

THR-FCU-2025.31 Fan Coil Thermostat

THR-FCU-2025 is designed to control the room temperature in industrial, commercial and residential environment with stand-alone microprocessor and large LCD display.

It shows the following Items: working status (Cooling ❄️, Heating ☀️, Ventilation 🌀, Auto (A)), valve output status (V), room temperature, set temperature, time and etc. With key: On/Off (⏻), Menu (M), Fan speed (🌀), Okey (✓), Adjustment (▲▼).



Basic Features

- ☞ Manual/Auto control valves 0-10V output
- ☞ Manual or Automatic 3-speed fan control
- ☞ 2-pipe and 4-pipe Fan Coil Unit control
- ☞ Real Time Clock (RTC)
- ☞ Low temperature protection
- ☞ Detect and display room temperature

States Display

- ☞ Working mode
- ☞ 0 – 10V valve control
- ☞ Display sensor detect temperature
- ☞ Display setting temperature
- ☞ Clock display
- ☞ Display valve output

Specifications

- ☞ Temperature sensor: NTC
- ☞ Control Accuracy: ± 0.5 °C
- ☞ Operation environment: 0~45 °C
- ☞ Humidity: 5~95% RH (non-condensing)
- ☞ Button: push button
- ☞ Power Consumption: < 2 W
- ☞ Protection Class: IP 30
- ☞ Power supply: AC 24V, 50/60Hz or DC 24V
- ☞ Wiring: Accepting: Accepting 2×1.5 mm² or 1×2.5 mm² wires
- ☞ Switch current rating: Resistive: 5 A, Inductive: 1.5 A
- ☞ Housing: PC + ABS Flame Retardant
- ☞ Frame size: 112×85×28.5 mm (L×H×W)
- ☞ Hole pitch: 60 mm /83.5mm (Standard)

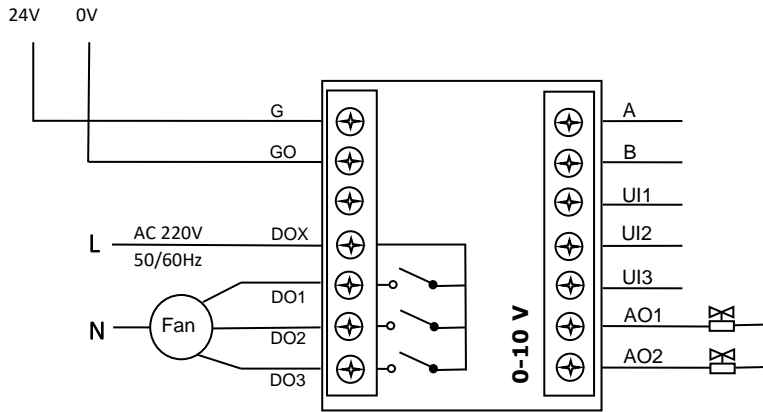
Operation

- ☞ ON/OFF: Press "⏻" for on/off
- ☞ Temperature setting: press "▼" and "▲" to adjust temperature by 0.5 °C.
- ☞ Mode selecting: press "M" to select cooling ❄️, heating ☀️, ventilation 🌀 or auto (A)
Auto mode is available only under 4-pipe system.
- ☞ Fan speed: press "🌀" to set 🌀 (Low), 🌀 (Med), 🌀 (High), A (Auto);

