# RFCP$^{V2}$

## RF Cylinder Thermostat & Receiver

Installation & Operation Guide

EPH CONTROLS

# Table of contents


**RFCA$^{V2}$ Cylinder Thermostat**

**Installation Instructions** 2

Factory Default Settings 3

Specifications 3

How your RFCA$^{V2}$ Cylinder Thermostat works 4

Mounting & Installation 5

Mounting of Temperature Sensor 8

**RF1C Receiver**

**Installation Instructions** 9

Specifications & Wiring 10

Mounting & Installation 11

**RFCA$^{V2}$ Cylinder Thermostat**

**Operating Instructions** 13

LCD Symbol Description 14

Button Description 15

Replacing the Batteries 16

On/ Off Function 16

Battery Low Warning 17

| | |
|---|---|
| Locking the Keypad | 17 |
| Adjusting the Target Temperature | 17 |
| **Menu** | 18 |
| P0 2 Setting High & Low Limits | 19 |
| P0 3 Hysteresis HOn & HOFF | 20 |
| P0 4 Calibration | 21 |
| P0 7 Resetting the Thermostat | 22 |
| **RF1C Receiver** | |
| **Operating Instructions** | 23 |
| Button / LED Description | 24 |
| LED Description | 25 |
| To connect the RFCA$^{V2}$ Thermostat to an RF1C Receiver | 26 |
| To disconnect the RFCA$^{V2}$ Thermostat from an RF1C Receiver | 27 |

# RFCA$^{V2}$ Cylinder Thermostat

# **Installation Instructions**

## Factory Default Settings

| | |
|---|---|
| Temperature indicator: | ˚C |
| Hysteresis: | 5˚C |
| Keypad lock: | Off |

## Specifications

| | |
|---|---|
| Power supply: | 2 x AAA Alkaline Batteries |
| Power consumption: | 50 uA |
| Battery replacement: | Once a year |
| Temp. control range: | 10 … 90˚C |
| Dimensions: | 80 x 80 x 25.7mm |
| Temperature sensor: | NTC 10K Ohm @ 25˚C |
| External sensor length: | 1950mm ± 80mm |
| Temperature indication: | ˚C |
| Hysteresis: | Adjustable 0.0 … 10˚C |

# How your RFCA$^{V2}$ Cylinder Thermostat works

When a RFCA$^{V2}$ thermostat is calling for heat, it will operate according to the target temperature selected by the user.

The target temperature is defined by turning the dial clockwise for a higher target temperature or anti-clockwise for a lower target temperature.

If the cylinder temperature is lower than the target temperature then the thermostat will activate the demand for heat.

This will be indicated with a flame symbol on the screen.

Once the desired target temperature has been achieved, the thermostat will stop demanding heat, and the flame symbol will disappear from the screen.

The screen will always display the current cylinder temperature.

# Mounting & Installation

## Caution!

- Installation and connection should only be carried out by a qualified person.
- Only qualified electricians or authorised service staff are permitted to open the receiver.
- If the thermostat or receiver are used in a way not specified by the manufacturer, its safety may be impaired.
- Prior to setting the thermostat, it is necessary to complete all required settings described in the section.

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**This thermostat should be mounted directly on a wall.**

# Mounting & Installation Continued

1) Remove the thermostat from its packaging.

2) Choose a mounting location so that the thermostat can measure the temperature as accurately as possible.

   - Choose a mounting location for the temperature probe as per the instructions on Page 9.

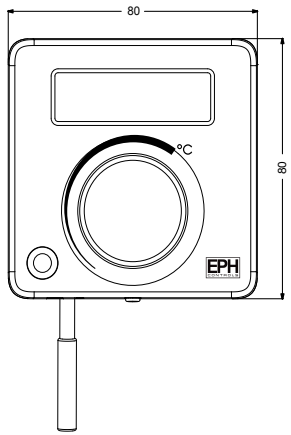
   - Prevent direct exposure to sunlight or other heating / cooling sources.

3) Press and hold the release button on the bottom of the thermostat to detach the front housing from the base plate.

4) Insert the 2 x AAA batteries provided and the thermostat will turn on.

