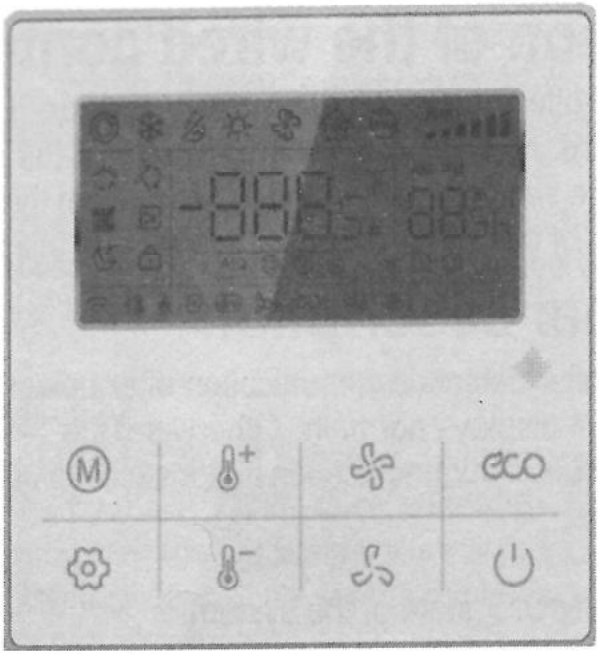
Acrylic Touch Key Wired Controller Manual

Three/five core communication



The presentation of function key

	**Mode key:** Set the mode of the air conditioner.
	**Temperature increase or decrease key(TEMP+ and TEMP-)** Set the set temperature of the air conditioner.
	**Fan speed key(FAN+ and FAN-):** Set different fan speeds of air conditioner.
	**Energy key:** Short press this key to enter the energysaving state, the temperature is set to 26˚C, and the fan speed is the level-2 wind. Press the Energy key for the second time to restore the original setting.
	**On/Off key:** Start-up and shut-down of air conditioner.
	**Function key:** Set the timing start-up and shutdown, swing, sleep, query, screen cleaning, and key lock of the wired controller.

1. Introduction

This is three/five-core communication wired controller Some models are with WIFI function.

2. Description of the wired controller

The wired controller communicates with the system control mainboard through its mainboard, controls the operating state of the system through the keys, and displays the working state of the entire system through LCD.

The appearance of this wired controller is shown in the cover page image.

3. Functional description

The wired controller detects communication after power-on. If the communication is successful, it displays normally. Otherwise, the "---" icon will flash. The fault code E9 will appear if communication is not successful within 1 minute.

Functions of keys:

3.1 ON/OFF key

(1) Control the ON/OFF state of the system.

(2) When the wired controller enters the function setting, parameter setting or engineering parameter setting, press the "ON/OFF" key to exit the setting and return to the main display interface.

3.2 Mode key

Automatic mode→Cooling→Dehumidification→Heating→Fan→Automatic mode

Cycle switching

3.2.1 Dehumidification mode: The temperature of the wired controller can be set, and the fan speed cannot be set.

3.2.2 Fan mode: mandatory display of T1 temperature;

3.2.3 Forced cooling mode: set the 6th item in the engineering parameter setting. In forced mode, press the shutdown or mode key to switch to other modes(Reserved).

3.3 Fan + and Fan -key

Adjust the indoor fan speed. Each time you press the fan speed key, the fan speed will change as below:

Level 6 ← Level 4 ← Level 2 ← Automatic fan (3 Windshield indoor unit)

Level 4 ← Level 3 ← Level 2 ← Level 1← Automatic fan (4 Windshield indoor unit)

Level 6 ←Level 5 ←Level 4 ←Level 3 ←Level 2 ←Level 1 ←Automatic fan
↑ (6 Windshield indoor unit) ┘

3.4 Temperature + key

Each time the "TEMP+" key is pressed, Five-core communication set temperature increased by 1°C, Three-core communication set temperature increased by 0.5°C. When the set temperature is increased to 32°C, the temperature will remain at 32°C while pressing this key (the maximum temperature limit).

