

Air-to-Water Split Type Heatpump Indoor Unit  
(Hydronic Module)

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**Touch Screen Wired Controller Manual**

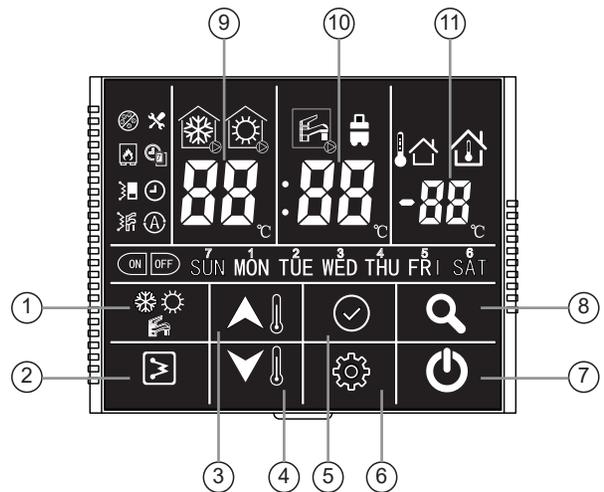
This wired controller is used for communicating with the system main board, controlling the operating status of the system through touch keys, and displaying the working status of the whole system through its LCD screen.

The wired controller and the main board will check whether the communication is successful within 1 minute after power-on. If the communication is not successful, the main control board (30 seconds) and the wired controller will alarm the communication fault. If the communication is successful later, the alarm fault is restored and normal operation control is restored.



### Buttons / Indicator

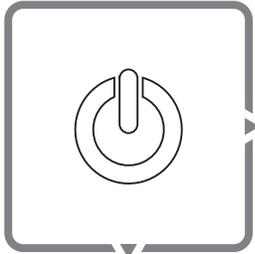
- ① Mode Setting
- ② Electric auxiliary heating
- ③ Temperature +
- ④ Temperature -
- ⑤ Setting
- ⑥ OK
- ⑦ ON/OFF
- ⑧ Query
- ⑨ Left digital tube
- ⑩ Middle digital tube
- ⑪ Right digital tube



	Anti-freezing		Error		Cooling mode ON
	External heat source (Reserved)		Weekly timer		Heating mode ON
	Hydronic module heater		Clock		DHW mode ON
	Water tank heater		Auto function		Outdoor temp.
	Timer ON		Timer OFF		Indoor Temp.
	Cooling mode		Heating mode		DHW mode
	Day		Time / temp.		Holiday mode

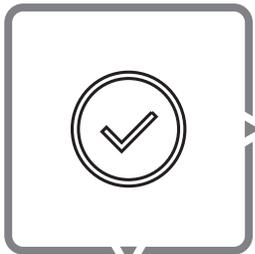
## Notes on using conditions:

1. Power supply: AC 220V±30%, the main board of hydronic module supplies power to the wired controller.
2. Working environment temperature: -30°C ~ +50°C.
3. Working environment humidity: RH10% ~ RH95%.
4. Touch any key when the screen is off to light up the screen.



ON/OFF

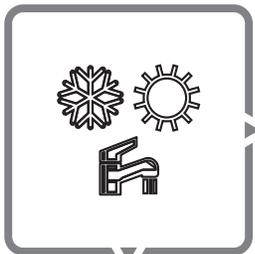
Press this button to turn the unit on or off.



OK

Press this button to return to main interface.

Press  button to confirm the settings, exit all interfaces of setting or query and return to the main interface.



Mode

Press this button to select the mode.

### 1. When DHW mode is OFF.

When the main interface is turned on or there is a timing state, press  button:

Only heating model: the wired controller can only select heating mode;  
Heat pump model: it will be selected heating - cooling - heating.

### 2. When DHW mode is ON.

When the main interface is turned on or there is a timing state, press  button:

Only heating model: the wired controller can only select heating mode, DHW mode and heating + DHW combination mode;

Heat pump model: it will be selected heating - DHW - cooling - cooling + DHW - heating + DHW - heating.

### 3. Sterilization mode

Long press  button, the water tank heater icon displays 5S, and the high-temperature sterilization mode is manually activated (DHW mode or cooling(heating) + DHW combination mode).