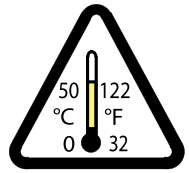
5) Fix the base plate directly to the wall with the screws provided. Attached the front housing to the base plate.

**1**




Type
1C
EN60730

IP20
EN60529



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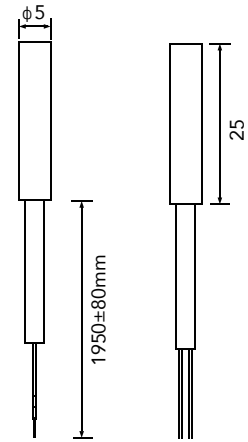


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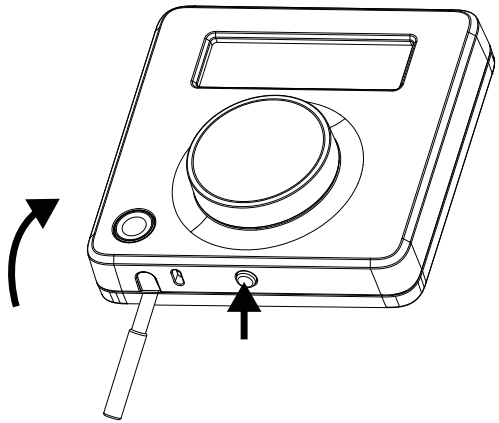
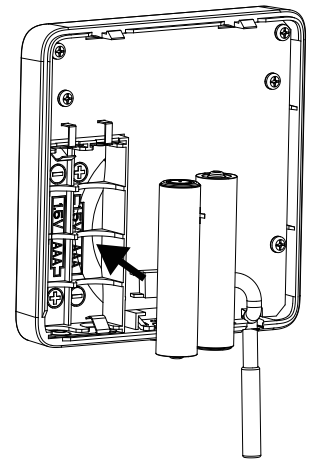
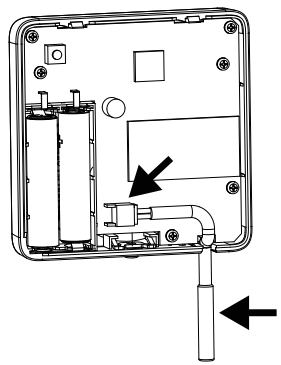


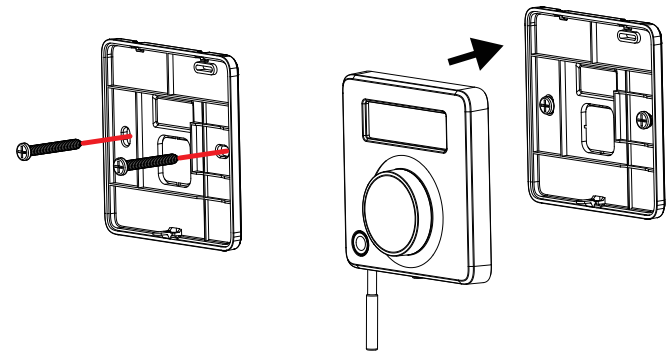
**4**



**5** Temperature Sensor



**6** Wall mounted



# Mounting of Temperature Sensor

## 1. Cylinder

***Surface***

The temperature sensor should be fitted on the bottom 1/3 of the cylinder.
Remove a section of insulation on the cylinder to reveal the copper surface.
Attach the temperature sensor to the surface of the cylinder using the foil tape provided.

***Cylinder Pocket***

Insert the temperature sensor into the appropriate pocket on the cylinder.
Secure the temperature sensor to the pocket using the foil tape provided.

## 2. Pipe

Remove any insulation on the pipework to reveal the pipe.
Attach the temperature sensor to the surface of the pipe using the foil tape provided.