Note: If the Fahrenheit temperature display is selected: each time the "TEMP+" key is pressed, the set temperature will be increased by 1°FH. When the set temperature is increased to the set maximum temperature, it will be no longer increased.

3.5 Temperature - key

Each time the "TEMP-" key is pressed, Five-core communication set temperature reduced by 1°C, Three-core communication set temperature reduced by 0.5°C., and when the set temperature is reduced to 16°C, Press this key to keep the temperature at 16°C (or set the minimum temperature).

Note: If the Fahrenheit temperature display is selected: Each time the "TEMP-" key is pressed, the set temperature will be decreased by 1°FH, and when the set temperature is decreased to the set minimum temperature, it will be no longer decreased.

3.6 Energy key

1) Short press this key to enter the energysaving state, the temperature is set to 26°C, and the fan speed is the level-2 wind. Press the Energy key for the second time to restore the original setting.

2) Press and hold the Energy key to enter the query status. The digits "double 8" will appear at the lower right corner of the LCD showing the inspection number, and the query data information will appear in the middle of the LCD. Press the "TEMP+"and "TEMP-" key to switch the query data.

3) To exit the query state, press and hold the Energy key , or press the ON/OFF key, or wait for 10 seconds without operation.

Five core communication:

VRF indoor unit: Parameter Description : ndoor unit' s capacity demand→ T1 temperature value → T2 temperature value → T2B temperature value → Average of T2 temperature value → Opening of EXV → Indoor unit's address → Parameter Description,then rapeat the cycle.

ON-OFF seriers: 1-Indoor temperature T1; 2-Evaporator temperature T2; 3-Condenser temperature T3.

Checked table for inverter series

Inspection No.	Parameter Description
1	Indoor unit capacity
2	Indoor unit' s capacity demand (Reserved)
3	Revised demand by T4(Reserved)
4	Revised demand by T2(Reserved)
5	T1 temperature value
6	T2 temperature value

Inspection No.	Parameter Description
7	T2B temperature value
8	T3 temperature value
9	T4 temperature value
10	T5 temperature value
11	Opening of EXV
12	Operating frequency of compressor
13	Primary side voltage/4(Reserved)

Three core communication:

Checked table for inverter split unit

Inspection No.	Parameter Description
1	Indoor unit capacity (HP*10)
2	Indoor unit's capacity demand
3	Revised demand by T4
4	Revised demand by T2
5	T1 temperature value
6	T2 temperature value
7	T2B temperature value
8	T3 temperature value
9	T4 temperature value
10	T5 temperature value/2

Inspection No.	Parameter Description
11	Opening of electronic expansion valve/8
12	Operating frequency of compressor
13	Outer fan gear
14	Primary current *2
15	Secondary current *2
16	Primary side voltage/4
17	Secondary side voltage/4-50
18	Last failure(no fault E-)
19	The second last fault(no fault P-)
20	Humidity
21~24	Reserved

Checked table for ON/OFF LCAC (Some Part)

Inspection No.	Parameter Description
1	Reserved
2	Reserved
3	Reserved
4	T1 temperature value
5	T2 temperature value
6	T3 temperature value

Inspection No.	Parameter Description
7	T4 temperature value
8	T5 temperature value
9	Last failure (no fault E-)
10	The second last failure (no fault P-)
11	Humidity
12~15	Reserved

Checked table for VRF indoor unit

Inspection No.	Parameter Description	Inspection No.	Parameter Description
1	Indoor unit's address	7	Average of T2 temperature value
2	Indoor unit's capacity	8	Opening of EXV
3	Indoor unit's capapcity demand	9	Last failure (no fault E-)
4	T1 temperature value	10	The second last failure (no fault P-)
5	T2 temperature value	11	Humidity
6	T2B temperature value	12~15	Reserved

3.7 Wifi connection key(Only applicable with WiFi wired controller)

Press "TEMP+" and "ON/OFF" together and keep 2s, it can clear current WiFi information and re-configure user's WiFi account and password.

