

V1.8.0

ESC PRO 2

Thermostat

Welcome Guide



works with the
Google Assistant

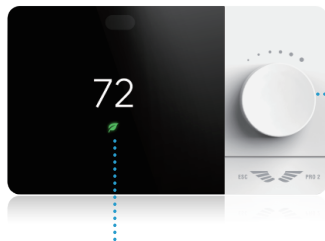


WORKS WITH
alexa

ESC PRO 2 WiFi color screen display programmable thermostat contain many models as follows:

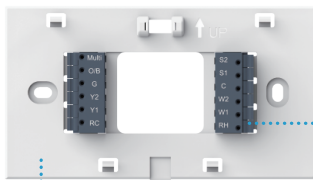
Model name/number: ESC PRO 2

Installation Guide



Display

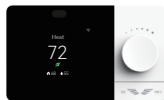
Control buttons



Wall Plate

Wire terminals

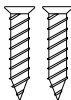
What's Included



ESC PRO 2
Thermostat



Wall Anchors
(x2)



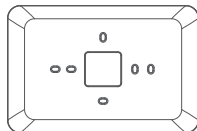
Screws
(x2)



User Guide



Wire Label Stickers



Trim Plate

Additional tools you'll need:

- Screwdriver
- Pen or pencil (to mark drilling holes)

Additional tools you might need:

- Needle-nose pliers
- Wire stripper
- Drill and drill bit (7/32")

WiFi Requirements

- 2.4 GHz (802.11b/g/n) WiFi network
- WiFi name and password

Installation

The ESC PRO 2 thermostat should be mounted in a suitable location.

- It is recommended to install the thermostat about 5 ft above the floor and in an open area with good air circulation.
- Do not install in locations that may affect the temperature reading, such as:
 - Drafty areas or poorly circulated areas.
 - Near ducts or appliances that blow hot or cold air.
 - Concealed pipes and chimneys.
 - Unheated (uncooled) areas such as an outside wall behind the thermostat.



WARNING

Failing to shut off the power could result in a serious injury, electrical shock, and/or risk of fire.

1. Turn off power.

Important: You must shut off the power at the breaker box that controls your heating/cooling system.

2. Test to make sure the power is off.

Sometimes there's some residual power in the thermostat so it could take up to 5 minutes for your old thermostat to turn completely off.

3. Remove your old thermostat.

Most thermostats allow you to just pull off the unit from its wall plate. However please make sure you're familiar with your old thermostat and the removal process, as you can potentially damage your wall if the process is incorrect. Do NOT remove any wires yet from the old thermostat's wall plate.

4. Make sure the wires you have are supported.

If you have thick black wires, wire nuts connected on the wires coming from the wall, or uses 120V or higher, then your system is not compatible with the ESC PRO 2.

5. Take a picture of your current wiring setup.

Use your smartphone to take a picture of the wiring and connectors with the letters. You will use this as a reference when connecting to the ESC PRO 2 thermostat.

6. Attach the included label stickers to the wires.

Wrap the label stickers around the appropriate wires. This will help when connecting them to the ESC PRO 2 thermostat's connectors.

7 . Disconnect the wires and remove the old wall plate.

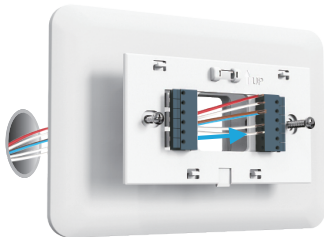
You may now start disconnecting the wires from the old thermostat's wall plate connectors. Make sure the wires do not fall back into the wall as they may be difficult to retrieve. Then, unscrew the wall plate from the wall to remove it.

8. Insert the wall anchors (optional).

You may choose to use the wall anchors to insert into the wall first before applying the new wall plate. First, hold the ESC PRO 2 wall plate onto the wall where you'll be installing it and use a pen or pencil to mark the screw holes on the wall. Take off the wall plate and use a 7/32" drill bit to create the hole for the wall anchor, then insert the wall anchors.

9. Bring the wires through the ESC PRO 2 wall plate.

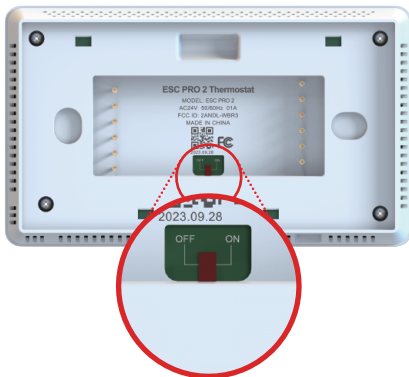
Bundle the wires together and through the middle hole of the ESC PRO 2 wall plate. Also check to make sure there is enough exposed wiring (at least 1/4 inch) for each wire so they can insert into the wall plate connectors easily.



10. Connect your R wire(s).

Depending on your heating/cooling system you may have an R, Rh, and/or Rc wire(s). The ESC PRO 2 thermostat can accommodate for these three wires but some configurations require a “jumper” connect the power.

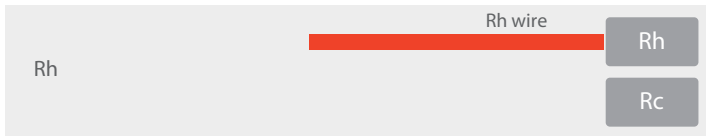
The jumper switch is located on the back of the thermostat as shown in the image below.



To determine the switch position, use the follow chart as a guide.

