CP4*i* Smart thermostat

BOILER PLUS

The CP4i Smart Thermostat is the perfect combination of simplicity and technology. The thermostat, receiver and gateway are pre-paired during production to ensure a quick and easy installation.

Via the EMBER App it is possible to have complete control over your heating system anywhere, anytime.

Key features and benefits

PRE-PAIRED COMPONENTS

Thermostat, recevier and gateway have pre-paired RF connections making installation quick and easy.

MULTI ZONE

Control up to 6 zones in a home by adding more thermostats. Hot water control is also available with CP4-HW-OT thermostat.

VOICE CONTROL

Control your heating system, check temperatures, boost zones and more with Alexa voice control.

OPENTHERM®

Modulate your OpenTherm® boiler for maximum efficiency and minimum impact on our environment.

MULTIPLE CONTROL

Control multiple homes and add multiple users at the touch of a button via your smartphone.

COST EFFECTIVE

Reduce your energy bills with time and temperature control of your heating & hot water - anywhere.

CONVENIENT

Whether at home or abroad, easy control of your heating system is in the palm of your hand.

PROGRAMMABLE

Allows flexible control by the users via the hardware or the EMBER App. Time and temperature can be programmed for 6 periods per day.

WARRANTY 5 Years STANDARD

ErP Class V | +3%

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WORKS WITH alexa

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GW03 GATEWAY INSTRUCTIONS

Welcome

Thank you for choosing EMBER by EPH Controls. We hope you enjoy using it as much as we did developing it!

Controlling your heating anywhere, anytime is only a few simple steps away.

In this booklet, we will provide a step by step guide to setting up the EMBER heating control app and its associated hardware.

Again, thank you for choosing EMBER.

Index

Getting started

WiFi Requirement

The SSID of your Wi-Fi should not be hidden when you are pairing the gateway to your router.

Please install the gateway in a place with a good Wi-Fi signal.

The gateway can only support 2.4GHz wireless routers. It does not support 5GHz wireless routers.

The gateway should not be in the blacklist of the router.

Please restart your wireless router periodically or restart it before you are going on holiday to ensure that the connection is kept after long periods of inactivity.

Pay attention to the number of devices connected to your wireless router. Some routers may not work properly if too many devices are connected.

Device Operating System

1) Minimum iOS is 9.
2) Minimum Android OS is 5.1 (Lollipop)

Positioning of the gateway

The gateway should be located near the receiver in an area with good WiFi signal. It should not be installed close to appliances such as microwaves, televisions etc.

The above will ensure a stable connection for remotely controlling your heating system.

■ **Useful Information:**

Visit EMBER YouTube channel for the TS Set up Guide.

On the Initial Setup screen, click on the Setting icon to access Tutorials, FAQs and Videos.

LCD / LED / Button legend

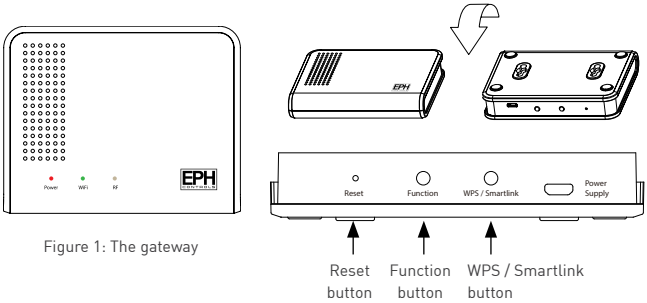
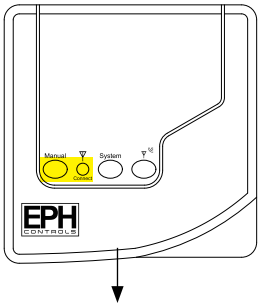


Figure 1: The gateway

LED	Status
Red LED on	Gateway has power
Green LED on	Gateway connected to WiFi
White LED on	Gateway connected to receiver



Buttons to be used during gateway installation

Figure 2: The RF receiver

Pairing your receiver to your gateway

Complete this step before pairing your receiver to your gateway

* Please note: If you are installing a CombiPack4, the RFRP-OT thermostat and the RF1A-OT receiver will have a pre-established RF connection so it is not necessary to carry out Step 2 in the RF connection process below.

** Please note: If you are installing a CP4i, the thermostat, receiver and gateway will have pre-established RF connections so there is no need to carry out Step 3 in the RF connection process below.

1. Reset your router by switching it on and off.
2. Ensure that your thermostat(s) are paired to your receiver(s). This can be tested by turning the thermostat on or off and ensuring the receiver is switching on and off accordingly. If a thermostat is not paired to the receiver please follow the instructions in Section 17 of the thermostat Operating Instructions.
3. Ensure that the receiver you're connecting to the boiler is set up as a hub receiver. For instructions on your to do this, please refer to Section 2 of the thermostat OpenTherm® Instructions.
4. Press the 'Connect' button on the receiver. The Red and Green LEDs will begin to flash.
5. On the Gateway, press and hold the 'Function' button for 3 seconds.
6. The White LED on the gateway will begin to flash at 1 second intervals.
7. When the White LED stop flashing and is solid On, the gateway has been connected to the hub receiver.

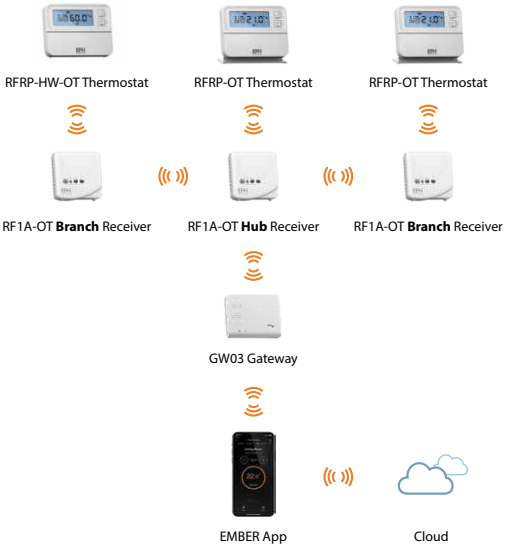
Note: If you are connecting multiple receivers to a gateway, please ensure that all branch receivers are connected to the hub receiver. There can only be 1 hub receiver in a system. Allow 5 minutes for all receivers to synchronise with the hub receiver before connecting the gateway to the EMBER App.

System architecture

To optimise battery life, the end to end communication can take up to 3 minutes .

Example A Single Zone System

Example B Multi Zone System



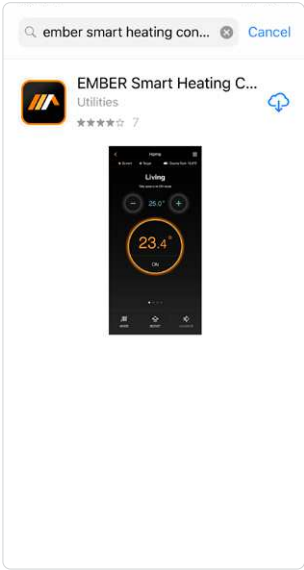
Note: A maximum of 6 thermostats can be used in the system.

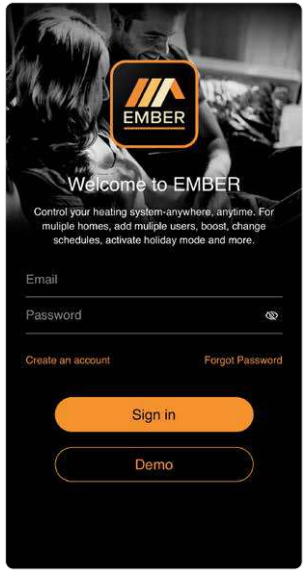
Downloading the EMBER App

1. Go to the Apple App Store on your iPhone or the Google Play Store on your Android device and download the EPH EMBER App.

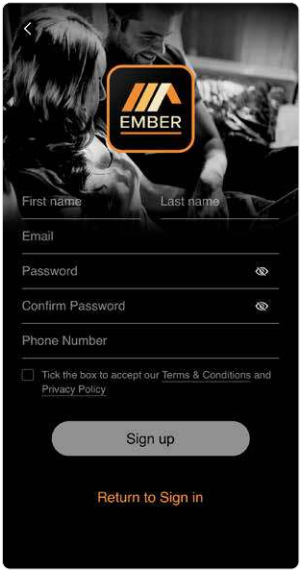
   QR codes to the download links are available on the back cover.

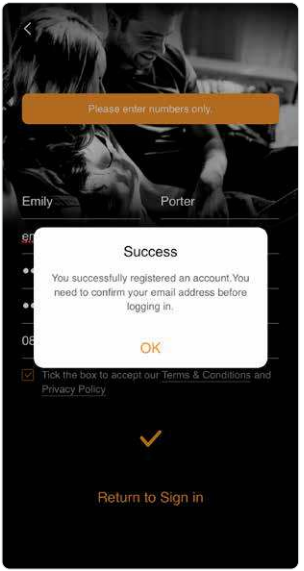
2. Once the app has been installed, open it.
3. Select 'Create an account' to Sign up with your email address.





4. Enter your First name.
5. Enter your Last name.
6. Enter your Email address.
7. Enter your Password (Minimum 6 characters – including lowercase, uppercase and number)
8. Confirm your Password.
9. Enter your telephone number. (optional)
10. Tick the box to accept our Terms & Conditions and Privacy Policy.
11. Press 'Sign up'.





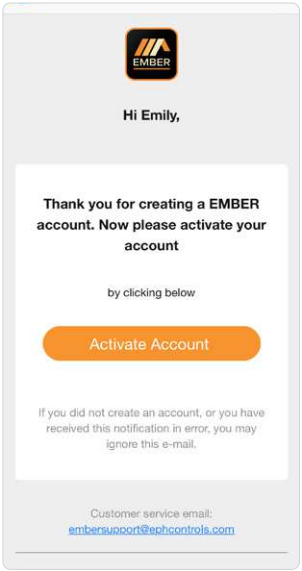
Downloading the EMBER App (Continued)

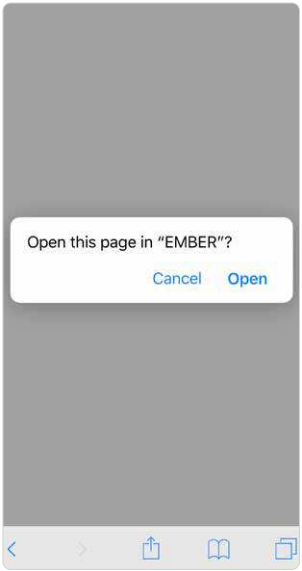
12. A confirmation email should arrive in your inbox from EMBER.