Relationship between WiFi Icon flashing and WiFi state

WIFI Icon	WIFI sate	
Slow flash 3s	Press wifi connection button one time	3 times flashing within 3s, then off 3s
Fast flash	In wifi configuration state	2 times flashing with 1s
Double flash	In LAN state (Reserved)	2 times fast flashing within 1s then off 0.5s
Slow flash	Failed connect to wifi	1 time flashing within 2s
ON	Failed connect to wifi, and failed connect to cloud server	
Fast flash one time every 5s when it is ON	Normal, connect to wifi and cloud server	

3.8 Function key

Under any operating states (except query), press the function key to enter the function setting interface.

3.8.1 Press "Function key " ⟲ " ,The up and down wind swing will flash. The "intermediate double 8 digital tube" displays the current state: 0-off, 1-open. Press the "TEMP+" "TEMP-" key to switch on and off;(Valid only for models with louver)

PS: Press the "Fan+" "Fan-" key to adjust the angle gear (lever1-5), adjust the swing wind angle, the up and down wind swing off(Reserved).

3.8.2 Press "Function Key" to enter the next setting, " ⟷ " The left and right wind swing will flash, the "big double 8 digital tube" shows the current state: 0-off, 1-open; Press the "TEMP+" "TEMP-" key to switch on and off. (Valid only for models with louver)

PS: Press the "Fan+" "Fan-" key to adjust the angle gear (lever1-5), adjust the swing wind angle, the left and right wind swing off(Reserved).

3.8.3 Press "Function Key" to enter the next setting, it will directly enter the "Timing On" setting and the " " icon will flash. The "Left digital tube" indicates the current status, "---" indicates no timing on, "**h" indicates turn on after setting for a few hours. Press "TEMP+" "TEMP-" key to adjust the set time for timing on.

3.8.4 Press "Function Key" to enter the next setting, it will directly enter the "Timing Off" setting and the " " icon will flash. The "Left digital tube" indicates the current status, "---" indicates no timing off, "**h" indicates shut-down after setting for a few hours. Press "TEMP+" "TEMP-" key to adjust the set time for timing off.

3.8.5 Press "Function Key" to enter the next setting, it will directly enter the "Sleep" setting and the " " icon will flash. The "Big double 8 digital tube" indicates the current status, 0-off, 1-open, and press "TEMP+" "TEMP-" keyto adjust the on and off.(Valid only for models with sleep function)

3.8.6 Press "Function Key" to enter the next setting and directly go to the electric auxiliary heat setting " " will flash. The "Big double 8 digital tube" indicates the current state, 0-manual off; 1-manually on; 2-automatic switch, and press "TEMP+" "TEMP-" key to adjust the setting parameters.(Valid only for models with electrical heater)

3.8.7 Press "Function Key" to enter the next setting, if screen cleaning reminder icon " " appears, the "Big double 8 digital tube" indicates the current status 1, press the "TEMP+" "TEMP-" key to switch the cancellation and no cancellation; if the " " does not appear, it indicates that the timing cleaning reminder time has not arrived, then itwill jump to the next setting 3.8.8.

3.8.8 Press "Function Key" to enter the next setting and jump directly to the key lock " " , and the icon " " will flash. The "Big double 8 digital tube" displays the current status, 0-off, 1-open; press "TEMP+" "TEMP-" key to switch On and Off.(It will only take effect when you exit the general function setting interface)After setting the lock, press "TEMP+" and "TEMP-" to unlock the controller.

3.8.9 Press "Function key" to enter the next setting and jump directly to "WiFi Link Setting" to display the current status, The "Big double 8 digital tube" indicates the current state, 0-Smartconfig configuration status; 1-AP configuration status; 2-WIFI is configured but not connected to the router; 3-WIFI is configured and connected to the router; 4-Connected to the router and connected to the cloud; 5-WiFi device is in low power mode;Press ON/OFF key to exit

and enter WiFi configuration mode.

PS: Without WiFi controller or When WiFi is abnormal show "--".