#### ■ Note:

- The only heating model or heat pump model is selected by the SW2\_1 dial of the hydronic module PCB, the factory default is heat pump model.
- The domestic hot water mode is selected by the SW2\_4 dial of the hydronic module PCB, the factory default is with DHW mode.



Query

Press this button to check the data.

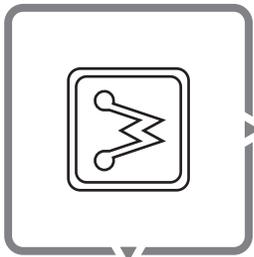
Press  button to enter the query status, press  button or no operation for 5 seconds to exit the query interface and return to the main interface.

Press  button in the query status, it will show these data in turn:

1. Ts1: AC side setting water temperature;
2. Ts2: Domestic hot water setting temperature;
3. Tw\_in: Water inlet temperature of heat exchanger;
4. Tw\_out: Water outlet temperature of heat exchanger;
5. T1: Water outlet temperature of hydronic module;
6. T4: Ambient temperature;
7. T6: Temperature detected by temperature probe of wired controller;
8. T7: Water tank temperature;
9. Capacity of hydronic module;
10. Operating capacity demand of hydronic module;
11. Water pump gear.

■ **Note:**

- When the hydronic module SW2\_4 is ON: select without domestic hot water function, Ts2 and T7 will show 0.
- The unit of horsepower is 0.1. For example, for 5HP hydronic module, spot check No.9 parameter should be 50.



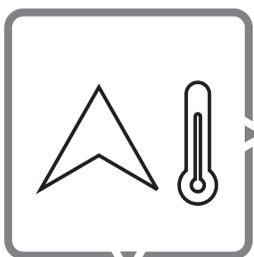
Electric auxiliary heating

Press this button to turn the heater on or off.

Press  button when the heating mode is turned on in the main interface or the timer heating mode is on. The hydronic module heater icon  is displayed. Press  button again, the hydronic module heater icon  is not displayed.

Press  button when the domestic hot water mode is turned on in the main interface or the timer domestic hot water mode is turned on. The water tank heater icon  is displayed. Press  button again, the water tank heater icon  is not displayed.

Long press  button, the main interface will display "dF" for 5 seconds, this is the forced defrosting function. Wait for 5 seconds to automatically exit the interface.



Temperature +

Press this button to set temperature and time.

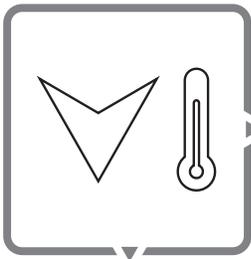
**1. Temperature setting.**

Press  button for the first time in the main interface in the cooling and heating mode to enter the air-conditioning temperature Ts1 setting interface;

In DHW mode, press  button for the first time to enter the domestic hot water temperature Ts2 setting interface;

Press  button once to increase the setting temperature by 1°C. When the setting temperature reaches the highest value, press the button again that the setting temperature won't change.

In the combination mode of domestic hot water and cooling(heating), after pressing  button for the first time, the water temperature flashes and enters the air-conditioning temperature Ts1 setting interface. Press  button or no operation for 5 seconds, water tank temperature flashes, enter the domestic hot water temperature Ts2 setting interface. Press  button or no operation for 5 seconds, then exit the temperature setting interface. In the combination mode of domestic hot water and cooling(heating), press  button continuously within 5 seconds to enter the temperature setting interface of the current operating mode. Press  button or no operation for 5 seconds, then exit the temperature setting interface.



Temperature -

Press this button to set temperature and time.

### 1. Temperature setting.

Press  button for the first time in the main interface in the cooling and heating mode to enter the air-conditioning temperature Ts1 setting interface;

In DHW mode, press  button for the first time to enter the domestic hot water temperature Ts2 setting interface;

Press  button once to decrease the setting temperature by 1°C. When the setting temperature reaches the lowest value, press the button again that the setting temperature won't change.

