

# The SunStatRF Si 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 thermostat 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 TRVs.

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 SunStatRF Si is a wireless programmable room thermostat. In addition to the normal programmable room thermostat features this unit also benefits from installer selectable **Service Interval (Si) and Delayed Start (DS)** modes. A **SunStat Si** should be purchased if a wired 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.**

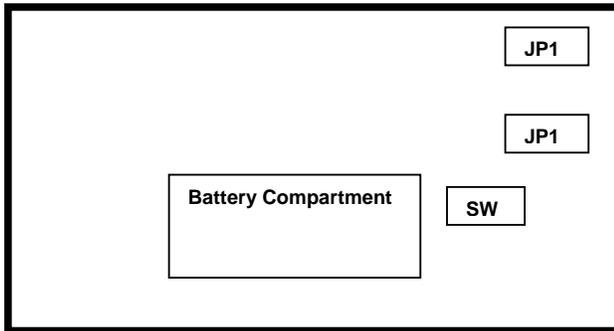
### **Installation Notes**

The manual override button on the SunStatRF Si receiver is only operational when the RF link has not been established.

When the RF link has been established the unit can be commissioned by adjusting the temperature up and down on the main SunStatRF Si Si unit.

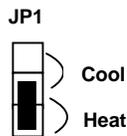
If the batteries need to be changed the RF link may be lost. In such an instance the manual override will become active. This feature can be temporarily used by the householder until such times as the batteries have been changed.

1. Remove the back-plate from the thermostat by loosening the retaining screw on the left hand side of the unit before separating the unit.
2. Fix the back-plate to the wall with the screws and, if required, the rawplugs, provided.
3. The following jumper links / switches, located inside the main unit, should be set prior to starting the installation process.



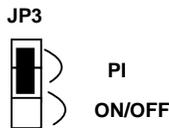
### JP10 - Heating & Cooling

The SunStatRF Si will be set to "heating" at the factory.



### JP13 - TPI / ON/OFF

The SunStatRF Si will be set to "PI" at the factory. 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)



4. Fit the "AA" batteries (x2), provided, into the battery compartment of the main unit, taking care to orientate them correctly.
5. Fit the main unit to the back-plate and tighten the screw on the left hand side of the unit.
6. The unit is now ready to be programmed.
7. See "**Fitting the SunStatRF Si Rx**" on Page 4 for instruction on how to install the receiver.
8. 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  $\Delta^+$  and  $\text{OK}$  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.
- e) **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  $\Delta^+$  and  $\nabla^-$  at the same time for 3 seconds to enter the **setting mode**.
- 3) The display will show or the previously set value
- 4) 5 selections are possible (1 – 5 minutes) the default setting is 1 minute.
- 5) Press  $\Delta^+$  or  $\nabla^-$  to set the desired duration of the minimum boiler firing time.
- 6) Press  $\text{OK}$  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 or the previously set value.
- 9) Press  $\Delta^+$  or  $\nabla^-$  to set the desired number of boiler cycles per hour.
- 10) Press  $\text{OK}$  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 0.1°C. The default setting is 1.5°C.
- 12) The display will show or the previously set value.
- 13) Press  $\Delta^+$  or  $\nabla^-$  to set the desired temperature bandwidth.
- 14) Press  $\text{OK}$  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  $\Delta^+$  and  $\nabla^-$  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  $\Delta^+$  or  $\nabla^-$  to set the desired switching differential.
- 20) Press  $\text{OK}$  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**".
- 2) Press and hold, at the same time,  and  for 3 seconds to enter the **offset** setting mode.
- 3) The **offset** can be set between -4°C to +4°C in steps of 0.2°C. The default value is 0.0°C.
- 4) Press  or  to select the desired **offset** value.
- 5) Press  to save the desired **offset** value.
- 6) Spin the rotary selector to "**START**" to return the thermostat to normal operation.
- 7) The thermostat will now display the temperature, including the offset value. Due to the nature of the software it can take up to 3 minutes for the display temperature to change to the new setting.

## Locking the Thermostat

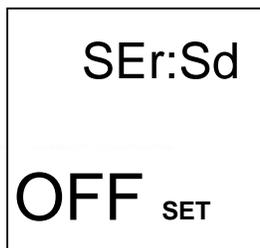
The thermostat has a locking facility. This can be used to prevent unauthorised personnel tampering with the thermostat.

- 1) Spin the rotary selector to "**Saturday**".
- 2) Press and hold, at the same time,  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.