3.8.10 Press "Function Key" to enter the next setting and directly go to the reserved items.

3.8.11 Press "Function Key" to enter the next setting and directly go to the Double-effect health model " ⊕ " will flash. The "Big double 8 digital tube" indicates the current state, 0-off, 1-open, and press "TEMP+" "TEMP-" key to adjust the setting parameters.Valid only for models with this function.

3.8.12 Press "Function Key" to enter the next setting and directly go to the Ultraviolet sterilization mode " UV " will flash. The "Big double 8 digital tube" indicates the current state, 0-off, 1-open, and press "TEMP+" "TEMP-" key to adjust the setting parameters.Valid only for models with this function.

3.8.13 Press "Function Key" to enter the next setting and directly go to the reserved items.

3.9 Parameter setting

3.9.1 User parameter setting

In main interface, short press "Function key" one time, then long press the "Energy key" to enter the user parameter setting interface.

In the user parameters interface, the right digital tube displays the serial number of the setting item, and the middle digital tube displays the numerical value, as shown in the table below. In the user parameter interface: press the "Fan +" , "Fan -" key or function key to select the serial number of the setting item; press "TEMP+" "TEMP-" key to adjust the parameter value.

Serial number	Parameter	Parameter Description	Remarks
1	Fahrenheit/ Celsius setting	Default ℃; ℃->℉->℃	Displayed at set temperature
2	Set the maximum temperature	Default 32℃,with range of 24-32℃ Default 88℉, with range of 76℉-88℉	Display set value
3	Set the minimum temperature	Default 16℃,with range of 16-24℃ Default 61℉, with range of 61℉-76℉	Display set value
4	Temperature display in the main interface	Display set temperature by default (display indoor temperature)	Display 0/1
5	select prompt tone of press key	0: voiced(Default) 1: silent	Display 0/1
6	Cleaning reminder time setting	2000h/3000h/3500h/4000h / 5000h/6000h (Default 4000h)	Display 20/30/35/40/50/60

7	Remote master /slave settings	Default 0-host; 1- slave(optional)	(This option can only be set when two wired controllers are connected, otherwise normal communication will not be realized)
8	Multiple oniine address settings	0~99	Display set value
9	Constant air flow setting	0: OFF(Default) 1: ON	Only valid for constant air flow ducted units

Note 1: When the slave wired controller is set, the engineering parameter settings and queries cannot be used.

Note 2: Multiple online address settings: Press "TEMP+" "TEMP-" key to change, then press "ON/OFF" key to save and exit.

3.9.2 Engineering parameter setting

When wired controller is in the user parameter setting interface and in the first item setting, long press "Energy" key to enter engineering parameter setting interface. (This setting interface can only be enter after the controller communicates with unit correctly and no operation is performed for 20 seconds. When controller is connected to 5-pin indoor unit, it doesn't have this function)

3.9.3 In the engineering settings interface, the left digital tube indicates the serial number of the setting item, and the middle digital tube indicates the numerical value, as shown in the table below. In the engineering parameter interface: press the "Fan+", "Fan-" key or function key to select the serial number of the setting item; press "TEMP+" "TEMP-" key to adjust the parameter value.

Serial number	Parameter	Parameter Description	
1	T1 sensor selection	0-main control board T1; 1-wire controller T1	
2-18	Reserved		

4. Description of DIP Switch:

	ON	OFF
1	With power-off memory	Without power-off memory
2	Reserved	Reserved

5. Fault Code Description

Note: If there is a conflict between a wire controller fault and an indoor unit fault, please prevail with the indoor unit fault.