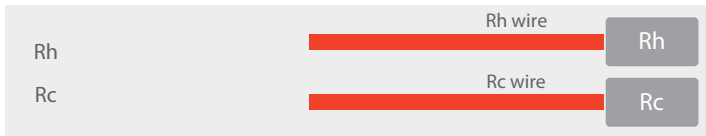
Turn the switch ON if:

Your heating and cooling equipment uses the same power supply



Turn the switch OFF if:

Your heating and cooling equipment unuses the same power supply



11. Connect the remaining wires.

Match your wires to the appropriate connectors on the wall plate. You will be connecting to the same labeled terminals as your old thermostat connections.

Note:

1. You may use Appendix 1 located in Page 34 as a reference if you encounter wiring issues.
2. Your wire colors may differ from the images shown below.

Terminal	Definition
C	AC 24V Common
RC	AC 24V power supply (transformer)
RH	AC 24V power supply (heating transformer)
W1	Heat 1 for Furnace/Boiler; Heat 1 for dual fuel
W2	Heat 2 for Furnace/Boiler; Auxiliary heat for heat pump; Med Speed for FCU
Y1	Cool 1 for AC; cool 1/heat 1 for heat pump
Y2	Cool 2 for AC; cool 2/heat 2 for heat pump; VENTILATION
G	Fan output; Low Speed for FCU
O/B	Reverse (changeover) valve
Multi	Emergency heat; Heat 2 for dual fuel ; High Speed for FCU
S1	NTC sensor terminal 1/2 (available for all systems)
S2	NTC sensor terminal 2/2 (available for all systems)

12. Attach your ESC PRO 2 WiFi Thermostat.

Firmly attach the ESC PRO 2 thermostat to the wall plate.

13. Turn the power back ON.

Turn ON the power at the breaker box.

14. Follow on-screen instructions.

Once the power is back on, there will be a sequence of instructions to connect the WiFi, enter zip code, and app pairing.

App pairing

WARNING

WiFi icon  should flash when device is activated for the first time:
If you see WiFi icon flashing, please jump to **Step 4**.

If you did not see WiFi icon flashing, please follow **Step 1** to **3** to activate thermostat pairing state.

Step 1.

In home screen, press the knob to enter the main menu.



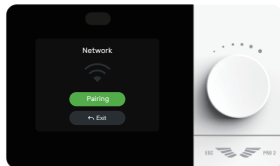
Step 2.

Rotate the knob to select the network setting, press the knob to enter.



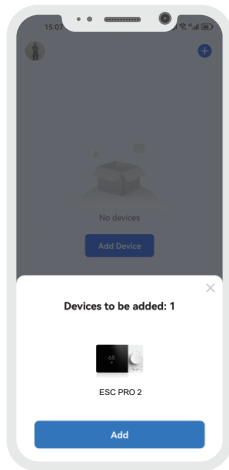
Step 3.

Select Pairing and press knob to activate thermostat pairing state.



Step 4a.

Download and Login to **Smart Life** app, ESC PRO 2 will be found automatically, a pop up page will appear as below.

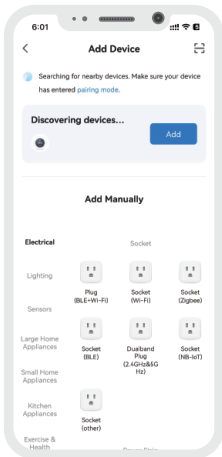


WARNING

Mobile phone should connect to a 2.4G WiFi, and bluetooth should be enabled.

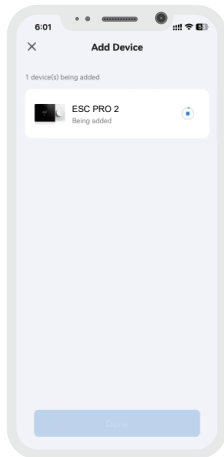
Step 4b.

If ESC PRO 2 did not pop up automatically, click  in the upper right corner, and click .



Step 5.

Enter the WiFi password click Start to start pairing. If pairing fail please repeat previous steps.



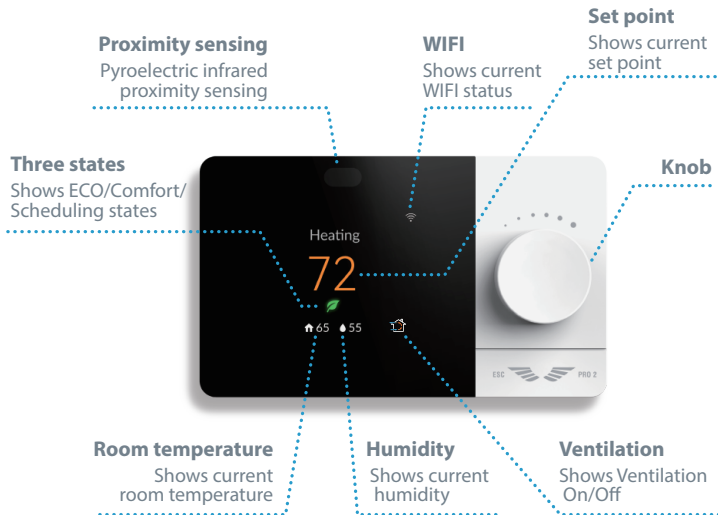
Operation Guide

The ESC PRO 2 WiFi Thermostat allows you remotely control and schedule your home's temperature with ease. It can support most home cooling and heating systems up to 4 stage heating and 2 stage cooling.

