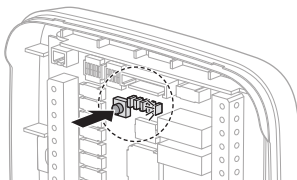
- **Initial Mode**

  LED1 to LED5 illuminate for 1 second and then turn off for 1 second repeatedly, while the Kit is checking the settings for the DIP Switch and Rotary Switch and checking the communication with the indoor unit.

- **Normal Mode**

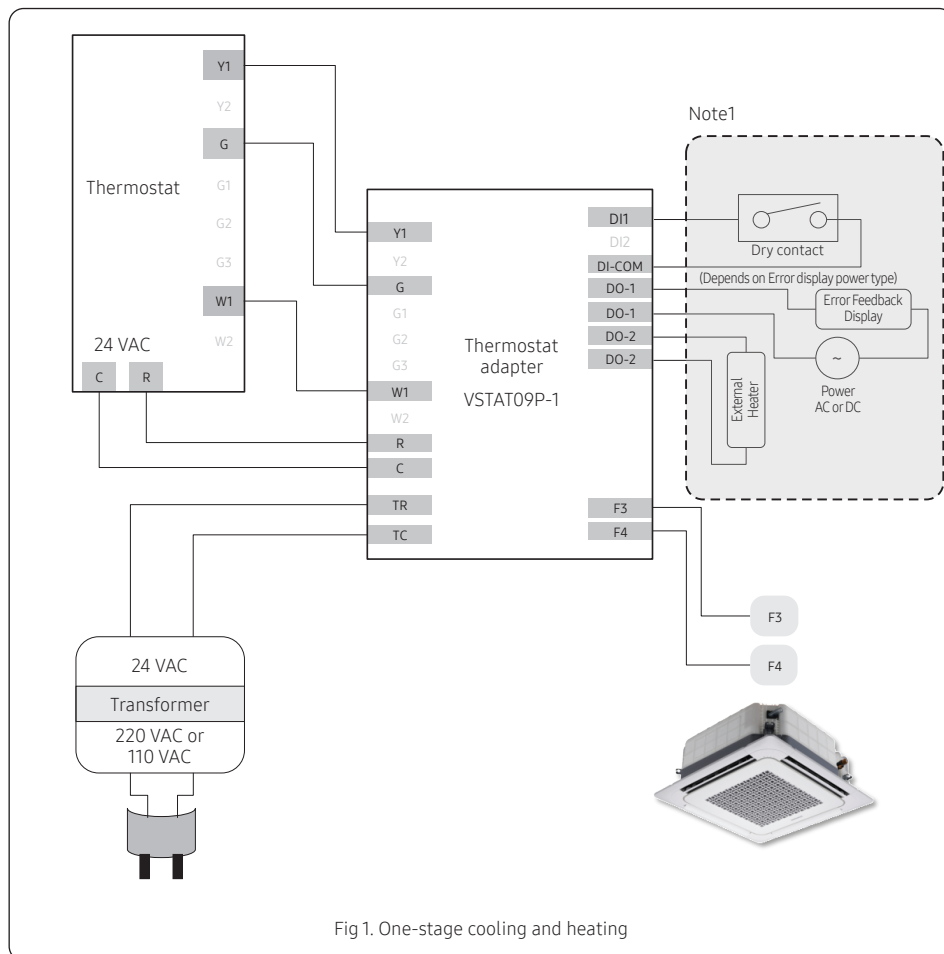 The settings and the normal communication status are fixed, and only LED1 remains lit.

⚠ CAUTION

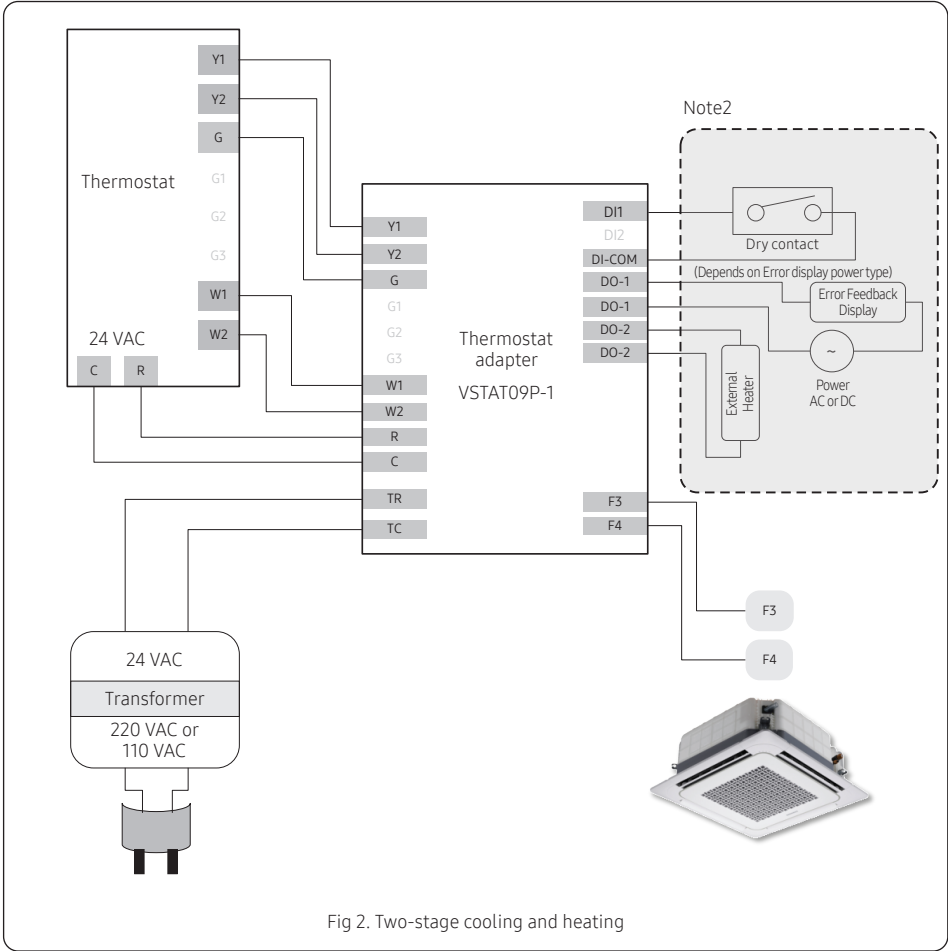- Operation option settings that have been fixed cannot be changed.

