

TV01 Zigbee Thermostat Radiator Valve



User Guide

Table of contents

1. Information about this manual.....	1
2. Product Description.....	1
3. Device Overview.....	2
4. Start-up.....	2
4.1 Before we get started.....	2
4.2 Inserting(replacing) batteries.....	3
4.3 Set date and time.....	4
5. Installation of the radiator thermostat.....	5
6. Interface screen.....	10
7. Software Installation.....	10
8. Voice Control.....	11
8.1 Amazon Alexa.....	11
8.2 Google Home.....	13
9. Product features.....	14
9.1 Auto Mode.....	14
9.2 Manual Mode.....	14
9.3 Holiday Mode.....	15
9.4 Open Window Detection.....	16
9.5 Offset Temperature.....	16
9.6 Eco and Comfortable Temperature.....	17
9.7 Child Lock.....	17
9.8 Anti-Freezing Mode.....	17
9.9 Heating stop (Power Saving) Mode.....	18
9.10 Anti-Calcification (Descaling) Protection.....	19
9.11 Boost.....	19

10. Setting.....	19
10.1 Date.....	20
10.2 Week Programming Stage.....	20
10.3 Open Window.....	21
10.4 Comfortable Temperature.....	21
10.5 ECO Temperature.....	22
10.6 Offset.....	23
10.7 Holiday Setting.....	23
11. Low Battery.....	24
12. Reset.....	24
13. Troubleshooting and maintenance.....	24
14. Technical Data.....	25
15. Package contents.....	25
16. Instructions for disposal.....	26

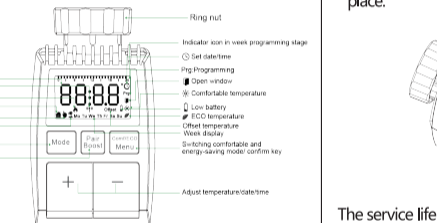
1. Information about this manual

Please read this manual completely and carefully before starting to use the device. The manual contains important information about the intended use of the device. Especially observe the safety notes. Keep the manual for later consultation. If you hand over the device to other persons for use, please hand over the operating manual as well.

2. Product Description

The device moves a valve to intelligently control the flow of heat to the radiator. With the Thermostat Radiator Valve TV01 you can conveniently adjust the room temperature between 5-30°C, and save more than 15% of energy. The device is part of the Tuya smart home system and works with the ZigBee 3.0 protocol. All devices on the system can be configured comfortably and individually with the Tuya smartphone app. The temperature can be controlled individually, room by room. The radiator thermostat fits to all common radiator valves and is easy to mount-without having to drain any water or intervene in the heating system.

3. Device Overview



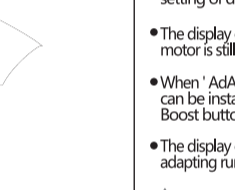
4. Start-up

4.1 Before we get started

- 2 x AA batteries are required for TV01 to work, please get prepared.
- A smart gateway hub is required for the TV01 to work.

4.2 Inserting(replacing) batteries

- Pull off the battery compartment cover on the underside of the device.
- Insert 2 new LR6(mignon/AA) batteries in the battery compartment, making sure they are the right way round.
- Reattach the battery compartment cover and latch it into place.



The service life of new alkaline batteries is approximately 1.5 years. A battery symbol() on the display indicates that the batteries need to be replaced. After removing the empty batteries, wait approx. 1 minute before inserting the new ones. This device does not support operation with rechargeable batteries.

4.3 Set date and time

If batteries are inserted or replaced, the date and time is automatically requested after a brief display of the firmware version number.

- Set the year, month, day, hour and minute with the +/- button, and confirm with Menu button. You can press the Boost button to return to the previous menu during the setting of date and time.

- The display of ' InS ' with the rotating ' □ ' shows that the motor is still travelling back.

- When ' AdA ' is shown in the display, the radiator thermostat can be installed on the valve. After installation, press the Boost button to run adaptive.

- The display of ' AdA ' with the rotating ' □ ' shows that an adapting run to adapt the thermostat to the valve.

⚠ If the adapting runs is initiated before installation, press Boost button and the motor travels back to the ' InS ' position. If an error message(F1,F2,F3) is displayed, press the Pair/Boost button and the motor similarly travels back to the ' InS ' position.