Key Features

- Conventional system (AC, Gas/Oil Furnace, Boiler) up to 2H/2C
- Heat pump system up to 2H/2C + 1Aux & 1Emergency heat
- FCU up to 1H/1C
- Compressor protection
- Heat/Cool auto changeover
- VENTILATION control (ERV)
- Fan control up to 3 speeds
- Fan circulation
- Color screen display
- Intuitive knob control
- Wi-Fi enabled App remote control
- Weather aware
- 3 operating states: Comfort, ECO, Schedule
- Programmable schedule
- OTA remote upgrade
- Energy usage report

Introduction



More icons you'll find:

Home Screen			
Icon	Definition	Icon	Definition
	State :ECO mode		Ventilation off
	State: Comfort mode		WiFi signal strength
	State: Scheduling mode		WiFi is not connected
	Minimum Compressor Off Time		WiFi is only connected to router
Early-On	Early-On function start (check page 22)		Room temperature
	Fail to receive outdoor temperature		Room humidity
	Fail to receive weather forecast temperature		Knob lock
	Ventilation on		Fan speeds (Auto, Low, Med, High)

Menu			
Icon	Definition	Icon	Definition
	State		Advanced setting
	System mode setting		Device info
	Fan mode setting		Temp & hum from different sources
	WiFi pairing setting		Exit

Menu

Icon	Definition	Icon	Definition
	System ON/OFF		Fan speeds (Auto, Low, Med, High)
	Cool mode		
	Heat mode		VENT (ON, Auto)
	Cool/Heat auto switch mode		Temperature
	Emergency mode		Humidity
	Scheduling state		Lock Settings
	Comfort state		Exit
	Eco state		Next
	Reset setting		Try to pair WiFi again
	System test		WiFi Paring Complete
	System type		Select to start paring
	Fan mode		Reset setting to factory default
			Reset network setting to factory default

Functions

Functions	Descriptions
System Modes	Off, Heat, Cool, Auto, Emergency, VENT
Fan	Auto, On; Hi, Med, Low for FCU
Operation states	ECO, Comfort, Scheduling. User can switch between these states via local control & Mobile App
Room Temperature Display	Show the current room temperature.
Room Humidity Display	Show the room humidity
Minimum Compressor Off Time	A minimum Off time to make sure compressor cannot be started immediately after de-energized.
WiFi Connection	For OTA and remote control
Filter Change Reminder	Reminds to change filter based on timer
Knob Lock	Lock local control of thermostat
Early-On	To activate heat/cool equipment earlier dynamically and in time to make sure room temperature will reach to the scheduled temperature of next period on time.
Energy Report	In the home screen, press the knob to enter main menu, rotate the knob and select "Device info ⓘ" to access the Energy Report page 📊. Show periodic runtime statistics of heating, cooling and fan operation Yesterday, Last 7 Days and Last 30 Days to track energy consumption. Note: Any runtime data generated within the current hour will not be recorded if power interruption happens during this hour.

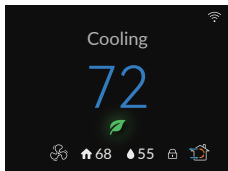
Specifications

Temperature Accuracy	±2°F
Humidity Accuracy	±10% RH
Set Point Range	Heating:(40°F~90°F) /Cooling:(50°F~99°F)
Operating Temp/Humidity Range	32~122°F, 5~95% RH (non - condensing)
Screen Resolution	320x240 TFT LCD
Power Supply	AC 24V
Max Contact Current	2A
Operating Current	100mA
Size	130x77x24 mm
Housing Material	PC+ABS V0
IP Rank	IP30
WiFi	2.4GHz only
Remote Sensor	10K NTC Temperature sensor

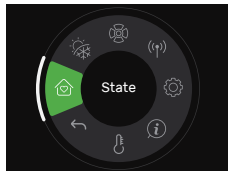
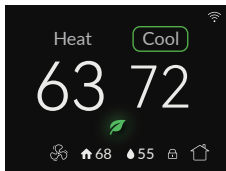
Compatibility

- Compatible with most heating, cooling and heat pump systems.
- Required: 24 VAC power (“C” wire).
- Does not work with electric baseboard heat(120- 240V).
- Does not work with millivolt systems.
- Android or iOS smart phone, table or device.
- 2.4GHz (802.11b/g/n) for WiFi connectivity

Operations



Home Screen



Main Menu

1) System mode selection

In the home screen, press the knob to enter main menu, rotate the knob and select “System mode ”, press the knob to set system mode, including: OFF , COOL , HEAT , AUTO , and EMER , VENT On/Auto  .

Note that not all homes will have every mode option available and depends on your HVAC system. The thermostat determines which modes are active according to the HVAC system type.

2) View or modify the temperature setpoint

In the home screen:

When OFF  mode is selected, home screen will not display set point, select other mode to view and set setpoint.

When AUTO  mode is selected, home screen will display both Heat and Cool setpoint, rotate the knob to select the setpoint that needs to be set, press the knob to activate setting state, rotate the knob to set, press the knob or wait for 30s to confirm the new setpoint.

When system mode is not AUTO  or OFF  , home screen will display Heat or Cool setpoint depend on the mode you set, rotate the knob to set, press the knob to confirm the new set point.

3) VENT On/Auto mode

When VENT On  is selected, thermostat will activate ventilation system for 24 hours every day. When VENT Auto  is selected, ventilation system is interlocked by fan speed: the thermostat will keep ventilation off by default, but will switch the ventilation system on once a fan speed signal is output from the thermostat.

4) Thermostat running state selection

In home screen press and hold the knob for 1.5s or go to the main menu, to set thermostat running state between Scheduling , Comfort , and ECO .