    This should take up to 2 minutes. If you do not receive the email, please search your Junk / Spam email folder.

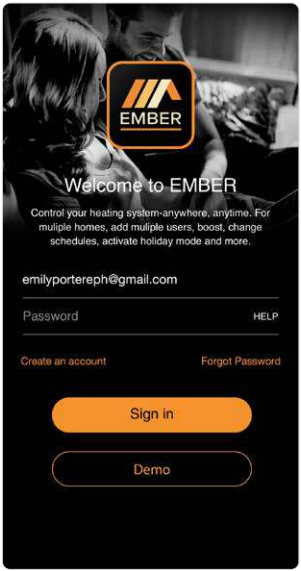
13. Open the email and press the embedded button 'Activate Account'.

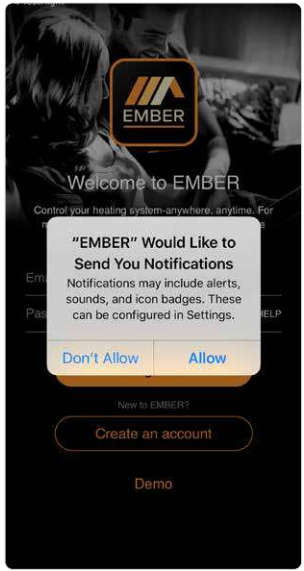
14. You will be directed to the EMBER App. Select 'Open' in EMBER. If you are not automatically directed to the App, manually open it and complete step 15.





15. When the App opens, enter your email address and password.
16. Press 'Sign in'.
17. Choose 'Allow' so EMBER App can send you notifications.



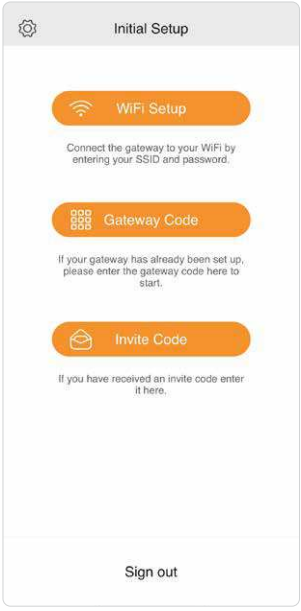


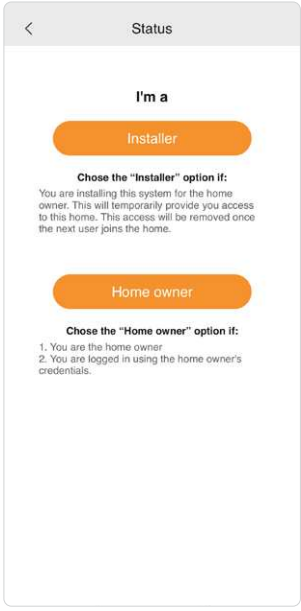
Pairing your gateway to your wireless internet

1. Press 'WiFi Setup' and you will be directed to the WiFi Setup screen.

   If the WiFi light on the gateway is green you can choose the Gateway Code.

   If you have been given an invite code, press 'Invite Code' and you may then enter the code to access the home you have been invited to.





2. On the 'Your System' screen, you must choose the 'TS' (Thermostat System) option.

   GW03 will not operate with the 'PS' (Programmer System).

Pairing your gateway to your wireless internet (Continued)

3. Ensure your mobile device is connected to the same network that the gateway will be connected to. This will ensure that the SSID will be automatically populated with the correct information.

Note: It is recommended to allow location permission on devices running IOS 13 / Android 9 or above. This will allow EMBER to automatically populate the WiFi (SSID) information during Setup. Without giving this permission, you will have to enter your WiFi (SSID) details manually.

- - NOTE - -

After entering the WiFi router password in Step 4, do not press the continue button. Complete step 5 and then press continue button as per step 6.

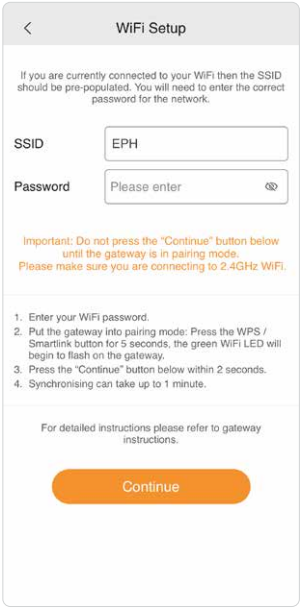
4. Enter WiFi router password –
5. On the gateway:

   Hold the WPS / Smartlink button for 5 seconds.

   The green light will begin to flash on the gateway.
6. On your mobile device:
   Immediately press 'Continue'.

   When successful the lights on the gateway will be solid green and you will progress to the Gateway Code screen.

   Synchronising can take up to 30 seconds.
7. If pairing is unsuccessful, please repeat steps 5 & 6.
8. The Gateway now needs to be associated with your mobile device.



Home Setup

9. Enter the gateway code located on the gateway housing.

   Do not press "Continue" on the Gateway Code screen until all 3 LEDs are On constantly.

10. Press 'Continue' once only.

Home Setup appears on the the screen.

1. Enter the Hom name.
2. Enter the Zone names. (It is not possible to rename the Hot Water zone.)
3. Press 'Save' to continue.

   Note: It is recommended to use unique zone names if you are planning to use the Alexa or Google Assistant voice control function.

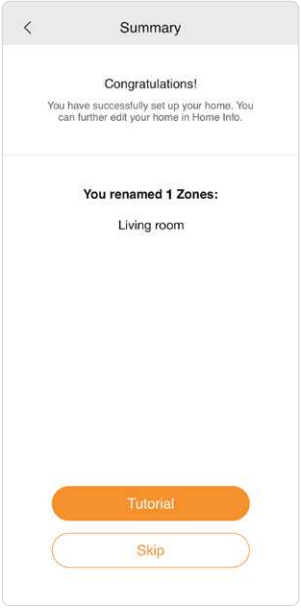
Home Setup (Continued)

4. Enter the postcode or your address to set the location of your home.
5. Press 'Save'.
6. The Invite Users screen will appear.
7. Invite other users if needed or press 'Skip to continue'.

8. You will receive a summary confirming the changes that you have made.
9. Press 'Tutorial' to view the tutorials.*
10. Press 'Skip' to complete Home Setup.
11. The Home screen will appear.

    If you have multiple zones, you will see a zone list with the relevant number of zones.

    Note: You can access the tutorials from the setting menu and burger menu in the EMBER App.



Home setup (Continued)

12. Select one of the zones on the Home screen to access zone control.

Zone control diagram

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Official Site EMBER

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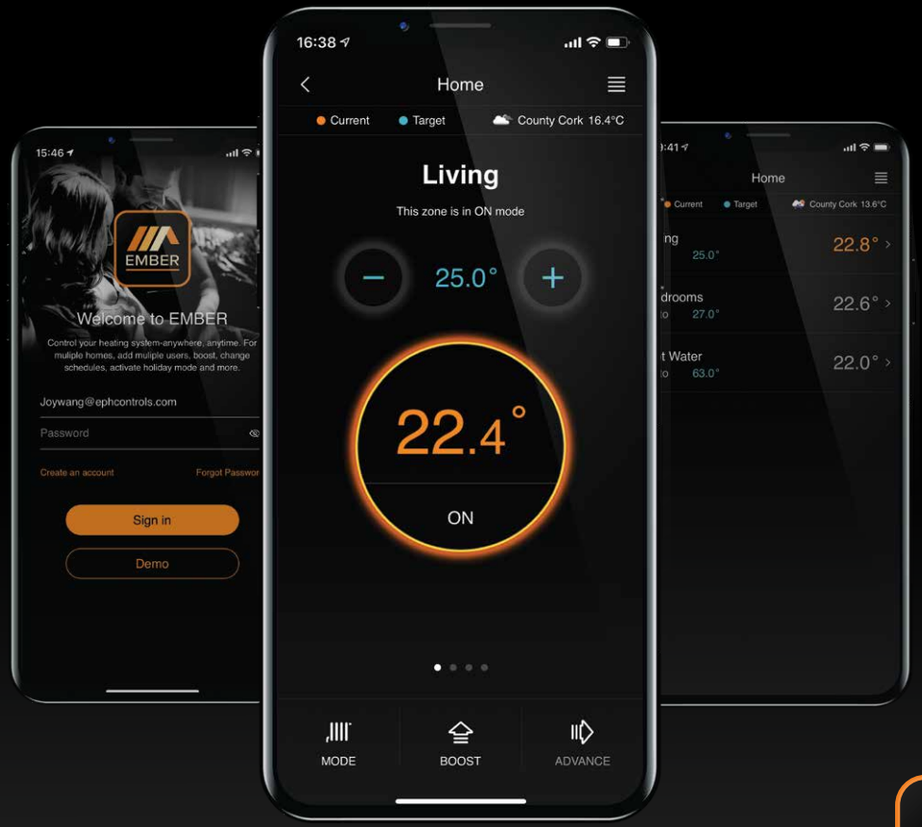
20191107

Smart Heating Control System

Control your heating anytime from anywhere using the EMBER App



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One App 2 Systems

Voice Control
Frost Protection
Quick Boost
Holiday Mode

We all love to come home to a cosy house.

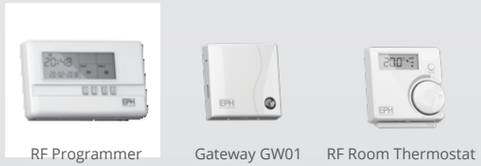
With the EMBER App from EPH Controls, you can ensure your home is at your desired temperature, from wherever you are, and come home to cosy, every time.

At the touch of a button, the EMBER App allows you to turn on and off your heating, adjust the temperature, view and change your weekly schedule. The boost function allows you to turn on the heating for 1 to 3 hours, without adjusting your programmed settings.

The EMBER APP is simple to install and easy to use. It is the perfect solution for new heating systems or upgrades.

Talk to your installer to find out which system best suits your requirement. The EMBER App can control both programmer based systems and thermostat based systems.