## Activating the Service Interval Mode

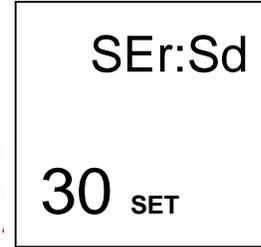
The Service Interval mode helps landlords comply with gas safety legislation. The Service Interval mode gives an on screen warning to alert the householder to get their boiler serviced ASAP. Failure to get the boiler serviced by the due date will mean that the boiler is put into set-back mode, whereby the heating will only come on if the room temperature falls below 14°C. The unit is supplied with the Service interval feature deactivated ("OFF").

1. Spin the rotary selector to "**Thursday**".
2. Press and hold, at the same time,  and  for approximately 5 seconds to enter the **Service Interval** setting procedure.



3. The screen will show the number of service days (Sd) to be "**OFF**".

4. To activate the **Service Interval** feature press the  button to enter the number of **Service Warning Days** (Sd). The minimum number of **Service Warning Days** (30) will then be displayed.



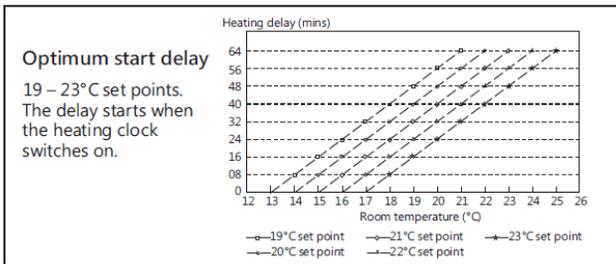
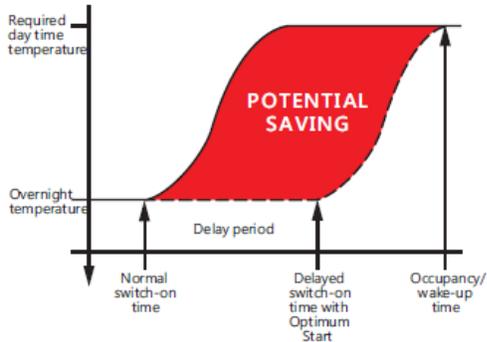
5. The **Sd** is the number of **Service Warning Days**, before the end of the Service Interval period, that a warning message will be displayed. The warning message "**SEr**" will be displayed when the software reaches the selected number of service warning days. The number can be set between 30 and 60 days.
6. Press  or  to set the number of **Service Warning Days**.
7. Press  when the desired Sd has been entered. The screen will then prompt you to enter the number of Service Interval days (Si). The Si is the number of days before the next boiler service must have been carried out. This value can be set between 0 and 365 (default value is 365).



8. Press  or  to set the number of **Service Interval Days**.
9. When the desired **SI** has been entered press  to review the **Sd** setting or press  to leave the **Service Interval** mode and confirm the setting.
10. The software reduces the **SI** value by 1 every day (at midnight). When **SI** value reaches 0 days the unit will enter **setback** mode. In this mode the heating will only come on if the temperature falls below 14°C.
11. During the servicing of the heating system the heating engineer will reset the **Service Interval** function on the unit and the system will return to normal operation until the next service is due.
12. When the **Service Interval** mode has been selected it cannot then be de-selected / disabled. Only the service engineer can reset the unit.

## Activating the Delayed Start mode

The Delayed Start mode is an energy saving feature that saves energy when the room temperature is close to the set temperature, hence the heating does not need to come on as early as would be required if the room was much colder than the set temperature.



## Fitting the SunStatRF Si Rx

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

**WARNING**

**The SunStatRF Si Rx must not be removed from its wall box unless it has been isolated from the electrical supply.**

---

**Interference with sealed parts renders the guarantee void**

- Before wiring the SunStatRF mains power must be removed from the whole system.
- The SunStatRF Si Rx is normally fitted close to the boiler it will control.
- Choose a suitable position for the receiver unit and route the wires, if possible, behind the wall to the receiver wall box.
- Fix the receiver back-box to the wall with the screws and, if necessary, the rawplugs, provided.
- Route the wires through the back of the receiver back-box.
- Remove the front panel of the receiver by loosening the retaining screw at the top of the unit.
- Connect the wires to the main part of the receiver in accordance with the diagram below (Fig 5) and current Wiring Regulations.

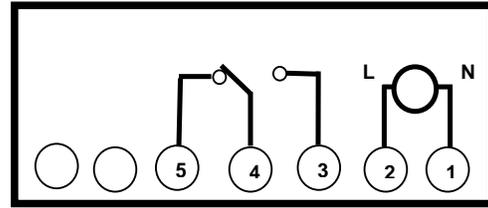


Fig 5

- Fit the main part of the receiver to the back box with the screws provided.
- Before fitting the receiver front panel, select the position of the 4 DIP switches.
- Use the table below to note the **Zone / Room Code**, based on the four DIP positions. The 16 different positions allow different wireless codes to be selected. Different wireless codes should be used in adjacent properties (e.g. block of flats) where the properties are less 60m apart.

