Thermostatic Radiator Valve

TR-01

This is a smart radiator thermostat that gives you easy in-home control of each individual radiator. By adding a wifi gateway, you can control your radiators from your smartphone. If you prefer to adjust setting manually, you can use set the desired temperature from display by press buttons.

Functions

- ✓ **Easy APP programming on smart phone (IOS & Android)**
- ✓ **Energy Savings**
- ✓ **M30 x 1.5 Universal Type Head to body connection**
- ✓ **Easy for installation**
- ✓ **Child lock**
- ✓ **PID or ON/OFF Accurate temperature control**
- ✓ **7 days program(from APP only)**
- ✓ **The display shows the set temperature or measured temperature**
- ✓ **Temperature display in degrees Celsius**

Technical Data

Thermostat operating voltage:	2 x AA1.5 V, alkaline batteries.
Backup storage:	EEPROM
Switching options:	7 days programming (from APP only)
Frequency:	868Mhz
Temperature settings:	5°C ~ 35°C, in 0.5℃
Accuracy:	± 1℃
Control:	PID or ON/OFF
Thermostat dimensions:	φ55*69mm
Max Extention	5.0mm
Color:	White
IP protection rating:	20.
Certification:	CE，ROHS,RED

Thermostatic Radiator Valve

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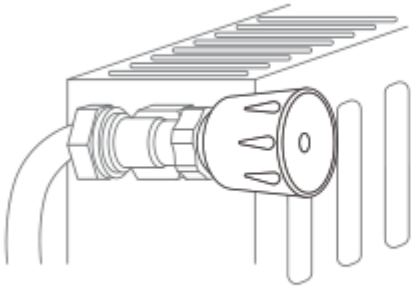
Warning

Read this instructions carefully before you get started.

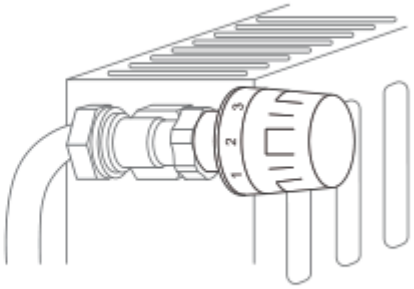
a.The device is for indoor use only and must be protected from damp and dust as well as solar radiation

b. The device is for water based radiator ONLY, any other kind of radiator is NOT supported.

c. There are two types of radiator valves: manual valves (1), and thermostatic valves (2)



(1)



(2)

Thermostat valves (Usually with numbered graduation marks from 1 to 5) can be easily replaced with smart radiator thermostat valve.

Note: If you have manual valves, please leave them as they are or call a professional to replace them.

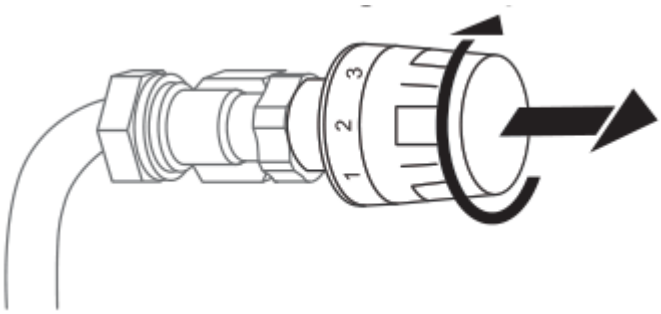
Hardware installation

Before we get started.

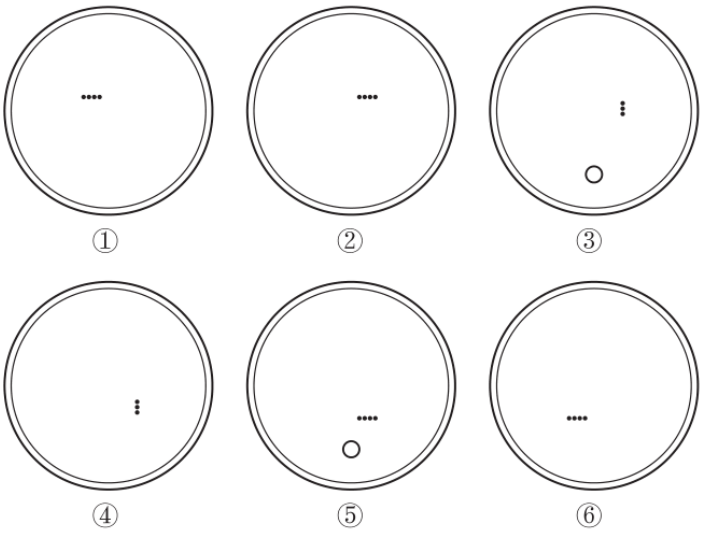
2*1.5V AA batteries are requried for radiator thermostat to work. Please get prepared.