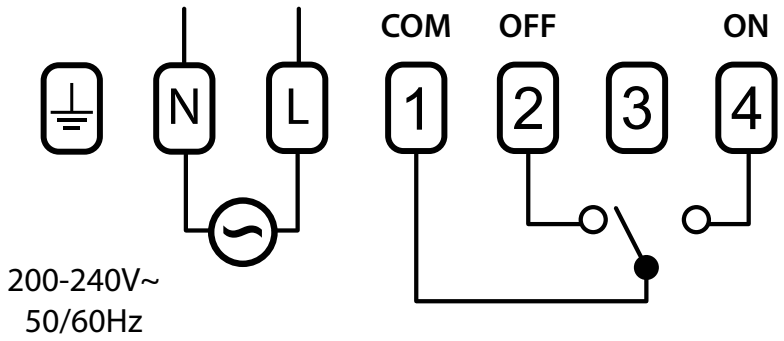
RF1C Receiver

# Installation Instructions

# Specifications & Wiring

| | |
|---|---|
| Power supply: | 200 - 240Vac 50-60Hz |
| Contact rating: | 230Vac 3A |
| Switch output: | SPDT |
| Ambient temperature: | 0…45˚C |
| Automatic action: | Type 1.C.Q |
| Appliance classes: | Class II appliance ⧈ |
| Pollution degree: | Pollution degree 2 |
| IP Rating: | IP20 |
| Rated Impulse Voltage: | Resistance to voltage surge 2500V as per EN 60730 |

## Internal wiring diagram for RF1C




### Switching Options

**Mains Switching**

- Link L to 1.

**Low Voltage Switching**

- Remove the external controls link from the boiler PCB.
- Connect 1 and 4 to these terminals.

# Mounting & Installation

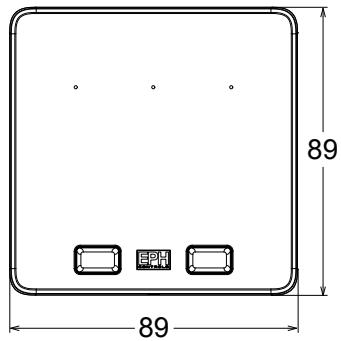
1) The RF1C receiver should be wall mounted in an area within 20 metres distance of the wireless thermostat. It is important that the receiver is mounted more than 25cm away from metal objects as this will affect communication with the thermostat.

   The receiver should be installed at least 1 meter from any electronic devices such as radio, TV, microwave or wireless network adaptor.

   The unit can be fitted to:
   1. Recessed conduit boxes
   2. Surface mounting boxes
   3. Directly mounted on a wall

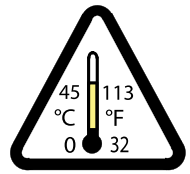
2) Use a Phillips screwdriver to loosen the screws of the backplate on the bottom of the RF1C. The receiver is lifted upwards from the bottom and removed from the backplate. (see page 12)
3) Screw the backplate to the wall with the screws provided.
4) Wire the backplate as per the wiring diagram on page 10.
5) Mount the receiver on the backplate making sure the pins and the backplate contacts are making a sound connection. Push the receiver flush to the surface and tighten the screws of the backplate from the bottom. (See page 12)

**1**




Type
1.C.
EN60730

IP20
EN60529



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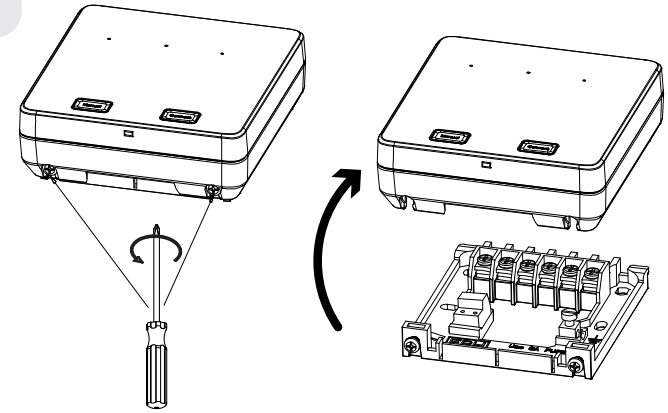

