HRT

EPH CONTROLS

Room Thermostat
Installation and Operation Guide

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Battery operated non-programmable Room Thermostat

Installation Instructions

Factory default settings

Contacts:	Volt Free
High and Low Temp. Limitation:	Off
Keypad lock:	Off
Backlight:	Auto
Operating mode:	Normal

Specifications

Power supply / Input:	2 x AA Alkaline Batteries
Power consumption:	Operating <0.05W
	Standby <0.2mW
Temperature range:	5 … 35˚C
Ambient temperature:	0 … 45˚C
Ambient admissible humidity:	5-95%RH
Contact rating:	8(3)A 230Vac
Switch output:	SPDT Volt Free
Dimensions:	85 x 85 x 36mm
Temperature sensor:	NTC 100K
Backlight:	White
IP rating:	IP20
Pollution degree:	2
Switching differential:	Adjustable from 0.0 – 1.0°C
	0.1°C increments
Automatic action:	1C

LCD Display

[1] 88.8° Shows the current / target temperature.

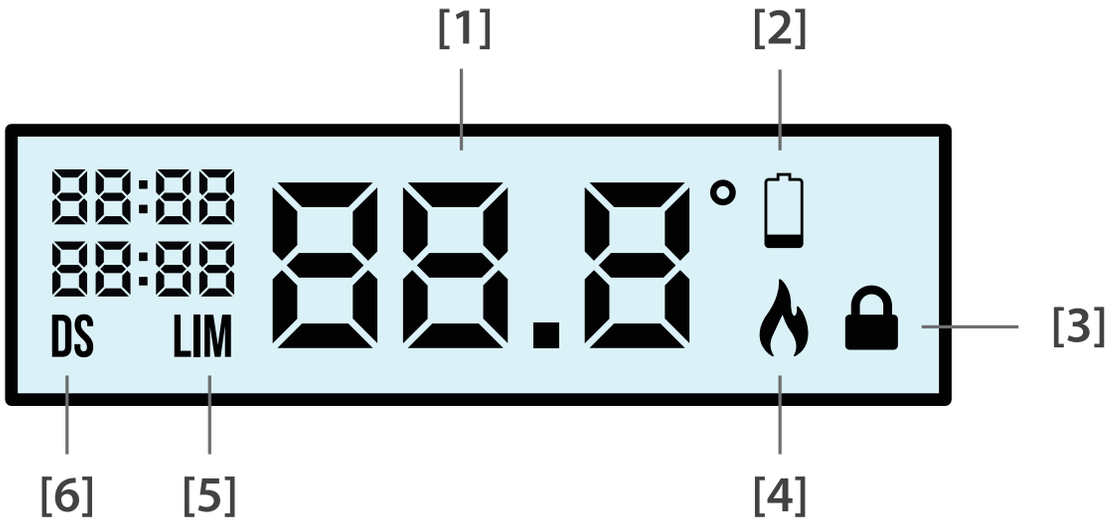
[2] Displayed when batteries need to be replaced.

[3] If the keypad is locked, the lock symbol is displayed.

