



**eTRV Smart Radiator
Thermostat**



EPH CONTROLS eTRV Smart Radiator Thermostat Instruction Manual

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Factory Default Settings

- Keypad lock: Off
- Installation position: Vertical
- Hon: 0.4°C
- Hoff: 0.0°C
- Boost temperature: 21°C

Specifications




- Power supply: 2 x AA Li-FeS2 Batteries
- Standby current: <50uA
- Battery replacement: 240 days approx.*
- Temp. control range: 5...35°C
- Dimensions: 80 x 52mm
- Temperature sensor: NTC 100K Ohm @ 25°C
- Temperature indication: °C
- Ambient temperature: 0...45°C
- Ambient admissible humidity: 5-95% RH
- Backlight: White
- IP rating: IP20
- Hysteresis (Switching differential): Adjustable from 0 to 2°C

Based on average estimated usage.

Important Notes

- It is extremely important to use good quality batteries in the eTRV to ensure the correct operation of the product. EPH recommends using Li-FeS2 (Lithium Iron) batteries. If poor-quality batteries are used, they may cause the product to stop communicating wirelessly, fail to communicate information correctly, and stop opening or closing.
- Low-power or discount store battery brands should not be used. When the battery is low a battery low notification will appear on the RV, it will also display on the EMBER app. The batteries should be changed immediately. Normally the eTRV will stop operating soon after this notification. When the eTRV shows a fault E4 – the motor is not operating correctly, this is normally due to a battery issue – possibly one or both of the batteries are not providing adequate power.
- The eTRV detects temperature and communicates on cycles every 4 minutes to conserve battery power.
- When buttons are pressed on the eTRV it will save these changes but may not communicate immediately to the RF16 controller. It will communicate these changes in the next communication cycle.
- The eTRV is designed for use with EPH TRV Valve bodies.

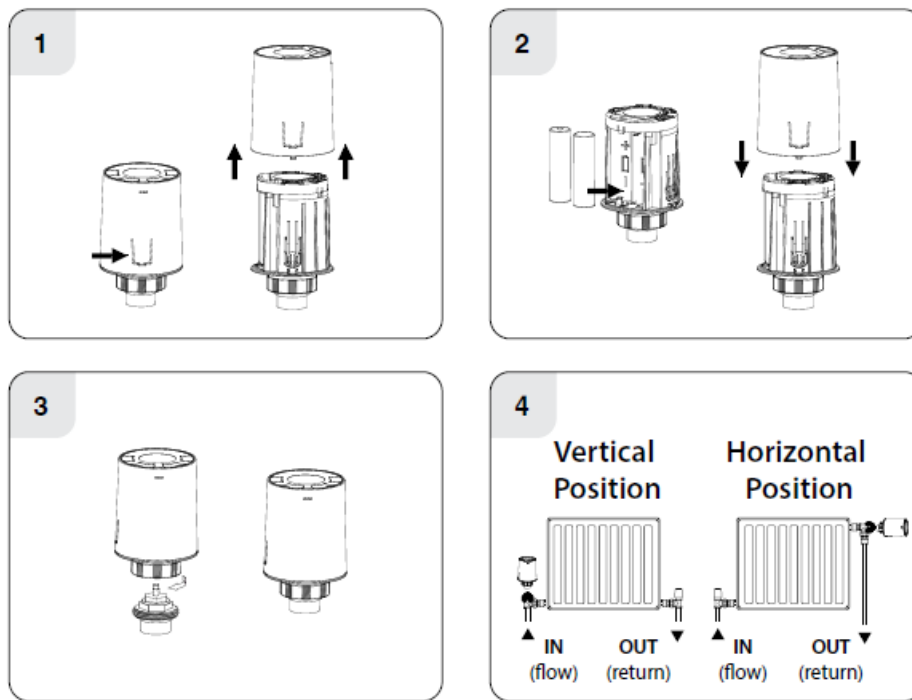
How your eTRV works

- The eTRV is designed to control and operate a radiator valve wirelessly. When the eTRV is calling for heat, it will communicate wirelessly to the RF16 controller which will activate your heating system to heat the radiator. When the eTRV reaches its defined setpoint temperature it will close the radiator valve and stop calling for heat.
- The temperature setpoint is defined by the program settings on your RF16 controller, via the EMBER app or by using the   buttons on the eTRV.
- If the room temperature is lower than the target temperature then the eTRV will open the radiator valve and request the heating system to activate, if the room temperature is higher than the set temperature it will close the radiator valve and signal the system to stop calling for heat.
- When calling for heat your eTRV will show a flame symbol  on the screen. This will disappear when the temperature setpoint has been achieved.
- When the eTRV is in MANUAL or AUTO, the screen will display the current room temperature. When the eTRV is in the OFF mode the screen will display the word 'OFF'.