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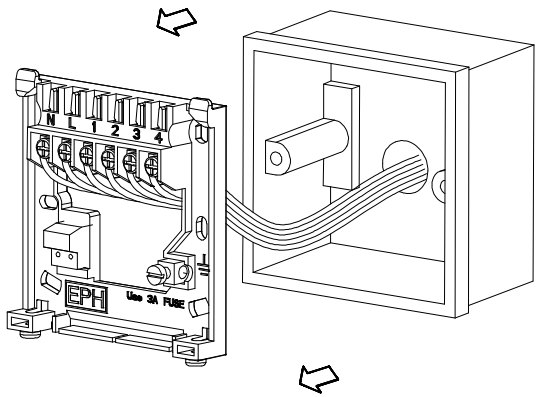


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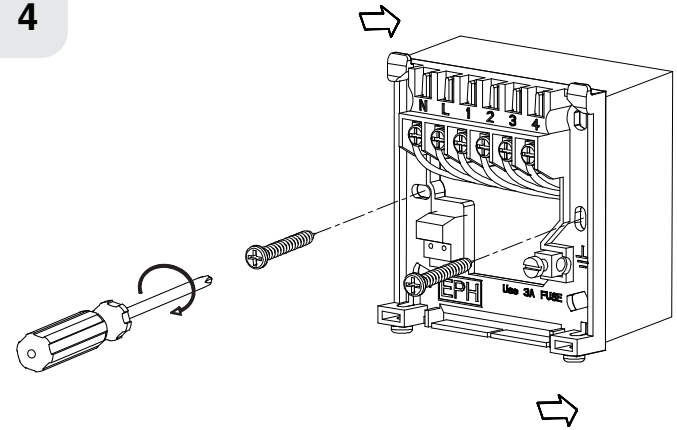


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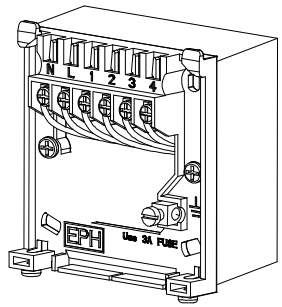
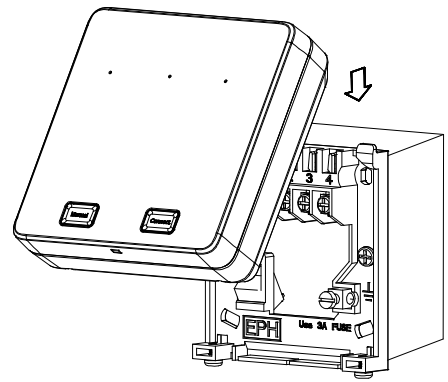