Installing the Thermostat Adapter

Wiring Examples

Fig 1. One-stage cooling and heating

Note1: Adjust the following settings: Dry Contact, Error Feedback, External Heater
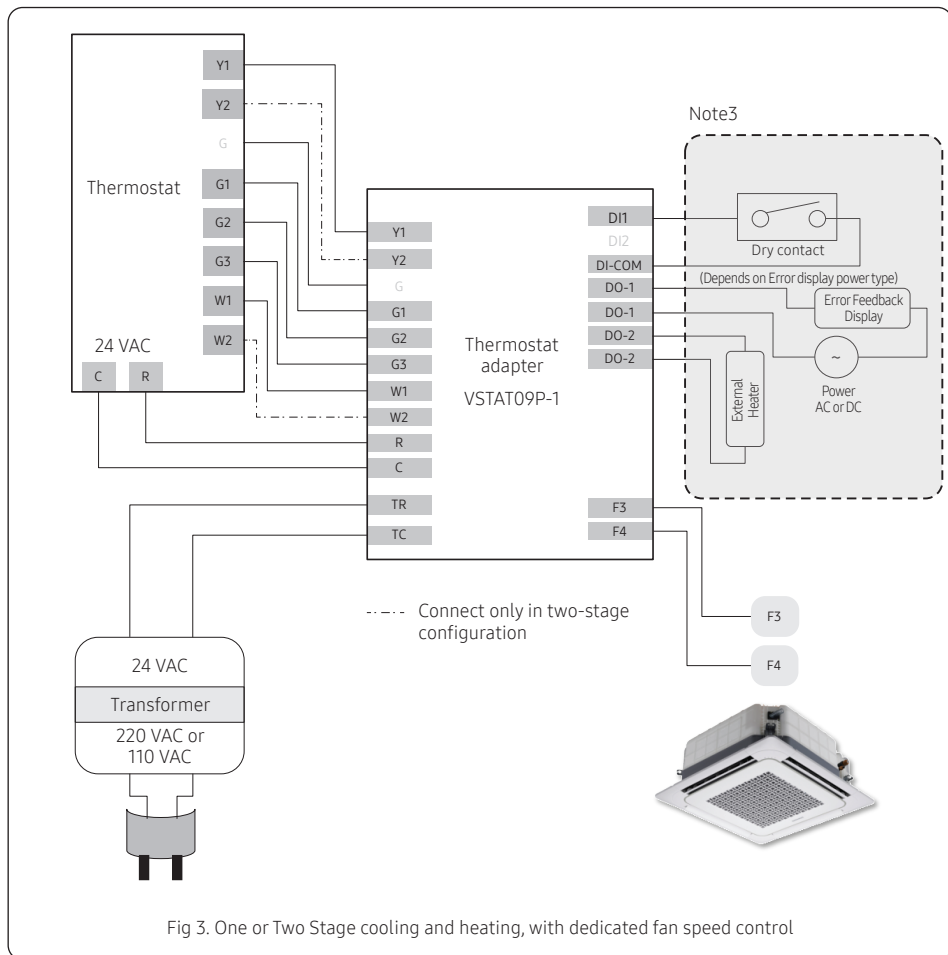
Wiring Examples

Fig 2. Two-stage cooling and heating

Note 2: Adjust the following settings: Emergency Input, Emergency External Heater, External Heater

Installing the Thermostat Adapter

Wiring Examples

Fig 3. One or Two Stage cooling and heating, with dedicated fan speed control

Note 3: Adjust the following settings: Emergency Input, Emergency External Heater, External Heater

Troubleshooting

Symptom	Measure
The thermostat adapter does not work at all. (No LED lighting)	Check the power supply wiring (AC 24V). This connects to F3/F4 enabling central control should not matter.
Cooling does not work.	Check the wirings for power supply (AC 24V) and communication.
Heating does not work.	Check the wirings and options for power supply (AC 24V) and communication.
The desired fan operation does not match.	Check the option setting.
The thermostat temperature setting is different from that of the thermostat adapter.	Check the rotary switch setting.