SM-922-FDM-WIFI

WIFI Smart LED Display Programmable Thermostat

For 2-pipe and 4-pipe Fan Coil / DX Units

Features

- Remote Control with Tuya Wi-Fi
- 2/4 Pipe Fan Coil Systems
- 7 Days Independent Programming
- Heating and cooling button in summer and winter
- Different system control possibilities with a single device (DX - Fancoi
- LED screen
- Tempered glass panel
- Compatible Amazon Alexa / Google Assistant voice control
- Flush-mounted installation
- Modbus RTU conversion
- Automatic 3 Speed Fan
- External temperature sensor input
- Backlight option
- Energy saving mode
- Dry contact input for hotel card, window or door
- Key Lock feature

Use

SM-922-FDM-WIFI series smart programmable thermostats are used in buildings, rooms or spaces. The thermostat is designed and manufactured to be used in 2-pipe or 4-pipe systems. The 922-FDM-WIFI device has an external sensor input, remote control feature via tuya smart application and RS-485 port. The thermostat can be used by adjusting the heating and cooling module in summer and winter.

Usage Notes

Please read the document carefully. 922-FDM-WIFI thermostat is designed and manufactured in accordance with the latest technological developments and safety rules. Safety instructions must be observed to prevent injury and material damage.

About the Product

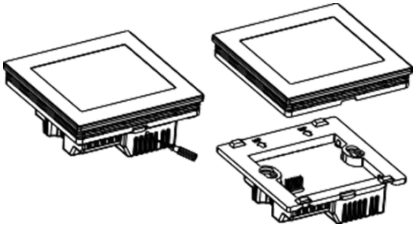
Product Code	Definition	Strength	Communication
SM-922-FDM-WIFI		100-240VAC	Modbus RTU / Tuya WIFI

Technical Specifications

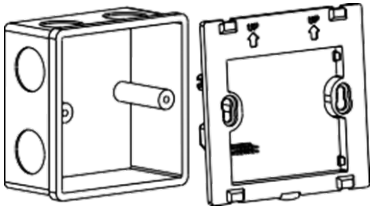
Power supply	100-240VAC 50/60Hz
IP Value	IP21

Temperature Setting Range	5°C~35°
Temperature Setting Accuracy	0,5°C
Temperature Display Range	0°~50°
Temperature Accuracy	0,1°C
Working Environment	0-50°C,5-95%RH
Transport and Storage Temperature	-10°C~60°C
Communication	Modbus / Tuya WIFI
Output	Fan Relay Ampere 8(5)A Compressor/Valve relay Ampere 8(5)A
Dimensions	88 x 88 x 36.5 mm
Assembly	Flush Mounting

