2. TS21 Two-Zone Heating Control System

The TS21 comes with a room thermostat and a 2-zone receiver, making it easy to control different areas of your heating system. The room thermostat manages both zones from one simple control point.

The first zone uses both time and temperature control, allowing you to set specific temperatures at different times of the day for greater comfort and energy efficiency.

The second zone works on a timed schedule only, meaning you can choose when it turns on and off without setting a temperature. This zone can be used for either heating or hot water control, depending on your system setup.

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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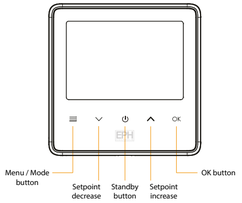
4. Setting the Date, Time and Programming Mode

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 for Zone 1 (5/2d)

Press and hold ☰ for 5 seconds.
'P01 & PrOg' will appear on the screen. Press OK
'Zone 1' 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. Adjusting the Program Settings for Zone 2 (5/2d)

Press and hold ☰ for 5 seconds.
'P01 & PrOg' will appear on the screen. Press OK
'Zone 1' will appear on the screen. Press OK
Press ^ and **'Zone 2'** 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 select ON or OFF. Press OK
Repeat this process to adjust P2 to P6 times. Press OK
Programming for Saturday to Sunday is now selected.
Press ^ or v to adjust the P1 time. Press OK
Press ^ or v to select ON or OFF. Press OK
Repeat this process to adjust P2 to P6 times.
Press ☰ to return to normal operation.

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)

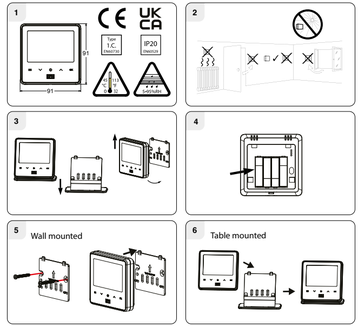
Press ☰ to enter the manual mode (Permanent Override).
'MAN' will appear on the screen.
Press ^ or v to adjust the temperature setpoint.
Press OK or after 5 seconds the thermostat will operate in this permanent override.
To cancel permanent override, press ☰ to return to the automatic mode.

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.

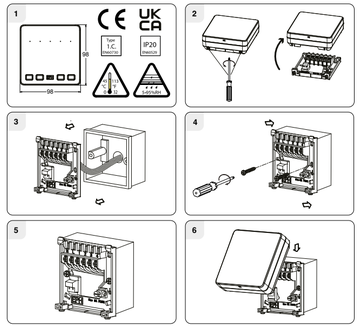
11. Mounting & Installation of the RFRP-TW

- 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.

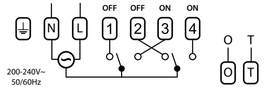


12. Mounting & Installation of the RF2B

- 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.



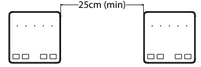
13. Internal Wiring



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

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] until the white RF1 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'** to appear.
Press [OK] to confirm. The thermostat is now connected.

3. On the RF2B:

The white RF1 and RF2 LED will appear solid.

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

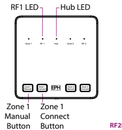
Making the RF2B a Hub Receiver

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:

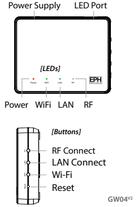
Hold [Zone 1 Connect] & [Zone 2 Connect] on the RF2B until RF1 & RF2 LED flashes.

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

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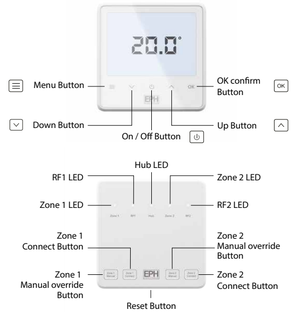
EMBERTS21

Easy User Guide
Important: Keep this document

Programmable RF Thermostat

Full Datasheet

1. Button / Symbol Description