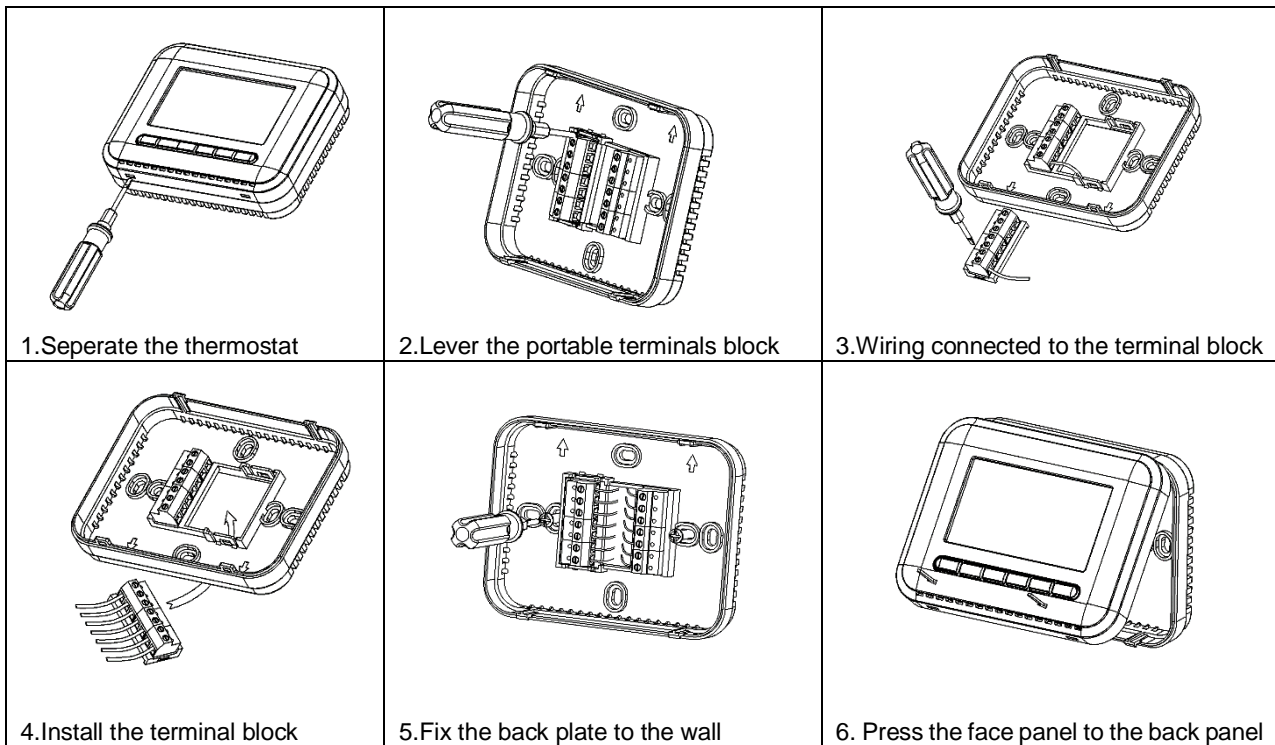
The fan speed changes automatically under Auto mode. Auto Low when the difference between room-temperature and set-point exceed 1 °C; Auto Med when exceed 2 °C; Auto High when exceed 3 °C.

- ☞ Clock setting: Press "✓" into clock program function by hour, minutes and week, Press "▼" and "▲" to adjust.

Wiring Diagram



Mounting Diagram



⚠ Note: Be sure to connect all the wires as per the wiring diagrams and keep it away from water, mud and other material to prevent the unit being spoiled!

Modbus Parameters

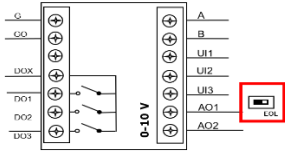
Slave Address : 1 ... 247. **Default 1**

Baudrate : 9600, 19200, 38400, 76800. **Default 19200**

Parity : Odd, Even, None. **Default Even**

Note: Slave address, baudrate and parity changings will become effective after power off and power on.

End Of Line (EOL) Resistor



Flip the THR-FCU-2025 thermostat front plate, open the back plate. You will see the EOL resistor DIP Switch in the position that appears in the picture. The default is **OFF** position (Left). If you would like to enable EOL (120 Ohm) resistor, change it to **ON** Position (Right).