Scheduling state

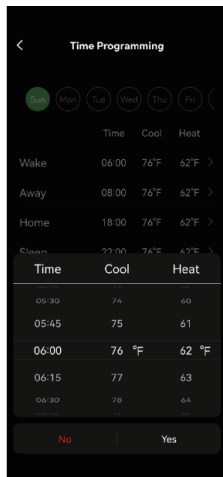
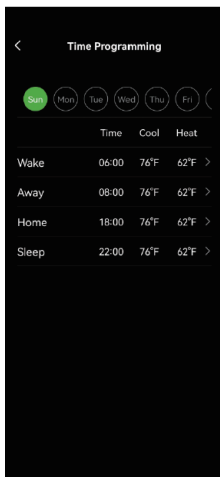
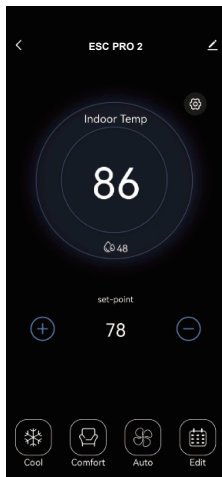
In this state, thermostat state is running following a programmed schedule, Default scheduling is as below:

Period	Time	Heating	Cooling
Wake	6:00am	68 °F	78 °F
Away	8:00am	60 °F	85 °F
Home	4:00pm	68 °F	78 °F
Sleep	10:00pm	60 °F	82 °F

User can set the schedule only on the mobile APP:

Step 1 click  to edit schedule

Step 2 click  to set the time and setpoint of each period.



Temporary hold scheduling: change the setpoint to temporarily hold current time period scheduling. Thermostat will go back to the programmed schedule when next time period is reached.

Permanent hold scheduling: select **Comfort** or **ECO** state to permanent hold scheduling.

Comfort  & **ECO**  state

You can define the setpoint of ECO  & Comfort  state. ESC PRO 2 will remember the setpoints you set.

Default setpoint for **Comfort** mode: Heat setpoint = 72 °F; Cool setpoint = 78 °F

Default setpoint for **ECO** mode: Heat setpoint = 62 °F; Cool setpoint = 82 °F

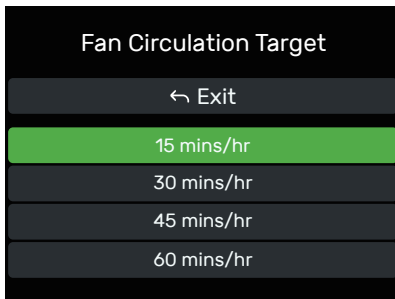
5) Fan mode selection

In the home screen, press the knob to enter main menu, rotate the knob and select “Fan mode ”, Press the knob to set fan mode, including ON , AUTO . For FCU mode, fan speeds includes AUTO , Low , Med , and High .

Fan Circulation Target

This setting defines the target runtime of circulation fan per hour.

Change this setting to set how many minutes the fan runs hourly when fan mode is set to ON , Low , Med , or High .



Settings

Advanced settings can be configured through two access channels: mobile App and the "Other Settings" menu on the device.

Symbols marked after each setting indicate available configuration paths:



Adjustable via local Other Settings on the device



Adjustable in the mobile App

Note: Some settings can only be operated through a single channel.



WARNING

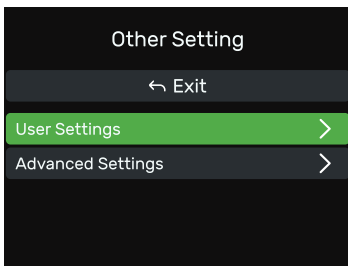
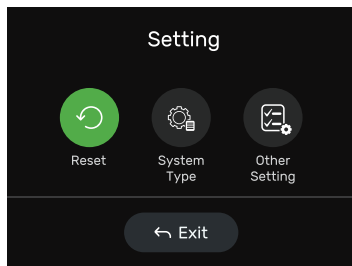
Do not change advanced setting without consulting with technical support.

Access paths for other settings on the device

Setting  → **Other Settings**  → **User Settings / Advanced Settings**

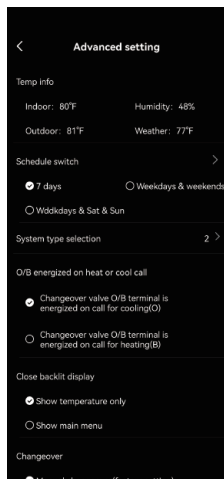
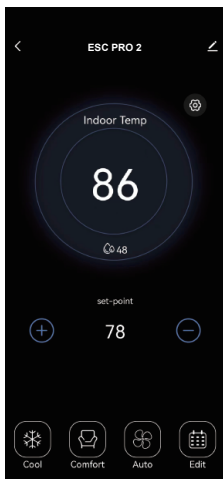
In home screen, press the knob to enter main menu, rotate the knob and select “Setting ” press the knob to enter setting list.

Select  and press knob to enter other settings.



Mobile App

Press the settings icon  on the app to enter the Advanced Settings interface.



Temp Info

Display all the temperature and humidity readings from various sources.

Unit

Change this setting to switch the temperature unit between Celsius and Fahrenheit.

Time Display 12/24 Hour

You Change this setting to switch the time display between 12-hour and 24-hour format.

Schedule Type

Use this setting to change schedule types.

7 days scheduling allows users to set different schedule for each weekday.

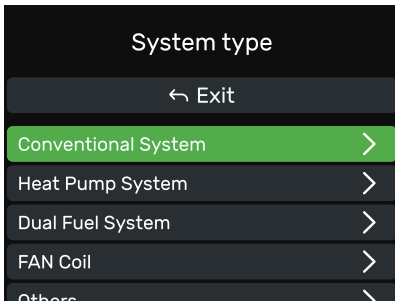
Weekdays & weekends scheduling allow users to set different schedule for 5 weekdays and 2 weekend days.

Weekdays & Sat & Sun scheduling allow users to set different schedule for 5 weekdays, Saturday, and Sunday.

Schedule Switch

Change this setting to enable or disable program schedule function.