5. Installation of the radiator thermostat

The radiator thermostat is easy to install and can be done without draining heating water or intervening in the heating system. No special tools are required, nor does the heating have to be switched off. The ring nut attached to the radiator thermostat can be used universally and without accessories for all valves with a thread size of M30 x 1.5 from the most popular manufacturers such as:

- Danfoss
- Landis&Gyr (Duodyr)
- Oventrop
- Meritik Maxitrol
- R.BM
- Idmar54
- Heimeier
- MNG
- Junkers
- Honeywell-Braukmann
- Comap
- Valf Sanayii
- Watts
- Wingenroth (Wiroflex)
- Jaga
- Siemens

By means of the adapters in the delivery, the device can be installed on radiator valves of type Danfoss RA, Danfoss RAV and Danfoss RAVL.

5.1 Unscrew your existing radiator thermostat

No worries, water will not leak during this process.

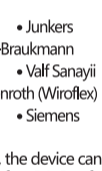
5.2 M30 x 1.5

5.2.1 Screw the TV01 smart radiator thermostat directly onto the radiator if the connector type is M30 x 1.5 (picture shown as below). You can adjust the angle to make the screen facing the viewer properly.

5.2.2 Rotate the thermostat dial to the maximum value, the max value may be 6 or 8.

5.2.3 Check the © is active.

5.2.4 Install the device.



5.3 Danfoss RAVL Valve

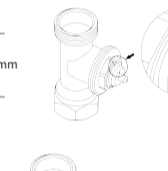
5.3.1 Check the © is active.

5.3.2 The valve bodied have elongated notches around their circumference, which ensure that the adapter is properly seated when it snaps on: snap on the adapter completely,so that the pins inside the adapter are lined up with the notches on the valve.

5.3.3 Install the adapter,Plane A is aligned with Plane B.

5.3.4 Install the round tube into the device.

5.3.5 Install the device.



5.4 Danfoss RAV Valve

5.4.1 Rotate the thermostat dial to the maximum value, the max value may be 6 or 8.

5.4.2 Check the © is active.

5.4.3 The valve bodied have elongated notches around their circumference, which ensure that the adapter is properly seated when it snaps on: snap on the adapter completely,so that the pins inside the adapter are lined up with the notches on the valve.

5.4.4 Install the adapter,Plane A is aligned with Plane B.

5.4.5 Union nut.

5.4.6 Install the device.



5.5 Danfoss RA Valve

5.5.1 Rotate the thermostat dial to the maximum value, "N" Align Dial.

5.5.2 Check the © is active.

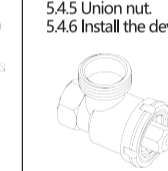
5.5.3 The valve bodied have elongated notches around their circumference, which ensure that the adapter is properly seated when it snaps on: snap on the adapter completely,so that the pins inside the adapter are lined up with the notches on the valve.

5.5.4 Install the adapter,Plane A is aligned with Plane B.

5.5.5 Union nut.

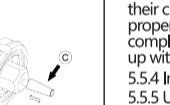
5.5.6 Install the round tube into the device.

5.5.7 Install the device.



6. Interface screen

When you see the LCD screen is showing information as below, the radiator thermostat is ready for configuration. If not, please uninstall and re-install the batteries and redo step 4.



7. Software Installation

7.1 Download the Tuya Smart/Smart Life App for your mobile device from App Store or Google Play.



8. Voice Control

8.1 Amazon Alexa

Amazon Alexa is an intelligent personal assistant developed by Amazon, and is capable of voice interaction. Smart radiator thermostat works with Alexa to allow you to regulate the temperature of each room in your system by using a wake-word and an instruction.

8.2 Common commands for Alexa

- Discover Devices: "Alexa, discover devices"
- Reduce Temperature: "Alexa, decrease the DEVICE NAME by 4 degrees" / "Alexa, make it cooler in here."

8.3 Interface screen

7.2 Search for Tuya Smart/Smart Life.

7.3 Download the Tuya Smart app.

7.4 Open Tuya Smart App, use your phone number or email address to register and login. Tap + on the top right, choose Gateway Control->Wireless Gateway(ZigBee) and simply follow the inbuilt setup wizard for device installation and configuration.

7.5 After the ZigBee smart gateway hub is added successfully, you can add the sub-device on the gateway hub interface.

7.6 Long press Pair button on the radiator thermostat for 5 seconds until the ZigBee signal icon flashed, which means the device has entered the pairing mode.