A Tuya smart zigbee gateway is required for the smart thermostat to work.

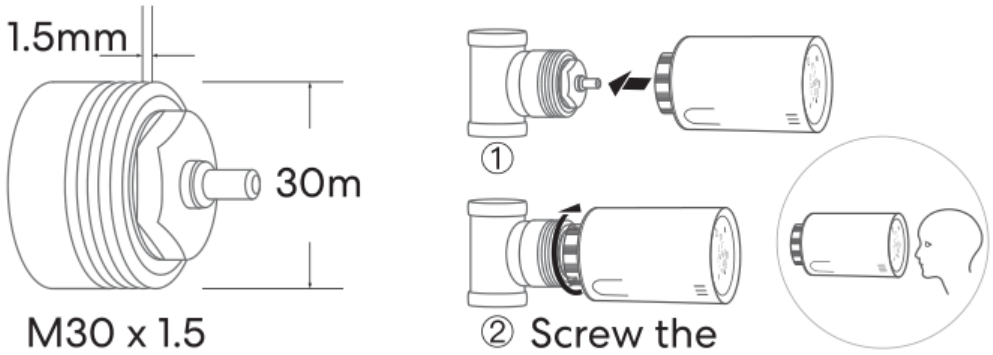
1) Unscrew your existing radiator thermostat. No worries, the water will not leak during this process.



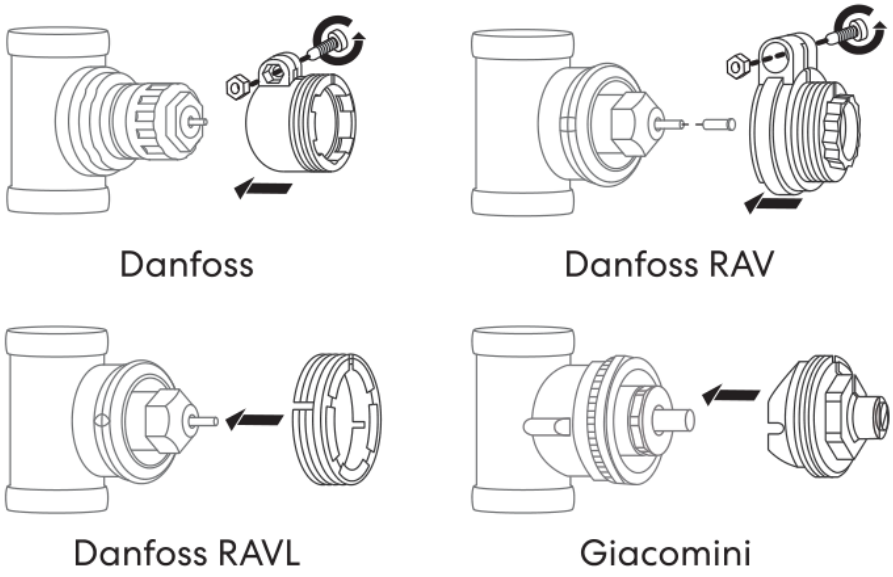
2) Install 2*1.5V non-chargeable batteries, wait a few second unit the screen show **"– –"** as ①, then the dash flashing and circling as ②~⑥.

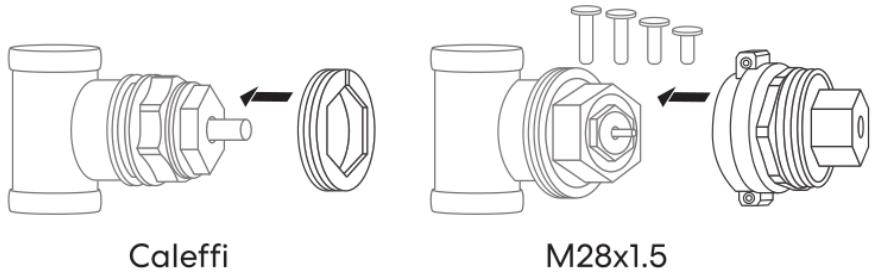


3) Screw the radiator thermostat directly to radiator if the connection type is M30*1.5 type (picture show as below). You can adjust the angel to make sure screen facing the viewer properly. Then hold the product and screw its nut till screw tight.



4) If your valves listed as below, please refer to the following picture for the adaptor installation first. Then screw the thermostat as descripted 2).