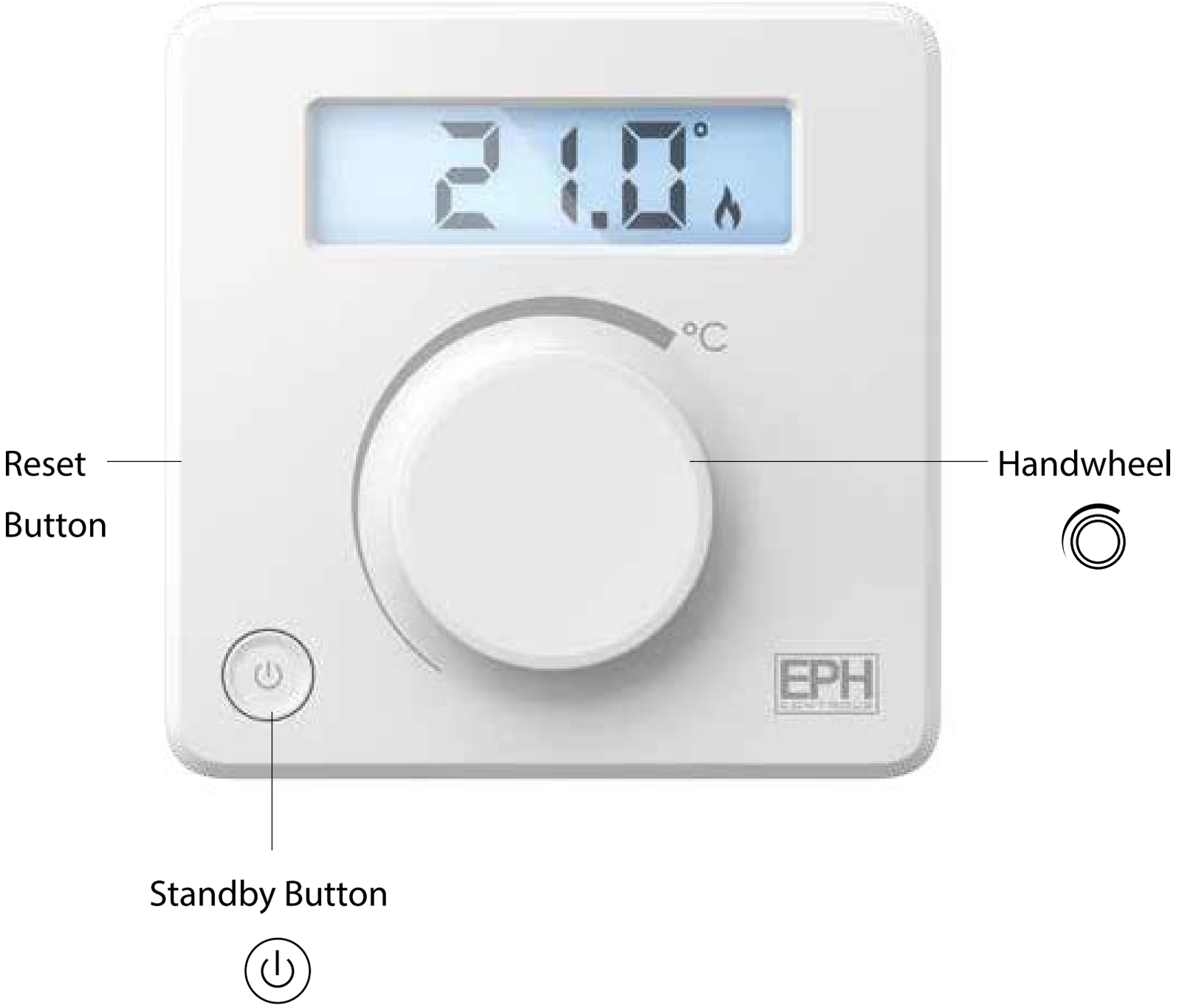
[4] When the thermostat is calling for heat, the flame symbol is displayed.

[5] LIM When a high or low temperature limit is set, ‘LIM’ is displayed.

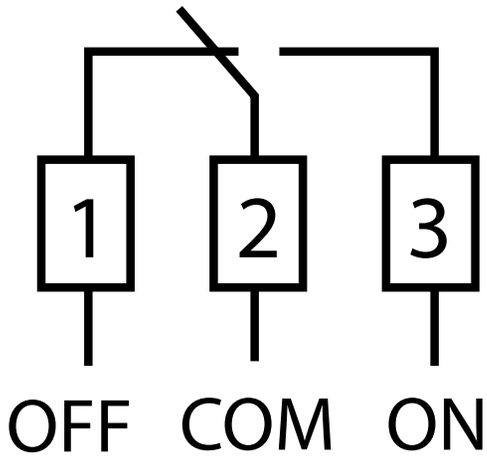
[6] DS Displayed when delay start is enabled.



Buttons



Wiring



Terminal Connections

1 OFF - N/C Normally closed connection

2 COM - Common connection

3 ON - N/O Normally open connection

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 this section.
- Before commencing installation, the thermostat must be first disconnected from the mains.

This thermostat can be mounted in the following ways:

1) **Directly mounted on wall**
2) **To a recessed conduit box**

Mounting & Installation Continued

1) Remove the thermostat from its packaging.

2) Choose a mounting location so that the thermostat can measure the room temperature as accurately as possible.
   - Mount the thermostat 1.5 meters above the floor level.
   - Prevent direct exposure to sunlight or other heating / cooling sources.

