## 2. TS22 Two-Zone Heating Control System

The TS22 heating control system includes two room thermostats, a two-zone receiver and a temperature sensor, providing a flexible and efficient solution for managing home heating and hot water.

The two thermostats allow independent temperature control across separate heating zones, helping to improve comfort and energy efficiency.

The included temperature sensor adds further versatility by enabling one of the thermostats to operate as an RF Hot Water Thermostat. This feature allows monitoring and control of hot water temperature, reducing the need for additional controls while ensuring reliable performance and convenient system management in your home.

## 3. 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.

EPH CONTROLS

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## 4. Setting the Date, Time and Programming Mode

Press and hold ☰ for 5 seconds.

**'P01 & PrOg'** will appear on the screen.

Press ^ until **'P02 & tInE'** appears on the screen.

Press OK to select.

Press ^ or v to adjust the year. Press OK

Press ^ or v to adjust the month. Press OK

Press ^ or v to adjust the day. Press OK

Press ^ or v to adjust the hour. Press OK

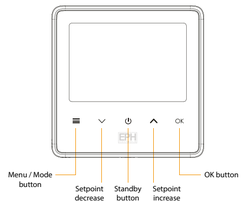
Press ^ or v to adjust the minute. Press OK

Press ^ or v to adjust from 5/2d to 7d or 24h mode. Press OK

Press ^ or v to turn DST (Day Light Saving time) On or Off.

Press ☰ to return to normal operation.

* 5/2d: Mon-Fri / Sat - Sun
7d: Mon -Sun, individual day
24h: All days inclusive




## 5. Adjusting the Program Settings (5/2d)

Press and hold ☰ for 5 seconds.

**'P01 & PrOg'** will appear on the screen. Press OK

**Programming for Monday to Friday is now selected.**

Press ^ or v to adjust the P1 time. Press OK

Press ^ or v to adjust the P1 temp. Press OK

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

**Programming for Saturday to Sunday is now selected.**

Press ^ or v to adjust the P1 time. Press OK

Press ^ or v to adjust the P1 temp. Press OK

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

Press ☰ to return to normal operation.

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

While in PROG Mode holding ⏻ for 3 seconds will jump to the next day (block of days).

| 5/2 DAY | | | | | |
|---|---|---|---|---|---|
| | MON - FRI | | | SAT - SUN | |
| P1 | 06:30 | 21˚C | P1 | 08:00 | 21˚C |
| P2 | 08:00 | 10˚C | P2 | 10:00 | 10˚C |
| P3 | 12:00 | 10˚C | P3 | 12:00 | 10˚C |
| P4 | 14:00 | 10˚C | P4 | 14:00 | 10˚C |
| P5 | 17:30 | 21˚C | P5 | 17:30 | 21˚C |
| P6 | 22:00 | 10˚C | P6 | 23:00 | 10˚C |

## 6. Changing the Thermostat type

This function allows you to change between heating or cylinder control. The thermostat is automatically set in heating mode.

Press and hold ☰ for 5 seconds.

**'P01 & Prog'** will appear on the screen.

Press ^ until **'P15 & Htg'** appears on the screen.

Press OK to select.

**'Htg'** will flash on the screen.

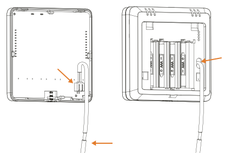
Press v to select **'CyL'.**

Press OK to confirm.

The thermostat will restart and hot water parameters will now be applied. When you change the parameter to CYL it will change the range and differential setting to suit a cylinder application.

The NTC10K-Plug accessory should be plugged into the connector socket and inserted into a cylinder pocket or attached directly to the cylinder surface using the metallic tape provided.

**Temperature Sensor**



## 6. Changing the Thermostat type Continued

When the CyL parameter is selected, the thermostat operates in cylinder mode. The default target temperature is 60°C. During scheduled ON periods, the thermostat will heat the cylinder until the target temperature is reached or the scheduled period ends. The target temperature can be adjusted at the thermostat but not through the EMBER app.

**Note:** Below is the default programming schedule when CyL is selected.

| 5/2 DAY | | | | | |
|---|---|---|---|---|---|
| | MON - FRI | | | SAT - SUN | |
| P1 | 06:30 | ON | P1 | 08:00 | ON |
| P2 | 08:00 | OFF | P2 | 10:00 | OFF |
| P3 | 12:00 | OFF | P3 | 12:00 | OFF |
| P4 | 14:00 | OFF | P4 | 14:00 | OFF |
| P5 | 17:30 | ON | P5 | 17:30 | ON |
| P6 | 19:00 | OFF | P6 | 19:00 | OFF |

## 7. AUTO Mode

When the thermostat is in the AUTO mode it will automatically change the temperature throughout the day according to the schedule set by the user in the programming menu.

If the room temperature falls below the setpoint it will activate the heating.

**Note:** If the heating is set to 16°C for Program 6 and during the night the heating falls below 16°C it will turn on the heating. If you do not want this to happen you should adjust P6 to a lower temperature.

## 8. Temporary Override

When in AUTO mode, press ^ or v to adjust the temperature setpoint. **'OVERRIDE'** will appear on the screen.

Press OK or after 5 seconds the thermostat will operate to this temperature, until the next switching time.

To cancel temporary override, press ☰ to return to the automatic mode.