System type



Change system type to ensure the control logic of your thermostat is aligned with your HVAC system.

Please contact technical support if you do not know your HVAC system type.

When you change the system type, please check the wiring diagram and ensure the wiring is aligned with your system type.

System Test

You can use this setting to test if your cooling/heating system is working normally.

Example: if in heat stage your system below cool air, your need to check the wiring and system type, or contact AC expert to help you diagnose.

O/B Reversing Valve

This setting is for Heat Pump system only. The orientation setting O/B energizes the reversing valve. When energized, the reversing valve helps the heat pump to switch between the cooling and the heating modes. If your heat pump system blows hot air in cooling mode, or blows cool air in heating mode, you may check this setting.

Remote Sensor Selection

You can choose the use case of your temperature sensor if an external temperature sensor is connected to S1, S2 terminal.

Average sensor: equal the reading our thermostat build-in sensor and external sensor and used the result as room temperature.

Indoor sensor: use the reading of external sensor as room temperature sensor.

Outdoor sensor: use the reading of external sensor as outdoor temperature for dual fuel control logic.

Dual Fuel Settings

Dual fuel outdoor temperature source:

Change this setting to switch the outdoor temperature source between outdoor sensor and Local weather forecast.

Dual fuel balance point:

This setting defines what temperature should the dual fuel furnace kick on.

When outdoor temperature is above balance point temperature, Heat Pump will be the heat source.

When outdoor temperature is below balance point temperature, A furnace heat equipment will be the heat source.

Weekday Dual Fuel Sched Switch & Weekday Dual Fuel Sched

Setting

You can choose to enable or disable Weekday Dual Fuel Sched Switch function.

During weekday (Mon to Fri):

When the outdoor temperature is higher than dual fuel balance point, thermostat choose to use heat pump or furnace for heating based on you defined time.

Weekday Dual Fuel Sched Setting

Heat Pump as Source After:

12 : 00

Furnace as Source After:

12 : 00

↩ Exit

When the outdoor temperature is lower than dual fuel balance point, thermostat only use furnace for heating.

Fan Control

Delayed fan on time-heat & delayed fan on time-cool:

Change this setting to define if fan needs to keep running for a period to below the remaining heat or cool out of the system. Only functional when thermostat is controlling your fan output and fan is set to Auto mode.

Fan control in heat mode:

Change this setting to define if you want ESC PRO 2 to control the fan of your conventional Air Conditioning and Furnace system when fan mode is set to AUTO in heating mode. For Heat Pump application, this setting is hidden and set to thermostat controls fan when fan mode is set to AUTO in heat mode.

Min Compressor off Time

This function is designed to protect your equipment by keeping the compressor off for a few minutes before restarting, the minimum off timer is activated after the compressor turns off.

Do not change this setting if you are not a trained technical expert.

VENTILATION Selection

Normal on Vent" is default. Thermostat output is (on=0v, off=24v). This is for a built-in VENTILATION unit inside a fan coil unit;

Select "Normal off Vent", then thermostat output is (on=24v, off=0v). This is for a standalone VENTILATION unit or a remote VENTILATION equipment.

Differential

Change this setting to configure the temperature differential threshold for Stage 1, Stage 2 and Stage 3 equipment stages separately.

Equipment stages turn on sequentially when room temperature drifts away from your setpoint by the cumulative differential value.

Differential

Stage 1	2 °F
Stage 2	2 °F
Stage 3	2 °F

← Exit

Indoor Temperature offset

Change this setting to add a plus or minus offset to display value of room temperature.

Auto Changeover settings

Auto changeover

Change this setting to enable or disable heat and cool mode auto switch function.

Auto changeover dead band

Change this setting to adjust the gap between heat and cool set point. This setting is only available when auto changeover is enabled. Main display will show both heat mode set point and cool mode set point when auto changeover is enabled. Note: cool mode set point should be always equal or larger than heat mode set point plus dead band value.

Heat Set Point Range & Cool Set Point Range

Change this setting to change set-point range of heat and cool, default heat set-point range is 40F to 90F, you can only set the upper limit of heat set-point; default cooling set-point range is 50F to 99F, you can only set the lower limit of cool set-point.

Cycle per hour for cool/Cycle per hour for heat

Use these settings to define how many times per hour your heating or cooling system will turn on and off.

Early-on

Enable this function will allow thermostat to activate heat/cool equipment earlier dynamically and in time to make sure room temperature will reach to the scheduled temperature of next period on time.

Filter change reminder

Change this setting to set a filter reminder. When the set running time is reached, ESC PRO 2 will remind you to change the filter. The filter timer can be reset by press the “Reset filter” button.

Idle state display

Change this setting to set idle state display contents.

Screen normal state brightness/Screen idle state brightness

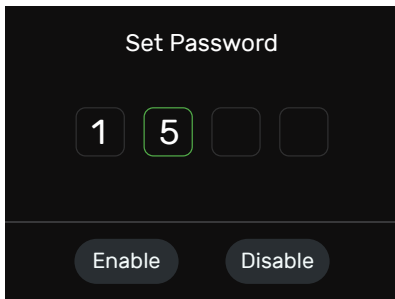
Change these settings to adjust the brightness, when screen is in normal state and idle state.

Password

This setting defines a 4-digit security passcode to lock the settings menu.

Change this setting to enable or disable the password protection function.

When Enable is selected, entering the correct passcode is required to access and modify the settings. When Disable is selected, the password lock for settings is turned off, and no passcode is needed to enter the settings menu.



Reset thermostat

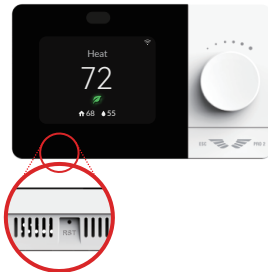
You can reset your ESC PRO 2 by this setting.