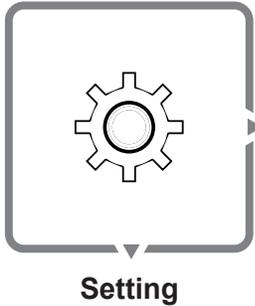
In the combination mode of domestic hot water and cooling(heating), after pressing  button for the first time, the water temperature flashes and enters the air-conditioning temperature Ts1 setting interface. Press  button or no operation for 5 seconds, water tank temperature flashes, enter the domestic hot water temperature Ts2 setting interface. Press  button or no operation for 5 seconds, then exit the temperature setting interface.

In the combination mode of domestic hot water and cooling(heating), press  button continuously within 5 seconds to enter the temperature setting interface of the current operating mode. Press  button or no operation for 5 seconds, then exit the temperature setting interface.

#### ■ Note:

##### Digital tube display:

- When there is DHW mode: When in standby, the left digital tube displays the water outlet temperature T1 of hydronic module, and the middle digital tube displays the temperature T7 of water tank. When setting the temperature, the left digital tube displays AC side setting water temperature Ts1 and the middle digital tube displays Domestic hot water setting temperature Ts2.
- When there is no DHW mode: When in standby and setting temperature, the left digital tube displays the water outlet temperature T1 of hydronic module, and the middle digital tube displays AC side setting water temperature Ts1.



Press this button to set different functions.

### 1. Clock.

Short press  button, the clock icon  flashes. When the clock icon flashes, short press  button, the current time is displayed on the right side, the clock icon becomes constantly on, and it automatically exits after 10 seconds;

When the clock icon flashes, long press  button to enter the time setting interface.

### 2. Weekly timer.

Press  button twice, the weekly timer icon  flashes;

When the weekly timer icon flashes, short press  button to enter the weekly timer viewing interface;

In weekly timer viewing interface, press  or  button to check:

1. Timer on: the digital tube displays the timer on time;
2. Timer on: the digital tube displays the timer setting temperature;
3. Timer off: the digital tube displays the timer off time.

When the weekly timer icon flashes, long press  button to enter the weekly timer setting interface.

### 3. Power-down memory setting.

- Press  button three times, middle digital tube displays 1, meaning the controller with power-down memory (default). Press  or  button, when it displays 0, meaning the controller without power-down memory.
- Press  button three times, after middle digital tube display 1 or 0, long press  button, in order to clear weekly setting and reset the controller.