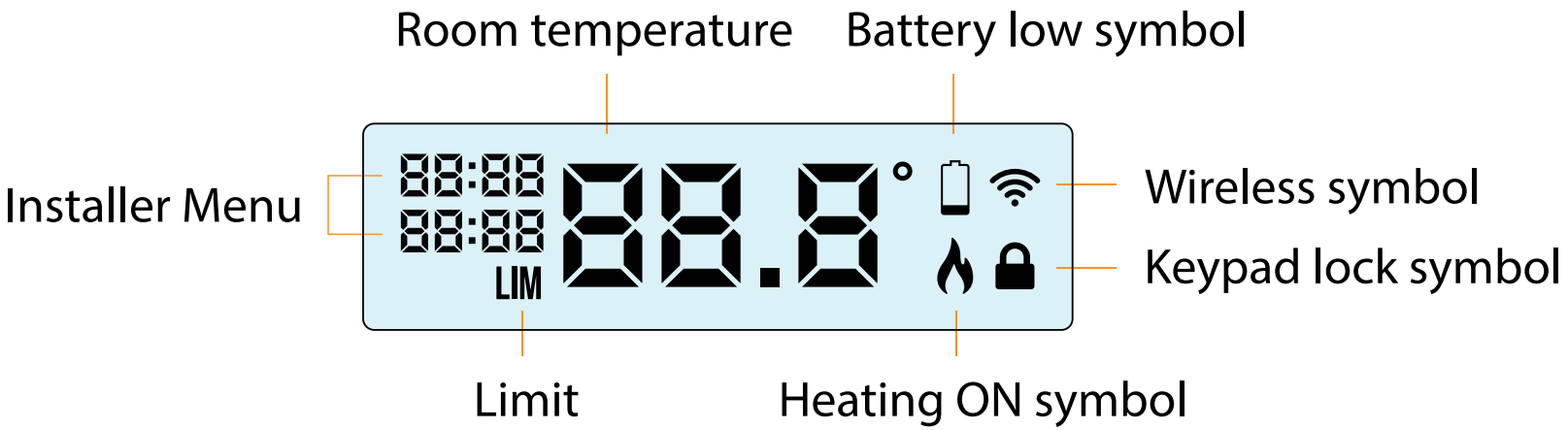

**6**



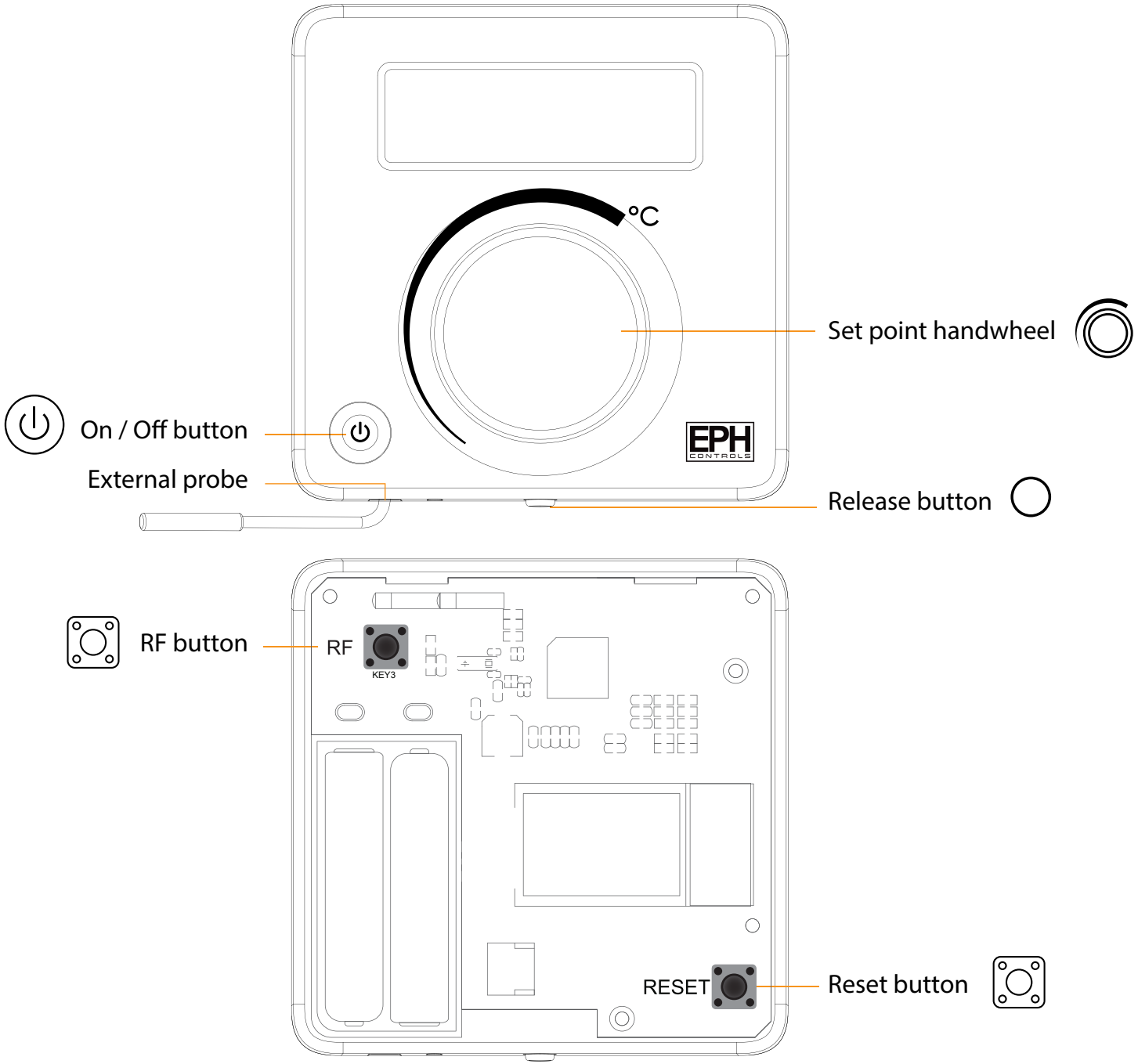
# RFCA$^{V2}$ Cylinder Thermostat

# **Operating Instructions**

# LCD Symbol Description



# Button Description

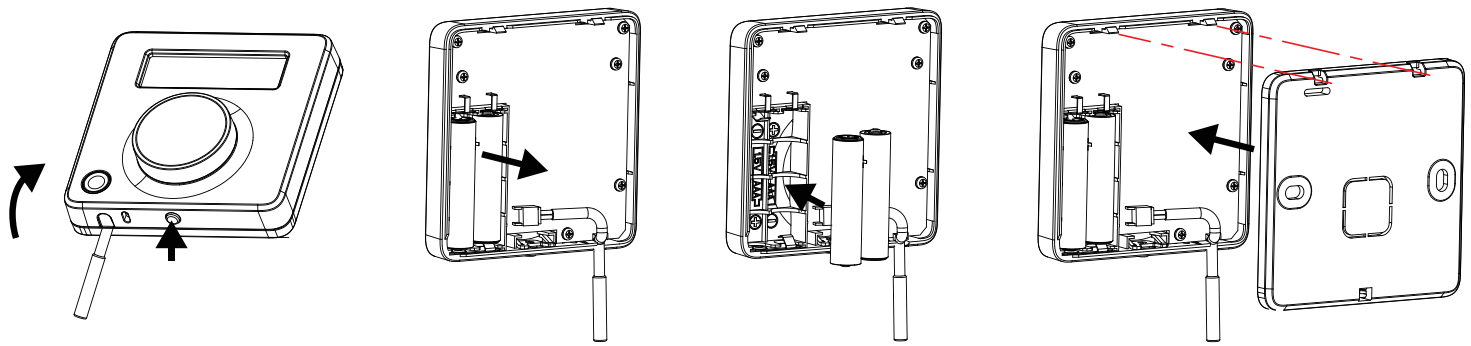


# Replacing the Batteries

Press and hold ◯ on the bottom of the thermostat, while holding ◯ , pull from the bottom to detach the front housing from the baseplate.

Insert the 2 x AAA batteries and the thermostat will turn on.

Close the battery compartment.



# On / Off Function

Press ⏻ to turn the thermostat On or Off.

When the thermostat is turned on, it will display the current room temperature.

When the thermostat is turned off, it will display the current room temperature and the word **'OFF'**.

## Battery Low Warning

When the batteries are almost empty, the symbol will appear on the screen. The batteries must now be replaced or the unit will shut down.

**Note:** Good quality batteries are essential to ensure the correct operation of this product. EPH recommend using Duracell or Energiser batteries.

## Locking the Keypad

To lock the thermostat, press and hold for 10 seconds.

will appear on the screen. The buttons are now disabled.

To unlock the thermostat, press and hold for 10 seconds.

will disappear from the screen. The buttons are now enabled.

## Adjusting the Target Temperature

Rotate clockwise to increase the target temperature.

Press or wait 5 seconds. The target temperature is now saved.

Rotate anti-clockwise to decrease the target temperature.

Press or wait 5 seconds. The target temperature is now saved.

# Menu

This menu allows the user to adjust additional functions.

**P0 2: Setting High and Low limits**

**P0 3: Hysteresis HOn & HOFF**

**P0 4: Calibration**

**P0 7: Resetting the Thermostat**

# P0 2 Setting High & Low limits Hi 90°C Lo 10°C

This menu allows the installer to change the minimum and maximum temperatures that the thermostat can operate between.

To access this setting press and hold and together for 5 seconds.

**'P02 & HI LO'** will appear on the screen. Press to select.

**'OFF' & 'LIM'** will appear on the screen.

Rotate to select **'ON'** and press to confirm.

**'Hi LIM'** will appear on the screen and the temperature will begin to flash.

Rotate to select the high limit for the thermostat.

Press to confirm.

**'LO LIM'** will appear on the screen and the temperature will begin to flash.

Rotate to select the low limit for the thermostat.