Five core communication:
Fault code table for ON-OFF series

Display	Fault Description	Display	Fault Description
F0	Indoor fan stall protection	F9	Three-phase electricity phase sequence failure
F2	Outdoor protection	E0	Communication failure of indoor and outdoor unit
F3	High pressure protection	E1/E9	Indoor unit and wire controller communication failure
F4	Low pressure protection	E2	Room ambient temperature sensor(T1) failure
F5	Water fullfilled protection	E3	Evaporator tube temperature sensor(T2) failure
F7	Outdoor unit over-current protection	E5	Condenser tube temperature sensor(T3) failure
F8	Outdoor unit exhaust temperature over-high protection	P6	Indoor unit EEPROM failure

Fault code table for VRF indoor unit

Display	Fault Description	Display	Fault Description
E1	Communication failure of indoor and outdoor unit	E8	Wind testing fault of PG electric motor
E2	Room temperature sensor failure(T1)	E9	Communication fault of wire controller
E3	Tube temperature midpoint sensor failure(T2)	EA	Outdoor unit current fault
E4	Tube temperature outlet sensor failure(T2B)	Eb	Outdoor unit IPM fault

E5	Malfunction of outdoor unit	EF	Model conflict
E6	Testing fault of zero-crossing signal		
E7	EEPROM malfunction		

Fault code table for inverter series

LED Display	Display	Error Description
Time light flash	E2	Room temperature T1 sensor error
Defrost,run, protection light flash	E3	Evaporator temperature T2 sensor error
Deforst light flash	E4	Evaporator outlet temperature T2B sensor error
Protection light flash	EE	Water full filled error
Run, defrost light flash	E9	Indoor unit and wired controller communication error
Run, time light flash	E7	Indoor EEPROM error
Defrost, time light flash	E8	Indoor fan motor speed lose protection
Defrost warning lights flash	F4	Outside ambient temperature T 4 sensor error
	F5	Discharge temperature T5 sensor error
	P9	Outdoor fan motor protection
	E5	Outdoor unit error
	FE	Outdoor EEPROM error
	F6	Condenser temperature T3 sensor error
	P5	Condenser temperature T3 too high protection
	PA	Anti-typhoon protection
	L1	DC side over-voltage
	PE	DC side over-current
	EF	Mode conflict
	P6	Inverter IPM protection
	H6	3 times P4 protection (Reserved)
	H5	3 times P2 protection (Reserved)
Timing warning lights flash	E1	Communication error between indoor and outdoor unit
Running defrost timing lights flash	P1	High pressure protection
Defrost timing warning lights flash	P2	Low pressure protection
Running timing warning lights flash	P4	Outdoor discharge temperature too high protection
Running defrost timing	E0	Three phase sequence error

Three core communication:

Its fault code description:

Display	Fault Description
E0	Sequence fault
E1	Indoor and outdoor communication failures
E2	Room temperature sensor failure(T1)
E3	Tube temperature midpoint sensor failure (T2)
E4	Tube temperature outlet sensor failure (T2B)
E5	Outdoor unit failure
E6	Zero-crossing protection
E7	Indoor unit E-party failure
E8	Indoor unit stall protection
E9	Wire controller communication failure
EA	Compressor overcurrent (four times) fault
Eb	Inverter module protection
EC	Refreshing faults
Ed	Reserved
EE	Water level alarm
EF	Mode conflict

Display	Fault Description
F0	Outdoor communication failures
F1	Phase sequence error protection
F2	Outdoor or indoor communication failures
F3	Exhaust air temperature sensor fault
F4	External T4 sensor failure
F5	T6A sensor failure TP exhaust temperature sensor fault
F6	External T3 sensor failure
F7	T6B sensor failure
F8	Outdoor unit address error T5 exhaust temperature sensor fault
F9	Voltage ultra-high/ultra-low protection
FA	Refrigerant cooling copper tube sensor fault. Outdoor unit E-party failure
Fb	T6 sensor failure or temperature protection
FC	T7 sensor failure
Fd	reserved
FE	E-party failure Indoor unit address error
FF	reserved

Display	Fault Description
P0	(reserved)
P1	High pressure protection
P2	Low pressure protection
P3	Primary side over current protection
P4	Ultra-high exhaust temperature protection
P5	T3 /T3B high temperature protection
P6	IPM module protection
P7	The lack of the degree of superheat
P8	(reserved)
P9	Outdoor DC fan failure
L0	Inverter compressor malfunction
L1	DC generatrix low voltage protection
L2	DC generatrix high voltage protection
L3	reserved
L4	MCE error/ Synchronization / closed loop
L5	Zero speed protection
L6	reserved
L7	Wrong phase protection
L8	Speed difference >15Hz protection between the front and the back clock
L9	Speed difference >15Hz protection between the real and the setting speed