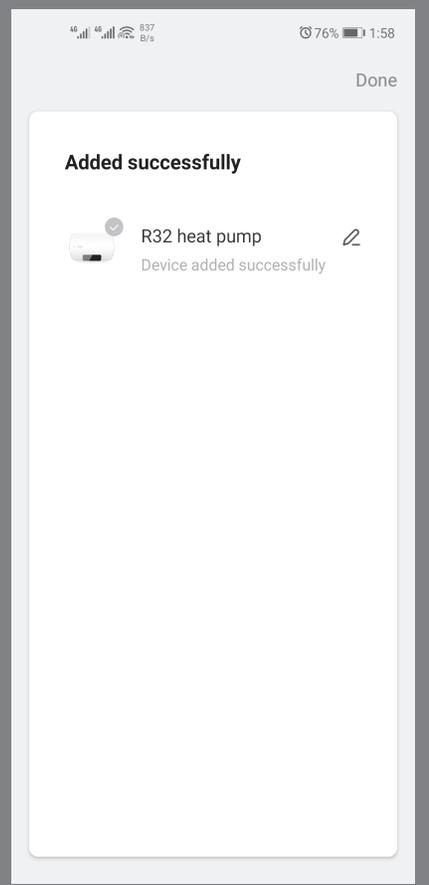
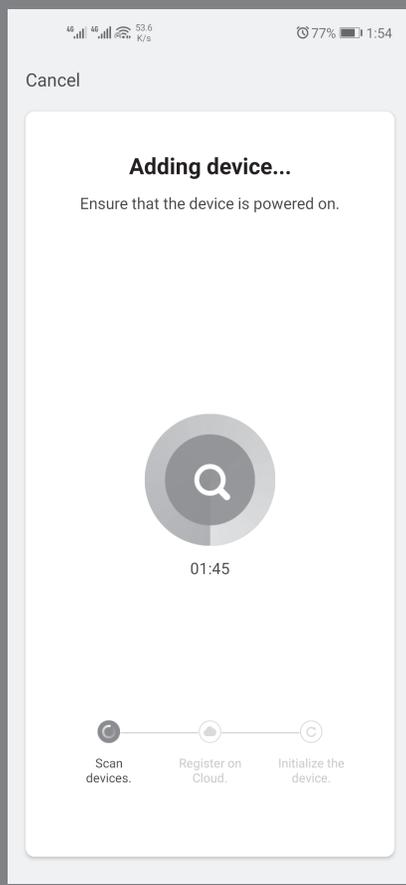
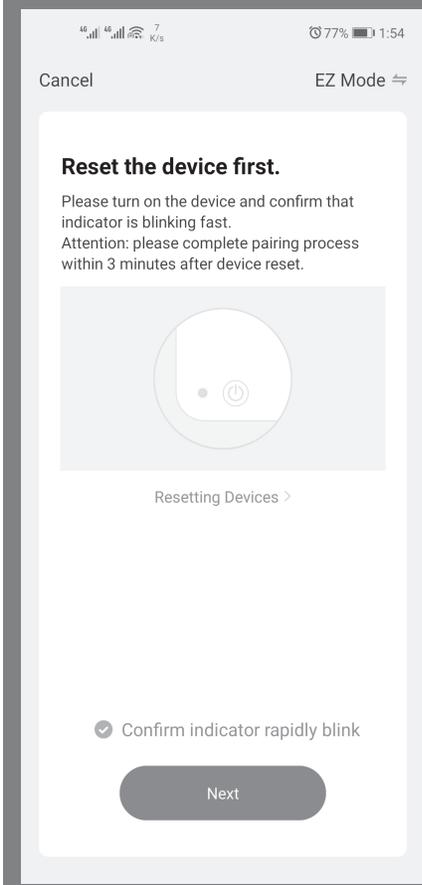
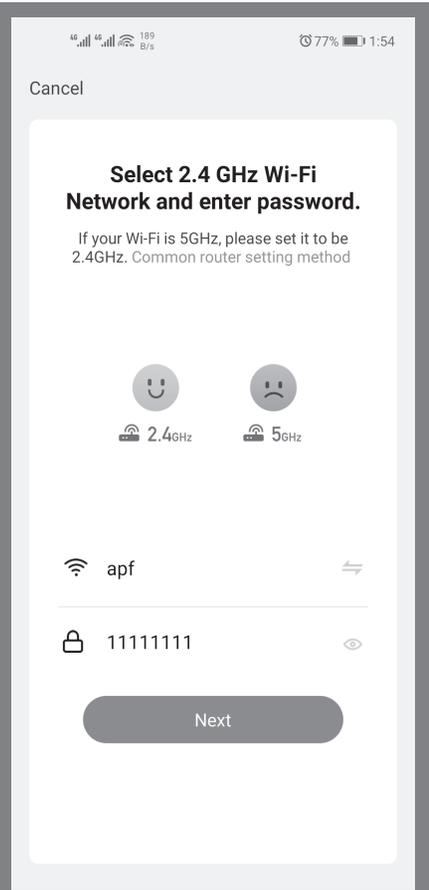
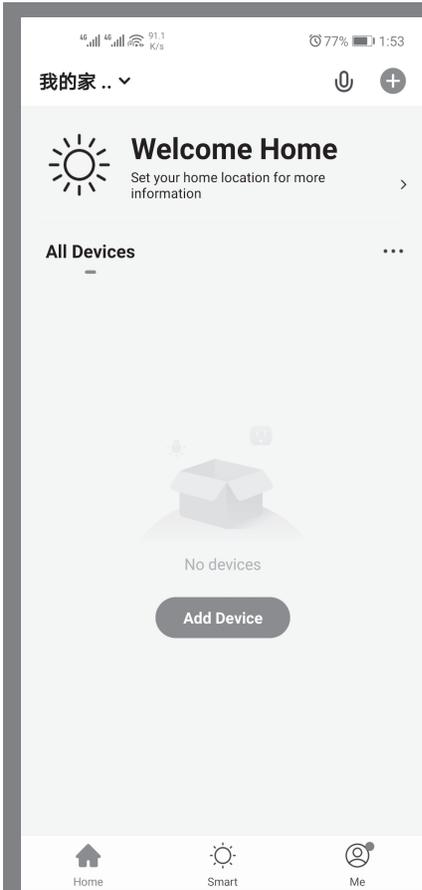
### 4. WiFi configuration (for the wired controller with WiFi function)