7.7 The blue LED indicator of gateway hub flashes during pairing mode.

7.8 When the radiator thermostat is successfully added, the blue LED indicator will extinguish within 1 second, the device ZigBee signal is always on.

8.4 Example

Example: If the current set-point is 16°C, the current room temperature is 19°C and you ask Alexa to increase the temperature by 2°C - the current set-point will change to 18°C but the heating will not start because the room temperature is already higher than 18°C.

8.5 Common commands for Alexa

- Discover Devices: "Alexa, discover devices"
- Reduce Temperature: "Alexa, decrease the DEVICE NAME by 4 degrees" / "Alexa, make it cooler in here."

8.6 Interface screen

7.2 Search for Tuya Smart/Smart Life.

7.3 Download the Tuya Smart app.

7.4 Open Tuya Smart App, use your phone number or email address to register and login. Tap + on the top right, choose Gateway Control->Wireless Gateway(ZigBee) and simply follow the inbuilt setup wizard for device installation and configuration.

7.5 After the ZigBee smart gateway hub is added successfully, you can add the sub-device on the gateway hub interface.

7.6 Long press Pair button on the radiator thermostat for 5 seconds until the ZigBee signal icon flashed, which means the device has entered the pairing mode.

7.7 The blue LED indicator of gateway hub flashes during pairing mode.

7.8 When the radiator thermostat is successfully added, the blue LED indicator will extinguish within 1 second, the device ZigBee signal is always on.

- Increase Temperature: "Alexa, increase the DEVICE NAME by 3 degrees" / "Alexa, make it warmer in here."
- Set Temperature: "Alexa, set the DEVICE NAME to 20 degrees"
- Get Temperature: "Alexa, what is the DEVICE NAME temperature?"
- Get Set Point: "Alexa, what is the upstairs set to?"

Note: Alexa considers the smart thermostat and room names as the devices.

8.2 Google Home

Google Home is a brand of smart speakers that work similarly to Amazon Echo. Google's intelligent PA, Google Assistant, is equivalent to Amazon's Alexa. Google Home is also available on all Android devices and does not require the use of the 'Smart Speakers'. The user can speak a profusion of commands to request information, or ask the Google Assistant to perform an action such as play music, video playback, report news, access home automation. All of this can all be controlled from a Google Home device.

Common commands for Google Home

Listed below are common commands used with Google Home:

- Discover Devices: "Hey google, discover devices"
- Reduce Temperature: "Hey google, decrease the DEVICE NAME by 4 degrees" / "Hey google, make it cooler in here."


- Increase Temperature: "Hey google, increase the DEVICE NAME by 3 degrees" / "Hey google, make it warmer in here."
- Set Temperature: "Hey google, set the DEVICE NAME to 20 degrees"
- Get Temperature: "Hey google, what is the DEVICE NAME temperature?"
- Get Set Point: "Hey google, what is the upstairs set to?"

Note: Hey Google considers the smart thermostat and room names as the devices.

9. Product features


9.1 Auto Mode

In automatic mode, the temperature is controlled in accordance with the set heating profile. Manual changes are activated until the next point at which the profile changes. Afterwards, the defined heating profile will be activated again. To activate the automatic mode, please proceed as follows:

- Press the mode button to select  icon.
- Default temperature: 17°C and 21°C.
- Temperature range: 5-30 °C, step: 0.5 °C.
- App operation: Click the mode icon to select.


9.2 Manual Mode

In manual mode, the temperature is controlled in accordance with the current temperature set via '+/-' button. The temperature remains activated until the next manual change. To activate the manual mode, please proceed as follows:


- Press the mode button to select  icon.
- Default temperature: 20°C.
- Temperature range: 5-30°C, step: 0.5 °C.
- App operation: Click the mode icon to select.



9.3 Holiday Mode

If you are on vacation or at a party, you can use holiday mode. To activate the holiday mode, please proceed as follows:

- Long press the menu button for 5 seconds, it will enter the setting interface.
- Select "Holiday" icon() via '+/-' button, and press menu button to enter the holiday mode setting.
- Use the '+/-' button to select the time, until which you want to activate the holiday mode and confirm with the menu button.
- Use the '+/-' button to select the date, until which you want to activate the holiday mode and confirm with the menu button.

