Programmable RF Room Thermostat with One Touch Energy Saving Override Control

Instruction Manual
Model No RT500ROF

WARRANTY 2 YEARS

energy saving trust endorsed product
PRODUCT COMPLIANCE

SALUS Controls Plc hereby declares that the radio equipment type 868Mhz is in compliance with Directives 1999/5/EC, 2014/53/EU, 2006/95/EC, 2004/108/EC, 2011/65/EU, 2009/125/EC and 93/68/EEC. The full text of the EU declaration of conformity is available at the following internet address: www.saluslegal.com

SAFETY INFORMATION

These instructions are applicable to the SALUS Controls model stated on the front cover of this manual only, and must not be used with any other make or model.

These instructions are intended to apply in the United Kingdom only, and should be followed along with any other statutory obligations.

This accessory must be fitted by a competent person, and installation must comply with the guidance provided in the current editions of BS7671 (IEE Wiring Regulations) and Part ‘P’ of the Building Regulations. Failure to comply with the requirements of these publications could lead to prosecution.

Always isolate the AC Mains supply before opening or removing the unit from the wall or wall box.

When replacing batteries do not mix old and new batteries together. Only use alkaline batteries - do not use rechargeable batteries.

Please leave these instructions with the end user where they should be kept in a safe place for future reference.

ErP RATING

This product has been rated as: Class 1, Efficiency 1%
What is a programmable room thermostat?

... an explanation for householders

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 RT500ROF is a programmable room thermostat with simple to operate energy saving override control. Unlike standard programmable room thermostats the programme on the programmable room thermostat can be temporarily overridden using the remote override control.

The One Touch Override (OTO) is normally mounted at the main exit of the property and is pressed on entry or exit. When activated, the OTO will override the programmed temperature on the RT500 Programmable room thermostat.

YOUR RT500ROF INCLUDES THE FOLLOWING:

RT500 Programmable Room Thermostat

The RT500 programmable room thermostat from SALUS Controls is a stylish and accurate 5/2 or 7 day programmable electronic thermostat with a large, easy to read display. The RT500 programmable thermostat can replace most common residential thermostats and is designed to be used with electric, gas or oil heating control systems. Unlike ordinary single unit design thermostats, this is a new type of thermostat separating the operational functions into three units.

The RT500 programmable room thermostat provides the user interface and temperature sensing / control.
RT500 Receiver
The RT500 Receiver is used for wiring connections and heat on/off control. This receiver has been specifically designed to be used for both Volt Free and AC heating applications.

One Touch Override (OTO)
The RF One Touch Energy Saving Override Control (OTO) is used to provide a temporary change to the programme on the RT500. This simple to use control can be activated when leaving your property or when you just want to override the programme on the RT500 programmable room thermostat.

RT500ROF Features
• One Touch Energy Saver Override Control (RF)
• Volt free switching option
• 5/2 or 7 day programming flexibility
• Built-in start up programming for quick installation
• Frost protection
• Large, easy to read display with blue backlight
• Burner on symbol
• Easy to use programming
• User friendly

About this Manual
This Manual is divided into 4 parts

INSTALLATION AND SETUP  Page  6 - 16
USER INTERFACE, CONTROLS & PROGRAMMING  Page  17 - 28
TECHNICAL SPECIFICATION  Page  29 - 30
WARRANTY  Page  31
INSTALLATION OF RT500ROF
RT500 Programmable Room Thermostat

The RT500 can be used in any convenient location by using the included stand, or can be easily installed in a fixed position using the industry standard back plate supplied with the unit – this is used purely for mounting purposes, as no wiring is needed for the RT500. The back plate can be mounted directly to the wall surface.

The ideal position to locate the RT500 is 1.5m above floor level. It should be mounted in a location where the thermostat is free from extremes of temperature.

To ensure trouble free operation of the Radio Frequency (RF) signal, always ensure that the programmable thermostat is mounted away from any possible sources of interference (such as radios, TV sets, computers, etc) and is not mounted on or in close proximity to large metal objects. Installing the RT500 in enclosed areas such as basements is not recommended.