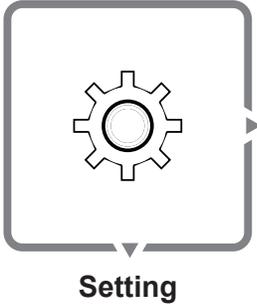
- Press  four times,  icon flashes. Long press setting button  and then the middle digital tube show 0, which means the controller is in configuration states.
- Add the heat pump in Tuya APP according to pictures below. Download Tuya Smart APP -> Add a device (choose "Large Home Appliances" – "Air Conditioner" ) ->Connect a WiFi -> input the WiFi password to connect to WiFi ->Connecting -> Heat pump is added successfully.

#### ■ Note:

#### Time setting:

- Press  button to enter the clock setting interface. At this time, the clock day icon flashes and the day of the week can be set. After selecting the day, press  button and the hour(left digital tube) icon flashes and the hour can be set. Then press  button, the minute (middle digital tube) icon flashes, you can set the minute value, press  button to complete the setting and exit the time setting operation, and return to the main interface.



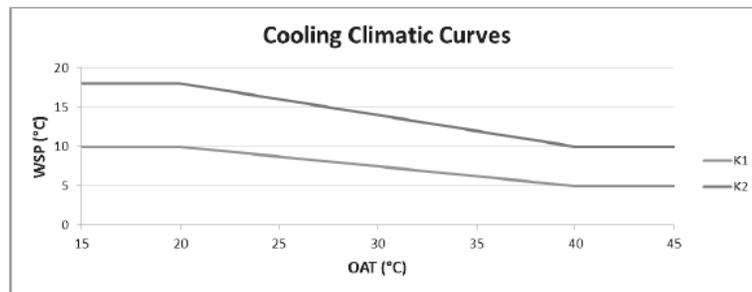


Press this button to set different functions.

### 5. weather compensation function (auto function)

Wired controller setting steps

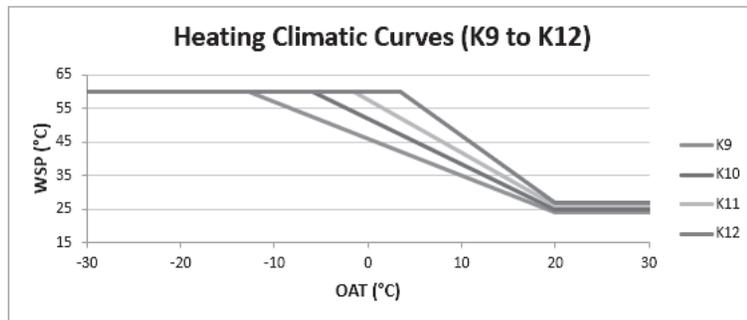
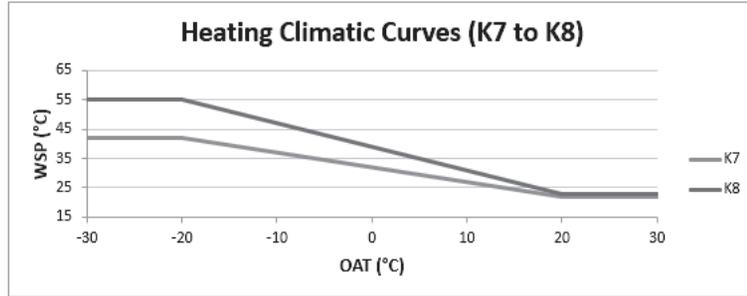
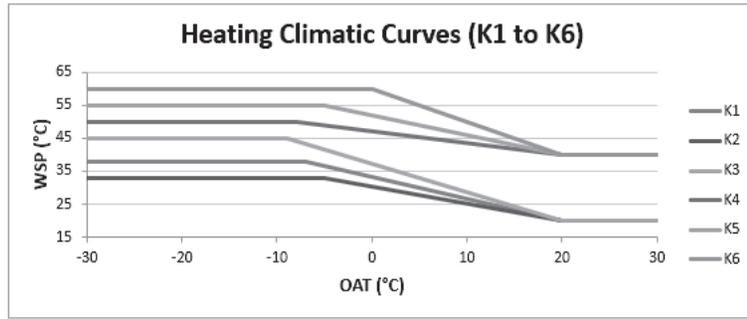
- a. Short press setting button 6 times, set the middle digital tube to 1, press “confirm” button. is ON. 1(with auto function)/0(without auto function)
- b. Select heating climate curve, 0~13, 0-no curve, 1~12-curve 1~12, 13-custom curve. If choose 1~12, press “confirm” button, then go to step f; if choose 13, press “confirm” button, then go to step c.
- c. Customized heating curve value input. Press “up” or “down” button to set Min OAT, Max OAT, Min WSP, Max WSP value one by one. After setting one value, short press “confirm” button to next. After finishing 4 values setting, then go to step d.
- d. Select cooling climate curve, 0~3, 0-no curve, 1~2-curve 1~2, 3-custom curve. If choose 1~2, press “confirm” button then go to step g; if choose curve 3, press “confirm” button then go to step e.
- e. Customized cooling curve value input. Press “up” or “down” button to set Min OAT, Max OAT, Min WSP, Max WSP value one by one. After setting one value, short press “confirm” button to next. After finishing 4 values setting, then finish all settings.
- f. Press “up” or “down” button to set the heating climate curve offset from -5~5°C, default as 0°C; then press “confirm” button to go to step d;
- g. Press the “up” or “down” button to set the cooling climate curve offset from -5~5°C, default as 0°C; then press “confirm” button to confirm and exit.



