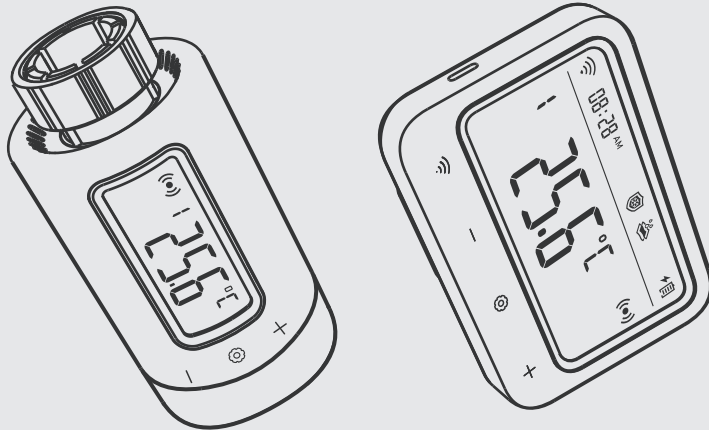


INKBIRD

SMART RADIATOR CONTROL VALVE USER MANUAL



IRC-RW1

Scan to download



Please keep this manual properly for reference. You can also scan the QR code below to visit our official website for product usage videos. For any usage issues, please feel free to contact us at support@inkbird.com.

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01 *Overview*

INKBIRD smart radiator control valve helps you precisely detect radiator temperature and efficiently controls it in the desired temperature range. By sequentially linking the control valve, Wi-Fi Gateway, and smartphone, you can freely control the smart radiator control valve via your smartphone anytime, anywhere, including the remote setting of air temperature and checking temperature history. This control valve features multiple protective functions like anti-frost, anti-limescale, and vacation mode. It's an efficient product with power conservation and emission reduction, saving heating bills in winter and keeping your home warm and comfortable even in cold winters.

02 *Safety Instruction*

- As with all electronic products, this device should be placed out of the reach of children.
- Do not use this product in areas where electronic products are prohibited.
- Protect this product from dust, moisture, and excessive heat. Use only in dry rooms.
- Do not use this product in a wet environment to avoid splashing water.
- Do not subject this product to any violent impact.
- To prevent suffocation, keep the packaging material out of the reach of children.
- Do not bend or press the power cord.
- If the device is damaged, do not turn it on or continue to operate it.
- Do not attempt to service or repair this device by yourself.

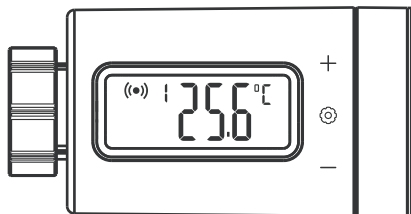
03 Technical Specifications

<i>Product Model</i>	<i>IRC-RW1</i>
<i>Screen</i>	<i>LCD Screen; The screen on the control valve features a manual rotation function for easy viewing.</i>
<i>Power Source</i>	<i>Wi-Fi Gateway: powered by lithium battery, DC5V, 1A ; Control Valve: 2*AA dry batteries (not included)</i>
<i>Temperature Heating Range</i>	<i>0.0°C~35.0°C</i>
<i>High Temperature Alarm Range</i>	<i>-10-50°C</i>
<i>Low Temperature Alarm Range</i>	<i>-10-50°C</i>
<i>Calibration Range</i>	<i>-4.9°C~4.9°C</i>
<i>Time Setting Range</i>	<i>00:00~23:59</i>
<i>Maximum Time Period Can Be Set</i>	<i>11</i>
<i>Maximum Number of Connectable Devices</i>	<i>Up to 5 control valves can be connected and controlled by a smartphone connected to the gateway.</i>
<i>Low Power Prompt</i>	<i>Reminds the user to replace batteries when the battery power of the control valve is too low.</i>
<i>Wi-Fi Gateway Dimension</i>	<i>110*80*48.7mm</i>
<i>Control Valve Dimension</i>	<i>Ø 57*110.9mm</i>
<i>Warranty Period</i>	<i>2 Years</i>
<i>Connection Range</i>	<i>Up to 180 meters of communication distance between the Wi-Fi gateway and the control valve</i>

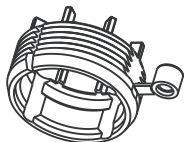
04 Package Contents



Wi-Fi Gateway



Control Valve



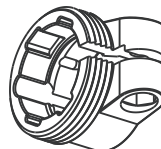
RAVL Connector



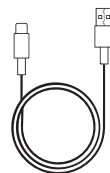
RAV Connector



Round Ring

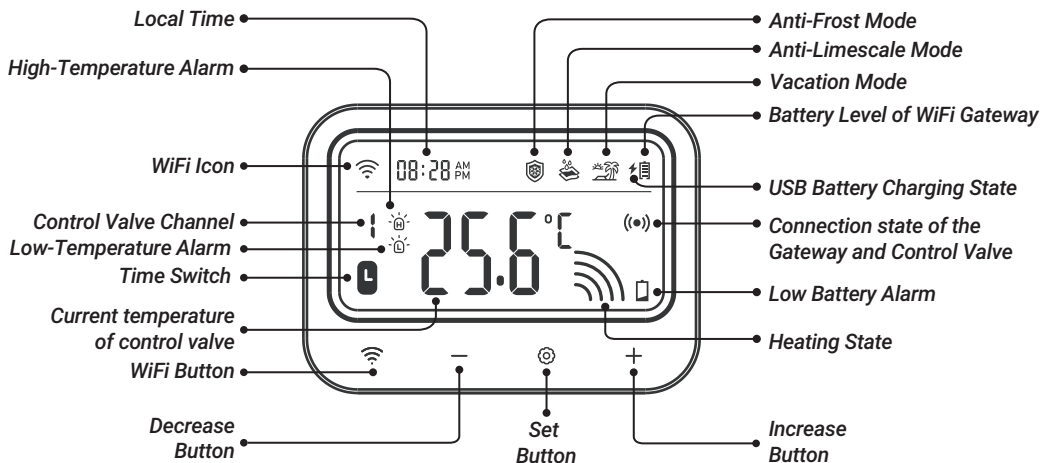


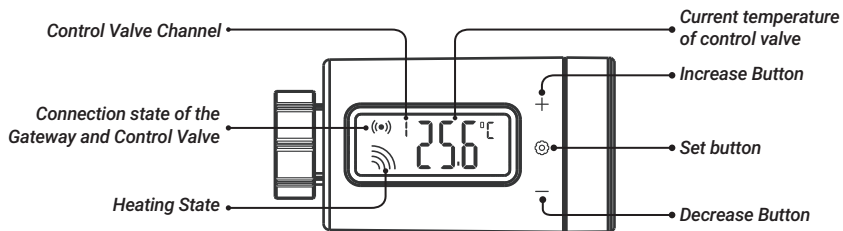
RA Connector



Type-c USB cable

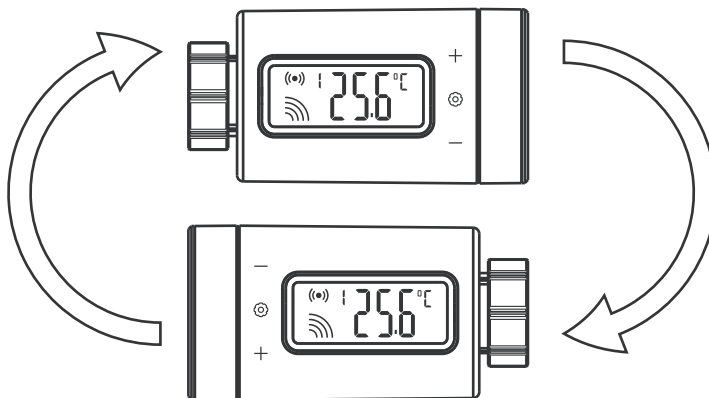
05 Product Diagram



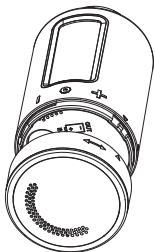


Manually screen rotation function

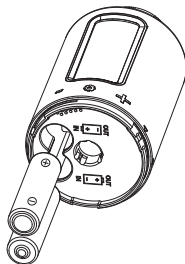
For easy viewing, short press the + key to rotate the screen 180 degrees.