Programmer System PS



RF Programmer | Gateway GW01 | RF Room Thermostat

Thermostat System TS

RF Programmable Thermostat | Gateway GW03 | RF Receiver

Benefits of EMBER

CONVENIENT

Whether at home or abroad, easy control of your heating system is in the palm of your hand.

COMFORTABLE

No need to come home to a cold house again. Simply activate your heating system en route!

COST EFFECTIVE

Reduce your energy bills with total control of time and temperature of your heating & hot water.

MULTIPLE CONTROL

Control multiple homes and add multiple users at the touch of a button via your smartphone.

WORKS WITH alexa

Voice Control is available on EMBER TS and will be available to EMBER PS soon.

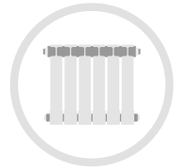
How it works

Control your heating and hot water with the EMBER App via your EMBER gateway.

PS

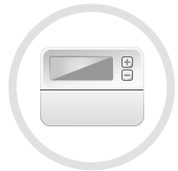
Your EMBER gateway is the connection between your WiFi and your heating controls.

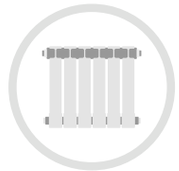
Your heating controls communicate with the EMBER App to achieve your desired settings.



Enjoy your ideal room & hot water temperatures with the EMBER App.

TS





COMBIPACK4

EPH CONTROLS

Installation and Operation Guide

Table of contents

Table of contents (Continued)

RFRP-OT Room Thermostat

Installation Instructions

Factory Default Settings

Temperature indicator:	˚C
Switching differential:	0.4˚C
In built frost protection:	5˚C - Not adjustable
Clock:	24 hours
Keypad lock:	Off
Operating mode:	5/2 day

Frost Protection

5˚C

Frost protection is built into this thermostat.
It is pre fixed at 5°C and is not adjustable.
It will only be activated when the thermostat is in the OFF mode and the room temperature falls below 5°C.

Specifications

Power supply:	2 x AA Alkaline Battery
Power consumption:	2 mW
Battery replacement:	Once a year
Temp. control range:	5 … 35˚C
Ambient temperature:	0 … 45˚C
Dimensions:	130 x 99 x 25mm
Temperature sensor:	NTC 100K Ohm @ 25˚C
Temperature indication:	˚C
Switching differential:	0.4˚C
Frost protection:	Only operational in Off mode
Pollution degree:	Pollution degree 2

How your programmable thermostat works

When the thermostat is in the AUTO mode, it will operate according to the times and temperatures that have been programmed. The user can select from 6 different programs per day - each with a time and a temperature.

There is no OFF time, only a higher and a lower temperature.

If the user wants the thermostat to be OFF at a certain time, set the temperature for this time to be low. The thermostat will turn ON if the room temperature is lower than the setpoint for the current period.

Example: If P1 is set to be 21˚C at 6am, and if P2 is set to be 10˚C at 8am, the thermostat will look for the temperature to be 21˚C between 6am and 8am.

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 thermostat.
- If the thermostat is 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.

This thermostat can be mounted in the following ways:

1) **Directly mounted on wall**
2) **Free standing - Stand Included**

Mounting & Installation (Continued)

1) The mounting height should be 1.5 metres above the floor level.

2) The thermostat should be wall mounted in the room where the heating is to be controlled.

   The place of installation should be chosen so that the sensor can measure the room temperature as accurately as possible.

   Choose the mounting location to prevent direct exposure to sunlight or other heating / cooling sources when mounted.

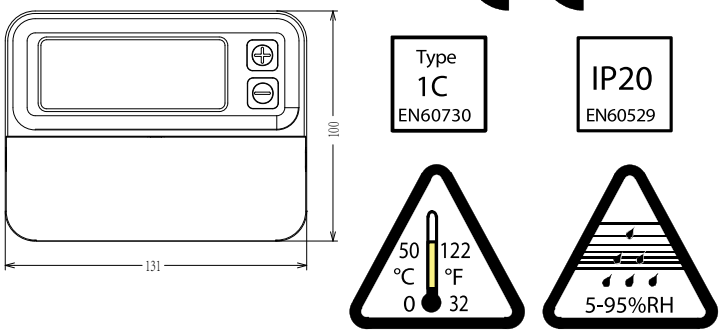
3) Fix the mounting plate directly to the wall with the screws provided.

4) Attach the thermostat to the mounting plate.

5) Lower the flap at the front of the thermostat. There is a battery compartment located below the buttons. Apply downward pressure to remove the cover.

6) Insert the 2 x AA batteries and the thermostat will turn on. Close the battery compartment.

1



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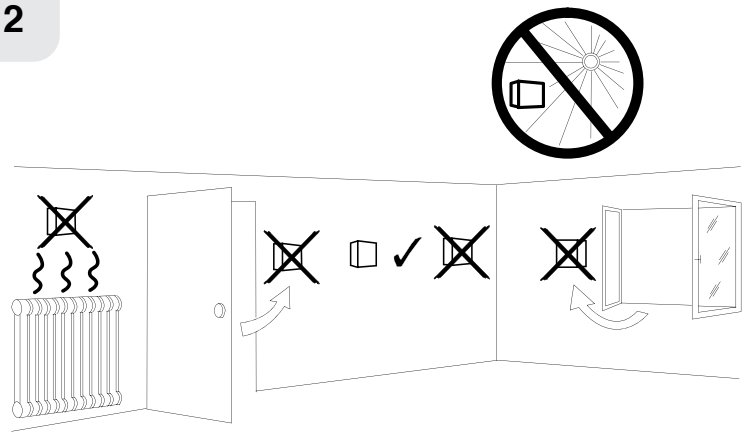

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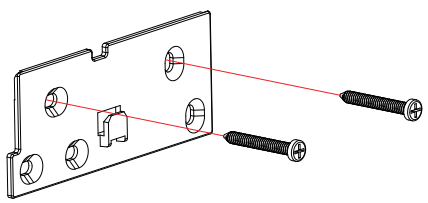

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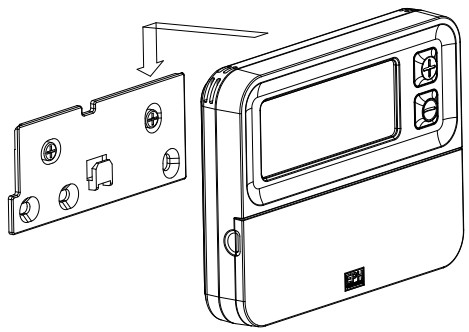

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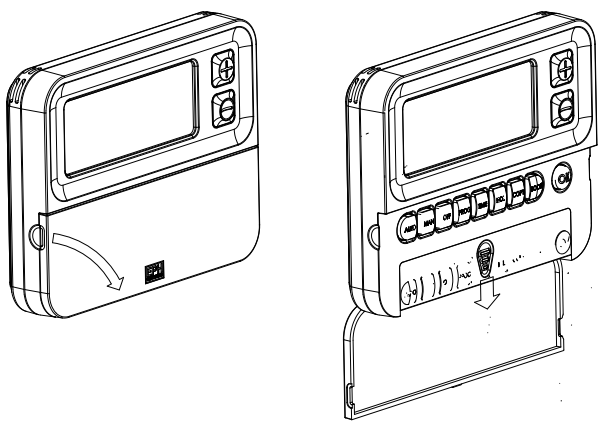

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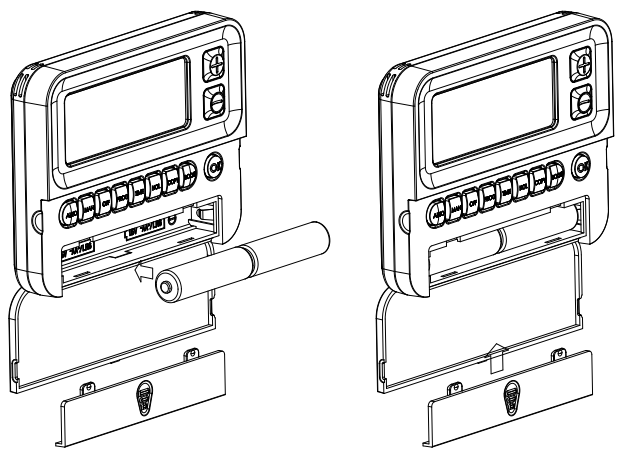
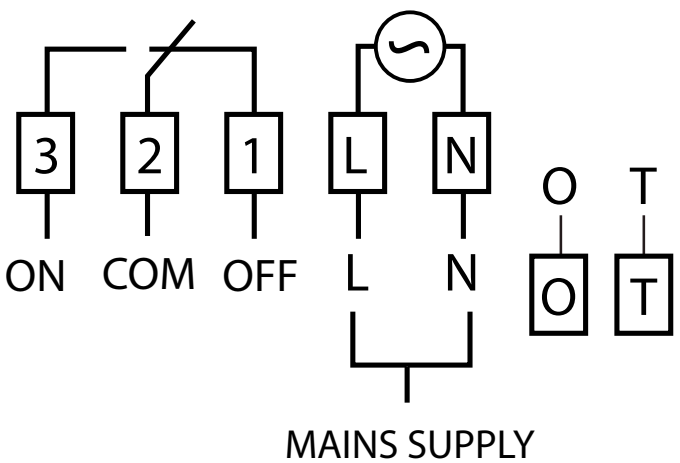


RF1A Wireless Receiver
Installation Instructions

Specifications & Wiring

Power supply:	200 - 240Vac 50-60Hz
Contact rating:	250 Vac 10(3)A
Ambient temperature:	0 … 45˚C
Automatic action:	Type 1.C.Q
Appliance classes:	Class II appliance ⧈
Pollution degree:	Pollution degree2
IP Rating:	IP20
Rated Impulse Voltage:	Resistance to voltage surge 2500V as per EN 60730

Internal wiring diagram for RF1A-OT



* If mains voltage output is required, terminals L & 2 must be electrically linked.

Important: Do not connect Mains Voltage to OpenTherm® terminals.

Mounting & Installation

1) The RF1A-OT 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 1 metre away from metal objects as this will affect communication with the thermostat.

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

2) Slacken the fastening screw on the bottom of the receiver with a philips screwdriver. The receiver is hinged and can be opened 180 degrees.

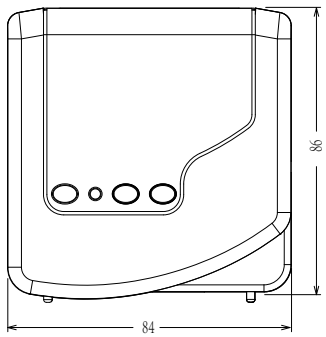
3) Screw the receiver to the wall with the screws provided.