Curve	Min OAT(T4) [°C]	Max OAT(T4) [°C]	Min WSP(TS1)[°C]	Max WSP(TS1)[°C]
K1	20	40	5	10
K2	20	40	10	18

#### Custom curve

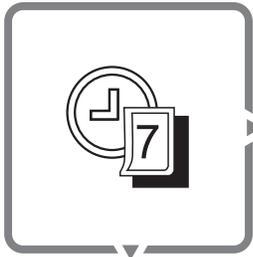
Curve	MinOAT(T4) [°C]	Max OAT(T4) [°C]	Min WSP(TS1)[°C]	Max WSP(TS1)[°C]
K3	0~30	24~50	5~20	5~20



Curve	Min OAT(T4) [°C]	Max OAT(T4) [°C]	Min WSP(TS1)[°C]	Max WSP(TS1)[°C]
K1	-7	20	20	38
K2	-5	20	20	33
K3	-9	20	20	45
K4	-8	20	40	50
K5	-5	20	40	55
K6	0	20	40	60
K7	-20	20	22	42
K8	-20	20	23	55
K9	-12.5	20	24	60
K10	-6	20	25	60
K11	-1.5	20	26	60
K12	3.5	20	27	60

**Custom curve**

Curve	Min OAT(T4) [°C]	Max OAT(T4) [°C]	Min WSP(TS1)[°C]	Max WSP(TS1)[°C]
K13	-30~10	10~30	25~40	30~60



Weekly timer

Press this button to set the weekly timer.

Enter the weekly timer setting mode, icon flashes, press or button to select **ON** or **OFF**, and press button, at this time icon is always on, and enter the boot time setting.

Long press or button to switch setting items. When the **ON** icon is always on, **SUN** icon starts to flash (flashing indicates that the setting is adjustable), short press or button to switch from **SUN-SAT**. After selecting a day, press button and the icon will be on. Press button again to cancel the selection, the icon flashes, and you can reset it.

After finishing setting the days, the selected day's icon is always on (if no day is selected, the currently flashing day will be selected). Long press button, at this time "Hour" (left digital tube, initial value is 08, if it has been set, the last set value is displayed, the temperature unit is not displayed) flashes, short press or button to select the time (00-23), short press button, the number is always on. Press button again to cancel the selection, the icon flashes, and you can reset it.

After "Hour" setting is completed, long press button. At this time, "Minute" (middle digital tube, initial value is 00, if it has been set, the last set value is displayed, temperature unit is not displayed) flashes, short press or to select the time (00-59). Short press button, the number is always on. Press button again to cancel the selection, the icon flashes, and you can reset it.