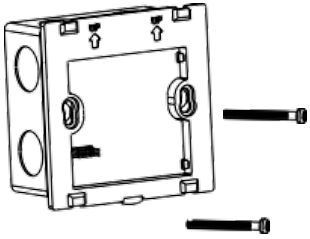
Thermostat Installation



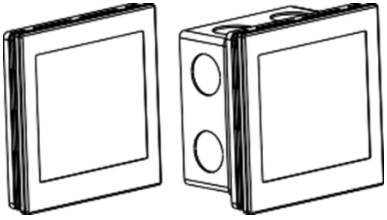
1. Open the Panel



2. Install the Base



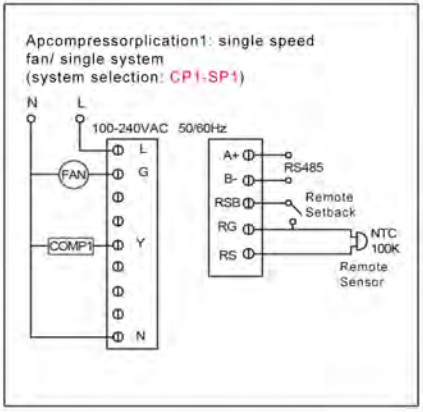
3. Mounting the Screws

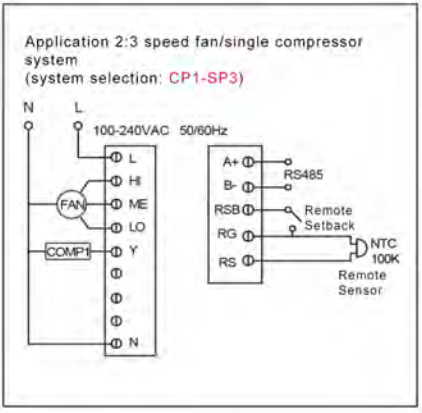


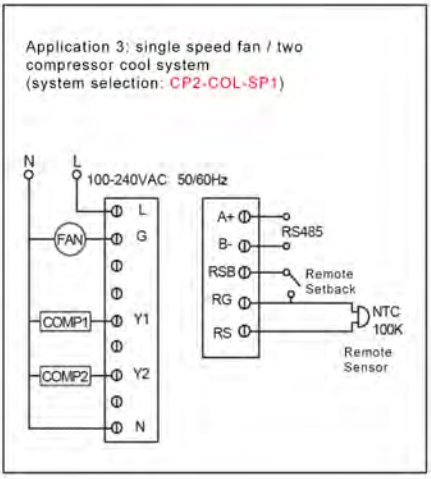
4. Install the Panel

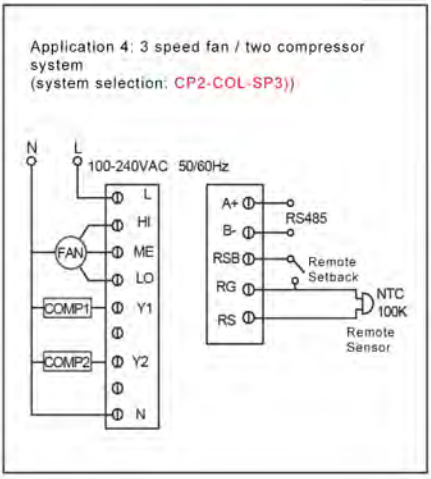
Wiring diagram

NO.	Terminal	Spec
1	L	AC 230V Live
2	HI/G	High/single speed
3	ME/W1	Med/Heat relay 1
4	LO/W2	Low/heat relay 2
5	Y1/ON/Y	Cool relay 1/Valve open /cool on
6	NC	
7	Y2/OFF/W	Cool relay 2/Valve close /heat on
8	NC	
9	N	AC 230V Neutral
10	A+	Rs485 A+
11	B-	Rs485 B-
12	RSB	Room card/ window card
13	RG	Common terminal(External sensor/room/window card)
14	RS	External sensor



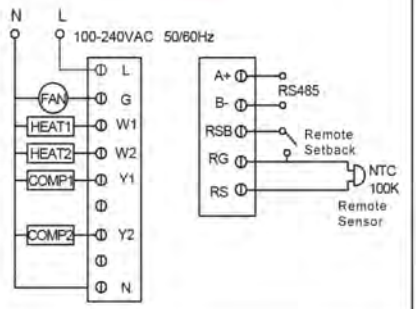






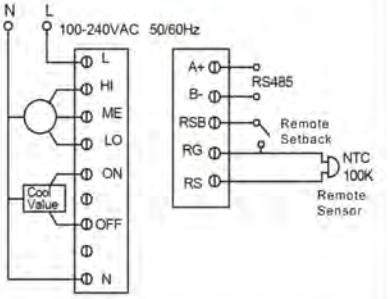
Application5: single speed fan / 2 heat / 2 cool system

(system selection: CP2-ALL)



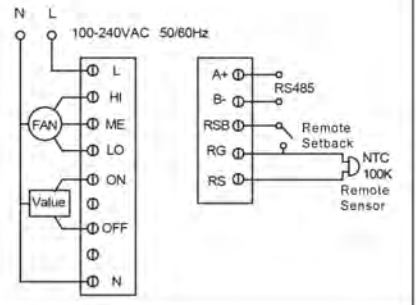
Application 6: Single cool / 3 wire fan coil system

(system selection: FAN-COL)



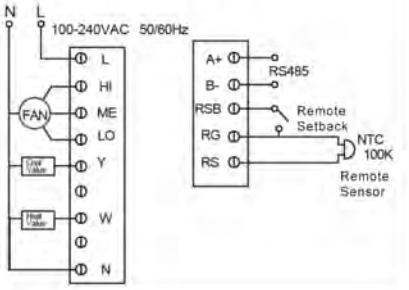
Application 7: 2 pipe / 3 wire fan coil system