9.4 Open Window Detection

The device automatically stop heating when it detects a sudden temperature drop(5°C in 5 minutes as default). This is usually caused by an opened window or door and the open window icon will display() on the screen. The device will resume to its previous status after detection if no actions is implemented. Or you can manually resume the device by pressing the mode button.
App operation: Click the open window icon in APP to cancel the window opening function. The open window detection only operates in automatic mode and manual mode.

- Press menu button to select comfortable temperature() or eco temperature()
- App operation: Click the icon in APP to select.

9.5 Offset Temperature

As the temperature is measured on the radiator thermostat, the temperature distribution can vary throughout a room. To adjust this, a temperature offset of ±5 °C can be set. If a nominal temperature of e.g. 20 °C is set but the room presents with only 18 °C, an offset of -2.0 °C needs to be set. An offset temperature of 0.0°C is set in the settings. To adjust the offset temperature, please proceed as follows:

- Long press the menu button for 5 seconds, it will enter the setting interface.
- Select "Offset" option via '+/-' button, and press menu button to enter the offset temperature interface.
- Set the desired offset temperature using '+/-' button and confirm with the menu button.

9.6 Eco and Comfortable Temperature

The comfort and eco temperature button makes switching between comfort and eco temperature simple and user friendly. These have been set at the factory at 21.0 °C (comfort temperature) and 17.0 °C (eco temperature). They can be adjusted as follows:
App operation: Click the offset icon in settings.


- Press any button to cancel anti-freezing function and return to automatic mode.

9.7 Child Lock

Operation of the device can be locked to avoid settings being changed unintended(e.g. through involuntary touch). To activate/deactivate the child lock, please proceed as follows:

- Long press the mode button for 5 seconds, it will show LOC symbol on the screen and the device button cannot be used.
- Long press the mode button for 5 seconds to unlock child lock App operation: Click the child lock icon in settings.

9.8 Anti-Freezing Mode

The device operation
App operation: Click the Heating stop icon() to turn on/off the function in settings.
Note: Once the function is activated, other functions are not available unless the function is deactivated.

- Press any button to cancel anti-freezing function and return to automatic mode.

9.9 Heating stop (Power Saving) Mode

Battery life can be prolonged by switching the heating off. To achieve this, the valve is opened fully. To activate the heating stop, please proceed as follows:

- In manual mode, manually adjust the temperature to more than 30 degrees, display "HS" on the screen, start the heating stop function, and the device will no longer be able to adjust the temperature.
- Press any button to cancel the heating stop function and return to automatic mode.

9.10 Anti-Calcification (Descaling) Protection

The equipment will automatically run for a period of time every week to prevent calcification of the valve.

10. Setting

Press the menu button for 5 seconds, enter Setting/Date/Week programming stage/Open window/Comfortable temp/ECO temp/Offset/Holiday setting App operation: Click the settings icon() in mobile app.


- The next time is shown in the display. You can adjust the time via the "+/-" button.
- Select the desired temperature for the next time period using the "+/-" button and confirm with the menu button.
- Temperature range: 5-30 °C, step: 0.5 °C.
- Repeat this procedure until temperatures are stored for the entire period between 0:00 and 24:00 h. To confirm, the time flashes three times.
- Use the boost button to return.

10.1 Date

To set the date and time, please proceed as follows:

- Long press the menu button for 5 seconds, it will enter the setting interface.
- Select "Date/Time" option via '+/-' button, and press menu button to enter the Date/Time setting interface.
- Select the desired year/month/day/hour/minute using the "+/-" button and confirm with the menu button. To confirm, the time flashes three times.
- Use the boost button to return.

10.2 Week Programming Stage


In this menu item, you can create a heating profile with heating and cooling phases according to your personal needs. You can set up to ten stages of temperature every day. The factory default is five stages.
App operation: Click the icon() in app to cancel the boost function.

10.3 Open Window

Press the menu button for 5 seconds to open the configuration menu.


10.4 Comfortable Temperature

Press the menu button for 5 seconds to open the configuration menu.


- (Select comfortable temperature icon() via the "+/-" button in the menu.
- Confirm with the menu button.
- Select the desired temperature using the "+/-" button and confirm with the menu button. To confirm, the temperature flashes three times.
- Temperature range: 5-30 °C, step: 0.5 °C.
- Use the boost key to return.

10.5 ECO Temperature

Press the menu button for 5 seconds to open the configuration menu.

- (Select ECO temperature icon)() via the "+/-" button in the menu.
- Confirm with the menu button.
- Select the desired temperature using the "+/-" button and confirm with the menu button. To confirm, the temperature flashes three times.
- Temperature range: 5-30 °C, step: 0.5 °C.
- Use the boost button to return.