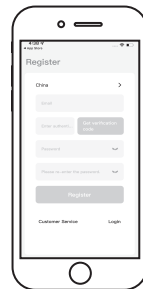
06 Operation Instructions



Check if the control valve is compatible with the radiator



Install battery in the control valve



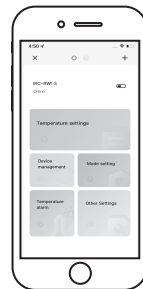
Download and register the app



Add the gateway device to the app



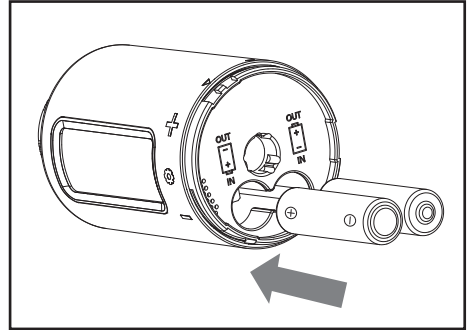
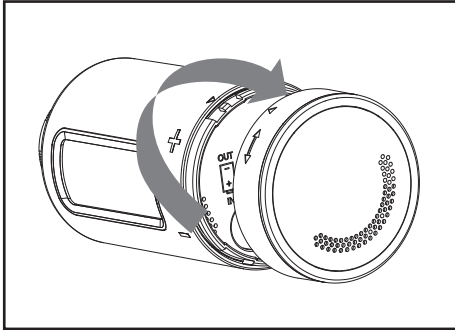
Check if the control valve is paired with the gateway



Complete installation and start customizing the parameters.

07 Get Start

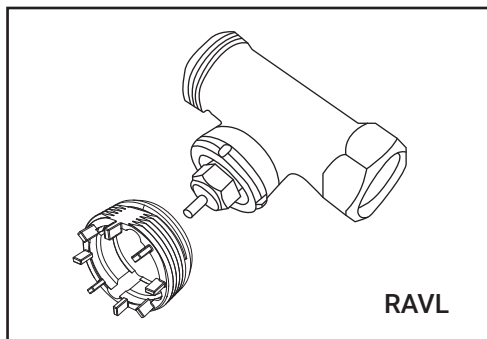
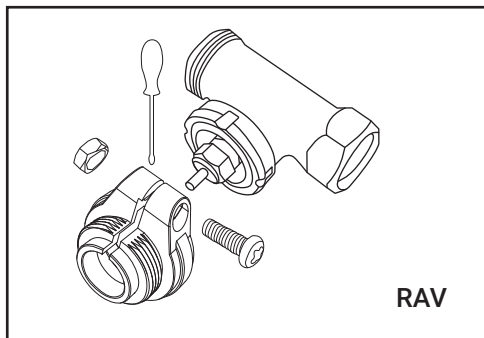
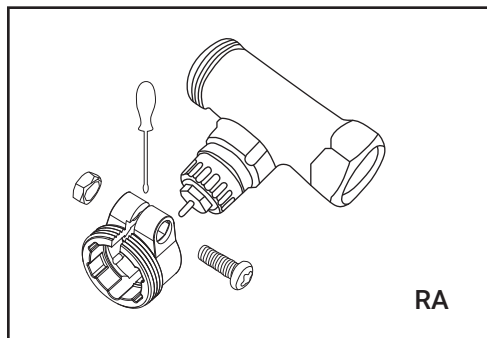
7.1 Battery Installation



Battery Precautions:

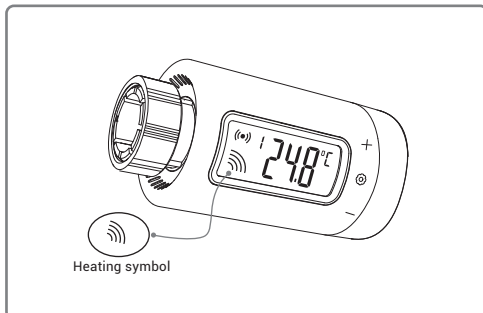
- Make sure the polarity is correct when installing the batteries.
- If you are not going to use the device for a long time, please remove the battery from the device to avoid the risk of leakage.
- Please keep the battery out of the reach of children to prevent accidental ingestion and burns. Do not recharge spent batteries or try to reactivate them by heating or any other means. Do not short-circuit the battery. If you accidentally swallow a cell or battery, please seek medical attention immediately.

7.2 Control Valve Installation

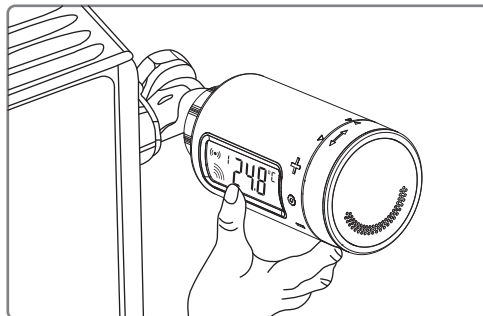


7.2.1: Choose a connector for your radiator from the included connectors, RA type, RAV type, and RAVL type.

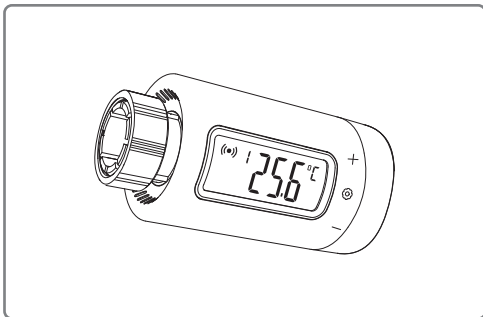
7.2.2: Install it on the control valve.



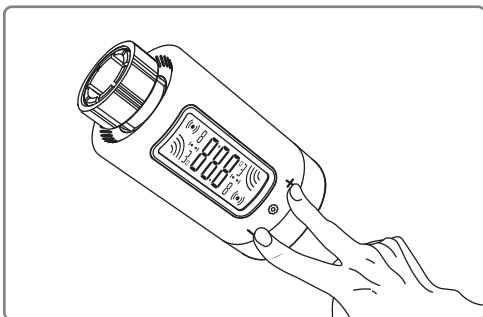
After installing the battery, if the control valve is in the heating-on state.



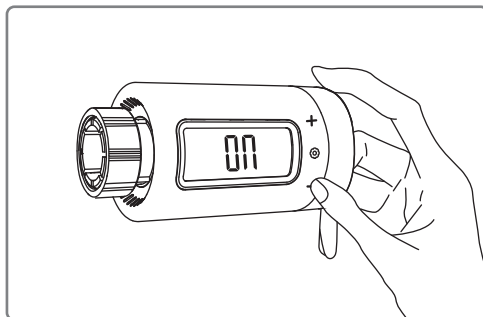
it can be installed directly on the radiator.



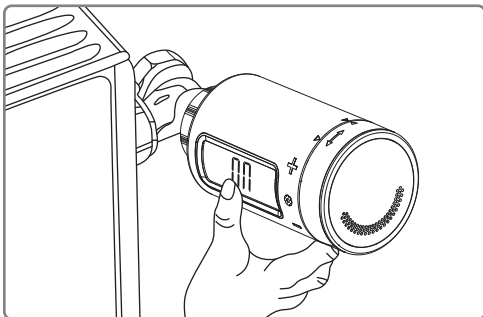
Otherwise, if the control valve is in the heating-off state, it should be installed according to the following steps.