THR-FCU-2025.31 Modbus Registers

Address (Decimal)	Parameter Name	Read (R) / Write (W)	Default	Min	Max	Description
0	Hardware Version	R	17	0	999	Device hardware version 17 => 1.7
1	Firmware Version	R	21	0	999	Device firmware version 21 => 2.1
2	Start/Stop	R/W	1	0	1	0 = Stop 1 = Start
3	Mode	R/W	3	0	3	0 = Fan Only 1 = Heat 2 = Cool 3 = Auto
4	Fan Speed	R/W	1	1	4	1 = Low 2 = Med 3 = High 4 = Auto Speed
5	Set Point	R/W	210 (698)	Set Point Low Limit	Set Point High Limit	This parameter is the desired room temperature value. 210 => 21.0°C (698 => 69.8°F)
6	Set Point High Limit	R/W	300 (860)	50 (410)	400 (1040)	This parameter adjusts the high limit for desired room temperature. 50 ... 400 => 5°C ... 40°C (410 ... 1040 => 41°F ... 104°F)
7	Set Point Low Limit	R/W	50 (410)	50 (410)	400 (1040)	This parameter adjusts the low limit for desired room temperature. 50 ... 400 => 5°C ... 40°C (410 ... 1040 => 41°F ... 104°F)
8	Main Screen	R/W	0	0	2	0 = Room temperature 1 = Setpoint temperature 2 = Swap Room Temperature and Setpoint Temperature
9	Key Lock	R/W	0	0	63	0 = Unlocked 1 = Lock On/Off 2 = Lock Mode 4 = Lock Setpoint 8 = Lock Fan Speed 16 = Lock Time Settings 32 = Lock Time Schedule Settings 63 = Locked All (*) To lock two or more buttons at the same time; sum the numbers of the buttons. To lock setpoint and fan speed, 4 (Setpoint) and 8 (Fan Speed) should be added and written 12.

10	Celsius or Fahrenheit	R/W	0	0	1	0 = Celsius 1 = Fahrenheit
11	Time Format	R/W	1	0	1	0 = 24 hours clock 1 = 12 hours clock (AM/PM) (* The system Time Format is 24 hours clock. This parameter adjusts how to clock format on the panel/screen will shows.
12	Time Schedule Enable	R/W	1	0	1	0 = Disable 1 = Enable
13	Screen Saver	R/W	4	0	5	0 = Screen Saver Disabled 1 = Display On 2 = Display Off 3 = Only Room Temperature 4 = Room Temperature and Clock 5 = Swap Room Temperature and Setpoint with Clock
14	Screen Saver Mode Delay	R/W	60 sec.	10 sec.	150 sec.	This parameter controls the screen saver mode delay of the panel.
15	LCD Brightness	R/W	5	1	5	This parameter controls the backlight of the panel.
16	Buzzer Stage	R/W	3	0	5	This parameter controls the key sounds.
17	Power Failure	R/W	2	0	2	This parameter adjusts the condition that the device will continue when the power failure. 0 = Device starts off 1 = Device starts on 2 = Keep State Before Power Failure
18 40	Reserved	-	-	-	-	-
41	Fan Coil Type	R/W	4	2	4	2 = 2 Pipe System 4 = 4 Pipe System
42	Room Temperature	R	-	-99 (141)	999 (2118)	This parameter shows the room temperature value. -99 ... 999 => -9.9°C ... 99.9°C (141 ... 2118 => 14.1°F ... 211.8°F)
43	Internal Temperature Sensor Calibration	R/W	0 (0)	-100 (-180)	100 (180)	-100 ... 100 => -10°C ... 10°C (-180 ... 180 => -18°F ... 18°F)
44	Universal Input 1 (Ntc value)	R	0	-99	999	This parameter shows the universal Input 1 temperature value. -99 ... 999 => -9.9°C ... 99.9°C (141 ... 2118 => 14.1°F ... 211.8°F)
45	Universal Input 1 (0-10v value)	R	0	0	100	This parameter shows the universal Input 1 proportionally value. 0v=0 10v=100
46	Universal Input 2 (Ntc value)	R	0	-99	999	This parameter shows the universal Input 2 temperature value. -99 ... 999 => -9.9°C ... 99.9°C (141 ... 2118 => 14.1°F ... 211.8°F)
47	Universal Input 2 (0-10v value)	R	0	0	100	This parameter shows the universal Input 2 proportionally value. 0v=0 10v=100
48	Universal Input 3 (Ntc value)	R	0	-99	999	This parameter shows the universal Input 3 temperature value. -99 ... 999 => -9.9°C ... 99.9°C (141 ... 2118 => 14.1°F ... 211.8°F)