Choose “Reset settings” will reset all settings to factory state, after reset is complete, ESC PRO 2 will restart and connect to mobile App automatically.

Choose “Reset Network Settings” will reset your network setting only, you will need to go through the WiFi pairing process to connect ESC PRO 2 with your mobile App.

Hard Reset

In case of abnormal operation on ESC PRO 2, such as a crash or no response of the knob, please press the reset button to force ESC PRO 2 to restart. The position of the reset button is shown in the right figure:



Appendix 1

Terminal	Definition
C	AC 24V Common
RC	AC 24V power supply (transformer)
RH	AC 24V power supply (heating transformer)
W1	Heat 1 for Furnace/Boiler; Heat 1 for dual fuel
W2	Heat 2 for Furnace/Boiler; Auxiliary heat for heat pump; Med Speed for FCU
Y1	Cool 1 for AC; cool 1/heat 1 for heat pump
Y2	Cool 2 for AC; cool 2/heat 2 for heat pump; VENTILATION
G	Fan output; Low Speed for FCU
O/B	Reverse (changeover) valve
Multi	Emergency heat; Heat 2 for dual fuel; High Speed for FCU
S1	NTC sensor terminal 1/2 (available for all systems)
S2	NTC sensor terminal 2/2 (available for all systems)

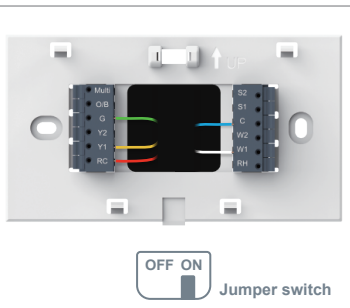
Note:

The default mode of jump switch is in ON mode, in this mode the RC and RH are jumping together by the switch. If your system has two transformer or the system type is set to 10-12, 14, 16-18, please turn the jump switch to OFF mode.

Note: the system default setting is 21-FCU (VENTILATION; 1 heat / 1 cool, 3 fan speeds). If your system is different, please change settings)

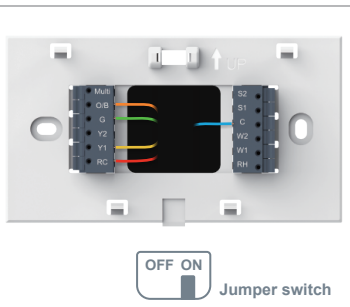
1-1heat/1cool conventional

Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	--
Y1	Cool 1 for AC
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	--
W1	Heat 1 for Furnace
RH	--



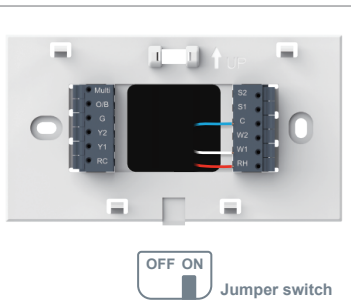
2-1heat/1cool heat pump (no AUX heat)

Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	--
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



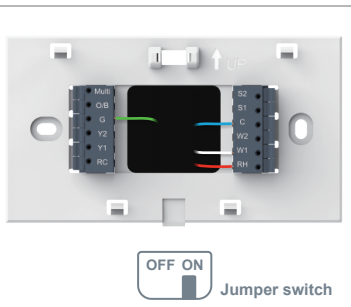
3-Heat only conventional (no fan)

Terminal	Definition
Multi	--
O/B	--
G	--
Y2	--
Y1	--
RC	--
S2	--
S1	--
C	AC 24V Common
W2	--
W1	Heat for Boiler
RH	AC 24V power supply



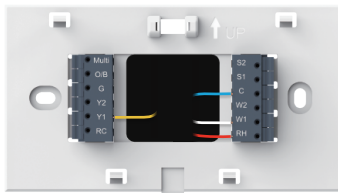
4-heat only conventional (with fan)

Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	--
Y1	--
RC	--
S2	--
S1	--
C	AC 24V Common
W2	--
W1	Heat for Furnace
RH	AC 24V power supply



5-heat only (power to open and close zone valves or normal-open zone valves)

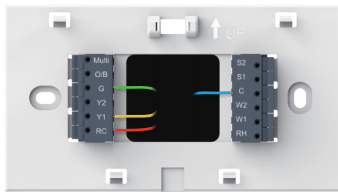
Terminal	Definition
Multi	--
O/B	--
G	--
Y2	--
Y1	Valve close
RC	--
S2	--
S1	--
C	AC 24V Common
W2	--
W1	Valve open
RH	AC 24V power supply



Jumper switch

6-cool only conventional

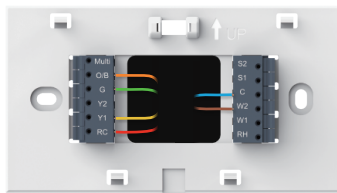
Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	--
Y1	Cool 1 for AC
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



Jumper switch

7-2heat/1cool heat pump (with AUX heat)

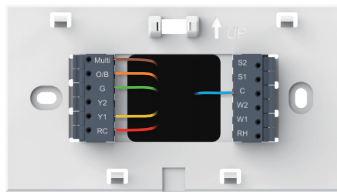
Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	--
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	Auxiliary heat for heat pump
W1	--
RH	--



OFF ON
Jumper switch

8-2heat/1cool heat pump (with E heat)

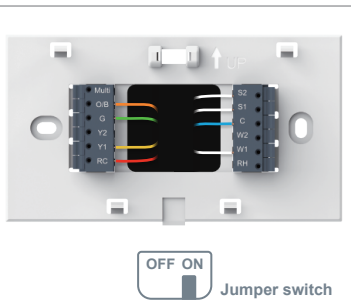
Terminal	Definition
Multi	Emergency heat
O/B	Reverse (changeover) valve
G	Fan output
Y2	--
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