(system selection: FAN-FA2)



Application 8: 4 pipe / 2 wire fan coil system

(system selection: FAN-FA4)

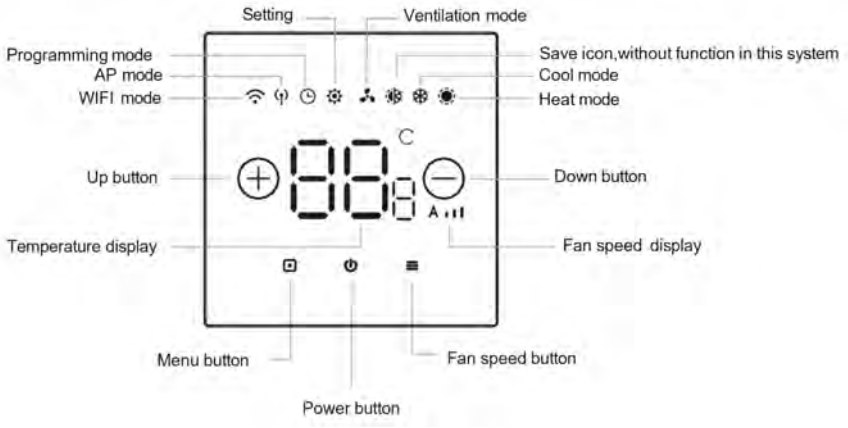


Internal and External Sensor Work:

When external sensor connected, the dispaly temperature will based on temperature detected by external sensor.

Without external sensor, all temperature will based on inside sensor.

Thermostat's Appearance



Menu button： In switch off page, parameter menu setting；In switch on page, heating/cooling/ ventilation mode change

Fan speed display: High, Med, Low, Auto fan or Fan ON/Auto

Power button : Switch ON/OFF

In switch on page, short press turn off thermostat. Long press could change to AP mode

In parameter menu page, press could save all setting and return.

Up button： Increase the temperature

Down button： Discrease the temperatue

Auto 3 speed Fan logic--Cooling mode : Room temperature-setting temperature ≥ 3°C: High speed 3°C＞Room temperature-setting temperature ≥ 2°C: Med speed Others: Low speed

Auto 3 speed fan logic--Heating mode : Setting temperature - room temperature ≥ 3°C: high speed 3°C＞Setting temperature - room temperature ≥ 2°C: Med speed Others: Low speed

Ventilation mode (only in fan coil system) : High, Med, Low switch, without auto fan

Child Lock

In switch on page, 6long press "⊡" and "⏻" over 3 seconds, enter child lock function. Display "LC" all button can't control.

Return Child lock: Long press "⊡" and "⏻" over 3 seconds to return main interface.

7 days programming

Default setting (heating)

week periods	Sun	Mon	Tue	Wed	Thu	Fri	Sat
6:00 Morning	22°C	22°C	22°C	22°C	22°C	22°C	22°C
8:00 Out door	16°C	16°C	16°C	16°C	16°C	16°C	16°C
18:00 Back home	22°C	22°C	22°C	22°C	22°C	22°C	22°C
22:00 Night	16°C	16°C	16°C	16°C	16°C	16°C	16°C

Default setting (cooling)

week periods	Sun	Mon	Tue	Wed	Thu	Fri	Sat
6:00 Morning	25°C	25°C	25°C	25°C	25°C	25°C	25°C
8:00 Out door	28°C	28°C	28°C	28°C	28°C	28°C	28°C
18:00 Back home	25°C	25°C	25°C	25°C	25°C	25°C	25°C
22:00 Night	28°C	28°C	28°C	28°C	28°C	28°C	28°C