RT500 Jumper Settings

Changes to the jumper settings should only be made by the engineer carrying out the installation or other qualified person.

The installer should select the jumper positions required for programme or span if changes need to be made to the factory default settings. These jumpers are found on the rear of the RT500. Jumpers 1-5 are for RF address coding and are explained on page 14.

<table>
<thead>
<tr>
<th>Jumper</th>
<th>Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>Program</td>
<td>5-2 (factory default setting) or 7 individual days programming.</td>
</tr>
<tr>
<td>Span</td>
<td>Temperature span of ± 0.5°C (factory default setting) or ± 1.0°C</td>
</tr>
<tr>
<td>1,2,3,4,5</td>
<td>RF address code (see Page 14).</td>
</tr>
</tbody>
</table>

**NOTE:** The Reset button **must** be pressed after changing jumper positions.
INSTALLATION OF RT500ROF

RT500 Receiver

NOTE: All electrical installation work should be carried out by a suitably qualified Electrician or other competent person.

If you are not sure how to install this programmable thermostat consult either with a qualified electrician, heating engineer or your boiler / heating system supplier for advice on how to continue.

The RT500 Receiver should be mounted in a suitable location that is both accessible for the connection of mains and control wiring, and allows good reception of the RF signal. The Receiver needs a 230V AC mains supply to operate, and this should be fused appropriately (13A max.). The Receiver should be mounted in a location where it will not come into contact with water, moisture or condensation.

The On/Off switch is accessible from the front face of the Receiver, as shown in this picture:

On the front cover of the Receiver you will see that there is the On/Off switch and two Light Emitting Diodes (LEDs). The switch allows you to turn off the Receiver if necessary to prevent it calling for heat.

The bottom LED (red) will illuminate when the switch is in the ‘On’ position and the unit is receiving power. The top LED (green) illuminates when the Receiver unit is receiving a heat call transmission from the RT500.

The wiring terminals and RF Address Code setting DIP switches are located on the rear of the Receiver, as shown in this picture:

Do not apply power until you are ready to setup RF communications on page 13
### Receiver Wiring Terminals

<table>
<thead>
<tr>
<th>Terminal</th>
<th>Identifier</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>N.O.</td>
<td>Switched Live (Normally Open [N.O.] contact)</td>
</tr>
<tr>
<td>2</td>
<td>COM</td>
<td>Linked Live feed</td>
</tr>
<tr>
<td>3</td>
<td>L</td>
<td>Live feed (230V AC)</td>
</tr>
<tr>
<td>4</td>
<td>N</td>
<td>Neutral</td>
</tr>
</tbody>
</table>

#### TYPICAL WIRING INSTALLATIONS

**a. 230V AC Installation**

**Notes:**
- Receiver should have a permanent 230V AC fused Mains supply
- Confirm that the Boiler has an external thermostat loop and is configured for 230V switching
- If the boiler has two terminals for the thermostat, remove the link from the boiler
- As the Receiver is compatible with 0v – 240v boiler the wiring is the same for all boilers with a 2 wire connection
b. 24V Installation

Notes:
- Receiver unit should have a permanent 230V AC main supply
- Confirm that the Boiler has an external thermostat loop and is **NOT** configured for 230V switching
- If the boiler has two terminals for the thermostat, remove the link from the boiler
INSTALLATION OF RT500ROF

One Touch Override (OTO)

The OTO can be mounted anywhere inside the property for convenience. We suggest mounting the unit at the main entry/exit of the property.

1. To begin installation remove the front cover by sliding it up from the back plate.

2. Mark and drill two holes at points A. Fix the OTO back plate to the wall using the screws and anchors provided.
3. Insert the two AAA batteries (supplied) into the bottom rear of the front cover

4. Position the front cover above the back plate and slide down until the cover is in line with back plate
SETTING UP RF COMMUNICATION of RT500ROF

1. Switch power on the receiver

The receiver will now enter learning mode
The RED light on the front will flash

2. Press and hold the sync button on the OTO

The RED LED will flash to indicate that a signal is being sent to the Receiver

3. When system setup is complete the LED on the receiver will stop flashing and the LED on the OTO will go out.

Note:
The RT500 will pair with the receiver automatically.