4) Remove the protective cover on the terminal block.

5) Insert wires into therminal block in accordance with the wiring diagram.

6) Close the cover and tighten the fastening screw.

1



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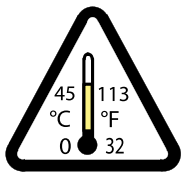

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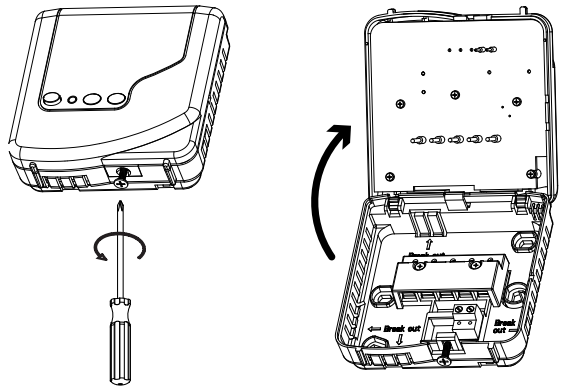

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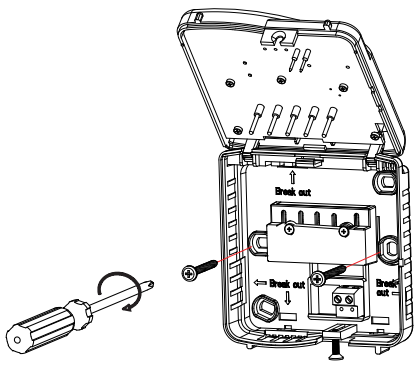

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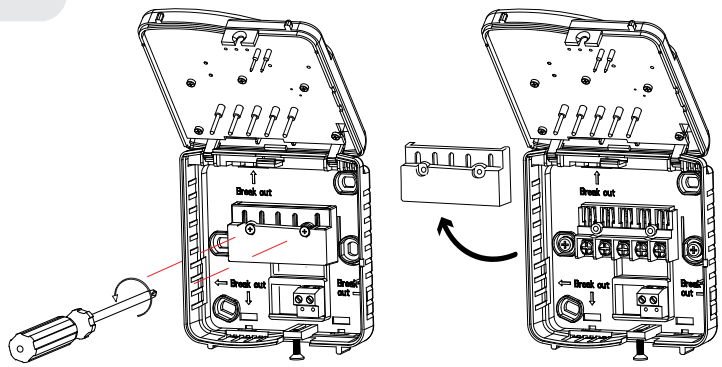
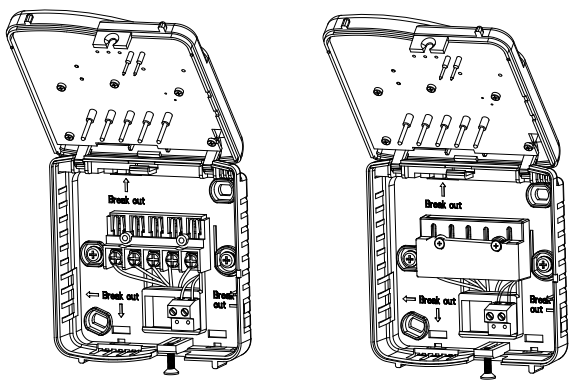


5



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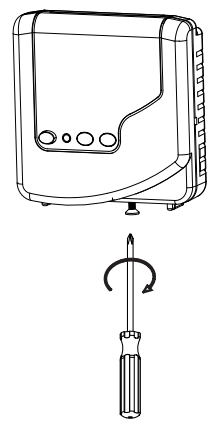
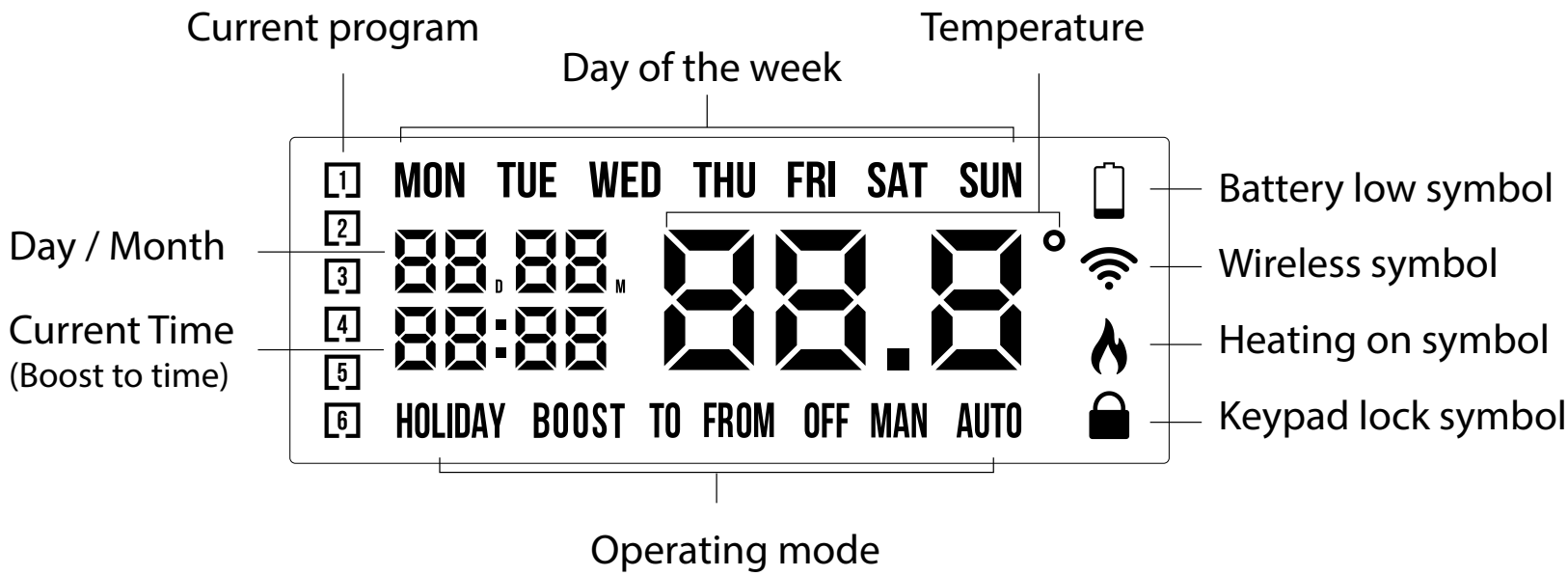


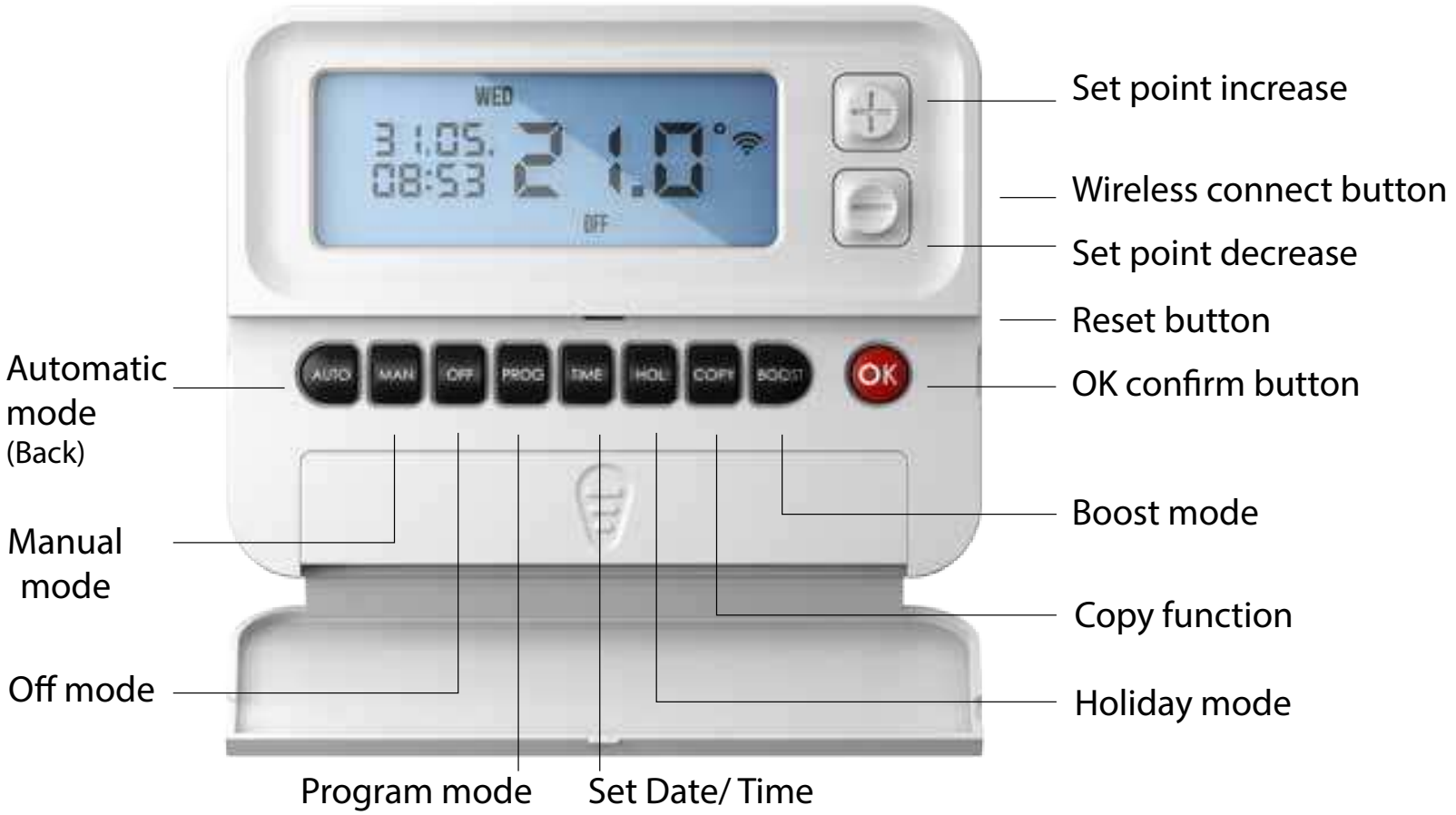
RFRP-OT Room Thermostat

Operating Instructions

LCD Symbol Description



Button Description



AUTO Automatic mode

MAN Manual mode

OFF Off mode

PROG Program mode

TIME Set Date / Time

HOL Holiday mode

COPY Copy function

BOOST Boost mode

Set point increase

Set point decrease

OK Copy function

RESET Copy function

Resetting the thermostat

Press the RESET button on the side of the thermostat.