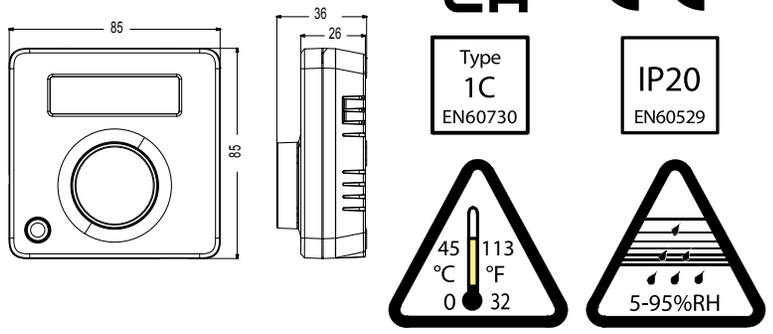
3) To open the front housing
   a) use a philips screwdriver to loosen the screw on the bottom right of the thermostat.
   b) insert and rotate a 3.5mm flat screwdriver into the slot on the bottom left.

4) Wire the thermostat according to the wiring diagram on page 6.

5) Screw the backplate onto a back box or directly to the surface.

6) Close the front housing and tighten the screw on the bottom of the thermostat.

1



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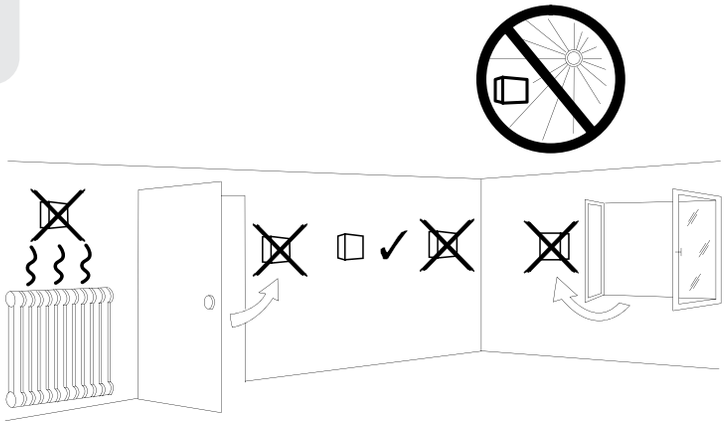

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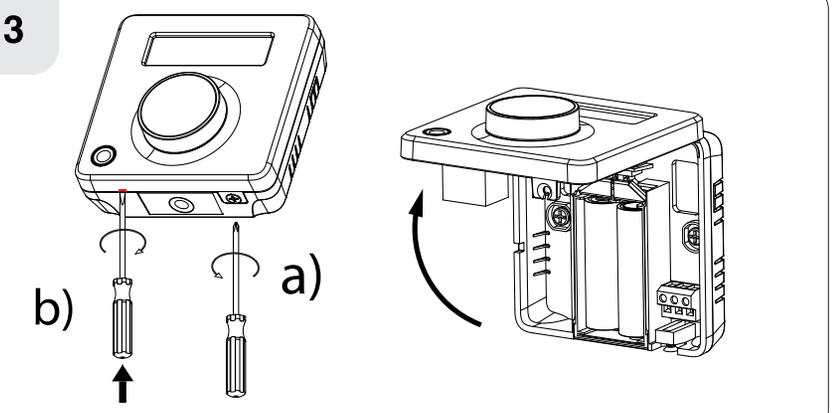

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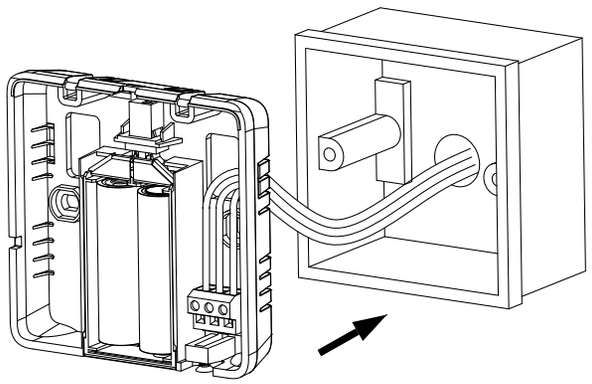