10.6 Offset


Press the menu button for 5 seconds to open the configuration menu.
App operation: Click the icon() in app.

10.7 Holiday Setting

Press the menu button for 5 seconds to open the configuration menu.

10.8 Eco and Comfortable Temperature

The comfort and eco temperature button makes switching between comfort and eco temperature simple and user friendly. These have been set at the factory at 21.0 °C (comfort temperature) and 17.0 °C (eco temperature). They can be adjusted as follows:
App operation: Click the icon in APP to select.

- (Select holiday mode icon)() via the "+/-" button in the menu.
- Confirm with the menu button.
- Select the start date using the "+/-" button and confirm with the menu button.
- Select the end date using the "+/-" button and confirm with the menu button.
- Select the desired temperature using the "+/-" button and confirm with the menu button. To confirm, the temperature flashes three times.
- Temperature range: 5-30 °C, step: 0.5 °C.
- Use the boost button to return.

10.9 Heating stop (Power Saving) Mode

Battery life can be prolonged by switching the heating off. To achieve this, the valve is opened fully. To activate the heating stop, please proceed as follows:

- In manual mode, manually adjust the temperature to more than 30 degrees, display "HS" on the screen, start the heating stop function, and the device will no longer be able to adjust the temperature.
- Press any button to cancel the heating stop function and return to automatic mode.

10.10 Anti-Calcification (Descaling) Protection

The equipment will automatically run for a period of time every week to prevent calcification of the valve.

11. Low Battery

When the battery power is less than 12%, the low power prompt icon () will be displayed. Please replace the battery as soon as possible. When the screen displays() the device is not available.

12. Reset

The device operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".
App operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".

- Press the menu button to confirm.
- Press the boost button to exit.

12.1 Low Battery

When the battery power is less than 12%, the low power prompt icon () will be displayed. Please replace the battery as soon as possible. When the screen displays() the device is not available.

- Press the menu button to confirm.
- Press the boost button to exit.

12.2 Reset

The device operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".
App operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".

13. Troubleshooting and maintenance

Note: if there is no operation in the setting interface within one minute, the setting will exit automatically.

14. Technical Data

Batteries: 2x 1.5 V LR6/mignon/AA
Battery life: 1.5 years
Temperature range: 5-30°C
Degree of protection: Ip20
Display: LCD with LED
RF: ZigBee
Frequency: 2.4GHz
Maximum radiated power: 20dBm
Dimensions(W x H x D): 55.3 x 54 x 98.3 mm
Weight: 190 g (incl. batteries)
Working temperature: -10°C—40°C
Working environment: Indoor
Safety: CE/ROHS

- (Select holiday mode icon)() via the "+/-" button in the menu.
- Confirm with the menu button.
- Select the start date using the "+/-" button and confirm with the menu button.
- Select the end date using the "+/-" button and confirm with the menu button.
- Select the desired temperature using the "+/-" button and confirm with the menu button. To confirm, the temperature flashes three times.
- Temperature range: 5-30 °C, step: 0.5 °C.
- Use the boost button to return.

14.1 Low Battery

When the battery power is less than 12%, the low power prompt icon () will be displayed. Please replace the battery as soon as possible. When the screen displays() the device is not available.

- Press the menu button to confirm.
- Press the boost button to exit.

14.2 Reset

The device operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".
App operation: Press the "+" and "-" buttons for 5 seconds to enter the reset mode, and the screen will display "FAC".

15. Package contents

1 ZigBee Radiator Thermostat
2 1.5V mignon/LR6/AA batteries
1 Adapters for Danfoss(RA,RAV and RAVL)
1 Screw for adapter
1 Operating manual

16. Instructions for disposal

Do not dispose of the device with regular domestic waste! Electronic equipment must be disposed of at local collection points for waste electronic equipment in compliance with the Waste Electrical and Electronic Equipment Directive.
 The device is not a toy, do not allow children to play with it. Do not leave packaging material lying around. Plastic films/bags, pieces of polystyrene, etc. can be dangerous in the hands of a child.
 Used batteries should not be disposed of with regular domestic waste! Instead, take them to your local battery disposal point.
This device complies with the EN62368/EN300328/EN301489 of the CE Rules.
This device complies with the ROHS 2.0 Rules.