'rst no' will appear on the screen.

Press the ⊕ button.

'rst yes' will appear on the screen.

Press the OK button to reset the thermostat.

Keypad lock and unlock

 OFF

To lock the keypad, press and hold the ⊕ and ⊖ buttons for 10 seconds.

🔒 will appear on the screen. The keypad is now locked.

To unlock the keypad, press and hold the ⊕ and ⊖ buttons for 10 seconds.

🔒 will disappear from the screen. The keypad is now unlocked.

Setting the date, time and programming mode

Press the TIME button once, the year will begin flashing.

Press the ⊕ or ⊖ buttons to adjust the year. Press OK.

Press the ⊕ or ⊖ buttons to adjust the month. Press OK.

Press the ⊕ or ⊖ buttons to adjust the day. Press OK.

Press the ⊕ or ⊖ buttons to adjust the hour. Press OK.

Press the ⊕ or ⊖ buttons to adjust the minute. Press OK.

Press the ⊕ or ⊖ buttons to adjust from 5/2d to 7d or 24h mode.

Press the ⊕ or ⊖ buttons to turn DST (Day Light Saving time) On or Off.

Press the AUTO button or wait 5 seconds and the thermostat will return to normal operation.

Factory Program Setting

5/2d

	5/2 Day					
	P1	P2	P3	P4	P5	P6
Mon-Fri	06:30	08:00	12:00	14:00	17:30	22:00
	21°C	10°C	10°C	10°C	21°C	10°C
Sat-Sun	08:00	10:00	12:00	14:00	17:30	23:00
	21°C	10°C	10°C	10°C	21°C	10°C

	7 Day					
	P1	P2	P3	P4	P5	P6
Mon-Fri	06:30	08:00	12:00	14:00	17:30	22:00
	21°C	10°C	10°C	10°C	21°C	10°C
Sat-Sun	08:00	10:00	12:00	14:00	17:30	23:00
	21°C	10°C	10°C	10°C	21°C	10°C

	24 Hour					
	P1	P2	P3	P4	P5	P6
Everyday	06:30	08:00	12:00	14:00	17:30	22:00
	21°C	10°C	10°C	10°C	21°C	10°C

Programming Modes

The RFRP-OT Room Thermostat has the following programming modes available:

5/2 Day mode	Programing Monday to Friday as one block and Saturday and Sunday as a 2nd block. Each block can have 6 different times and temperatures.
7 Day mode	Programming all 7 days individually with different times and temperatures.
24 Hour mode	Programming all 7 days as one block with the same time and temperatures.

If 7 D mode is selected, you can program each day of the week with 6 individual times and temperatures.

If 24H mode is selected, you can only program each day of the week with the same 6 times and temperatures.

Adjust the program setting in 5/2 Day mode

Press the PROG button once.

Programming for Monday to Friday is now selected.

Press the ⊕ or ⊖ buttons to adjust the P1 time. Press OK.

Press the ⊕ or ⊖ buttons to adjust the P1 temp. Press OK.

Repeat this process to adjust P2 to P6 times and temperatures. Press OK.

Programming for Saturday to Sunday is now selected.

Press the ⊕ or ⊖ buttons to adjust the P1 time. Press OK.

Press the ⊕ or ⊖ buttons to adjust the P1 temp. Press OK.

Repeat this process to adjust P2 to P6 times and temperatures.

Press the AUTO button to return to automatic mode.

While in PROG Mode pressing the PROG button will jump from P1-P2 etc without changing the temperature.

While in PROG Mode pressing the TIME button will jump to the next day (block of days).

Copy Function

Copy function may only be used if the thermostat is in the 7d mode.

Set the times and temperatures for the day that you wish to copy from in programming mode.

When still on the day press the COPY button.

The day of the week that you have selected will be shown with 'COPY' below it.

The next day will begin to flash on the top of the screen.

Press the ⊕ button to copy the times and temperatures to that day.

Press the ⊖ button to skip a day.

You can copy to multiple days using the ⊕ button.

Press the OK button when copying has been completed.

Temporary Override

When in AUTO mode, press the ⊕ or ⊖ buttons to adjust the temperature setpoint. ‘OvEr’ will appear on the screen.

Press OK or after 5 seconds the thermostat will operate in this temporary override, until the next switching time.

To cancel temporary override, press the OFF buttton and then press the AUTO button to return to the automatic mode.

Permanent Override

Press the MAN button to enter the manual mode (Permanent Override), ‘MAN’ will appear on the screen.

Press the ⊕ or ⊖ buttons to adjust the temperature setpoint.

Press OK or after 5 seconds the thermostat will operate in this permanent override.

To cancel permanent override, press the OFF buttton and then press the AUTO button to return to the automatic mode.

Boost Function

The thermostat can be boosted to a specific temperature for 1, 2 or 3 hours while the thermostat is operating in all modes except for holiday mode.

Press the BOOST button 1, 2 or 3 times, the time that the boost will be activated to will flash on the screen.

If you do not press any other button the boost will activate to the temperature displayed on the screen after 5 seconds.

If you press the OK button the temperature will now flash. You can edit the temperature if you press the ⊕ or ⊖ buttons.

Press the OK button or wait for 5 seconds for the boost to activate.

'**BOOST TO**' will now be displayed on the screen with the time that it is activated to displayed above this text.

Press the BOOST button again to deactivate the boost.

Holiday Function

This will switch your heating system off between the start and end times you select .

Press the HOL button, '**HOLIDAY FROM**' will appear on screen.

Press the ⊕ or ⊖ buttons to adjust the year. Press OK .

Press the ⊕ or ⊖ buttons to adjust the month. Press OK .

Press the ⊕ or ⊖ buttons to adjust the day. Press OK .

Press the ⊕ or ⊖ buttons to adjust the hour. Press OK .

'**HOLIDAY TO**' will appear on screen.

Press the ⊕ or ⊖ buttons to adjust the day. Press OK .

Press the ⊕ or ⊖ buttons to adjust the month. Press OK .

Press the ⊕ or ⊖ buttons to adjust the year. Press OK .

Press the ⊕ or ⊖ buttons to adjust the hour. Press OK .

The thermostat will now return to the mode it was in before the Holiday settings were entered. To cancel Holiday mode, press the HOL button.

Backlight mode selection  AUTO

There are two settings for selection. The factory default setting is AUTO.

OFF The backlight is permanently OFF.

AUTO On pressing any button the backlight stays on for 5 seconds.

To adjust the backlight setting, lower the cover on the front of the unit.

Press the OK button for 5 seconds.

Press either the ⊕ or ⊖ buttons to select the OFF or AUTO mode.

Press the OK button.

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.

Replacing the batteries

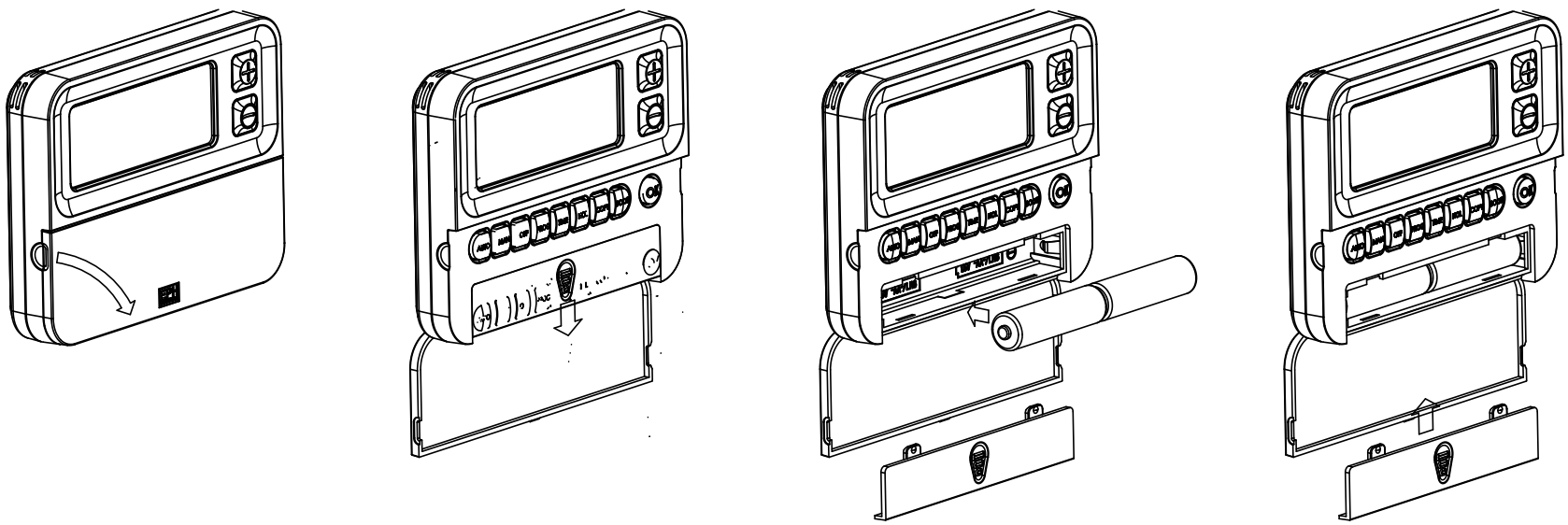
Lower the flap at the front of the thermostat.

There is a battery compartment located below the buttons.

Apply downward pressure to remove the cover.

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

Close the battery compartment.



Installer menu

To access the installer menu, you must hold Prog and OK for 5 seconds.

When in the installer menu, press ⊕ , ⊖ and OK to navigate and select. Use AUTO , MAN or OFF to go back a step.