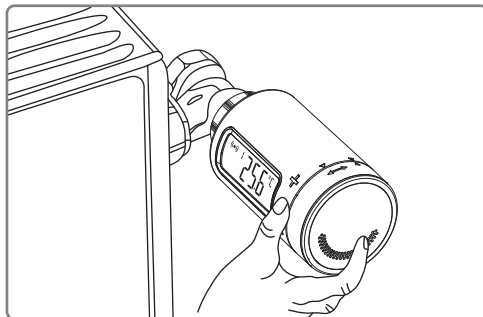
Step1: Long-press the + and – buttons for 2 seconds to enter the installation mode.



Step2: Press the – button: the LCD shows 0n, and the nut cap is sucked into place.



Step3: The installation begins.



Step4: After installation, press and hold the ⊙ button for 2 seconds to exit the installation mode.

08 *Instruction for First-Time Use of the INKBIRD APP*

8.1 How to Download the INKBIRD APP



Search "INKBIRD" in the App Store or Google Play or scan the QR code to download and install the INKBIRD application. Open the App, complete registration, and log in, then follow the app operation prompts to connect the gateway.

NOTES:

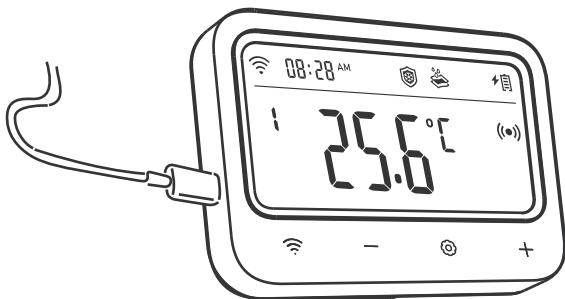
- Your iOS devices must be running iOS 12.0 or above to download the app smoothly.
- Your android devices must be running android 7.1 or above to download the app smoothly.
- The device supports a 2.4GHz Wi-Fi router only.

8.2 Registration

Step1: Open the app, select your Country/Region, and a verification code will be sent to you.

Step2: Enter the verification code to confirm your identity, and the registration is complete.

09 How to Pair the Gateway with the APP

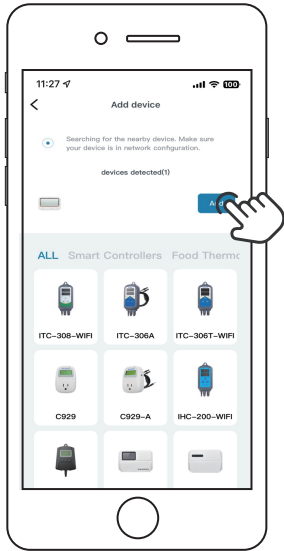


Step1: Plug the USB power connector directly into Gateway and keep it constantly connected when using.

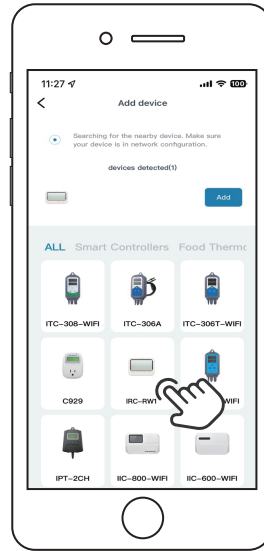


Step2: Press and hold the Wi-Fi icon button until the icon quickly flashes to enter pairing mode.

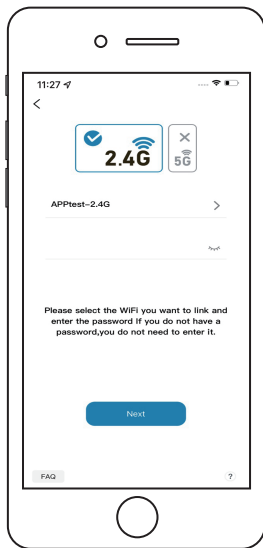
Note: Please make sure your phone has Bluetooth enabled and keep the Gateway as close as possible to your router and smartphone.



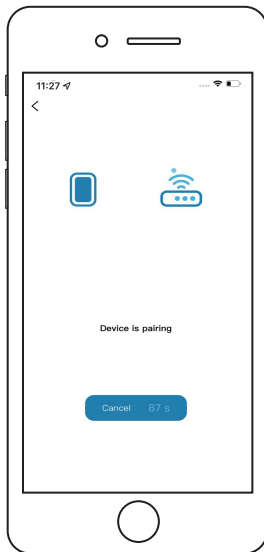
Step3: Open the INKBIRD app and click "Add" in the right corner. Add the IRC-RW1 after automatically searching the device.



Note: If the IRC-RW1 cannot be found automatically, please manually select the device model and follow the prompts to complete the connection.



Step4: Choose a WiFi network and connect it, enter the password, then click Next Step.



Step5: The device is automatically pairing with your smartphone.

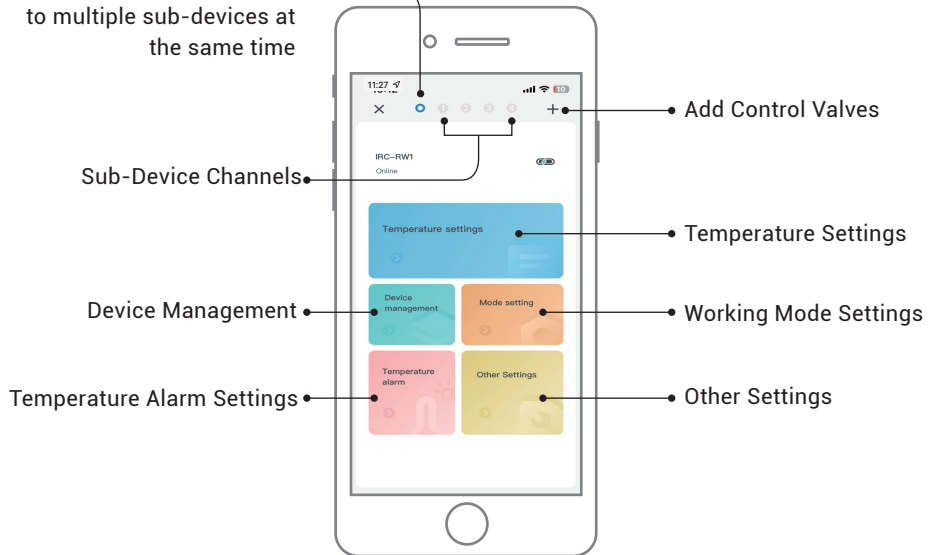


Step6: Pairing is successful.

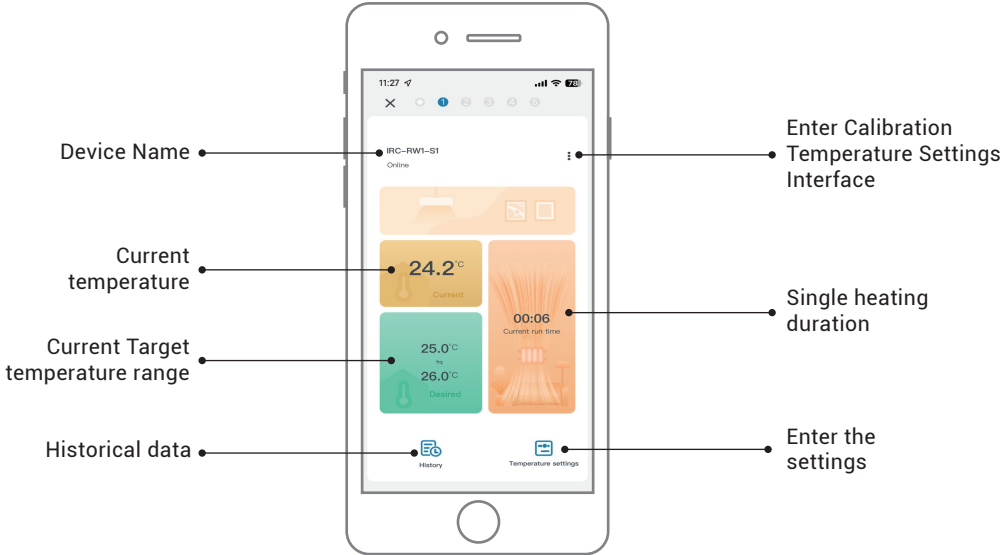
10 Main Interface of INKBIRD APP

10.1 The gateway control interface can set multiple control valves at the same time.

Central Control Interface,
to send the same command
to multiple sub-devices at
the same time