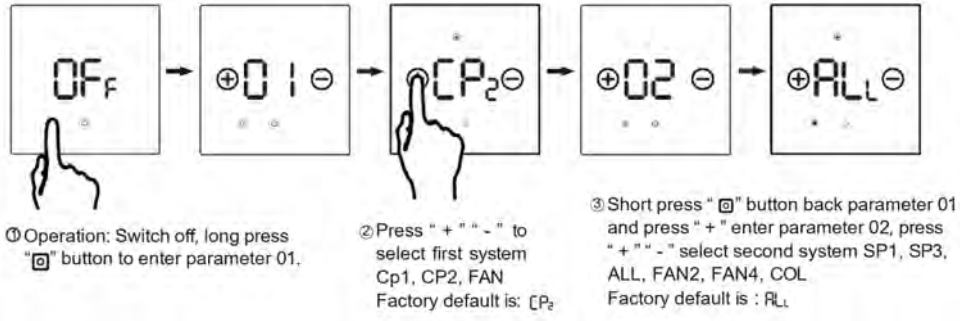
System Guidelines

CP1-SP1/SP3:CP1: 1 stage cooling compressor; SP1: Single speed fan; SP3: 3 speed fan CP2-ALL/COL:CP2: 2 stage cooling compressor, ALL: heating/cooling; COL: cooling only
FAN-FAN2/FAN4/COL:FAN: fan coil system; FAN2: 2 pipe system; FAN4: 4 pipe system; COL:cooling only in 2 pipe

Parameter back to factory setting

In parameter interface, long press " ⊡ " and " ⏻ " button over 3s, show "DEF" 3 times, it will back to factory default.

System Selection



Tips : parameter 01 select CP2 system, parameter 02 select COL system

Short press "⊡" button back parameter " 01" or " 02 " and press " + " enter parameter " 03 ", press " + " " - " select required fan speed system SP1, SP3 Factory default is: SP1

CP1-SP1/SP3 system parameter

Application 1: (page11) 3 speed fan/single compressor system (system selection:CP1-SP3)
Application 2: (page11) single speed fan/ single compressor system (system selection:CP1-SP1)

Parameter /Item	Description	Parameter options	Default
3	Temperature calibration	-4~4°C option	0°C

4	Maximum setting temperature limitation	20~35°C	30°C
5	Minimum setting temperature limitation	5~24°C	20°C
6	Power off memory	rd：Power recover the staus keep OFF rE：Memory power status before power broken	rE
7	Backlight option	1. Without touch backlight off immediately 2. Without touch backlight keep lowest after 10 seconds 3. Backlight keep long bright	2
8	Energy-saving temperature for cooling	25°C ~30°C	28°C
9	Room card option	SC: Activate the room card energy mode by open circuit OC: Activate the room card energy mode by close circuit OO: Cancel room card function	OO
10	The first compressor output activate deadband	1-5°C option Cooling ON：Room temperature ≥ setting temperature + activate deadband	1
11	The first compressor output stop deadband	1-5°C option Cooling OFF: Room temperature ≤ setting temperature - stop deadband	1
12	The first compressor restart delay time	0-5 minutes option	3
13	Rs485 address	1-254	1
14	485 Baud rate option	1-4800,2-9600,3-19200	2

CP2-COL- SP1/SP3 system parameter

Application 3:(page12) single speed fan/two compressor cool system (system selection:CP2-COL-SP1)

Application 4:(page12) 3 speed fan/two compressor system (system selection:CP2-COL-SP3)

Parameter /Item	Description	Parameter options	Default
4	Temperature calibration	-4~4°C option	0°C
5	Maximum setting temperature limitation	20~35°C	30°C
6	Minimum setting temperature limitation	5~24°C	20°C
7	Power off memory	rd：Power recover the staus keep OFF rE：Memory power status before power broken	rE
8	Backlight option	1. Without touch backlight off immediately 2. Without touch backlight keep lowest after 10 seconds 3. Backlight keep long bright	2
9	Energy-saving temperature for cooling	25°C ~30°C	28°C
10	Room card option	SC: Activate the room card energy mode by open circuit OC: Activate the room card energy mode by close circuit OO: Cancel room card function	OO
11	The first compressor output activate deadband	1-5°C option Cooling ON:Room temperature ≥ setting temperature + activate deadband	1
12	The first compressor output stop deadband	1-5°C option Room temperature ≤ setting temperature -stop deadband The first compressor stop	1

13	The first compressor restart delay time	0-5 minutes option	3
14	The second compressor output activate deadband	1-5°C option Room temperature≥Setting temperature+Parameter 11 + parameter 14	1
15	The second compressor output stop deadband	1-5°C option Room temperature≤setting temperature+Parameter 15 - parameter 12 (Parameter 12≤Parameter 11	1
16	The second compressor restart delay	0-5 minutes option	3
17	The second compressor start delay cycle setting	1-5°C option Restart time option when first compressor activate to activate second compressor	1
18	Rs485 address	1-254	1
19	485 Baud rate option	1-4800,2-9600,3-19200	2