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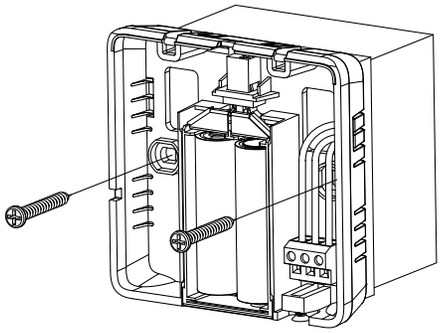
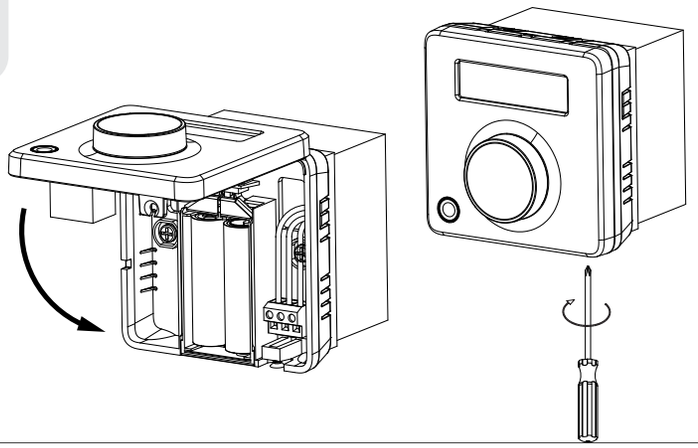


6



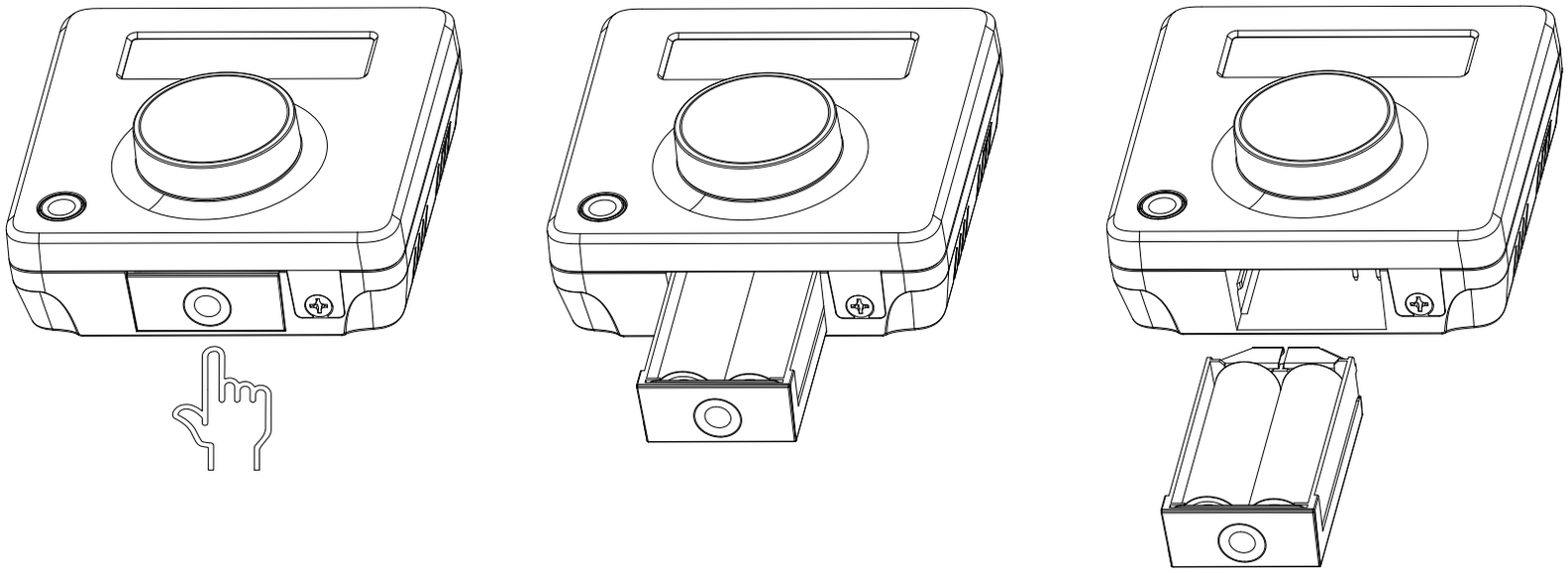
Replacing the batteries

1) is displayed when the batteries need to be replaced.