## 9. Permanent Override (Manual)

Press ☰ to enter the manual mode (Permanent Override).

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

Press ^ or v to adjust the temperature setpoint.

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

To cancel permanent override, press ☰ to return to the automatic mode.

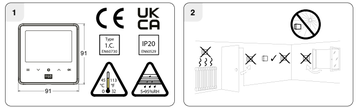
## 10. On / Off Function

Press ⏻ to turn the thermostat On or Off. When OFF is displayed on the screen the thermostat and zone will be set to OFF.

**Note:** If the zone is set to constant OFF mode, all other functions are disabled, except for frost protection, which remains active.

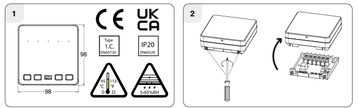
## 11. Mounting & Installation of the RFRP-TW

- Mount the thermostat between 1.2 and 1.5 metres from floor level.
- Place in a location where temperature can be measured accurately.
- Keep the thermostat away from radiators, direct sunlight, drafts, appliances or hidden heat sources.
- Insert batteries.
- For mounting, fix the mounting plate directly to the wall with the screws provided.
  Attach the thermostat or use the table mount supplied.

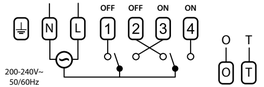



## 12. Mounting & Installation of the RF2B

- Use a Phillips screwdriver to loosen the screws of the backplate on the bottom of the RF2B. The receiver is lifted upwards from the bottom and removed from the backplate.
- Screw the backplate to the wall with the screws provided.
- Wire the backplate as per the wiring diagram.
- 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.
- If installing more than one RF2B receiver ensure they are 25cm apart.




## 13. Internal Wiring




Note: Opentherm® can only be used when two RF thermostats are connected to the RF2B.

## 14. Important Notes Caution!

- This device must be connected to a circuit protected by a suitable fuse or circuit breaker.
- Mount the receiver within 20m of the thermostat, maintaining at least 25cm clearance from metal objects or electrical fittings and 1m from electronic or wireless devices for reliable communication.
- When installing multiple receivers, it is important to ensure that there is a minimum 25cm between each receiver. If they are too close, they will not be able to pair with each other.

- Where possible, keep the receivers in the same area of the premises to allow for stable communication.
- If the battery low symbol appears on thermostat or EMBER App, the batteries should be changed.
- Good quality batteries are essential to ensure the correct operation of this product. EPH recommend using Duracell or Energizer batteries.
  Do not use low quality battery brands as they can cause the following problems:
  - Stop the wireless communication with the receiver.
  - Can cause the thermostat to reset.
  - Can cause the thermostat to display the incorrect information.

## 15. To connect the RFRP-TW thermostat to an RF2B receiver

**Note: Both RFRP-TW are pre-paired to Zone 1 of the RF2B**

This function allows the user to connect the RFRP-TW to an RF2B receiver.

**Pairing your RFRP-TW to a RF2B**

**1. On the RF2B receiver:**

Press and hold Zone 1 Connect or Zone 2 Connect until the white RF LED begins to flash.

**2. On the RFRP-TW:**

Press and hold ☰ for 5 seconds.
**'P01 & PrOg'** will appear on the screen.
Press ^ until **'P03 & RF'** appears on the screen.
Press OK to select.
Wait for **'r01'** or **'r02'** to appear.
Press OK to confirm. The thermostat is now connected.

**3. On the RF2B:**

The white RF1 or RF2 LED will appear solid.

## 16. How to connect a GW04$^{V2}$ Gateway to the RF2B receiver

**Making the RF2B a Hub Receiver**

**On the RF2B receiver:**

Hold Zone 1 Manual & Zone 1 Connect for 5 seconds.

The Hub LED will illuminate.

The RF2B is now a Hub receiver.

**Connecting the RF2B to the GW04$^{V2}$**

**1. On the RF2B receiver:**

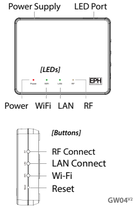
Hold Zone 1 Connect & Zone 2 Connect on the RF2B until RF 1 & RF2 LED flashes.

**2. On the GW04 Gateway:**

Hold the RF Connect button ◯ until RF LED flashes.

The gateway & receiver will stop flashing. Paring is now complete.

The white RF light on the GW04 will stay illuminated.




## 17. EMBER App Setup

1) Scan the QR code to download the EMBER app.
2) Create an account in the app.
3) Follow the EMBER setup instructions to control your heating from your device.

Download on the App Store
GET IT ON Google play

2024-08-08_EMBERTS22_EUG_Cat_IM

# EMBERTS22

*Easy User Guide*
*Important: Keep this document*

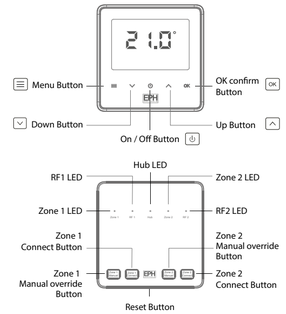
**Programmable RF Thermostat**

**Full Datasheet**

**2 x RFRP-TW**
Available in black: RFRP-TB

**RF2B**
Receiver

**GW04$^{V2}$**
Gateway

**Note: Both RFRP-TW are pre-paired to Zone 1 of the RF2B**

## 1. Button / Symbol Description