CP2-ALL system parameter

Application5: (page13)single speed fan /2 heat / cool system (systemselection:CP2-ALL)

Parameter /Item	Description	Parameter options	Default
3	Temperature calibration	-4~4°C option	0°C
4	Maximum setting temperature limitation	20~35°C	30°C
5	Minimum setting temperature limitation	5~20°C	20°C
6	Power off memory	rd：Power recover the staus keep OFF rE：Memory power status before power broken	rE
7	Backlight option	1. Without touch backlight off immediately 2. Without touch backlight keep lowest after 10 seconds 3. 3. Backlight keep long bright	2
8	Energy-saving temperature for heating	10°C ~18°C(Not for cooling only mode)	18°C
9	Energy-saving temperature for cooling	25°C ~30°C	28°C
10	Room card option	SC: Activate the room card energy mode by open circuit OC: Activate the room card energy mode by close circuit OO: Cancel room card function	OO
11	The first compressor output activate deadband	1-5°C option Cooling ON:Room temperature ≥ setting temperature + activate deadband; Heating ON:Room temperature ≤ setting temperature + activate deadband	1
12	The first compressor output stop deadband	1-5°C option Cooling OFF: Room temperature ≤ setting temperature - stop deadband; Heating OFF: Room temperature ≥ setting temperature - stop deadband	1

13	The first compressor restart delay	0-5 minutes option	3
14	The second compressor output activate deadband	1-5°C option Room temperature≥Setting temperature+Parameter 11 +parameter 14	1
15	The second compressor output stop deadband	1-5°C option Room temperature ≤ setting temperature + Parameter 15 - parameter 12 (Parameter 12 ≤ Parameter 11)	1
16	The second compressor restart delay	0-5 minutes option	3
17	The second compressor start delay cycle setting	1-5°C option Restart time option when first compressor activate to activate second compressor	1
18	Rs485 address	1-254	1
19	485 Baud rate option	1-4800, 2-9600, 3-19200	2

FAN-COL system parameter

Application 6:(page13) Single cool / 3 wire fan coil system(system selection: FAN-COL)

Parameter /Item	Description	Parameter options	Default
3	Temperature calibration	-4~4°C option	0°C
4	Maximum setting temperature limitation	20~35°C	30°C
5	Minimum setting temperature limitation	5~24°C	20°C
6	Power off memory	rd：Power recover the staus keep OFF rE：Memory power status before power broken	rE
7	Backlight option	1.Without touch backlight off immediately 2.Without touch backlight keep lowest after 10 seconds 1. Backlight keep long bright	2
8	Auto Fan stop option	(Only for fan coil system) OFF: In auto fan mode, fan still open even room temperature reach setting. ON: In auto fan mode, Fan would stop if room temperature reach setting	OF
9	Energy-saving temperature for cooling	25°C ~30°C	28°C
10	Room card option	SC: Activate the room card energy mode by open circuit OC: Activate the room card energy mode by close circuit OO: Cancel room card function	OO
11	Activate deadband	1-5°C option Cooling ON：Room temperature ≥ setting temperature + activate deadband	1
12	Stop deadband	1-5°C option Cooling OFF: Room temperature ≤ setting temperature - stop deadband	1
13	Rs485 address	1-254	1
14	485 Baud rate option	1-4800, 2-9600, 3-19200	2

FAN-FA4/FA2 system parameter

Application 7:(page14) 2 pipe/3 wire fan coil system (system selection:FAN-FA2)

Application 8:(page14) 4 piple /2 wire fan coil system (system selection: FAN-FA4