2) Push in the battery compartment on the bottom of the thermostat to release it.

3) Replace the batteries with 2 x AA Alkaline batteries.

4) Re-insert the battery compartment. Push it until it clicks into place.



Battery operated non-programmable Room Thermostat

Operating Instructions

On / Off Function

Press to turn the thermostat On or Off.

When in the ON mode the thermostat will display the current ambient temperature.

When in the OFF mode the thermostat will display the current ambient temperature and the word **'OFF'**.

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.

Locking the Keypad

To lock the thermostat, press for 10 seconds.

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

To unlock the thermostat, press for 10 seconds.

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

Backlight AUTO

There are three settings for selection.

'bL AUtO' The backlight is on for 5 seconds when any button is pressed.

'bL OFF' The backlight is permanently off.

To adjust the backlight setting, press for 10 seconds.

'bL AUtO' appears on the screen.

Rotate to change the mode between AUTO and OFF.

Press to confirm selection and to return to normal operation.

Menu Function

This menu allows the user to adjust additional functions.

P0 1 – Operating Mode

(Normal / Delay Start / TPI)

There are three settings for selection, Normal, Delay Start or TPI mode. The default setting is Normal.

Press and hold the and together for 5 seconds,

'P01 & Nor' will appear on the screen,

Press to select.

Rotate to select between

Nor (Normal mode)

dS (delay start mode)

tPi (Time proportional integral mode)

Press to confirm the mode.

Press to return to normal operation.

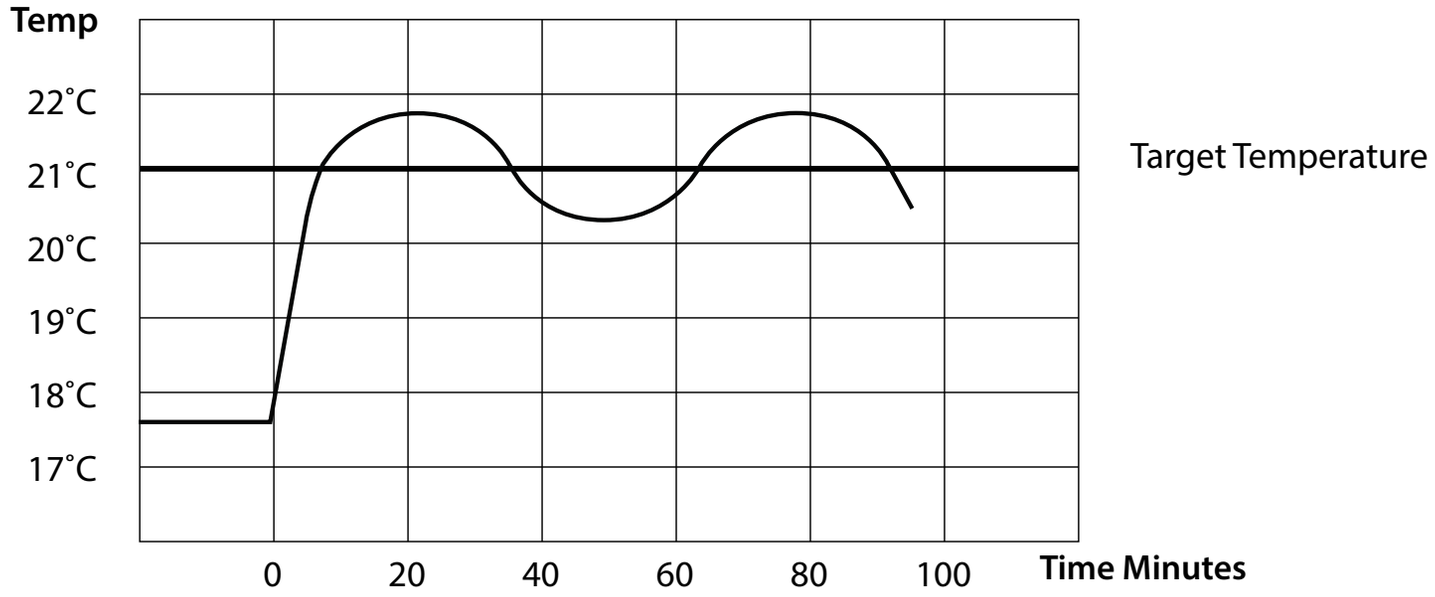
P0 1 – Operating Mode (Normal / Delay Start / TPI)

Nor (Normal Mode)

When the temperature falls below the target temperature, 🔥 will appear and the thermostat will activate the demand for heat.