P0 1: Mode (Normal / Optimum Start / TPI)

P0 2: Hi Lo (limiting the thermostat)

P0 3: Hysteresis (differential)

P0 4: Calibration

P0 5: Frost Protection

P0 6: Exit

Installer menu OpenTherm® Instructions

P0 6: Setting DHW temperature

P0 7: OpenTherm® Information

P0 8: DHOP

P0 9: Set OpenTherm® Parameters

Exit

PO 1 Operating Mode (Normal / Optimum Start / TPI)

Nor (Normal Mode)

When the thermostat is in Normal mode, the thermostat will try to reach the target temperature after the program changes.

Example: Program 1 on the thermostat is 21°C for 06:30am and the room temperature is 18°C. The thermostat will start the heating at 06:30am and the room temperature will start to increase then.

OS (Optimum Start Mode)

BOILER PLUS

When the thermostat is in Optimum Start mode, the thermostat will try to reach the target temperature by the start time of the next switching time. This is done by setting the Ti (time interval) on the thermostat in this menu to 10, 15, 20, 25 or 30. This will allow the thermostat 10, 15, 20, 25 or 30 minutes to increase the room temperature by 1°C.

Ti can be set when OS is selected in the installer menu. 20˚C

PO 1 Operating Mode (Normal / Optimum Start / TPI)

OS (Optimum Start Mode) BOILER PLUS (Continued)

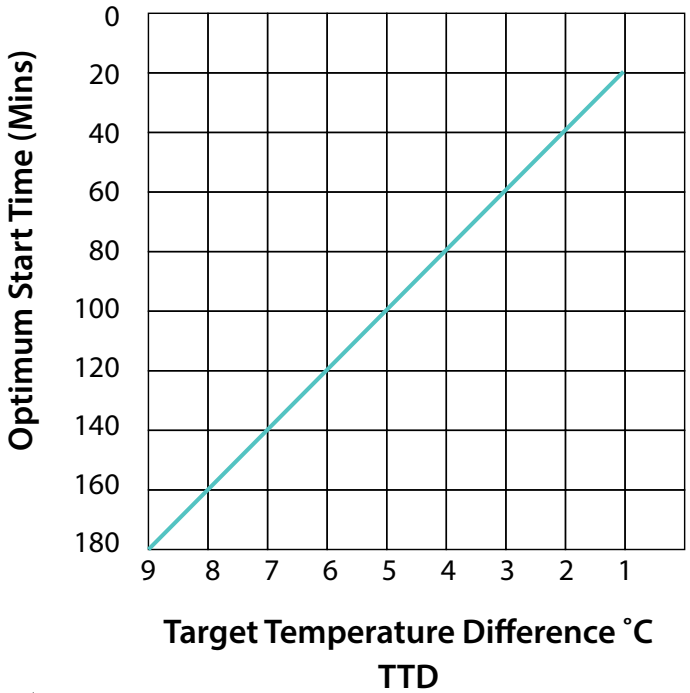
To achieve the target temperature when the program starts, the thermostat will read:

1. The Room Temperature (RT)
2. The Setpoint Temperature (ST)
3. The Target Temperature Difference (TTD) is the difference between the setpoint temperature and the room temperature .

The time (in minutes) that it will take to overcome (TTD) is called Optimum Start Time (OST) and its maximum value is 3 hours = 180 mins. This is subtracted from the start time.

As the temperature increases the thermostat will recalculate the OST if the temperature is increasing too quickly.

Optimum Start Control Graph with Ti = 20



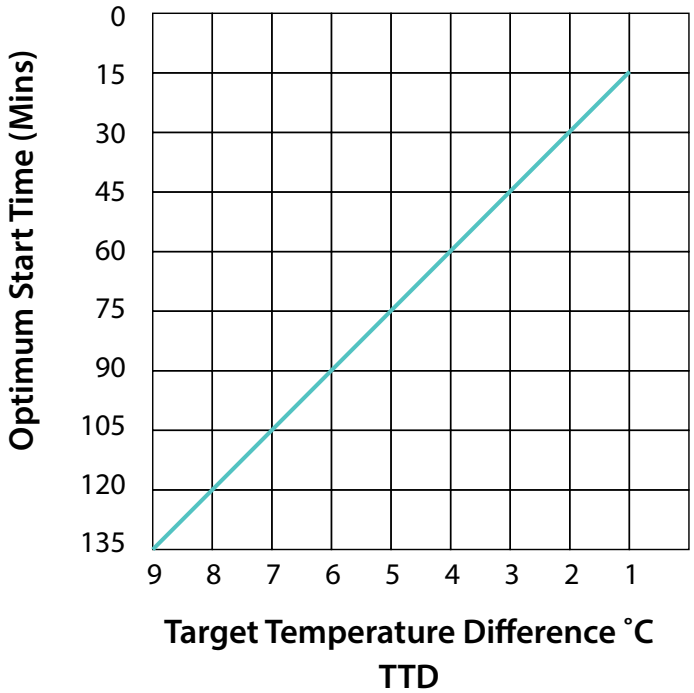
Example when Ti = 20

Program 1 on the thermostat is 21°C for 06:30am and the room temperature is 18°C. The thermostat will start the heating at 05:30am to reach 21°C for 06:30am @ Ti=20.

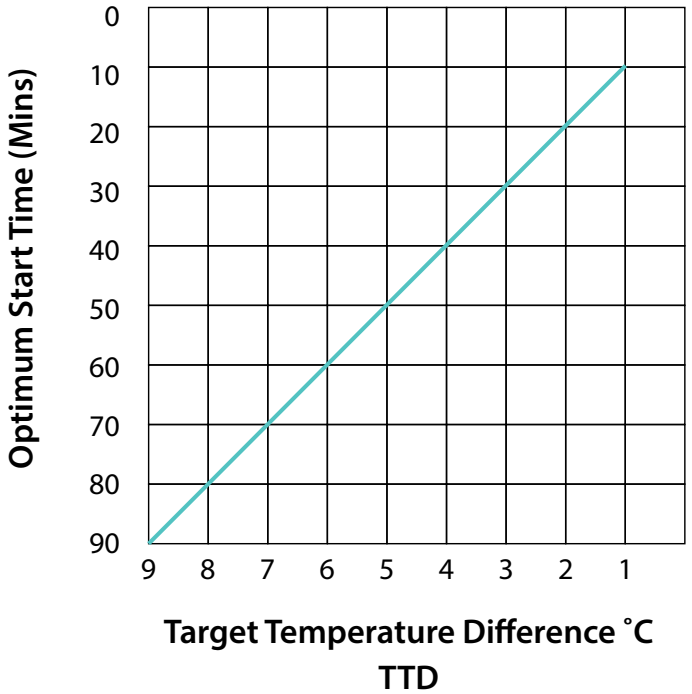
Example when Ti = 10

Program 1 on the thermostat is 21°C for 06:30am and the room temperature is 18°C. The thermostat will start the heating at 06:00am to reach 21°C for 06:30am @ Ti=10.

Optimum Start Control Graph with Ti = 15



Optimum Start Control Graph with Ti = 10



PO 1 Operating Mode (Normal / Optimum Start / TPI)

TPI (Time Proportional & Integral Mode)

When the thermostat is in TPI mode and the temperature is rising in the zone and falls into the Proportional Bandwidth section, TPI will start to affect the thermostats operation. The thermostat will turn on and off as it gains heat so that it doesn't overshoot the setpoint by too much. It will also turn on if the temperature is falling so it doesn't undershoot the setpoint which will leave the user with a more comfortable level of heat.

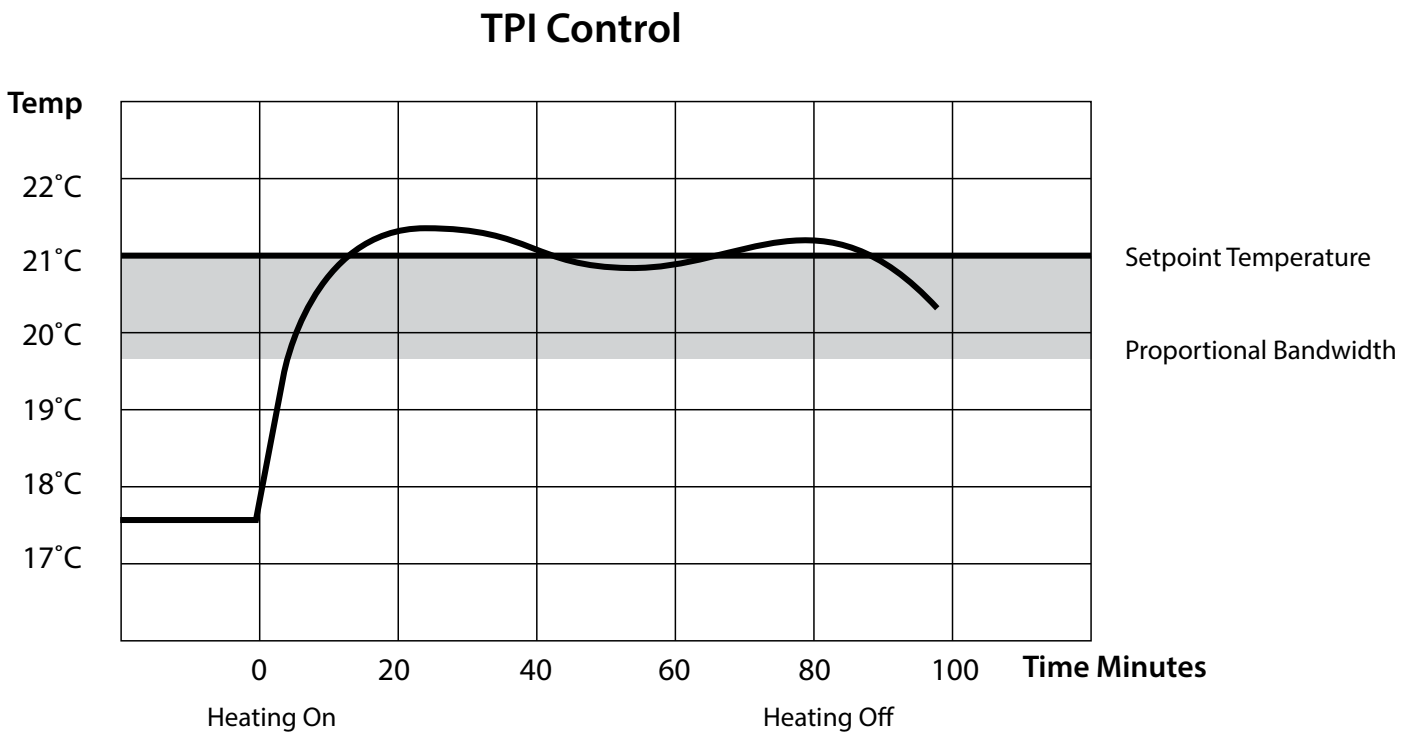
There are 2 settings that will affect the thermostats operation:

1. CYC - No. of Heating Cycles per Hour:  6 Cycles

This value will decide how often the thermostat will cycle the heating on and off when trying to achieve the setpoint temperature. You can select 2/3/6 or 12.