Mounting & Installation

Caution!

- Ensure the eTRV is positioned in an area that has good airflow so it can detect temperature effectively.
- Ensure the eTRV is out of direct sunlight.
- If the eTRV or RF16 is used in a way not specified by the manufacturer, its safety may be impaired.
- Before setting the eTRV, it is necessary to complete all required settings described in the mounting & installation section.
- Ensure the valve body is free of dust and debris.
- Ensure the valve body is dry and not leaking.

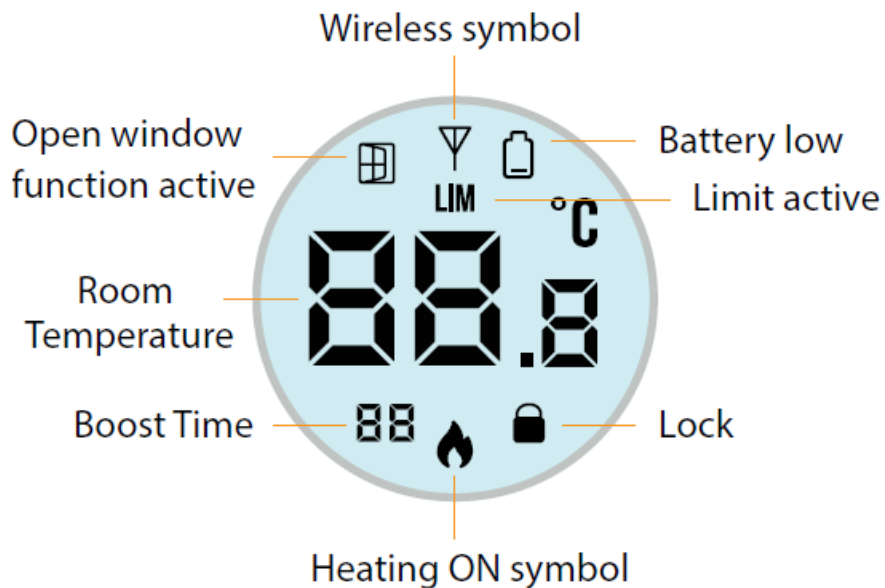


1. Press and hold the release mechanism on the side of the eTRV, while holding pull the cover-up and it will slide off the eTRV.
2. Insert the 2 x AA batteries and replace the cover. Pair the eTRV to the RF16.
 - Mark the eTRV zone by using the stickers provided.
 - Note the room name on the 16 zone list provided, this will help the user of the system identify the zones if it's needed in the future.
3. The eTRV can be mounted to a radiator valve with a M30 x 1.5mm thread. Rotate the ring at the base of the eTRV so it threads onto the radiator valve until it's tight. It will automatically adapt its stroke to that of the valve. It's recommended that the eTRV is opened to make it easier to mount, this is done by calling for heat on the RF16 or eTRV and it will retract the spindle.
4. Position the eTRV on the radiator valve so the screen is orientated correctly.

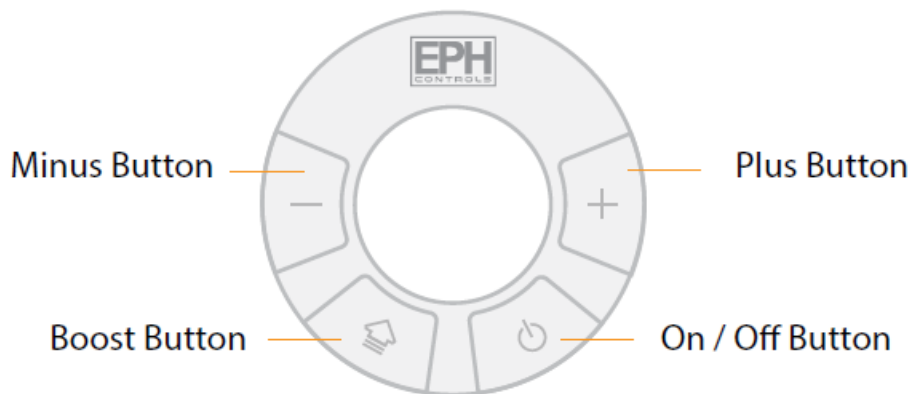
Note:

The eTRV is designed for use with EPH TRV Valve bodies.

LCD Symbol Description



Button Description



Shortcuts

Hold and for 10 seconds for keypad lock.