When the temperature rises above the target temperature, 🔥 will disappear, and the thermostat will cancel the demand for heat.

Graph (15.1): On / Off Control



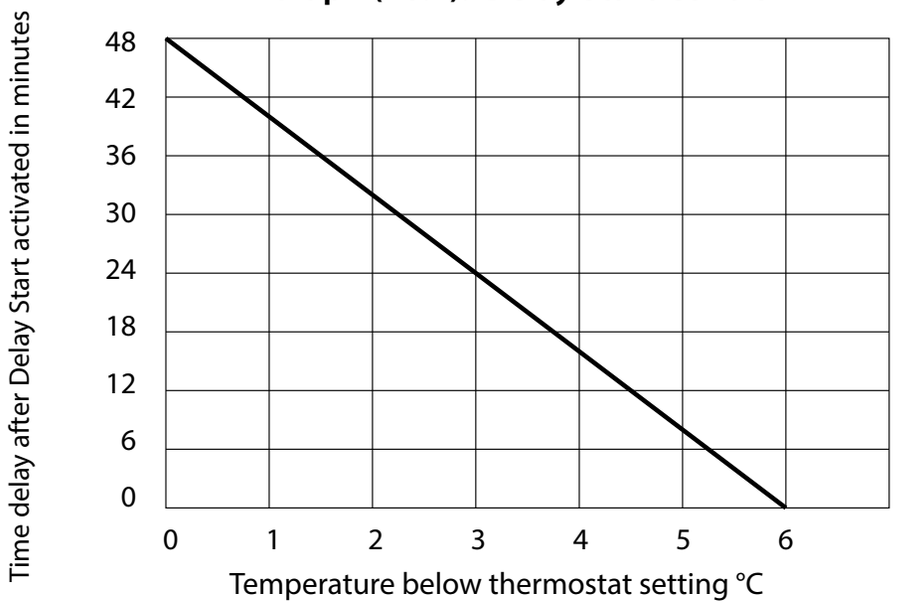
P0 1 – Operating Mode (Normal / Delay Start / TPI)

Delay Start Control (On/Off)

When the delay start mode is active, **'dS'** will appear continuously on the screen. When in this mode the thermostat is delayed by a variable time depending on the current temperature, target temperature and also the fall in temperature from when the delay start has activated. The will flash until the thermostat activates.

When activated the thermostat will allow the heating system time to reach the target and delay start will remain inactive until it reaches this target.

Graph (16.1): Delay Start Control



E.g: If the temperature is 6˚C below the thermostat target, the thermostat will call for heat immediately.

If the temperature is 2˚C below the target, the thermostat will not call for heat for 32 minutes.

Delay start can be reactivated by:

1. Lower the target below the current temperature.
2. Press to set the temperature.
3. Increase the target above the zone temperature within 6°.
4. Press to confirm.

The heating will be delayed as per the graph on page 16.

If the difference between the actual temperature and the target is 1°C the thermostat will delay starting for circa 40 minutes.

If the difference between the actual temperature and the target is 3°C the thermostat will delay starting for circa 24 minutes.

If the difference is 6°C or more then the thermostat will be switched on immediately.

The time delay will change if the temperature drops from the original calculation.

P0 1 – Operating Mode (Normal / Delay Start / TPI)

Time Proportional Integral Mode (TPI)

When the thermostat is in TPI mode and the temperature is rising in the zone and falls into the Proportional Bandwith 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 target by too much. It will also turn on if the temperature is falling so it doesn't undershoot the target which will leave the user with a more comfortable level of heat.

There are 2 settings that will affect the thermostats operation.