Parameter /Item	Description	Parameter options	Default
3	Temperature calibration	-4~4°C option	0°C
4	Maximum setting temperature limitation	20~35°C	30°C
5	Minimum setting temperature limitation	5~24°C	20°C
6	Power off memory	rd：Power recover the staus keep OFF rE：Memory power status before power broken	rE
7	Backlight option	1. Without touch backlight off immediately 2. Without touch backlight keep lowest after 10 seconds 1. Backlight keep long bright	2
8	Auto Fan stop option	(Only for fan coil system) OFF: In auto fan mode, fan still open even room temperature reach setting. ON: In auto fan mode, Fan would stop if room temperature reach setting	OFF
9	Energy-saving temperature for heating	10°C ~18°C (Not for cooling only mode)	18°C
10	Energy-saving temperature for cooling	25°C ~30°C	28°C
11	Room card option	SC: Activate the room card energy mode by open circuit OC: Activate the room card energy mode by close circuit OO: Cancel room card function	OO
12	Activate deadband	1-5°C option Cooling ON:Room temperature ≥ setting temperature + activate deadband; Heating ON:Room temperature ≤ setting temperature + activate deadband	1
13	Stop deadband	1-5°C option Cooling OFF: Room temperature ≤ setting temperature - stop deadband; Heating OFF: Room temperature ≥ setting temperature - stop deadband	1
14	Rs485 address	1-254	1
15	Compressor delay cycle setting	0：without delay for fan coil system 3：minutes delay for compressor heating/cooling 5：minutes delay for compressor heating/cooling (It only for cooling mode)	0
16	485 Baud rate option	1-4800, 2-9600, 3-19200	2

485 communication protocol

Basic description

Number	Parameter	Protocol provision
1	Operating mode	RS-485, master-slave, thermostat is the slave
2	Physical interface	A(+), B(-) two-wire system

3	Baud rate	9600
4	Byte format	10 format (1 start bit+8 data bits +1 stop bit)
5	Transmission mode	RTU format (consult MODBUS standard)
6	Thermostat address	1-254
7	Command code	3, 6 (3—read thermostat, 6—set thermostat)
8	CRC check code	CRC-16 (consult MODBUS standard)
9	CRC verification mode	CRC-16 (consult MODBUS standard)
10	Data frame interval	Greater than 4 bytes

Two stage DX system

Registry	Description	Possible values	Functions
0	ON/OFF status	00 –OFF, 01— ON	Read / Write
1	Fan mode	0 – Auto speed, 01 – High speed, 02 – Med speed 03 – Low speed; single speed fan:00 –ON, 01 –Auto	Read / Write
2	Setting temperature	Setting temperature *10	Read / Write
3	Compressor 1 working state	0 – OFF; 1 – ON; 2-Compressor delay	Read
4	Compressor 2 working state	0 – OFF; 1 – ON; 2-Compressor delay	Read
5	Fan working state	0 – OFF, 1 – High speed, 2 – Med speed, 3 – Low speed, one speed fan: 0 –OFF, 1 –ON	Read
6	Room card state	00–No people in room; 01–People in room (the default is 1 for no room card, can not modify)	Read
7	Compressor 1 start dead band	1-5℃	Read / Write
8	Compressor 1 stop running deadband	1-5℃	Read / Write

9	Compressor 1 delay time	0-5min	Read / Write
10	Compressor 2 start deadband	1-5℃	Read / Write
11	Compressor 1 stop running deadband	1-5℃	Read / Write
12	Compressor 2 delay time	0~5min	Read / Write
13	the compressor 2 start delay after active compressor 1	1~5min	Read / Write
14	Room temperature	Room temperature *10	Read
15	Working mode	00:cooling 01:heating	Read / Write
16	Address for Rs485	Address:1-254	Read / Write

CP1-485 communication protocol Single stage DX system

Registry	Description	Possible values	Functions
0	ON/OFF status	00 –OFF, 01— ON	Read / Write
1	Fan mode	0 – Auto speed, 01 – High speed, 02 – Med speed 03 – Low speed; Single speed fan: 00 –ON, 01 –Auto	Read / Write
2	Setting temperature	Setting temperature *10	Read / Write
3	Compressor working state	0 –OFF; 1 –ON; 2-Protecting	Read
4	Fan working state	0 – close, 1 – High speed, 2 – Med speed, 3 – Low speed; Single speed fan: 0 –OFF,1 –ON	Read
5	Room card state	00–No people in room; 01–People in room (the default is 1 for no room card, can not modify)	Read