Display	Fault Description
H0	Communication failure between external main board and drive board
H1	Communication failure between master and slave chips
H2	The decrease in the number of outdoor failures
H3	The increase in the number of outdoor failures
H4	3 P6 protection in 60 minutes
H5	3 P2 protection in 60 minutes
H6	3 P4 protection in 100 minutes
H7	The decrease in the number of indoor failures
H8	Pressure sensor failure
H9	3 P9 in 30 minutes
HA	3 P3 in 60 minutes
PA	IPM module temperature too high protection Anti-typhoon protection
Pb	Evaporate temperature T2 too high protection Refrigerant cooling temperature T6 too high protection
PC	Temperature T3 too high protection in heating mode
	Fan protection in zone A for 5 minutes during heating
Pd	Abnormal current protection
PE	Over current protection in DC side
PF	High pressure protection (High pressure sensor)

6. WIFI and App function

Wired controller can connect wifi and realize remote control. (Only applicable with WiFi wired controller)

6.1 Operation for WIFI configuration and adding device

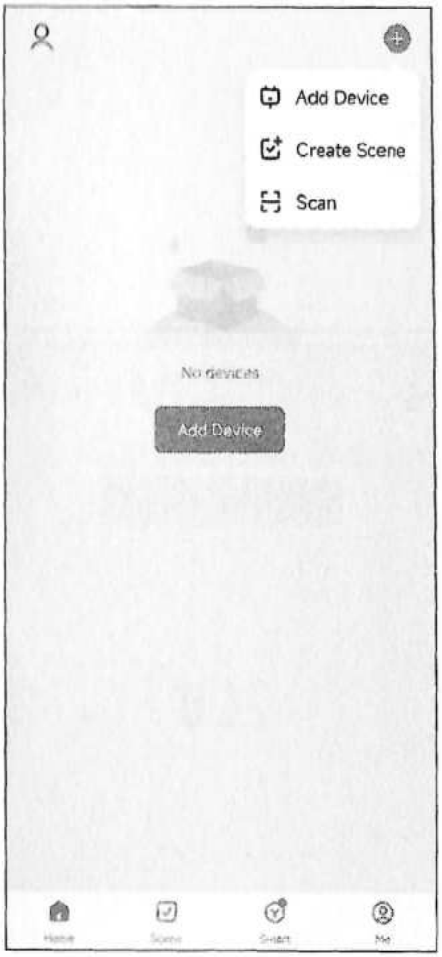
6.1.1 WIFI configuration

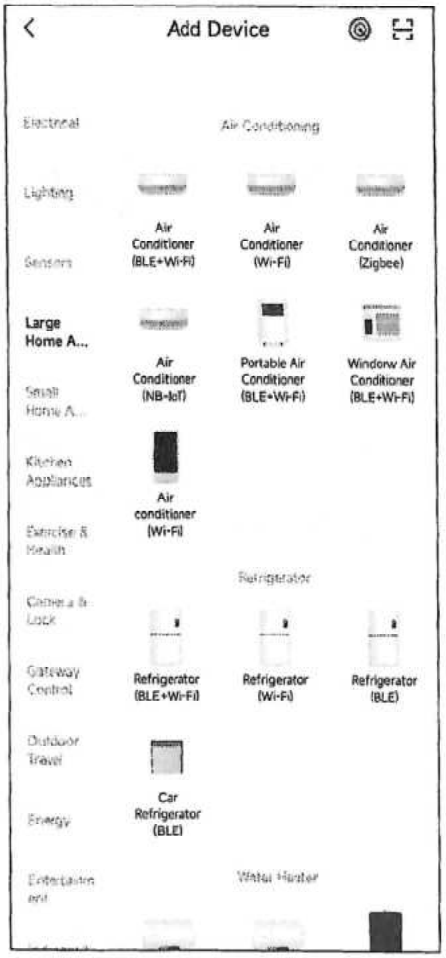
Method 1: Press "TEMP+" and "ON/OFF" key together and keep 2s

Method 2: Press "Function" key and enter into 9th setting, press "ON/OFF" key to re-intelligent network distribution.

