The SunStat Programmable Room Thermostat

Installation Instructions

What is a programmable room thermostat?

A programmable room thermostat is both a programmer and a room thermostat. A programmer allows you to set 'On' and 'Off' time periods to suit your own lifestyle. A room thermostat works by sensing the air temperature, switching on the heating when the air temperature falls below the thermostat setting, and switching it off once this set temperature has been reached.

So, a programmable room thermostat lets you choose what times you want the heating to be on, and what temperature it should reach while it is on. It will allow you to select different temperatures in your home at different times of the day (and days of the week) to meet your particular needs.

Turning a programmable room thermostat to a higher setting will not make the room heat up any faster. How quickly the room heats up depends on the design of the heating system, for example, the size of boiler and radiators.

Neither does the setting affect how quickly the room cools down. Turning a programmable room thermo stat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

The way to set and use your programmable room thermostat is to find the lowest temperature settings that you are comfortable with at the different times you have chosen, and then leave it alone to do its job. The best way to do this is to set low temperatures first, say 18°C, and then turn them up by one degree each day until you are comfortable with the temperatures. You won't have to adjust the thermostat further. Any adjustments above these settings will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one programmable room thermostat to control the whole house. But you can have different temperatures in individual rooms by installing thermostatic radiator valves (TRVs) on individual radiators. If you don't have TRVs, you should choose a temperature that is reasonable for the whole house. If you do have TRVs, you can choose a slightly higher setting to make sure that even the coldest room is comfortable, then prevent any overheating in other rooms by adjusting the TR V s.

The time on the programmer must be correct. Some types have to be adjusted in spring and autumn at the changes between Greenwich Mean Time and British Summer Time.

You may be able to temporarily adjust the heating programme, for example, 'Override', 'Advance' or 'Boost'. These are explained in the manufacturer's instructions.

Programmable room thermostats need a free flow of air to sense the temperature, so they must not be covered by curtains or blocked by furniture. Nearby electric fires, televisions, wall or table lamps may prevent the thermostat from working properly.

INTRODUCTION

The SunStat is a wired programmable room thermostat. A SunStatRF should be purchased if a wireless (RF) version of the same unit is required.

Thermostat position

The thermostat should be placed at a height of 1.5m from the floor. Do not position on an outside wall, above a radiator, next to a door, or in direct sunlight.

For fixed wiring only

Disconnect the mains supply before attempting to wire the unit, or removing unit from back plate. A switch having a contact separation of at least 3mm in all poles must be incorporated in the fixed wiring as a means of fully disconnecting the mains supply. An appropriate fuse should also be fitted to the circuit.


WARNINGS

All installations should be carried out by a competent person and in line with current wiring regulations.

The covers must not be removed from any part of the units before the electrical supply has been isolated.

Interference with sealed parts will render the guarantee void.

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1. Ensure that the mains power has been disconnected.
2. Remove the back plate from the thermostat by loosening the retaining screw on the left hand side of the unit before separating the unit.
3. The following jumper links / switches, located inside the main unit, should be set prior to starting the installation process.
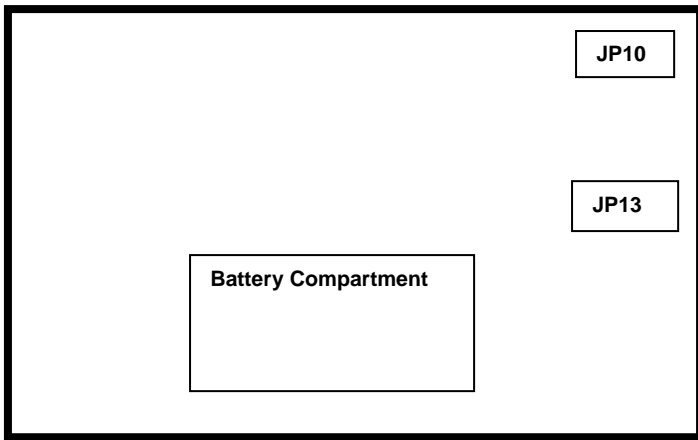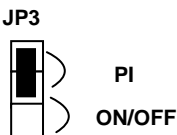

## JP10 - Heating & Cooling

JP1 will be set to "heating" at the factory.

JP1

Cool

Heat
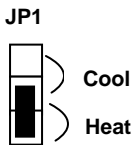
JP13 – TPI / ON/OFF

JP3 will be set to "PI" at the factory. The **ON/OFF** setting is used if you do not wish TPI control to be activated (i.e. the unit operates like a conventional programmable room thermostat)

JP3

PI

ON/OFF

4. Route the wires through the back of the back-plate, prior to fixing the back-plate to the wall with the screws and, if necessary, the rawplugs, provided.

5. Remove the terminal cover, on the back-plate, and connect the wires to the terminal block in accordance with the diagram below and current Wiring Regulations.