2. Pb - Proportional Bandwidth:  2˚C

This value refers to the temperature below the setpoint at which the thermostat will start to operate in TPI Control. You can set this temperature from 1.5˚C to 3.0˚C in 0.1˚C increments.



Example: Program 1 on the thermostat is 21°C for 06:30am and the room temperature is 18°C. The thermostat will start the heating at 06:30am and the room temperature will start to increase then but will switch itself off before it reaches temperature and allow the room temperature to increase naturally – this cycle may begin again if the thermostat isn't reaching temperature.

PO 2 Setting high & low limits

Hi 35˚C and Lo 5˚C

This menu allows the installer to change the min. and max. temperature range that the thermostat can be set at.

PO 3 Hysteresis HOn and HOFF

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

HOn is the fall in temperature – Default – 0.4°C. This will allow a fall of 0.4°C from the setpoint before the thermostat turns on again.

HOFF is the rise in temperature – Default – 0.0°C. This will allow the temperature to rise 0°C above its setpoint.

PO 4 Calibrate the thermostat

This menu allows the installer to re-calibrate the thermostat. The current temperature will be displayed on the screen and can be adjusted by pressing the ⊕ or ⊖ buttons .

PO 5 Frost Protection  5˚C

This menu allows the installer to activate or de-activate frost protection.

When frost protection is activated the thermostat will switch on the boiler when the temperature drops below 5˚C.

PO 6 Exit

This menu allows the installer to return to the main interface.

It is also possible to exit the installer menu by pressing AUTO , MAN or OFF whilst in the installer menu.

PO 6 Setting DHW temperature

This menu allows the installer to change the DHW temperature of the boiler. The temperature can be set in 0.5°C increments by pressing the  or  buttons.

Press the  button to select the desired temperature.

This menu is only available when the thermostat is connected to OpenTherm® and DHOP is ON (P08 OT installer menu).

PO 7 OpenTherm® Information

This menu allows the installer to view information received from the OpenTherm® boiler. It may take a few seconds to load information relating to each parameter. The information that can be shown from the boiler is outlined in the table below.

Displayed on screen	Description	Remark
tSEt	Target water temp	
tFLO	Outlet water temp	
trEt	Return water temp	
tdH	DHW temperature	This is only visible if DHOP is On (P08 OT Installer menu)
tFLU	Flue gas temperature	Dependent on boiler
tESt	Outdoor temperature	Dependent on boiler
nOdU	Modulation percentage	
FLOr	Water flow	This is only visible if DHOP is On (P08 OT Installer menu)
PrES	Water pressure	Dependent on boiler

PO 8 DHOP

This menu allows the installer to activate or deactivate DHW target temperature control from the thermostat. This menu is only available when the thermostat is connected to OpenTherm®

PO 9 Set OpenTherm® Parameters

This menu allows the installer to configure the OpenTherm® parameters.

To access the menu please enter the password “08” with the ⊕ or ⊖ buttons.

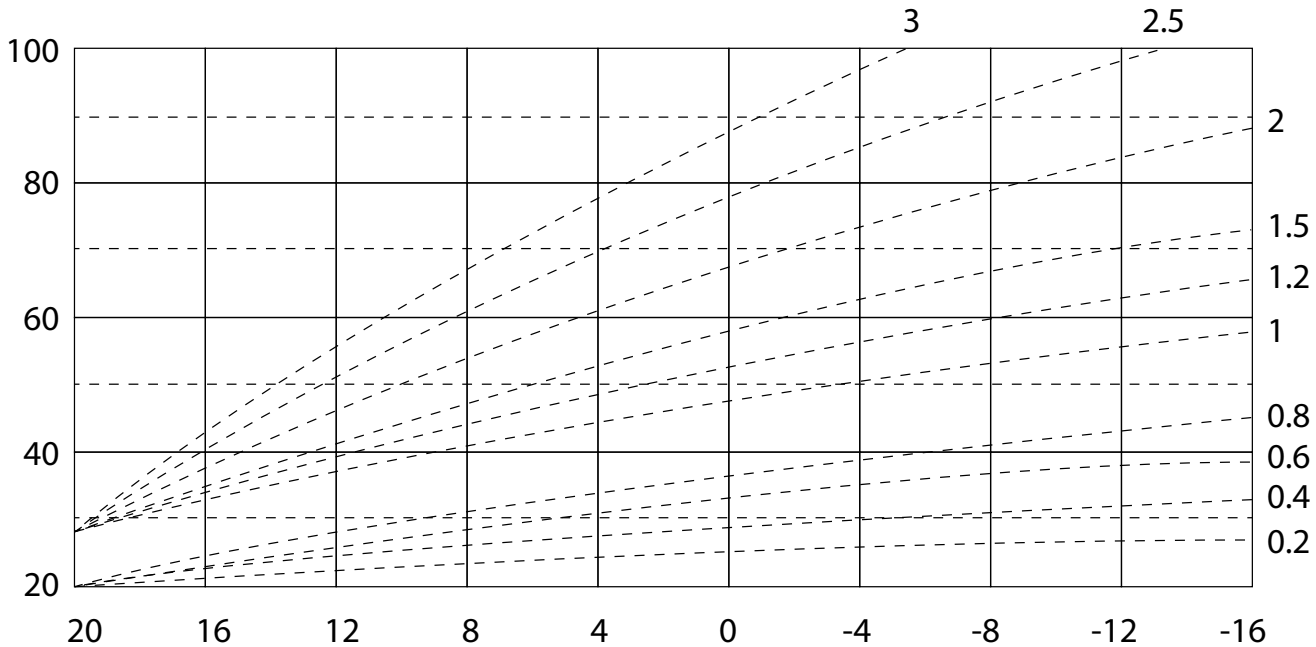
Press OK to confirm.

The parameters that can be set are outlined in the table below.

Param	Description	Range	Default
HHCH t-1	Maximum set point heating	45 - 85˚C	85˚C
LLCH t-2	Minimum set point heating	10 - HHCH˚C	45˚C
CLI t-3	This allows user to select different climatic curves for weather compensation. This only applies to Boilers with an outside sensor connected.	0.2 - 3.0	1.2
InFL t-4	Influence of room sensor on modulation of the boiler. Recommended value is 10.	0 - 20	10
HHbO t-5	This is the target setpoint for your CH flow temperature. Note: this value must be within the range of HHCH and LLCH.	HHCH Max >=ID57 >=LLCH Min	85˚C
Exit	Press OK button to turn back to main interface.		

PO 9 Set OpenTherm® parameters

Climatic Curve



Exit

This menu allows the installer to return to the main interface.

It is also possible to exit the installer menu by pressing AUTO, MAN or OFF whilst in the installer menu.

Controlling an OpenTherm® Boiler with multiple CombiPack4-OT

It is possible to have 6 CombiPack4-OT controlling 1 OpenTherm® boiler. To do this it is necessary to make one of the RF1A-OT receivers into a Hub Receiver. This Hub Receiver will receive data from all of the RFRP-OT thermostats and relay this information to the boiler via OpenTherm®.

Note: The Hub Receiver should have a wired OpenTherm® connection to the boiler.

Making your RF1A-OT receiver into a Hub Receiver

1. Press the Reset ■ button on the receiver that you wish to make the Hub Receiver – Red and Green lights are both solid.
2. Immediately press and hold the 

and 

buttons for 5 seconds, the red light will start blinking.
3. Press the 

button and the Green light will be solid – this is now the hub receiver.
4. Press the 

button to exit to the normal interface.

Controlling an OpenTherm® Boiler with multiple CombiPack4-OT (Continued)

Identifying if a receiver is a Hub Receiver

1. Press the 

button.
2. The Hub receiver will flash Green and Red.
3. The Normal receiver will just flash Red.
4. To exit to main interface press the 

button.

Pairing the RF1A-OT receivers together

1. Press the 

button on the Hub receiver. Red and Green lights will begin to flash.
2. Press the 

button on the next receiver to be paired. The Red light will flash 3 times and then stop.
3. Repeat this process to pair more, up to a maximum of 6 receivers.

Once all units have been paired, allow time for the receivers to begin to communicate and receive OpenTherm® information from the boiler. This may take approximately 2 – 5 minutes.

You will see the red light flash on the Hub receiver and see a corresponding flash on the other receivers paired to the Hub Receiver when they are sharing information.

You may need to pair the receivers to the thermostats again.

If so, please refer to page 51.

You can tell if your thermostat is receiving OpenTherm® information from the boiler by entering the installer menu of the thermostat (Hold Prog and OK buttons for 10 Sec) and go to P07 - Info.

If the installer menu is only showing P01 – P05, the thermostat and/or receiver has not been successfully paired.

Disconnecting the RF1A-OT receiver from Thermostats & other Receiver

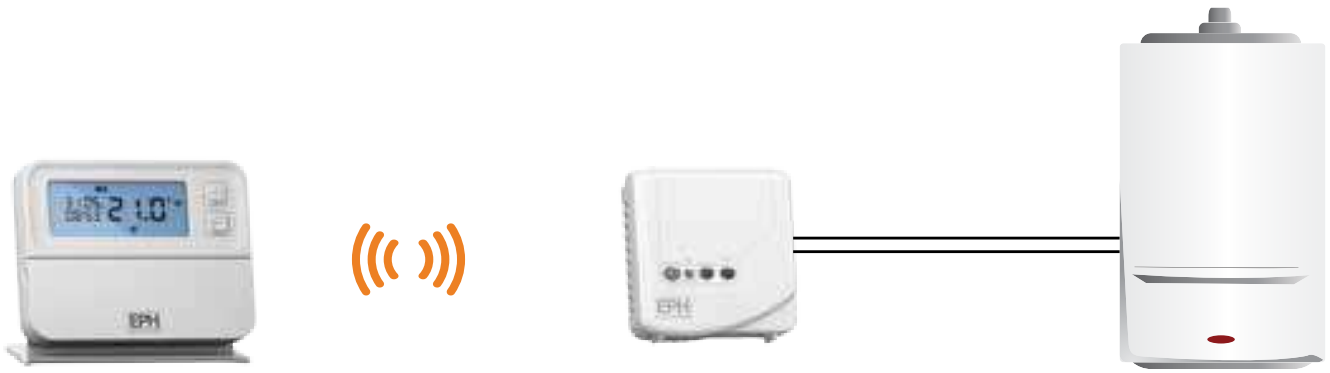
1. Press 

on the Receiver – the red light will flash (red and green light if using a hub receiver)
2. Press and hold 

for about 10sec and the receiver will then stop flashing.
3. The RF connection is now cleared.