After the time setting is completed, long press to enter the timer mode setting.

Short press button, **Heating** icon flashes → **DHW** icon flashes → **Cooling** icon flashes → **Cooling** and **DHW** icons flash simultaneously → **Heating** and **DHW** icons flash simultaneously. (Only the internal icon flashes, the box does not flash.)

Press button to select the mode, the corresponding icon is always on, and the corresponding digital tube flashes. Press button again to cancel the selection, the icon flashes, and you can reset it.

When the mode icon flashes, the temperature value is always on and displayed as the last set value. If it has never been set, the default cooling value is 7°C, the heating value is 45°C, and the hot water value is 50°C.

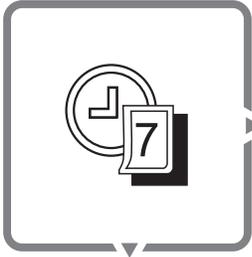
#### Temperature setting:

- If only cooling or heating mode is set:

Long press button to enter temperature setting interface.

The left digital tube flashes. Short press or button to set different target water temperatures in cooling or heating mode. Press button to select the setting temperature value, and the value is always on.

(The initial temperature setting value is the last setting temperature or the default temperature.)



**Weekly timer**

Press this button to set the weekly timer.

- If only DHW mode is set:

Long press button to enter temperature setting interface.

The middle digital tube flashes. Short press or button to set different target water temperature in the domestic hot water mode. Press button to select the setting temperature value. (The initial temperature setting value is the last setting temperature or the default temperature.)

- If the combination mode is set:

Long press button to enter temperature setting interface.

The left digital tube flashes. Short press or button to set different target water temperatures in cooling or heating mode. Press button to select the setting temperature value, and the value is always on. Press button again to cancel the selection, the icon flashes, and you can reset it.

Long press button, the middle digital tube flashes, short press or button to set the indoor target water temperature in the domestic hot water mode. Press button to select the setting temperature value, and the value is always on. Press button again to cancel the selection, the icon flashes, and you can reset it.

(The initial temperature setting value is the last setting temperature or the default temperature.)

After the temperature setting is completed, long press button, and return to the weekly timer setting mode (**ON** or **OFF**), and you can select the timer OFF to enter the OFF time setting interface.

When the icon is always on, Long press button to select days for timer shutdown. Short press or button to switch from **SUN-SAT**. After selecting a day, press button and the icon will be on. Press button again to cancel the selection, the icon flashes, and you can reset it.

After select days, long press button, left digital tube flashes, set timer shutdown hour. Short press button to select the time, short press button again to cancel.

After setting the “Hour”, long press button. At this time, “Minute” (middle digital tube, initial value is 00, displays the setting value of the boot time, temperature unit is not displayed) flashes, and short press or button to select time, 00-59), short press button, the number is always on.

Long press button to complete the weekly timer setting.

## Error code

Error code	Description	Error code	Description
E0	Water flow switch failure	E8	Heat exchanger water outlet temperature sensor Tw_out malfunction
E1	Communication failure between hydronic module and outdoor unit	E9	Communication failure between hydronic module and wired controller
E2	Water outlet temperature sensor T1 malfunction	EF	Mode conflict
E5	Outdoor unit failure	P0	EEPROM protection
E6	Water tank temperature sensor T7 malfunction	P1	Excessive temperature difference between water inlet and outlet protection
E7	Heat exchanger water inlet temperature sensor Tw_in malfunction	P2	Water shortage protection

## Spot check

No.	Description	Notes
1	AC side setting water temperature Ts1	
2	Domestic hot water setting temperature Ts2	When the hydronic module is without domestic hot water function, it will show 0.
3	Water inlet temperature of heat exchanger Tw_in	
4	Water outlet temperature of heat exchanger Tw_out	
5	Water outlet temperature of hydronic module T1	
6	Ambient temperature T4	
7	Temperature detected by temperature probe of wired controller T6	
8	Water tank temperature T7	When the hydronic module is without domestic hot water function, it will show 0.
9	Capacity of hydronic module	Capacity (HP) = value * 0.1
10	Operating capacity demand of hydronic module	Capacity (HP) = value * 0.1
11	Water pump gear	