Press to confirm. The settings will be saved and the user will be returned to the previous screen.

Press to return to normal operation.

# P0 3 – Hysteresis HOn & HOFF HOn 0.5°C HOFF 0°C

This menu allows the installer to change the hysteresis of the thermostat when the temperature is rising and falling.

If HOn is set to 5˚C, this will allow a temperature drop of 5˚C below the target temperature, before the thermostat turns on again.

If HOFF is set to 0˚C, this will allow the temperature to rise 0˚C above the target temperature before the thermostat turns off.

To access this setting press and hold and together for 5 seconds.

**'P02'** will appear on the screen.

Rotate clockwise until **'P03 & HOn'** appears on the screen.

Press to select.

**'HOn'** will remain on the screen and the temperature will begin to flash.

Use to select the **'HOn'** temperature, press to confirm.

**'HOFF'** appears on the screen and the temperature will begin to flash.

Use to select the **'HOFF'** temperature, press to confirm.

The settings will be saved and the user will be returned to the previous screen.

Press to return to normal operation.

# P0 4 – Calibration

This menu allows the installer to calibrate the temperature of the thermostat.

To access this setting press and hold and together for 5 seconds.

**'P02'** will appear on the screen.

Rotate clockwise until **'P04 & CAL'** appears on the screen.

Press to select.

Current actual temperature will appear on the screen.

Rotate clockwise or anti clockwise to calibrate the temperature.

Press to confirm the temperature.

The current temperature will be saved and the user will be returned to the previous screen.

Press to return to normal operation.

# P0 7 – Resetting the Thermostat

This menu allows the user to reset the thermostat to factory settings.

To access this setting, press and hold and together for 5 seconds.

**'P02'** will appear on the screen

Rotate until **'P07 & rSt'** appears on the screen.

Press to confirm.

**'rSt'** will appear on the screen an **'nO'** will flash.

Rotate clockwise.

**'rSt'** will remain and **'YES'** will flash on the screen.

Press to confirm.

The thermostat will restart and revert to its factory defined settings.