System architecture

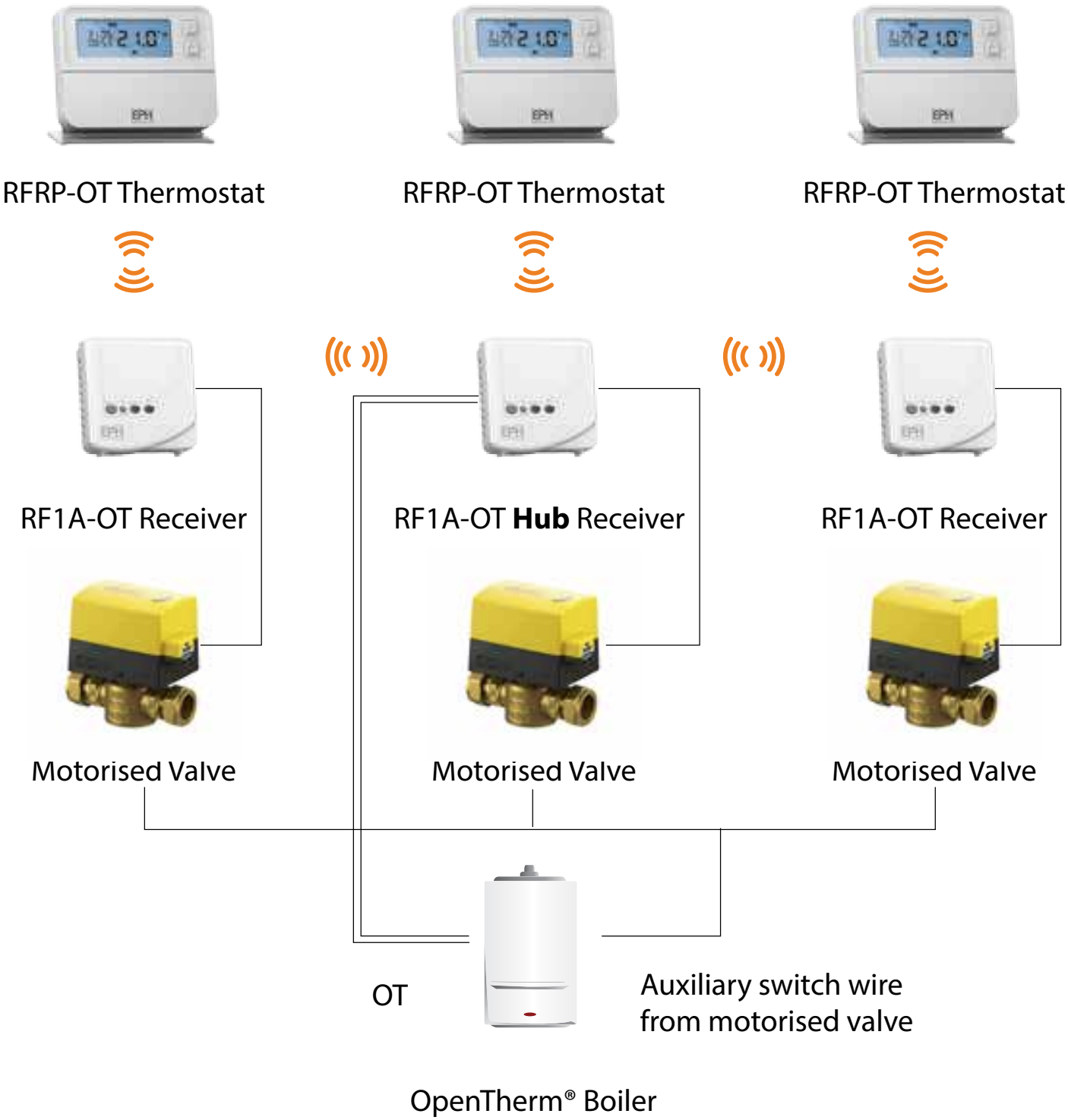
Example A 1 no. Thermostat controlling OT Boiler



RFRP-OT Thermostat | RF1A-OT Receiver | OpenTherm® Boiler

Example B 3 no. Thermostats controlling OT Boiler >>

Note: A maximum of 6 thermostats can be used in the system.


RFRP-OT Thermostat
RFRP-OT Thermostat
RFRP-OT Thermostat
RF1A-OT Receiver
RF1A-OT **Hub** Receiver
RF1A-OT Receiver
Motorised Valve
Motorised Valve
Motorised Valve
OT
Auxiliary switch wire
from motorised valve
OpenTherm® Boiler

RF1A Wireless Receiver
Operating Instructions

Button / LED Description

Manual

Manual override

Reset button

Press to reset the receiver

Connect

Wireless connect:

Once voltage has been applied this button may be pressed to initialise the pairing process with the wireless thermostat. Once pressed the red and green LED will begin to flash.

LED Description

OT Connection Normal Operation	Green LED	Red LED
RF1A-OT On	ON	OFF - will flash when communicating via RF
RF1A-OT Off	OFF	ON - will flash when communicating via RF

OT Communication Error	Green LED	Red LED
RF1A-OT On	Constant Flash	OFF
RF1A-OT Off	Constant Flash	ON

RF Communication Error	Green LED	Red LED
RF1A-OT On	ON	Constant Flash
RF1A-OT Off	OFF	Constant Flash

Summary	Green LED	Red LED
RF Communication Error	OFF or ON	Constant Flash
OT Communication Error	Constant Flash	OFF or ON
Normal Operation RF1A On	ON	OFF or Flashing
Normal Operation RF1A Off	OFF	ON or Flashing

To connect the RFRP-OT thermostat to an RF1A-OT receiver

Please note, If you are installing a CombiPack4 the RFRP-OT thermostat and the RF1A-OT receiver will have a pre-established RF connection so it is not necessary to carry out the RF connection process below.

On the RF1A-OT receiver:

Press the 

button.

The red light will begin to flash.

On the RFRP-OT thermostat:

Press the RESET button.

The thermostat will show **'OE'** followed by '---'

Once an RF connection has been established the thermostat will show '**r01**' on the LCD screen.

Press the OK button to finish the process.

The thermostat is now connected to the RF1A-OT receiver.

To disconnect the RFRP-OT thermostat from an RF1A-OT receiver

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

On the RFRP-OT thermostat:

Press the RESET button. The thermostat will begin to search through the RF channels.

Press and hold the COPY button for 10 seconds. '**Adr**' will appear on the screen of the thermostat.

Press the OK button twice to complete the unpairing process. The thermostat RFRP-OT is now disconnected from the receiver RF1A-OT.

On the RF1A thermostat:

Press the Connect button, the red light will flash.

Red & green lights if using as a hub receiver.

Press and hold connect for about 10 seconds, the receiver will then stop flashing.

The RF connection is now cleared.

Notes

Notes

Notes

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EPH CONTROLS

20191205_CombiPack4_Instruaction

CP4*i*

Smart thermostat

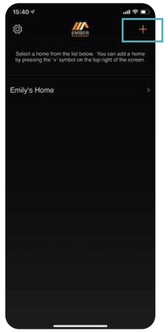
Quick Installation Instruction

For installer use only

Please note: All RF connectivity has been factory pre paired

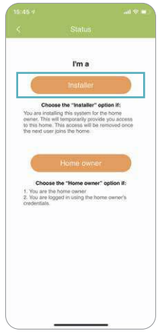
Download the EMBER App and follow the instruction below.

1. When in the home list screen, press the orange "+" button on the top right hand corner.



2. Click on the WiFI Setup.

3. Pick the "Installer" option.
(For home owners please select "Home owner" option.)



4. Choose the TS option.

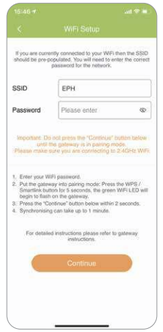
5. Please make sure your device is connected to the 2.4Ghz option of the internet router.
6. The internet name will be already pre-populated in the SSID window.

Please note if you have a blended WiFi connection of 2.4Ghz and 5Ghz, you will have to disable the 5Ghz for the duration of the setup.

Your 5Ghz can be reactivated on completion of the EMBER Setup.

7. Enter your password from the internet router

DO NOT PRESS CONTINUE



8. Press and hold the WPS/Smartlink button in the back of the gateway until the green WiFi light begins to flash, quickly press the continue button on the Ember app.
9. If successful, you will be automatically be brought into the Gateway code screen where gateway code should be pre-populated.

Please wait for the green Wifi light to stop flashing

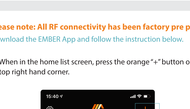
10. Press continue on the gateway code screen, your home should now be created.

CP4*i*

Smart thermostat

Quick Installation Instruction

For installer use only



Please note: All RF connectivity has been factory pre paired
Download the EMBER App and follow the instruction below.

1. When in the home list screen, press the orange "+" button on the top right hand corner.

2. Click on the WiFi Setup.

3. Pick the "Installer" option.
(For home owners please select "Home owner" option.)

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4. Choose the TS option.

5. Please make sure your device is connected to the 2.4Ghz option of the internet router.

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6. The internet name will be already pre-populated in the SSID window.

7. Enter your password from the internet router

DO NOT PRESS CONTINUE

8. Press and hold the WPS/Smartlink button in the back of the gateway until the green WiFi light begins to flash, quickly press the continue button on the EMBER App.

9. If successful, you will be automatically be brought into the Gateway code screen where gateway code should be pre-populated.

Please note:
if you have a blended WiFi connection of 2.4Ghz and 5Ghz, you will have to disable the 5Ghz for the duration of the setup.
Your 5Ghz can be reactivated on completion of the EMBER Setup.
Do not press "Continue" on the Gateway Code screen until all 3 LEDs are On constantly.

10. Press continue on the gateway code screen, your home should now be created.

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