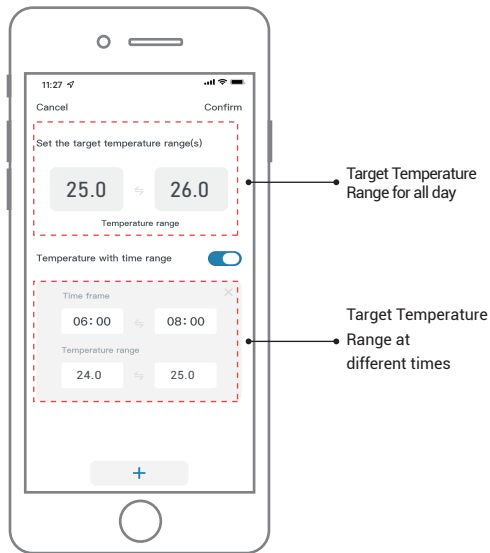
10.2 Control Valve Interface



10.3 History Graph Interface

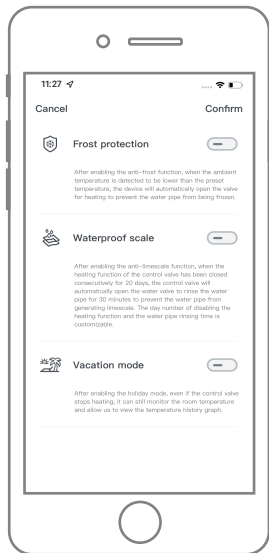


10.4 Control Valve Setting Interface

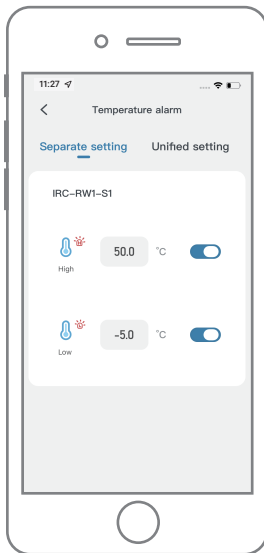


Temperature Setting Interface

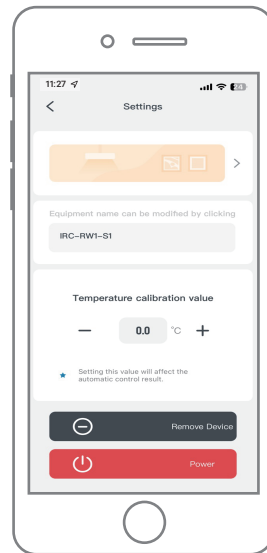
10.4 Control Valve Setting Interface



Mode Setting Interface

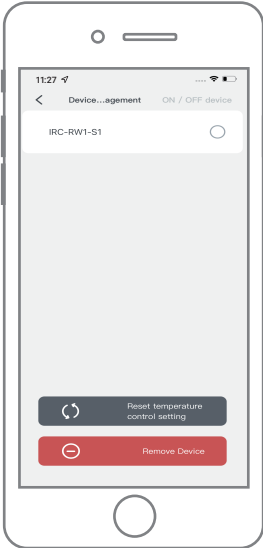


High/Low-Temperature Alarm Setting Interface

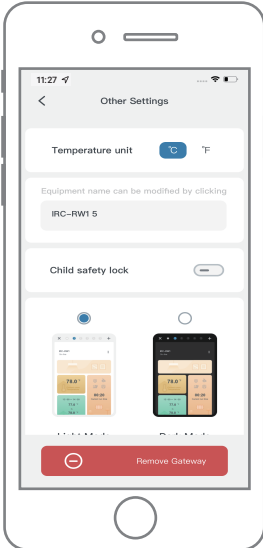
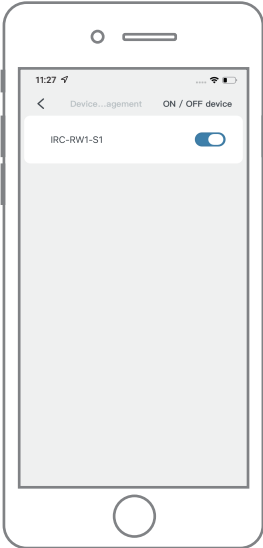


Calibration Temperature Settings Interface

10.4 Control Valve Setting Interface



Device Management Interface



Other Setting Interface

11 Parameter Setting

11.1 Parameter Setting Range




Code	Function	Default Setting	Setting Range
ST	Start Heating Temperature	25.0°C	0.0 ~35.0°C
SP	Stop Heating Temperature	26.0°C	0.0 ~35.0°C
ST1...ST11	Start Heating Time	00:00	00:00~23:59
SP1...SP11	Stop Heating Time	00:00	00:00~23:59
AH	High-Temperature Alarm Value	45.0°C	-10-50°C
AL	Low-Temperature Alarm Value	-5.0°C	-10-50°C
CA	Temperature Calibration Value	0.0°C	-4.9 ~4.9°C
CF	Temperature Unit	C	C/F

Note: The minimum setting differential value of ST and SP is 0.3°C.

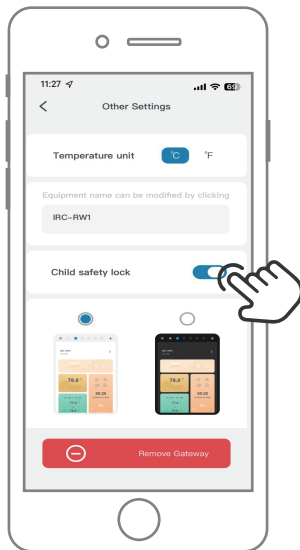
11.2 Working Principle

The valve will close to stop heating when the current temperature reaches the SP(stop heating temperature) and will open to start heating when it reaches the ST(start heating temperature).

Function Description

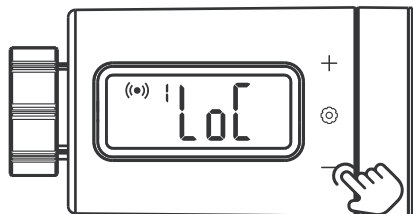
Icon	Mode	Definition	Default Setting	Custom
	Anti-Frost Mode	In order to prevent the water in the pipe from freezing, the control valve will automatically activate the heating function when it detects that the ambient temperature is too low.	Enabled when the temperature is below 5.0°C .	0.0 ~10.0°C
	Anti-Limescale Mode	In order to prevent water pipes from forming scale, the valve will automatically be opened to flush when the control valve has not been opened for a long time.	The default number of days is 20, and the flushing time is 30 minutes.	Day setting: 5~30 days Time setting: 10~60 min
	Vacation Mode	After enabling the vacation mode function, the control valve will close the heating function but will maintain the function of detecting the indoor temperature, and you can see the historical temperature curve record.	OFF	ON/OFF

11.3 Child Safety Lock Function



How to enable the child safety lock?

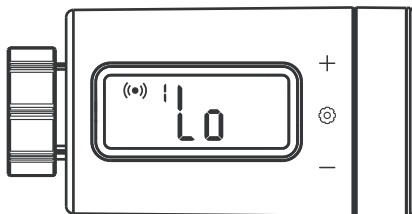
When the child safety lock is enabled on App, pressing any button will immediately display the LoC character, and the buzzer will sound three times.



How to unlock the child safety lock on the Gateway or Control Valve ?

Press and hold the — button for 2 seconds to unlock the child safety lock on Gateway or Control Valve. If no button is pressed within 60 seconds, the function reverts to the locked state.

11.4 Low Battery Alarm Function



When the battery power is too low, the control valve will automatically be closed, and the character "Lo" will be displayed. At the same time, all action keys are disabled and the App sends you a low-battery notification. When the battery power is low, we strongly recommend replacing the battery immediately so as not to affect its normal work.