After that, WIFI icon will flash 3 times slowly, then fast flash.

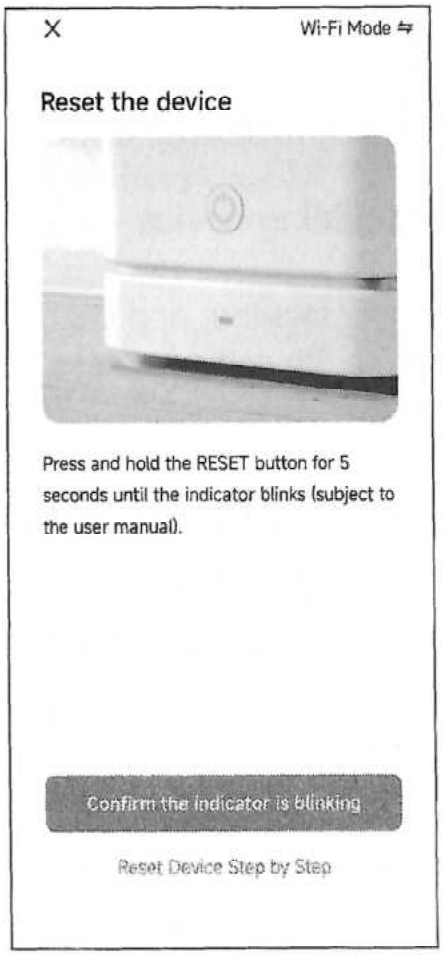
6.1.2 After it go to configuration statue, open TUYA APP, press the "add device" → "add manually" → "air conditioner" as the following pics;



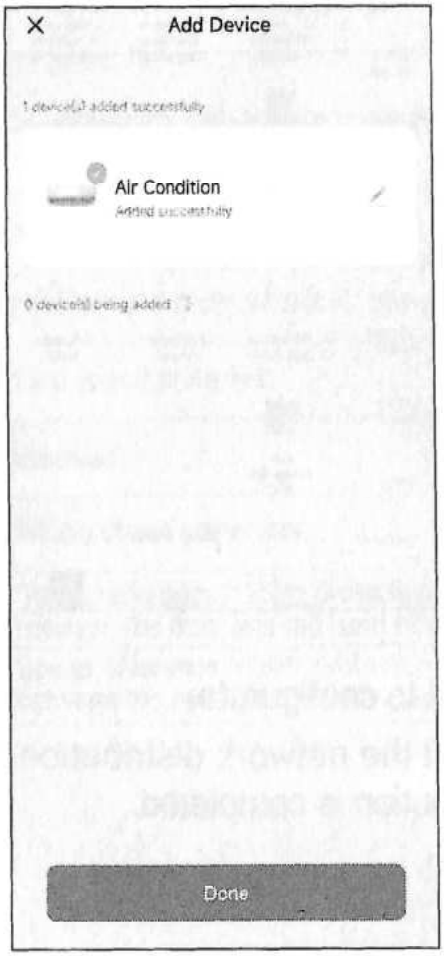


6.1.3 Input the WIFI name and password to configurate;

6.1.4 Select SmartConfig mode to start the network distribution, and the device can be added after the network distribution is completed.


Wi-Fi Mode
Reset the device
Press and hold the RESET button for 5 seconds until the indicator blinks (subject to the user manual).
Confirm the indicator is blinking
Reset Device Step by Step


Select 2.4 GHz Wi-Fi Network and enter password.
If your Wi-Fi is 5GHz, please set it to be 2.4GHz
Common router setting method
Wi-Fi · 2.4Ghz
Next


Add Device
Air Condition
Done


Air Condition
24.0℃
Cold
Low