OFF ON
Jumper switch

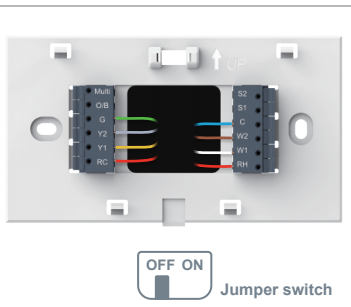
9-1heat/1cool Dual Fuel

Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	--
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	NTC sensor terminal 2/2 (Optional)
S1	NTC sensor terminal 1/2 (Optional)
C	AC 24V Common
W2	--
W1	Heat 1 for dual fuel
RH	--



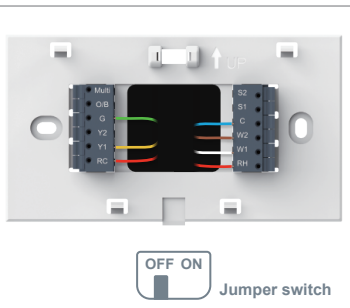
10-2heat/2cool multistage conventional

Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	Cool 2 for AC
Y1	Cool 1 for AC
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	Heat 2 for Furnace
W1	Heat 1 for Furnace
RH	AC 24V power supply



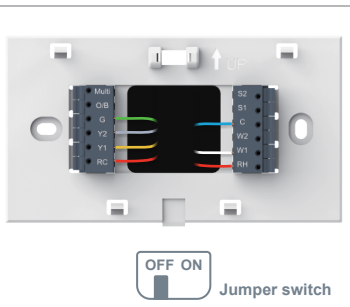
11-2heat/1cool multistage conventional

Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	--
Y1	Cool 1 for AC
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	Heat 2 for Furnace
W1	Heat 1 for Furnace
RH	AC 24V power supply



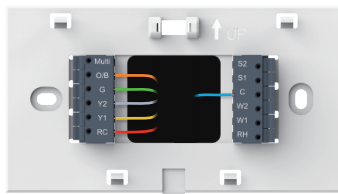
12-1heat/2cool multistage conventional

Terminal	Definition
Multi	--
O/B	--
G	Fan output
Y2	Cool 2 for AC
Y1	Cool 1 for AC
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	--
W1	Heat 1 for Furnace
RH	AC 24V power supply



13-2heat/2cool heat pump (no AUX heat)

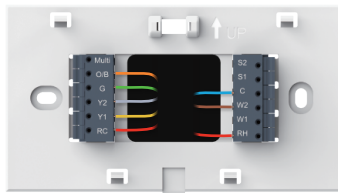
Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



Jumper switch

14-3heat/2cool heat pump (with AUX heat)

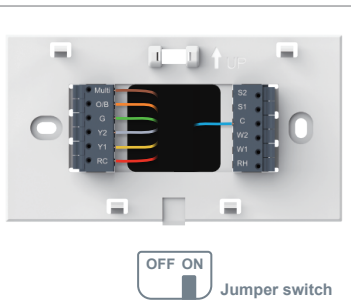
Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	Auxiliary heat for heat pump
W1	--
RH	AC 24V power supply



Jumper switch

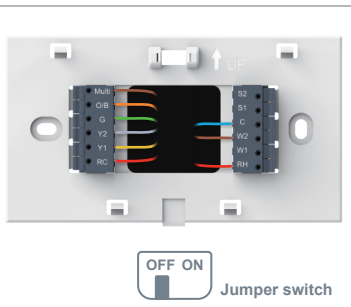
15-3heat/2cool heat pump (with Emergency heat)

Terminal	Definition
Multi	Emergency heat
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



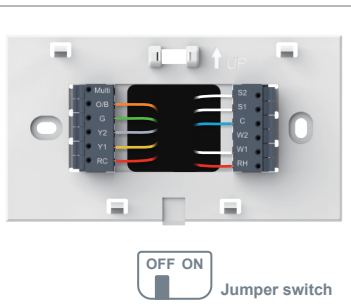
16-4heat/2cool heat pump (with AUX & Emergency heat)

Terminal	Definition
Multi	Emergency heat
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	--
S1	--
C	AC 24V Common
W2	Auxiliary heat for heat pump
W1	--
RH	AC 24V power supply



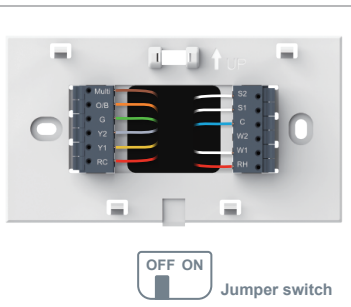
17-3heat/2cool dual fuel

Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	NTC sensor terminal 2/2 (Optional)
S1	NTC sensor terminal 1/2 (Optional)
C	AC 24V Common
W2	--
W1	Heat 1 for dual fuel
RH	AC 24V power supply



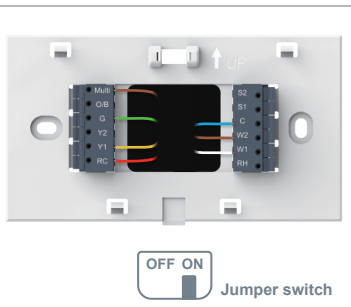
18-4heat/2cool dual fuel

Terminal	Definition
Multi	Heat 2 for dual fuel
O/B	Reverse (changeover) valve
G	Fan output
Y2	Cool 2/heat 2 for heat pump
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply
S2	NTC sensor terminal 2/2 (Optional)
S1	NTC sensor terminal 1/2
C	AC 24V Common
W2	--
W1	Heat 1 for dual fuel
RH	AC 24V power supply