12 *Troubleshooting Guide*

1) What should you do if the connection between the WiFi gateway and the control valve is abnormal?

a. Remove the control valve from the App and add it again.

2) The WiFi network is often dropped, historical data is lost, or the network cannot be connected?

a. Make sure the WiFi signal is stable, and place the device as close to the router as possible.

b. Make sure there are as few barriers as possible between the device and the router.

c. Check to see if the battery level is low.

d. Enable Bluetooth and positioning functions, allow the App to obtain location information, and allow the local network (iOS System).

3) The alarm notification is not received or delayed?

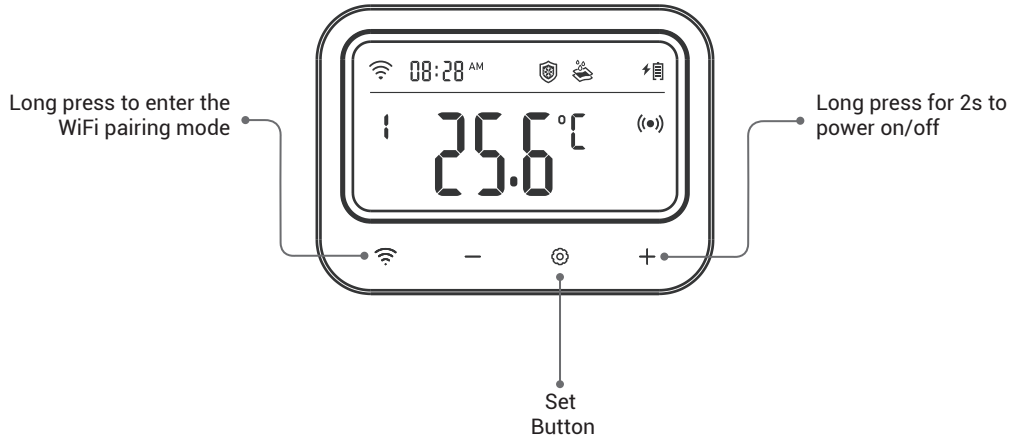
a. Make sure the WiFi signal is stable, and place the device as close to the router as possible.

b. Make sure there are as few barriers as possible between the device and the router.














c. Check to see if the app notification permission is enabled.

13 Gateway Operation Instruction

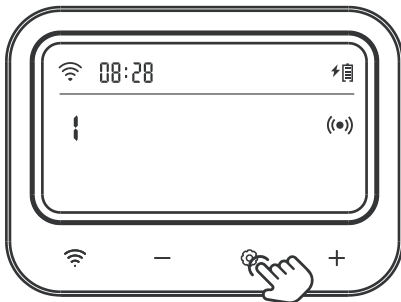
► Product Introduction




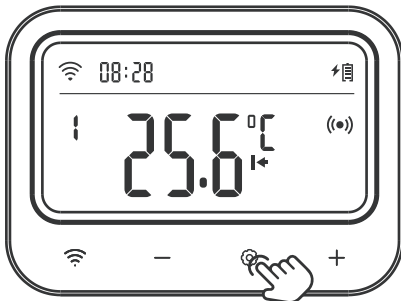
* Gateway Parameter Setting

Icon	Function	Setting Range	Default Setting
 + Temp	Start Heating Temperature	0.0 ~35.0°C	25.0°C
		32.0 ~95°F	77.0°F
 + Temp	Stop Heating Temperature	0.0 ~35.0°C	26.0°C
		32.0 ~95°F	78.0°F
ST + Temp	Start Time	00:00~23:59	00:00
SP + Temp	Stop Time	00:00~23:59	00:00
 + Temp	High-Temperature Alarm Value	-10.0 ~50.0°C	45.0°C
		14.0 ~122°F	113°F
 + Temp	Low-Temperature Alarm Value	-10.0 ~50.0°C	-5.0°C
		14.0 ~122°F	23.0°F
	High-Temperature Alarm Icon		
	Low-Temperature Alarm Icon		
	Anti-Frost Function Icon	ON/OFF	OFF
 +  + Temp	Anti-Frost Temperature Value	0.0 ~10.0°C	5.0°C
		32.0 ~50.0°F	41.0°F
	Anti-Limescale Function Icon	ON/OFF	OFF
 + No. +d	Number of Days without Heating	5~30 days	20 days
 + No.	Anti-Limescale Rinse Time	10~60 minutes	30 minutes
	Vacation Function Icon	ON/OFF	OFF

► How to control the target temperature at 25.0°C~26.0°C ?




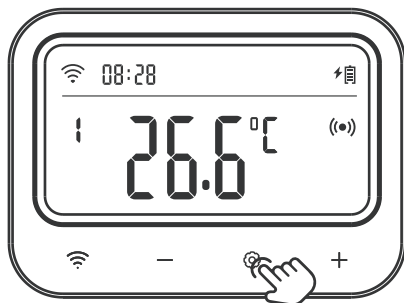
Step1: Press and hold the  key for 2 seconds to enter the setting, then short press the + or – key to select the temperature control valve to set.




Step2: Short press the  key to set the start heating temperature, and the relevant parameter will flash. Then press the + or – key to adjust the target value to 25.0°C.



Step3: Short press the  key to set the stop heating temperature, and the relevant parameter will flash. Then press the + or - key to adjust the target value to 26.0°C.






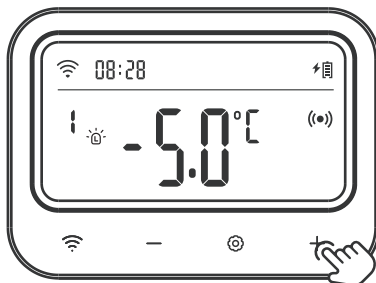
Step4: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.



► How to set a high/low-temperature alarm value ?

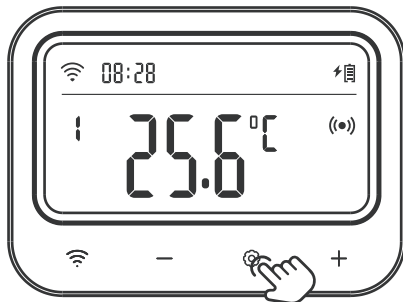
For example, set the high-temperature alarm value as 28.0°C, and set the low-temperature alarm value as 23.0°C.




Step1: Press and hold the  key for 2 seconds to enter the setting and select the temperature control valve to set. Then short press the  key to select the high-temperature alarm value, the  symbol will be displayed and the relevant parameter will flash. Press the + or – key to adjust the value to 28.0°C.



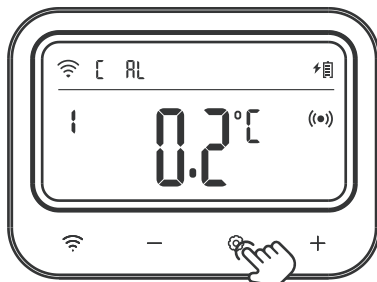
Step2: Short press the  key to select the low-temperature alarm value, the  symbol will be displayed and the relevant parameter will flash. Press the + or – key to adjust the value to 23.0°C.





Step3: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.


►How to set the calibration temperature?

For example, set the calibration temperature as 0.2°C.



Step1: Press and hold the  key for 2 seconds to enter the setting and select the temperature control valve to set. Then short press the  key to select the temperature calibration value, and the relevant parameter will flash. Press the + or - key to adjust the value to 0.2°C .



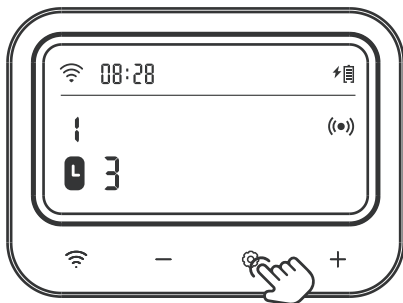
Step2: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

► How to set different target temperature ranges for different time periods?