1. The number of heating cycles per hour
2. The Proportional Bandwith

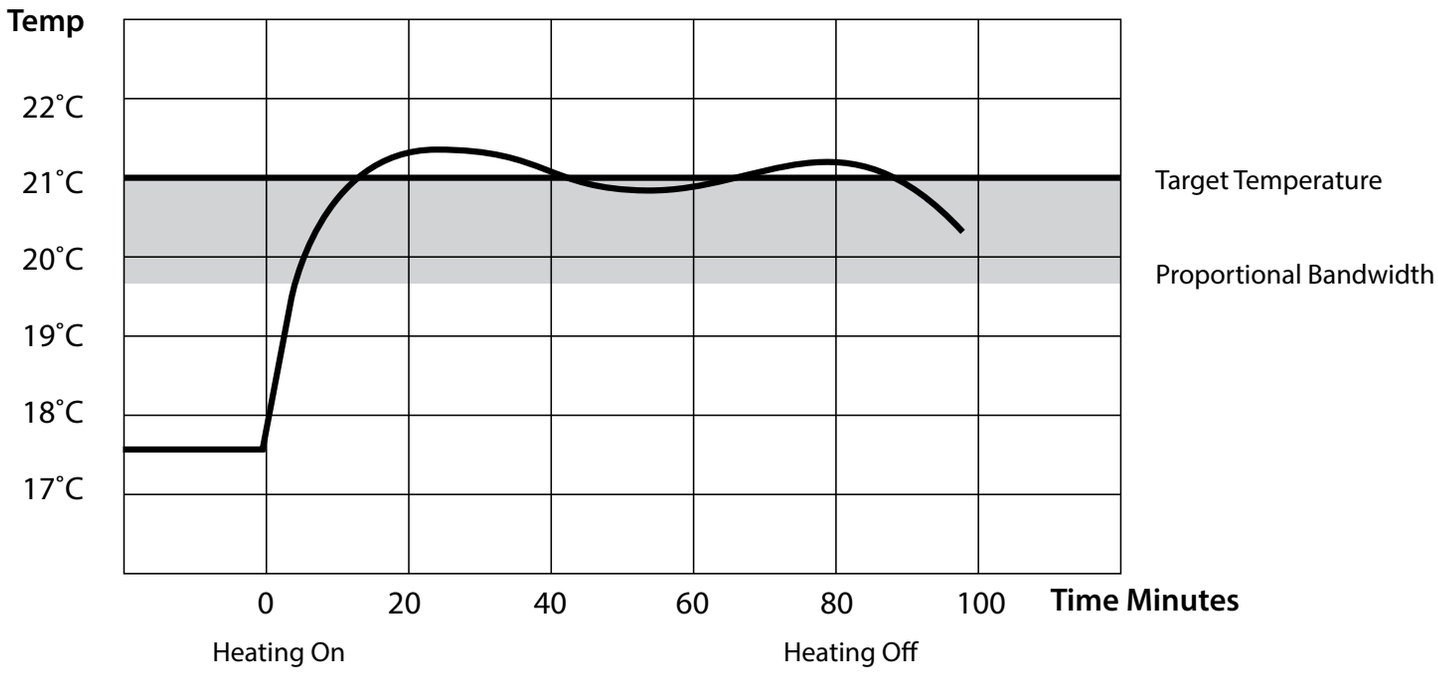
CyC – Number of Heating Cycles per hour 6 Cycles

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

Pb -Proportional Bandwith 2°C

This value refers to the temperature below the target 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.

Graph (19.1): TPI Control



P0 2 Setting High & Low limits Hi 35°C Lo 5°C

This menu allows the installer to change the minimum and maximum temperatures that the thermostat can be set at.
To access this setting press and hold and together for 5 seconds. **'P01 & Nor'** will appear on the screen. Rotate clockwise. **'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 0.4°C HOff 0.0°C

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

To access this setting press and hold and together for 5 seconds. **'P01 & Nor'** 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.

'P01 & Nor' 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 5 – Frost Protection On

Frost protection is built into this thermostat, it is pre fixed to 5°C and is not adjustable.

It will only be activated when the thermostat is in the standby mode and the temperature drops below 5°C.

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

'P01 & Nor' will appear on the screen.

Rotate clockwise until **'P05 & Fr'** appears on the screen.

Press to confirm.

Rotate to switch between ON and OFF.

Press to confirm selection.

The setting 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. **'P01 & Nor'** 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:

If installer menu is inaccessible there is the option of a master reset by using the button located on the left hand side of the thermostat. Press this button and follow the instructions above.

Notes

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