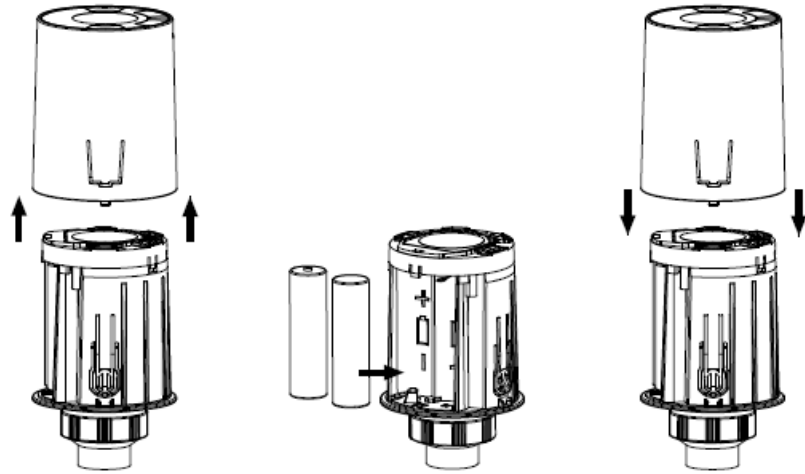
Hold and for 5 seconds to access the menu.

Hold and for 5 seconds for RF connection.

Hold and for 5 seconds for open window function.

Replacing the Batteries

- Press and hold the release mechanism on the side of the eTRV, while holding pull the cover-up and it will slide off the eTRV.
- Remove and replace the 2 x AA batteries. It is extremely important to use good quality batteries in the eTRV to ensure the correct operation of the product.
- Slide the cover back onto the eTRV and it will return to its normal operation.




Error Codes

The eTRV will display error codes if there is a problem.

1. E4

- Motor Issue – Check Batteries
- If E4 still shows after premium batteries are used, the eTRV needs to be replaced.





2. Battery Low Indication

When the batteries are low on the eTRV, the screen will show a low battery icon , this will also show on the zone in the EMBER App. When this appears on the screen it is recommended to change the batteries immediately.

Operating Instructions




Boost Function

The eTRV can be boosted to a specific temperature for 30 minutes, 1, 2, or 3 hours.




- Press  once for 30 minutes, twice for 1 hour, three times for 2 hours, or four times for 3 hours.
- Then press  or  set the desired temperature for the boost period. 30, 1, 2, or 3 will appear on the screen,
- Wait 5 seconds for the eTRV to return to the home screen.
- To cancel a boost, press  when the boost is active.

Locking and unlocking the eTRV

To lock the eTRV

- Press and hold  and  for 10 seconds.
-  will appear on the screen. The buttons are now disabled.

To unlock the eTRV




- Press and hold  and  for 10 seconds.
-  will disappear. The buttons are now enabled.

Changing the Mode

Press  to change between AUTO, MANUAL and OFF modes.

- AUT – Auto
- OFF – OFF
- On – Manual

Adjusting the Target Temperature

- Press  or  to decrease or increase the target temperature.
- Press  or wait 5 seconds.
- The target temperature is now saved.

Temporary Override




If the eTRV temperature is changed when in the Auto mode it will apply a temporary change to the current program and will revert to the programmed settings at the next program time.

Permanent Override

If the eTRV temperature is changed when in manual mode, it will change the target temperature permanently.

Connecting an eTRV to the RF16 Controller




On the RF16:

- Press **MENU**.
- 'P01 rF Cn' will appear on the screen.
- Press  to confirm.
- '01' will appear on the screen.
- Rotate  to the required zone.
- Press  to select that zone.
- 'CONNECT' will appear flashing on the screen.

Note:


When selecting a zone to pair, zones that are flashing are available while solid zones have already been paired.

On the eTRV:

- Press and hold  and  for 5 seconds.
- 'nOE' will appear on the screen followed by ' -- '
- The eTRV will display 'r ' followed by the zone number.
- Press  to exit from the screen.

On the RF16:






'CONNECTED' will appear solid on the screen when the eTRV is successfully paired.

- Rotate  to pair the next available zone and repeat the process or press **MENU** to exit.
- Press **MENU** to return to normal operation at any time.

Disconnecting an eTRV from the RF16 Controller



To Disconnect all zones:





On the RF16:

- Press **MENU** on the RF16.
- 'P01 rF Cn' will appear on the screen.
- Rotate  clockwise until 'P06 rF dn' appears on the screen.
- Press  to confirm.
- 'ALL' will be flashing.
- Press  to select ALL.
- 'nO' will appear on the screen.
- Rotate  clockwise.
- 'YES' will appear on the screen.
- Press  to confirm disconnection.
- (This allows you to disconnect all connected zones at once)






To Disconnect an individual zone:

On the RF16:

- Press **MENU** on the RF16.
- 'P01 rF Cn' will appear on the screen.
- Rotate  clockwise until 'P06 & rF dn' appears on the screen.
- Press  to confirm.
- 'All' will be flashing.