6	Compressor start dead band	1-5℃	Read / Write
7	Compressor stop running deadband	1-5℃	Read / Write
8	Compressor 1 delay time	0~5min	Read / Write
9	Room temperature	Room temperature *10	Read
10	Working mode	00:cooling 01:heating	Read / Write
11	Address for Rs485	Address:1-254	Read / Write

FAN-485 communication protocol Fan coil system

Regitry	Description	Possible values	Functions
0	ON/OFF status	00 –OFF, 01— ON	Read / Write
1	Fan mode	0 – Auto speed, 01 – High speed, 02 – Med speed 03 – Low speed	Read / Write
2	Setting temperature	Setting temperature *10	Read / Write
3	Fan working state	0 – close, 1 – High speed, 2 – Med speed, 3 – Low speed; one speed fan: 0 –close, 1 – open	Read
4	Room card state	00–No people in room; 01–People in room (the default is 1 for no room card, can not modify)	Read
5	The valve start dead band	1-5℃	Read / Write
6	The valve stop running dead band	1-5℃	Read / Write
7	Room temperature	Room temperature *10	Read
8	Working mode	00~cooling; 01~heating;02~single fan speed	Read / Write
9	Address for Rs485	Address:1-254	Read / Write

Link APP-Login

Download:
Click App store or Android application market to download “Tuya Smart” APP.

Registration and Login: Click the “Register” to create account.
Enter your account password to log in

Register

Create accout

Login

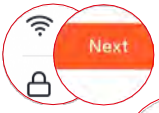
Link APP-Add devices

* Power on the thermostat, long press " ⏻ " until the thermostat display " (ψ) " faster blinkling.

1. Enter the “HOME” interface of the app, Click the “+” in the upper right corner .

2. Click the list bar “Small Home Appliance” select,
“Thermostat” in the right device list..

3. Enter your wifi name and password, then click “ Next ”.



4. Select “Confirm indicator rapidly blink ” , Click “ Next ”

5. Wait for few seconds.

6. Device added successfully,click “Done”, then automatically jump to the sub-device adding interface.

***Tips**

Only 2.4GHz Wi-Fi networks are supported. please select a 2.4GHz network.

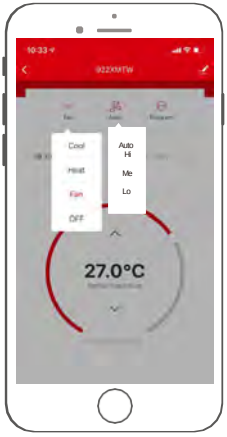
Temperature Setting

After the thermostat is added successfully, we can control the device through the APP.

Press "∧ ", " ∨ " or "slide the circle" to increase or decrease of the temperature.

slide to adjust the temperature

CP2, CP1 sistem



FAN sistem

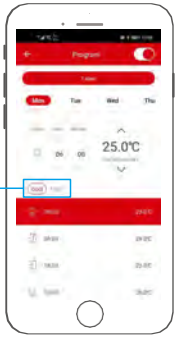
Tips : According different system selection,the display will different

Programming Setting

1. Click the programming to enter the programming interface.

2. Selecting the period of time of 7-day programming, press"∧"or "∨" to set temperatures in the different periods of time.

Select Cool/Heat mode to program

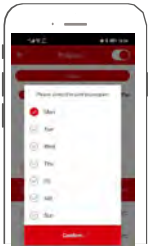


Tips : Turn off program,thermostat run manual mode

Multi-day Programming Setting

1. Enter the programming interface and then click the “7-day” key.

2. Click the date to edit and confirm it.



Temporary Stay-out Setting

1. If you need to go out, please click Away key “ ”

The temperature can remain as energy saving heating/cooling set the energy-saving icon“ ” turns green and is on.

2. After you arrival at home, click Away key “ ” to active the previous temperature setting.

Voice command

After waking up the speaker, you can say:

Amazon Alexa

* turn on bedroom.
* turn off bedroom.
* raise the bedroom by 1 degree.
* the bedroom by 1 degree.
* set the bedroom to 16 degrees.

Google Assistant

Tips : you need connect to the Google speaker

* turn on bedroom.
* turn off bedroom.
* set the bedroom to 16 degrees.

* **Tips: bedroom is the device name. You can name it by yourself.**
* **The temperature unit of thermostat and speaker must be the same.**