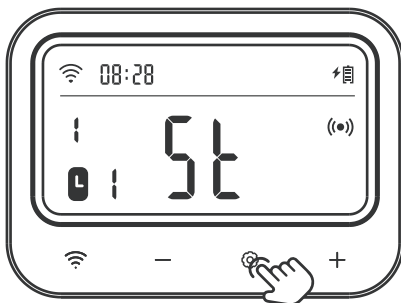
For example, let the control valve run on the following schedule.


Time period	Start time	End time	Start heating temperature	Stop heating temperature
1	09: 00	11: 00	24.0°C	25.0°C
2	21: 00	23: 00	22.0°C	23.0°C
3	02: 00	05: 00	26.0°C	27.0°C

Note: For the time outside of the above schedule, the temperature range will be controlled according to the original preset parameters, such as the target temperature range of 25.0°C~26.0°C mentioned above.




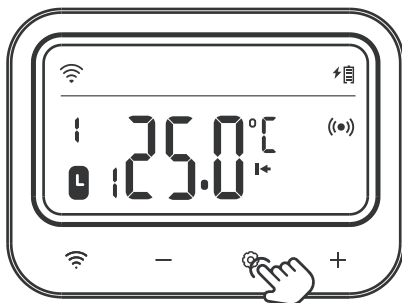
Step1: Press and hold theⓈ key for 2 seconds to enter the setting, and select the temperature control valve to set. Then short press theⓈ key to select the timing function, and the relevant parameter will flash. Press the + or – key to set the time period to 3. Note that when the time period is set to 0, it means that the timing function is turned off. Up to 11 time periods can be set.





Step2: Press the  key to enter the start time setting of the first time period. The character "ST" is displayed and the relevant parameter flashes. Press the + or – key to adjust the hour to 09:00.





Step3: Press the  key to enter the stop time setting of the first time period. The character "SP" is displayed and the relevant parameter flashes. Press the + or – key to adjust the hour to 11:00.




Step4: Press the  key to set the start heating temperature of the first time period. The  symbol is displayed and the relevant parameter flashes. Press the + or – key to adjust the temperature to 24.0°C.

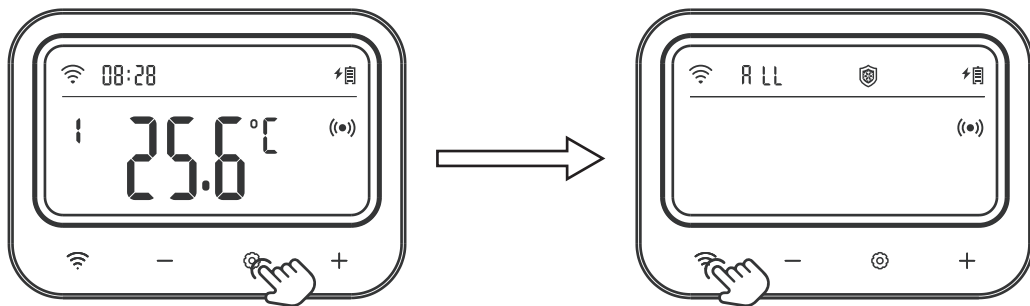




Step5: Press the  key to set the stop heating temperature of the first time period. The  symbol is displayed and the relevant parameter flashes. Press the + or – key to adjust the temperature to 25.0°C.

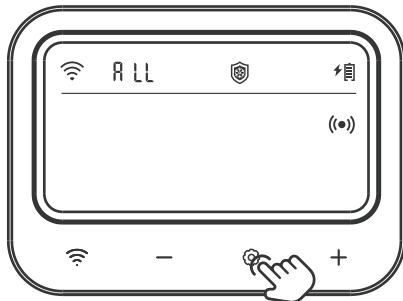
Step6: Repeat steps 2~5 to complete the settings for other time periods.


Step7: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

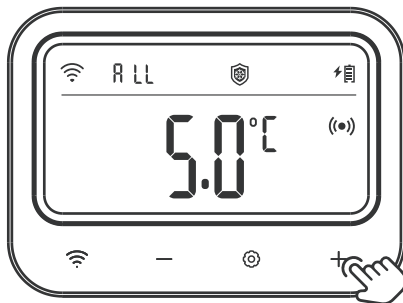
► How to Turn On/Off Anti-Frost Function?



Step1: Press and hold the  key for 2 seconds to enter the setting, then short press the  key to switch to setting mode, The character ALL remains on at this time, meaning the Anti-Frost function of all control valves has been selected.




Step2: Press the  key, and the Anti-Frost symbol will flash. Press the + key to turn on the Anti-Frost function; press the – key to turn off the function.

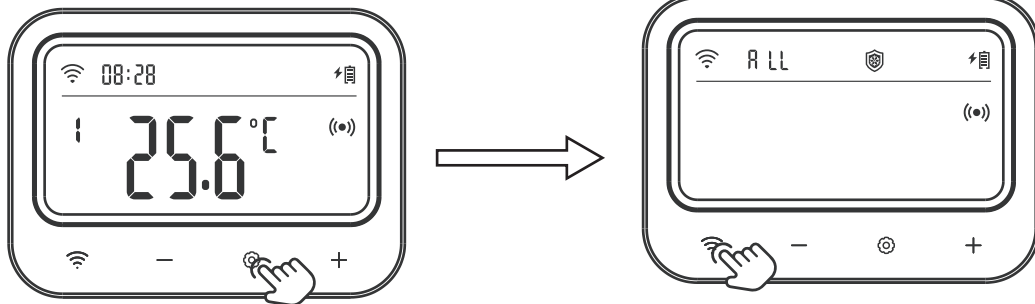




Step3: After turning on the Anti-Frost function, set the number of consecutive days without an open action for the control valve. The relevant parameter will flash. Press the + or – key to adjust the parameter.

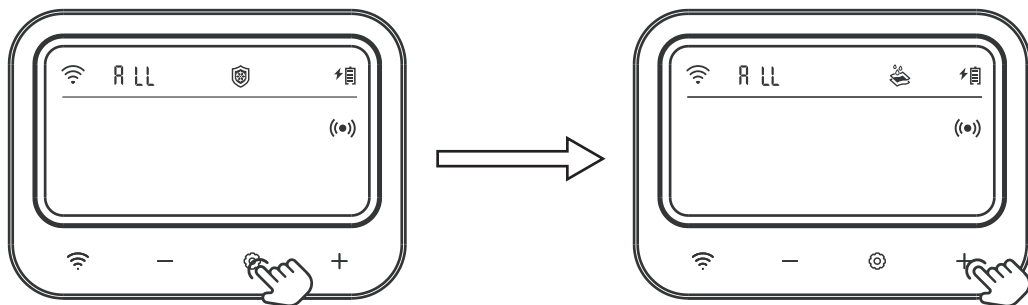



Step4: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

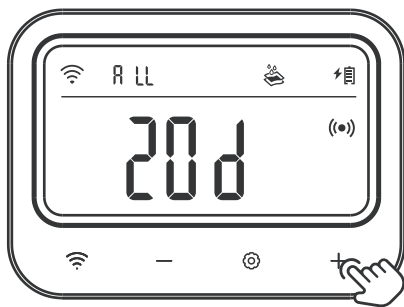
► How to Turn On/Off Anti-Limescale Function?



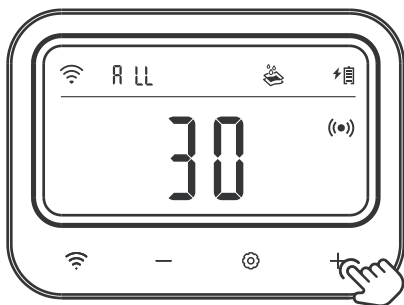
Step1: Press and hold the  key for 2 seconds to enter the setting, then short press  the key to switch to setting mode, The character ALL remains on at this time, meaning the anti-limescale function of all control valves has been selected.




Step2: Press the  key, and the anti-limescale symbol will flash. Press the + key to turn on the anti-limescale function; press the – key to turn off the function.