- Rotate  to select an individual zone.
- Press  to select the zone to be unpaired.
- 'nO' will appear on the screen.
- Rotate  clockwise.
- 'YES' will appear on the screen.
- Press  to confirm disconnection.
- Press MENU to exit to the home screen.

Open Window Function

- Enabling this feature will stop the zone from operating if the eTRV detects a drop in temperature of over 1.5°C within 3 minutes.
- When this is detected the eTRV will display the open window symbol  and will stop reading temperature.
- That zone will be prevented from turning on even if it falls below its setpoint.
- The open window function will disabled if the temperature rises by 0.5°C within 3 minutes or if the temperature stays low for more than 15 minutes.
- Press and hold  and  for 5 seconds.
- 'OFF' will appear on the screen.
- Press  until 'On' appears on the screen.
- Press  to select.

Menu

P1 CAL – Calibrate














- This function allows the user to calibrate the temperature reading of the eTRV.
- It's strongly recommended that you leave the eTRV for a minimum of 20 minutes to acclimatize to the room temperature before calibrating. Do not hold the eTRV during this time as it can increase the temperature reading.
- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.
- Press  to select.
- The current actual temperature will appear on the screen.
- Use  and  adjust the temperature reading.
- Press  to confirm and you will return to the menu.
- Press  to exit at any point.

P2 Hi & Lo – Setting high & low limits










OFF

This function allows the user to change the minimum and maximum temperatures that the thermostat can be set to between 5...35°C.

- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.
- Press  until 'LIn' appears on the screen.
- Press  to select.
- Press  to select ON.
- Press  to confirm.
- 'Hi' will appear on the screen & the temperature will flash.
- Use  and  select the high limit.
- Press  to confirm,
- 'Lo' will appear on the screen & the temperature will flash.
- Use  and  select the low limit.
- Press  to confirm and you will return to the menu.
- Press  to exit at any point.
- 'LIM' will appear on the screen of the eTRV.









P3 rSt – Resetting the eTRV

This function allows the user to reset the eTRV to its factory default settings.

- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.
- Press  until 'rSt' appears on the screen.
- Press  to select.
- 'nO' will flash on the screen.
- Use  to adjust.
- 'YES' will flash on the screen.
- Press  to confirm.
- The eTRV will now reset and will go to the OFF mode.
- Press  to change between Manual, Auto, and OFF.









P4 bL – Backlight Auto

This function allows the user to select the backlight to be OFF or Auto.



- Auto – this allows the backlight to activate for 5 seconds when a button is pressed.
- OFF – the backlight is permanently off.
- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.
- Press  until 'bL' appears on the screen.
- Press  to select.
- 'AUT' will display on the screen.
- Use  and  adjust between Auto and OFF.
- Press  to confirm and you will return to the menu.
- Press  to exit at any point.










P5 InS – Installation Direction **Vertical**

It is important to select the correct setting for the ETRV if it is mounted on a radiator in the vertical or horizontal position. The installation direction changes how the eTRV senses temperature.

- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.
- Press  until 'InS' appears on the screen.
- Press  to select.
- 'ud' will display on the screen.
- Use  and  adjust to the correct setting.
- 'ud' – Vertical Direction.
- 'Hd' - Horizontal Direction.
- Press  to confirm and you will return to the menu.
- Press  to exit at any point.

P6 HOn – Hysteresis **HOn 0.4°C & HOF 0.0°C**

- This menu allows the installer to change the switching differential when the temperature is rising and falling.
- If 'H ON' is set at 0.4°C and the setpoint is 20°C, then the thermostat will turn on when the temperature drops below 19.6°C.
- If 'H OF' is set at 0.2°C and the setpoint is 20°C, then the thermostat will turn off when the temperature reaches 20.2°C.
- Press and hold  and  for 5 seconds.
- 'CAL' will appear on the screen.

- Press  until 'HOn' appears on the screen.
- Press  to select.
- 'On' temperature will begin to flash.
- Use  and  adjust the HOn temperature.
- Press  to confirm.
- 'OF' temperature will begin to flash.
- Use  and  adjust the HOF setting.
- Press  to confirm and you will return to the menu.
- Press  to exit at any point.

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Documents / Resources



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References

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