5) Press **ON/OFF** button and the pin will detect the valve stroke. During the process, the display will be turn off for saving power purpose.
   Notes: If you have already installed the batteries before installion, please remove the batteries for 10 seconds and then reinstall. Otherwise, it might not detect both ends of the probe properly.)
6) After adaption success, the display will auto turn on. If adaption failed, the display will show E, please try again from step 1).

APP connect with gateway

Note: Before adding TRV to the app, please make sure you have add the gateway E-hub.

1) Turn on app, press gateway-- press add sub device—press heater
2) Long pressing **ON/OFF** button to turn off TRV.
3) Long press **ON/OFF** button until it show WIFI icon
4) Press **+** or **-** button, wifi icon start flashing
5) When wifi icon stop flashing, means code pairing done.
6) Press **ON/OFF** button to return, and press again to turn it on.

Mode selection

Press **O** button, you can choose Manual mode/Away mode/PRG mode, then radiator thermostat will work accordingly to preset values.

APP connection with gateway

Note: Before adding smart radiator thermostat to the app, make sure wifi & zigbee gateway are well connected and online.

7) Turn on app, press gateway-- press add sub device—press heater
8) Long pressing **ON/OFF** button to turn off TRV.
9) Long press **ON/OFF** button until it show WIFI icon
10) Press **+** or **-** button, wifi icon start flashing
11) When wifi icon stop flashing, means code pairing done.

Press **ON/OFF** button to return, and press again to turn it on.

Parameter settings

Long press **O** button to turn off thermostat.

Press and hold **O** button for 3s to enter below page

Press and hold **O** button for 3s until screen show 01. Each press of **O** button will take you to next setting item, adjust the range by using + & - button.

Menu	Description	Range	Default Value
01	Temp. calibration	-8 ℃ ~8 ℃	0℃
02	Set Point Max.	5 ℃ ~35℃	35 ℃
03	Set Point Min.	5 ℃ ~35℃	5 ℃
04	Frost Protection Temp.	5 ℃ ~15℃	5 ℃
05	Switching Differential	0~3℃	0.5℃
06	Child Lock	0: Disable 1: Enable	0
07	Open window detect function	0: Disable 1: Enable	0
08	OWD Detect Time	2~30mins	15mins
09	OWD Drop temp. select （within detect time）	2℃,3℃,4℃	2℃
10	OWD Delay time select (Return to previous working status)	10~60mins	30mins
12	Control Type	0: ON/OFF 1: PI	0
13	PI Type: P-band select	2 ℃ ~15℃	10℃
14	PI Type: I-time select	30~90mins	60mins
16	Software version		
17	Software version		

Parameter setting explanations

01 Temperature Calibration

This feature used to calibrate thermostat's room temperature display when actual room temperature different from thermostat showed (refer to the menu 01 of parameter settings). For example, if actual room temperature 21.5°C, but thermostat shows 23°C, then you can set this value to -1.5, then radiator thermostat will show 21.5°C.

04 Frost Protection

This is the temperature maintained when the thermostat is in Frost Protection Mode (refer to the menu 04 of parameter settings). If room temperature below 5°C (Default), radiator thermostat will turn on heating till room temperature arrive 5°C (Default).

05 Switching Differential

This function allows you to increase the switching differential of the thermostat (refer to the menu 05 of parameter settings). The default is 0°C which means that with a set temperature of 20°C, the thermostat will switch the heating on at 19.5°C and off at 20.5°C. With a 0.5°C differential, the heating will switch on at 19°C and off at 21°C.

06 Child Lock

Under child lock disable (refer to menu 06 of parameter setting), the buttons will lock once backlight off. Press **O** button for 5s to unlock it for temporary adjust.

08/09/10 Open Window Detection (OWD) Function

When the Open Window detect function is enabled in the parameter setting, the system will automatically stop heating when it detects a sudden drop of room temperature (2°C in 15 minutes as default). This is normally caused when a window or door is opened without turning off the heating device. The device will return to the previous mode of operation after 30mins, then  disappear. Press any button will exit OWD function during the heating off period.

12 Control type

0: ON/OFF type, when room temperature below set-point, valve will 100% open, when arrive set point, valve will 100% off. This type will consume more TRV power.

1: PI type. It is modulating control. It will auto adjust valve opening position accordingly to the temperature difference.

13. P band select is working only when 12 select PI type.

The larger the P value, the slower and more stable the temperature change, while the smaller the P value, the more radical and rapid the temperature change.

14. I time select is a supplement to the P-value set at 34.

Sometimes even TRV work according to P value, but room temperature and set temperature always keep the same temperature different without any change. As per this situation, I value will work as supplement.

The larger the I value set, the slower and more stable the temperature change, while the smaller the I value set, the more radical and rapid the temperature change.

Size