Zone code	00	01	02	03	04	05	06	07
Dip switch								
Zone code	08	09	10	11	12	13	14	15
Dip switch								

Table 1

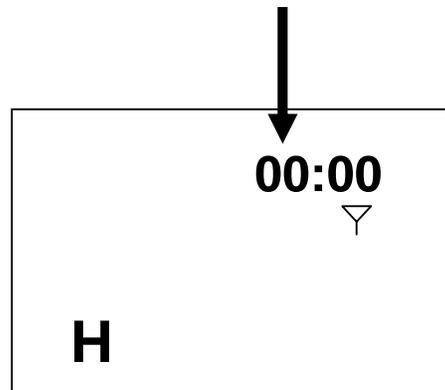
- When fitting the front panel ensure the locating tab on the bottom edge of the receiver front panel, is firstly placed in the corresponding mating piece of the main part of the receiver, and on closing of the two parts, that the terminal pins enter the terminal block and do not get distorted due to mis-alignment.
- Double check the wiring and then power up the system.

## Establishing the RF Link

The "linking" process is enabled by

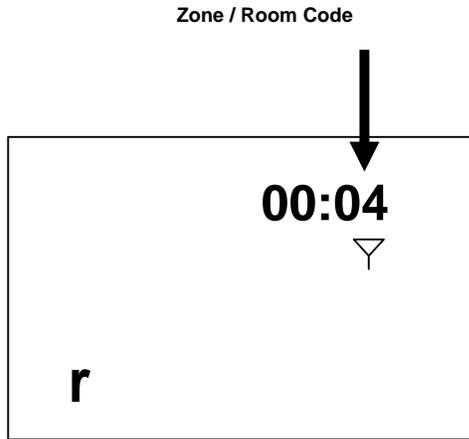
- Spinning the rotary selector switch to the "Start" position.
- Press the button for about 5 seconds.
- The display will then prompt the user to input a "House Code".

House Code



- The SunStatRF Si **House Code** is pre-set to "00" at the factory.
- If it is not "00" press the or buttons until the House Code is set to "00".
- Press the to accept the **House Code**.

- The display will then prompt the user to input a "Zone / Room Code".



ErP Information	
Manufacturer	Sunvic Controls
Product Name	SunStatRF Si
Class	IV
Efficiency Score*	2%

\* The efficiency score of the thermostat is added to the efficiency score of the boiler to give an overall package efficiency score.

- The **Zone / Room Code** has 16 options (0 to 15). This code needs to be set to match the four DIP switch settings on the SunStatRF Si Rx. e.g. if wireless code 4 is selected then the four DIP switches should be set as follows SW1 – OFF, SW2 – OFF, SW 3 – ON & SW 4 – OFF.
- Select the **Zone / Room Code** by pressing the  $\Delta^+$  or  $\nabla^-$  buttons, until the desired **Zone / Room Code** is displayed.
- When the correct **Zone / Room Code** is displayed
- Press the **OK** button to store the desired **Zone / Room Code**.
- The **RF link** should now be established.
- If the mains power is lost the RF link will automatically be re-established, when the mains power is returned. This may take a few minutes.
- During the installation process or if the RF link is lost the manual switch on the front of the SunStatRF Si Rx (see Fig 8) can be used to switch the boiler "ON" or "OFF". If the boiler is controlled in this manner no temperature control is achieved. The manual switch does **not** function if the RF link has been **established**.

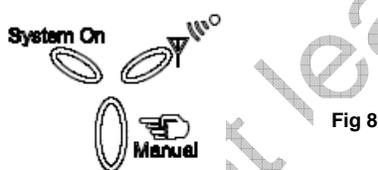


Fig 8

#### User notes

##### System On

When the boiler is "ON" the "System On" light will be blue.

The SunStatRF Si unit only transmits to the receiver (SunStatRF Si Rx) every few seconds or after a setting has been changed. During the transmission period the "Transmission" light will flash red. The "Transmission" light will be continuously red if the RF link has not been established or has been lost



If the RF link has been lost or has not been established the manual switch becomes active. The "Transmission" light will be continuously red and when the boiler is "ON" the "System On" light will be blue.



Safe Disposal



**SUNVIC CONTROLS Ltd.**  
**Units 1 & 2, Block 1**  
**251 Low Waters Road**  
**Cadzow Industrial Estate**  
**Hamilton**  
**ML3 7QU**

**Tel. +44 (0)1698 812944**  
**Fax +44 (0)1698 813637**  
**Technical Helpline +44 (0)1698 810945**

**N.B.** In line with a policy of continuous product development, Sunvic Controls Ltd. reserves the right to change the specification, design and materials of products without prior notice.