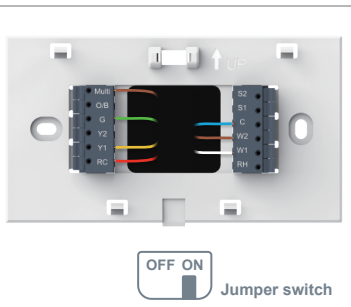
19-FCU (1 heat / 1 cool. 3 fan speeds)

Terminal	Definition
Multi	Fan speed High for FCU
O/B	--
G	Fan speed Low for FCU
Y2	--
Y1	Cool for FCU
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	Heat for FCU
RH	--



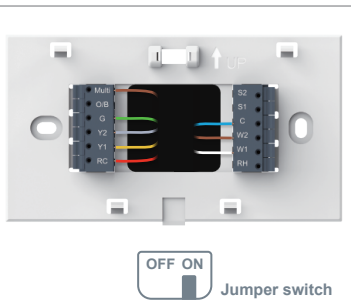
20-FCU (Ac for Cool; Hi fan speed for cool, 3 fan speeds for heat)

Terminal	Definition
Multi	Fan speed High for FCU
O/B	--
G	Fan speed Low for FCU
Y2	--
Y1	Cool 1 for AC
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	Heat for FCU
RH	--



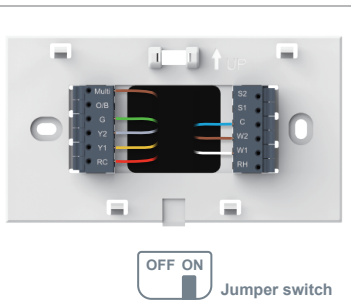
21-FCU (VENT; 1 heat / 1 cool, 3 fan speeds) (Default setting)

Terminal	Definition
Multi	Fan speed High for FCU
O/B	--
G	Fan speed Low for FCU
Y2	VENT
Y1	Cool for FCU
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	Heat for FCU
RH	--



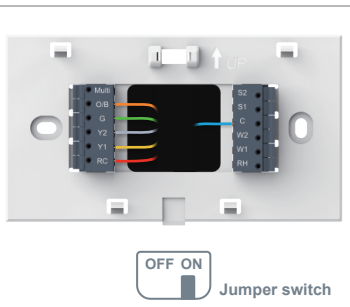
22-FCU (VENT; AC for Cool; Hi fan speed for cool, 3 fan speeds for heat)

Terminal	Definition
Multi	Fan speed High for FCU
O/B	--
G	Fan speed Low for FCU
Y2	VENT
Y1	Cool 1 for AC
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	Heat for FCU
RH	--



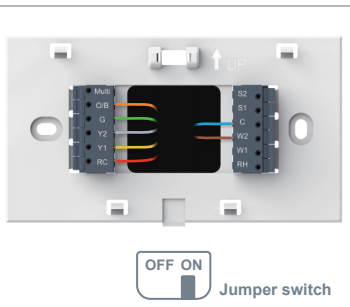
23-HP-1H1C (VENT)

Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	VENT
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	--
W1	--
RH	--



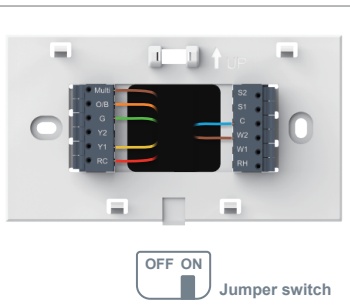
24-HP-2H1C (VENT& AUX)

Terminal	Definition
Multi	--
O/B	Reverse (changeover) valve
G	Fan output
Y2	VENT
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Auxiliary heat for heat pump
W1	--
RH	--



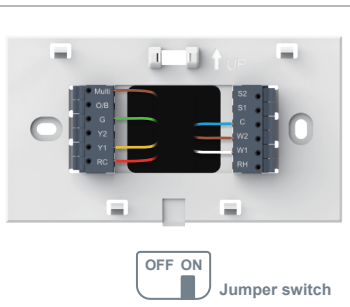
25-1heat/1cool heat pump with 3 speed (no Aux)

Terminal	Definition
Multi	Fan speed High for FCU
O/B	Reverse (changeover) valve
G	Fan speed Low for FCU
Y2	--
Y1	Cool 1/heat 1 for heat pump
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	--
RH	--



26-1heat/1cool with 3 speed conventional

Terminal	Definition
Multi	Fan speed High for FCU
O/B	--
G	Fan speed Low for FCU
Y2	--
Y1	Cool 1 for AC
RC	AC 24V power supply (transformer)
S2	--
S1	--
C	AC 24V Common
W2	Fan speed Med for FCU
W1	Heat 1 for Furnace
RH	--



FCC Compliance

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Attention that changes or modification not expressly approved by the party that may cause that may cause compliance could void the user's authority to operate the equipment.

Note: This product 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 product 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 product does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

This equipment should be installed and operated with a minimum distance 20cm between the radiator and your body.

Version Record

Version	Update Content	Release Date
V1.7.0	1. Add Energy Report function to view runtime statistics of Heat, Cool and Fan. 2. Most advanced settings can now be configured locally on the thermostat. 3. Revise App factory reset confirmation prompt text. 4. Add Fan Minimum Runtimes from 15 to 60 minutes per hour to circulate air. 5. Changed ERV ON/OFF icons to VENTILATION ON/AUTO icons to match common market. 6. Add password verification function for local settings.	2026-06-30
V1.8.0	Revise ERV display text to VENT or VENTILATION.	2026-07-31