49	Universal Input 3 (0-10v value)	R	0	0	100	This parameter shows the universal Input 3 proportionally value. 0v=0 10v=100
50	Mode Change Delay	R/W	3 min.	0 min.	255 min.	This parameter adjusts delay time between heat and cool modes.
51	Universal Input 1 NTC Temperature Calibration	R/W	0 (0)	-100 (-180)	100 (180)	-100 ... 100 => -10°C ... 10°C (-180 ... 180 => -18°F ... 18°F)
52	Universal Input 2 NTC Temperature Calibration	R/W	0 (0)	-100 (-180)	100 (180)	-100 ... 100 => -10°C ... 10°C (-180 ... 180 => -18°F ... 18°F)
53	Universal Input 3 NTC Temperature Calibration	R/W	0 (0)	-100 (-180)	100 (180)	-100 ... 100 => -10°C ... 10°C (-180 ... 180 => -18°F ... 18°F)
54	Auto Mode Enable	R/W	1	0	1	0 = Disable 1 = Enable Only valid when "Fan Coil Type" is set to 4.
55	Dead Zone	R/W	20 (36)	0 (0)	150 (270)	If "Mode" is set to Auto, this parameter adjusts dead zone. 0 ... 150 => 0°C ... 15°C (0 ... 270 => 0°F ... 27°F)
56	Hysteresis	R/W	10 (18)	0 (0)	150 (270)	This parameter adjusts hysteresis. 0 ... 150 => 0°C ... 15°C (0 ... 270 => 0°F ... 27°F)
57	Fan/Valve Control Selection	R/W	1	0	1	0 = Valve Independent 1 = Valve Dependent
58	Fan Stage Change Delay	R/W	2 sec.	0 sec.	5 sec.	This parameter adjusts delay of the changing time the fan stage.
59	Fan Off Delay	R/W	0 sec.	0 sec.	60 sec.	This parameter adjusts delay of the closing time the fan.
60	Alarm	R	0	0	3	This parameter indicates the alarm state. 0 = No alarm 1 = Onboard Sensor Alarm 2 = External Sensor Alarm
61	VA1 status	R	-	0	100	0 = Valve Closed : 50= Valve %50 Opened : 100 = Valve Opened
62	VA2 status	R	-	0	100	0 = Valve Closed : 50= Valve %50 Opened : 100 = Valve Opened
63	Fan Status	R	0	0	3	0 = Stop 1 = Low 2 = Med 3 = High
64	Monday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Monday.
65	Monday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Monday.
66	Tuesday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Tuesday.

67	Tuesday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Tuesday.
68	Wednesday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Wednesday.
69	Wednesday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Wednesday.
70	Thursday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Thursday.
71	Thursday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Thursday.
72	Friday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Friday.
73	Friday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Friday.
74	Saturday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Saturday.
75	Saturday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Saturday.
76	Sunday Start Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn on the device on Sunday.
77	Sunday Stop Time	R/W	0	0	2359	The hour and minute value written in this parameter are set to turn off the device on Sunday.
78	Current Year	R/W	2018	2017	2099	This parameter adjusts the current year.
79	Current Month	R/W	-	1	12	This parameter adjusts the current month.
80	Current Day	R/W	-	1	31	This parameter adjusts the current day.
81	Current Hour	R/W	-	00	23	This parameter adjusts the current hour.
82	Current Minute	R/W	-	00	59	This parameter adjusts the current minute.
83	Restore Factory Setting	R/W	0	0	1	0 = Factory Setting Disable 1 = Factory Setting Started
84	Baudrate	R/W	2	1	4	1 = 9600bps 2 = 19200bps 3 = 38400bps 4 = 76800bps
85	Parity	R/W	1	0	2	0 = Odd 1 = Even 2 = None
86	Slave Address	R/W	1	1	247	This parameter shows address of the device.
87	Parameter Menu Password	R/W	203	1	999	This parameter is set to the password to be entered in the parameter menu.