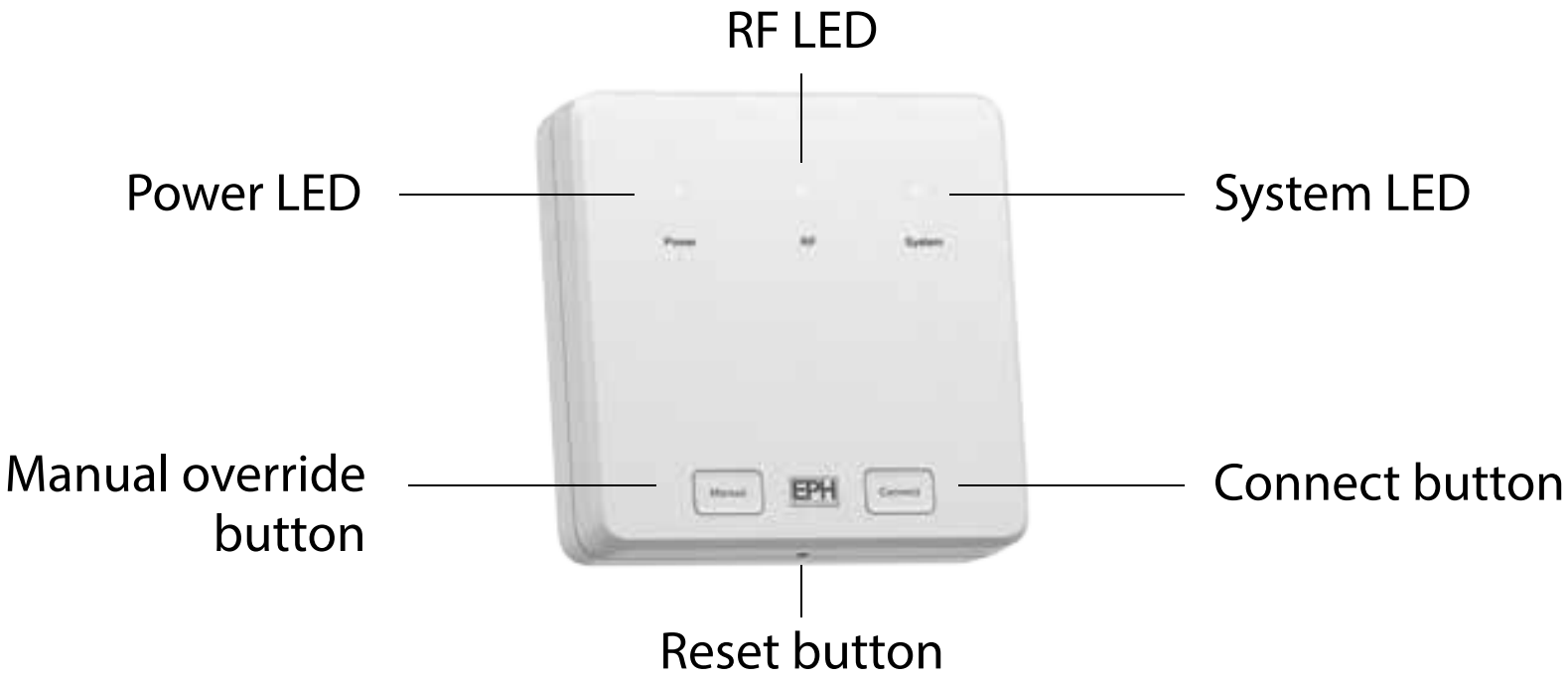
**Note:**

The thermostat may also be master reset by using the reset button located on the PCB inside of the thermostat. Press and follow the instructions above.

RF1C Receiver

# Operating Instructions

# Button / LED Description




| | | |
|---|---|---|
| Manual | Manual | Press to activate or deactivate the system. |
| Connect | Connect | Hold for 3 seconds to initialise the pairing process. The RF light will flash. |
| ■ | Reset | Press to reset the receiver. |

**Note:** Please refer to Page 10 for wiring information.

# LED Description

| LED | Colour | Function |
|---|---|---|
| Power LED | Red | The receiver is powered. |
| | | |
| RF LED | White | The thermostat is connected. |
| | | The RF light will double flash when the thermostat is disconnected. Check thermostat pairing. |
| | | **Note:** The RF light will blink intermittently when the system is sending and receiving a signal for communication. |
| | | **Note:** The RF light will blink once every second when in RF pairing by holding Connect. Press Manual to exit from this state. |
| | | |
| System LED | Red | The system is OFF. |
| | Green | The system is ON. |

# To connect the RFCA$^{V2}$ Thermostat to an RF1C Receiver

Please note: If you are installing a RFCP$^{V2}$, the RFCA$^{V2}$ thermostat and the RF1C receiver are pre-paired. The below procedures are not required.

## On the RF1C receiver:

Hold Connect for 3 seconds.

The RF light will begin to flash.

## On the RFCA$^{V2}$ thermostat:

Press and hold ◯ on the bottom of the thermostat, while holding ◯ , pull from the bottom to detach the front housing from the baseplate.

Press the RF button on the PCB.

**'nOE'** will appear on the screen followed by **'-- -'**.

The thermostat will count from 01 to 03.

When **'r1'** appears on the screen, press ◯ to confirm the pairing.

The thermostat and the receiver will return to normal operation.

The thermostat is now connected to the receiver.

# To disconnect the RFCA$^{V2}$ Thermostat from an RF1C Receiver

This can be done from either the thermostat or the receiver.

## On the RF1C receiver:

Hold Connect for 3 seconds to enter pairing mode.

Hold Connect for 10 seconds until the red light stops flashing.

Press Manual to exit, the thermostat is now disconnected.

## On the RFCA$^{V2}$ thermostat:

Press and hold ◯ on the bottom of the thermostat, while holding ◯ , pull from the bottom to detach the front housing from the baseplate.

Press the RF button once on the PCB.
**'nOE'** will appear on the screen followed by '-- -'.

Press and hold the RF button for 10 seconds until **'Adr'** appears on the screen.
Press twice to confirm.
The thermostat is now disconnected from the receiver.

# Notes

# Notes

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