Step3: After turning on the anti-limescale function, set the number of consecutive days without an open action for the control valve. The relevant parameter will flash. Press the + or – key to adjust the parameter.

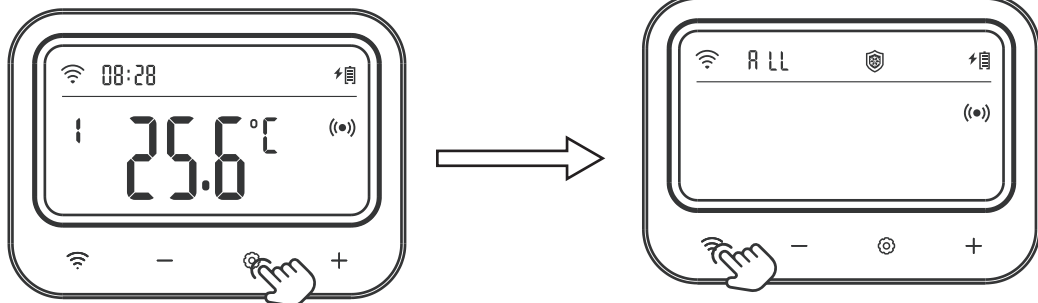




Step4: Press the  key set the minutes for rinsing the water pipe, and the relevant parameter will flash. Press the + or – key to adjust the parameter.

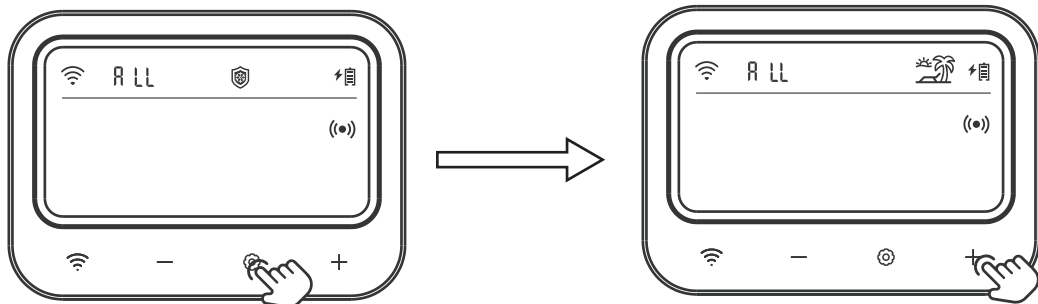



Step5: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

► How to Turn On/Off Vacation Mode?

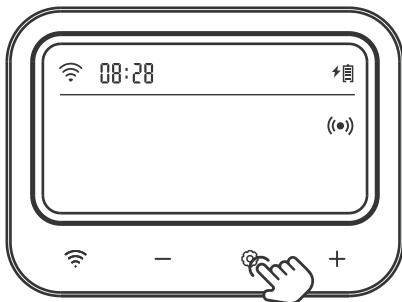


Step1: Press and hold the  key for 2 seconds to enter the setting, then short press the  key to switch to setting mode, The character ALL remains on at this time, meaning the vacation mode of all control valves has been selected.

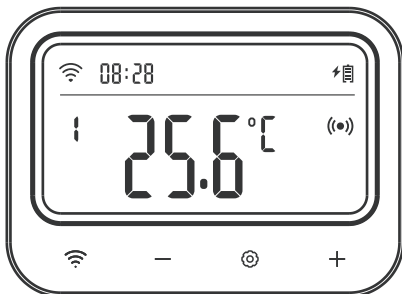


Step2: Press the  key, and the vacation mode symbol will flash. Press the + key to turn on the vacation function; press the - key to turn off the function.

►How to Set the Current Time ?

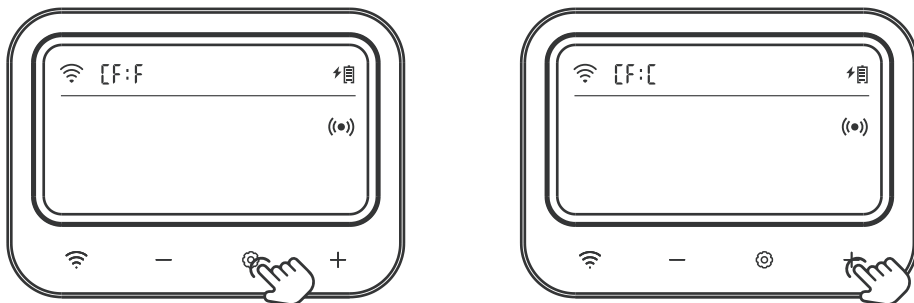





Step1: Press and hold the ⌲ key for 2 seconds to enter the setting, then short press the 📶 key to switch to setting mode. After that, short press the ⌲ key to select the current time menu, and the relevant parameter will flash. Press the + or – key to adjust the current time.




Step2: Press and hold the ⌲ key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

► How to Set the Temperature Unit ?

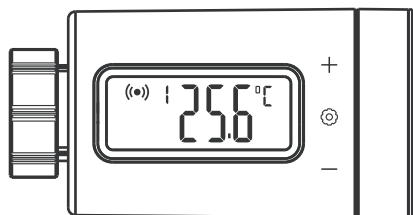


Step1: Press and hold the  key for 2 seconds to enter the setting, then short press the  key to switch to setting mode. After that, short press the  key to select the temperature unit menu, which displays "CF" and the relevant parameter flashes. Press the + or – key to adjust the parameter.

Step2: Press and hold the  key for 2 seconds or no operation for 60 seconds to save the settings and return to working mode.

14 Control Valve Operation Instruction

► Product Introduction

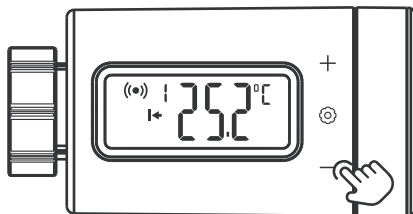



* Control Valve Parameter Setting

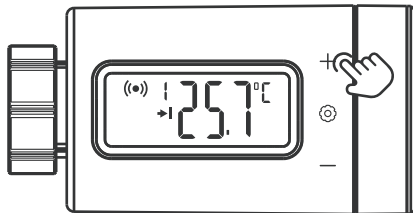
Icon	Function	Setting Range	Default Setting
↔ + Temp	Start Heating Temperature	0.0 ~35.0°C	25.0°C
		32.0 ~95°F	77.0°F
↔ + Temp	Stop Heating Temperature	0.0 ~35.0°C	26.0°C
		32.0 ~95°F	78.0°F
ST	Start Heating Temperature	0.0 ~35.0°C	25.0°C
		32.0 ~95°F	77.0°F
SP	Stop Heating Temperature	0.0 ~35.0°C	26.0°C
		32.0 ~95°F	78.0°F
AH	High-Temperature Alarm Value	-10.0 ~50.0°C	45.0°C
		14.0 ~122°F	113°F
AL	Low-Temperature Alarm Value	-10.0 ~50.0°C	-5.0°C
		14.0 ~122°F	23.0°F
CA	Temperature Calibration Value	-4.9 ~4.9°C	0.0°C
		-9.9 ~9.9°F	0.0°F


► **How to quickly set the target temperature range ?**

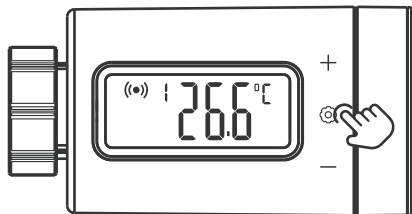
For example, set the temperature control range to 25.0°C~26.0°C.




Step1: Press the  key to enter the quick setting state, the start heating temperature will be displayed, and the relevant parameter will flash. Press the + or – key to adjust the start heating temperature to 25.0°C.



Step2: Press the  key to switch to stop heating temperature value, and the relevant parameter will flash. Press the + or – key to adjust the stop heating temperature to 26.0°C.