6. The terminal cover **mus**t be re-fitted to the back-plate in order that live connections are not exposed should a user attempt to change the batteries without the mains power being disconnected.
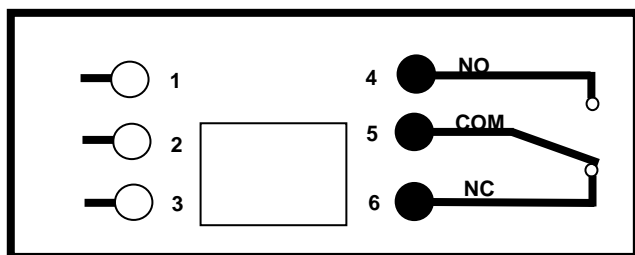
7. Fit the "AA" batteries (x2) provided into the battery compartment of the main unit, taking care to orientate them correctly.

8. Fit the main unit to the back-plate and tighten the screw on the left hand side of the unit.

9. The unit is now ready to be programmed.

10. It is necessary to Reset the unit, prior to the initial programming. This also resets the program times to the factory settings

    To Reset the unit:

    a) Ensure that the rotary switch is in the "START" position.
    b) Press both the △+ and ○OK buttons, at the same time for approximately 3 seconds until "dEL" is displayed on the screen.
    c) Move the rotary switch away from the "START" position and then return to the START" position.
    d) The unit has now been reset to the factory default settings.

11. **Note** the "Reset" button on the front panel is used to reset the operating time only.

Adjusting TPI Settings

TPI is enabled or disabled by the installer by means of a jumper link (JP3) inside the thermostat.

If TPI has been enabled by the installer then 3 settings can be adjusted:
    a)   The minimum firing time of the boiler
    b)   The number of boiler cycles per hour
    c)   The control temperature bandwidth

1) Spin the rotary selector to "**START**"

2) Press and hold both △+ and ▽- at the same time for 3 seconds to enter the **setting mode**.

3) The display will show [**Con: 1**] or the previously set value

4) 5 selections are possible (1 – 5 minutes) the default setting is 1 minute.

5) Press △+ or ▽- to set the desired duration of the minimum boiler firing time.

6) Press ○Ok to save desired duration of the minimum boiler firing time and enter the number of boiler cycles per hour setting.

7) 4 selections are possible (3/6/9/12). The default setting is 6 boiler cycles per hour.

8) The display will show [**CPH: 6**] or the previously set value.

9) Press △+ or ▽- to set the desired number of boiler cycles per hour.

10) Press ○Ok to save the desired number of boiler cycles per hour and enter the control temperature bandwidth setting.

11) The control temperature bandwidth range is 1.5°C – 3.0°C in steps of 1°C. The default setting is 1.5°C.

12) The display will show [**1.5°C Pb**] or the previously set value.

13) Press △+ or ▽- to set the desired temperature bandwidth.

14) Press ○Ok to save the desired temperature bandwidth and return the thermostat to normal operation

15) Suggested TPI settings

Equipment Type	Cycles per Hour	Minimum firing time
Gas boiler < 30kW	6	1
Oil boiler	3	4
Zone valve	6	1
Electric Heating < 16A	12	1

If TPI has been disabled by the installer then only a switching differential (hysteresis) can be selected.

16) Spin the rotary selector to "**START**".

17) Press and hold both △+ and ▽− at the same time for 3 seconds to enter the **hysteresis setting mode**.

18) 4 selections are possible 0.5, 1.0, 2.0 or 4.0. The default setting is 1.0°C.

19) Press △+ or ▽− to set the desired switching differential.

20) Press ○Ok to save the desired switching differential and return the thermostat to normal operation.

Temperature Calibration (Offset)

It is possible to offset the temperature sensor within the thermostat. This can be used, for example, where the thermostat is positioned in a cold part of the room. In such a case the temperature offset can be used to increase the display temperature such that it is more representative of the actual room temperature.

1) Spin the rotary selector to "**Monday**"

1) Press and hold, at the same time, ○ Date and ○ for 3 seconds to enter the **offset** setting mode.

2) The **offset** can be set between -4°C to +4°C in steps of 0.1°C. The default value is 0.0°C.

3) Press △+ or ▽− to select the desired **offset** value.

4) Press ○OK to save the desired **offset** value.

5) Spin the rotary selector to "**START**" to return the thermostat to normal operation.

6) The thermostat will now display the temperature, including the offset value.

Locking the Thermostat

The thermostat has a locking facility. This can be used to prevent unauthorised personnel tampering with the thermostat.

1) Spin the rotary selector to "**Saturday**".

2) Press and hold, at the same time, ○ Date and ○ for 3 seconds to lock the thermostat display.

3) A 🔒 will appear on the display

4) All controls are now locked.

5) Spin rotary selector to "**START**" to allow the thermostat to operate.

6) To remove the lock repeat the above procedure and 🔒 will disappear.

Safe Disposal

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