Step3: Press and hold the  key for 2 seconds or no operation for 60 seconds to quit the setting and save all parameters.

► How to set parameters ?

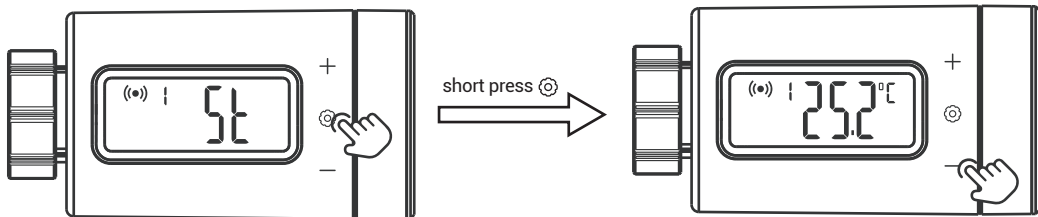
For example:

Target temperature control range: 25.0°C ~26.0°C

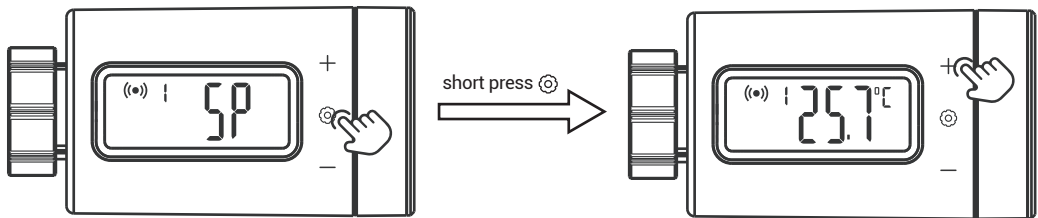
High-temperature alarm: 28.0°C

Low-temperature alarm: 23.0°C

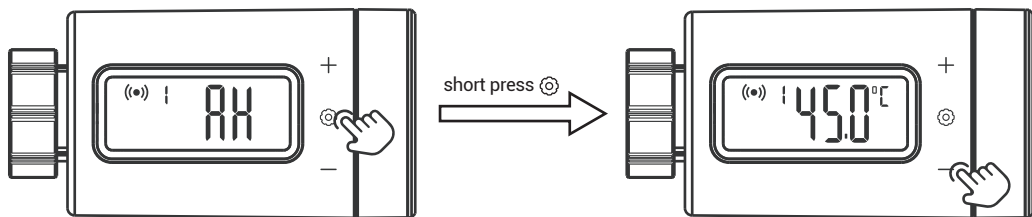
Temperature calibration: 0.2°C



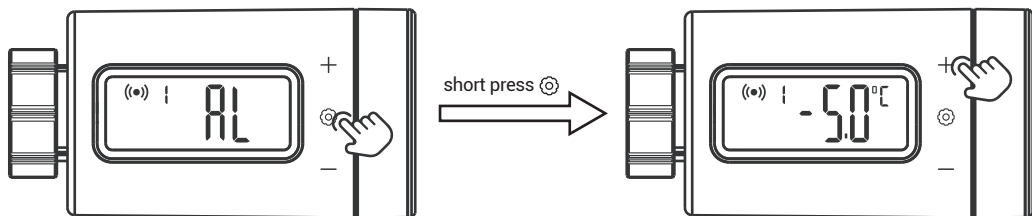
Step1: Press and hold the ⊕ key for 2 seconds to enter the setting, and the character "ST" (start heating temperature) will be displayed. Short press the ⊕ key to enter the parameter setting, then press the + or – key to adjust the start heating temperature to 25.0°C.



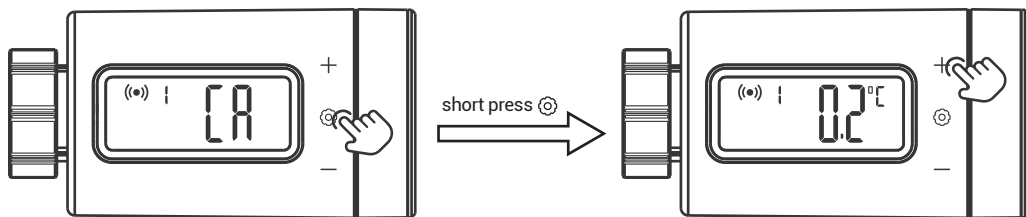
Step2: Short press the ⊕ key to switch to the menu character, then press the + or – key to select menu, and the character "SP" (stop heating temperature) will be displayed. Short press the ⊕ key to enter the parameter setting, then press the + or – key to adjust the stop heating temperature to 26.0°C.






Step3: Short press the ⊙ key to switch to the menu character, then press the + or - key to select the menu, and the character "AH" (high-temperature alarm value) will be displayed. Short press the ⊙ key to enter the parameter setting, then press the + or - key to adjust the high-temperature alarm value to 28.0°C.



Step4: Short press the ⊙ key to switch to the menu character, then press the + or - key to select the menu, and the character "AL" (low-temperature alarm value) will be displayed. Short press the ⊙ key to enter the parameter setting, then press the + or - key to adjust the low-temperature alarm value to 23.0°C .

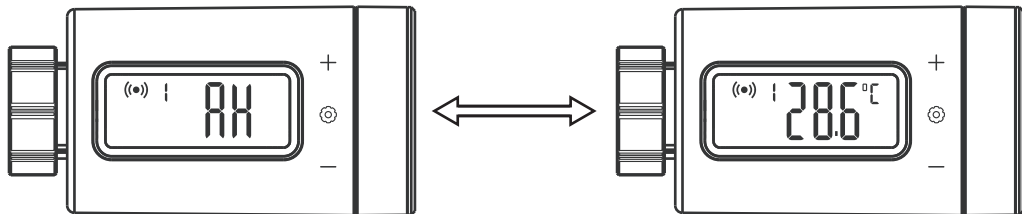


Step5: Short press the  key to switch to the menu character, then press the + or – key to select the menu, and the character "CA" (temperature calibration value) will be displayed. Short press the  key to enter the parameter setting, then press the + or – key to adjust the temperature calibration value to 0.2°C.

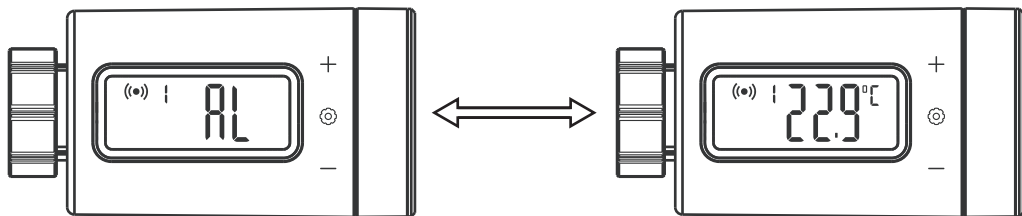
Step6:  key for 2 seconds or no operation for 60 seconds to quit the setting and save all parameters.

► Display function of high-temperature alarm and low-temperature alarm

For example, the high-temperature alarm value is 28.0°C and the low-temperature alarm is 23.0°C.



- When the current temperature is higher than the high-temperature alarm value, the character "AH" and the current temperature value are displayed in turns at a frequency of 1Hz. After the current temperature is lower than the high-temperature alarm value, the display will return to normal.



- When the current temperature is lower than the low-temperature alarm value, the character "AL" and the current temperature value are displayed in turns at a frequency of 1Hz. After the current temperature is higher than the low-temperature alarm value, the display will return to normal.

15 *Precautions For Use*

1. Please do not disassemble the product if you are not a professional.
2. Use a slightly damp, lint-free cloth to clean the product. Do not use corrosive cleansers

16 *Customer Service*

This item carries a 2-year warranty against defects in either components or workmanship. During this period, products that prove to be defective will, at the discretion of INKBIRD, be either repaired or replaced without charge. For any problems in use, please feel free to contact us at support@ink-bird.com. We will do our best to help you.

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MADE IN CHINA