You are now ready to test the RF communication which is explained on the next page.
TESTING THE RF COMMUNICATION

It is important to site the Receiver, One Touch Override and RT500 in locations where the RF signal cannot be interrupted.

The receiving range between RT500, One touch Override and Receiver is 70 metres in open air, however many factors can affect the RF transmission and shorten the operating distance, e.g. shielding by thick walls, foil back plasterboard, metal objects such as filing cabinets, general RF interference, etc.

The range is generally large enough for most household applications, but it is advisable to test the RF transmission from the intended RT500 and OTO locations to the Receiver location before deciding where to mount the units. To check the RF reception, follow the following steps:

1. Press the UP button on the RT500 until the set point temperature is 3°C higher than room temperature.
2. Wait for a few seconds. The flame indicator (heat call) should appear on the bottom left of the LCD on the RT500.
3. Check the green LED on the receiver unit - it should be lit.
4. Select setback of OTO, press the big button to transmit the setback signal to the Receiver. The green LED on the Receiver should be turned off. This can test the RF range between the OTO and the Receiver.
5. Press the DOWN button of the RT500 to adjust the set point temperature to be lower than room temperature.
6. Wait for a few seconds, and the flame indicator (heat call) should disappear and the green LED should switch off.
7. Repeat steps 1 to 6 to make sure the LED in Receiver can turn on and turn off each time.

If you are unable to get a stable RF connection between the Receiver and RT500, check that the Receiver is both switched on and has a mains supply (red LED lit). If this isn’t the problem you can also alter the RF address code by following the ‘RF Address Code Setting’ section of this manual, and then repeat steps 1 to 5. See page 14 and 15 of this manual.
RF COMMUNICATION FAULT FINDING

Normally, the RT500 can link with the Receiver and without pairing. If there is another unit being used nearby, e.g. in the next house or as part of a multiple installation, your Receiver may be fault triggered by the other RT500. You can change the RF Address Code to help prevent this problem.

Each Receiver can only respond to RF transmissions from a RT500 that has the same RF address code setting.

Disconnect any AC power to the Receiver, and remove the batteries from the RT500 and One Touch Override module before attempting any adjustment of the RF Address Code switches and jumpers. If you are not sure how to carry out this operation correctly, consult either with a qualified electrician or heating engineer or contact the SALUS Controls Technical Helpline for advice on how to continue.

To adjust the RF address code of the Receiver, simply push up one or more of the 5 DIP switch levers on the DIP switch bank located on the back of the receiver (the levers are numbered 1 to 5 same as the RT500 Jumpers). On the RT500 there are 5 jumpers and if you take 1 or more of the jumpers off the RT500 you must switch the same numbers on the receiver to Off and then press reset on the RT500.
To adjust the RF address code of the RT500, remove one or more of the jumper caps located on the back of the unit (labelled 1, 2, 3, 4 and 5 shown in the picture opposite) so that the jumper settings match the settings made on the receiver:

For example, if the DIP switches on the Receiver were set as follows:
1 - ON
2 - OFF
3 - OFF
4 - OFF
5 - ON

Then you would need to remove jumper caps 2, 3 and 4 on the RT500 to make sure that they are both set with the same RF address code. Please make sure that you keep any of the jumper caps you remove in a safe place, in case you later need to change the RF address setting again.

Turning on the Receiver at this point, the red LED will flash for 12 minutes to indicate the Receiver is in sync mode. During the pairing process, the Receiver will go into NORMAL mode if the pairing process is not completed within 12 minutes. After successfully completing the pairing process, the red LED of Receiver will stop flashing, then you can press the button of OTO to control the receiver relay.

To pair the One Touch Energy Override Control with the Receiver, gently press and hold the SYNC button for a few seconds with a sharp object (such as the end of a paper clip). The front LED will flash every few seconds and a RF address code will be generated and saved. The OTO unit will continuously transmit the RF signal for 5 minutes to the Receiver.

If the Receiver loses the signal from the OTO for more than 1 hour, the red LED will flash, and the setback temperature will be cancelled.
AFTER INSTALLATION

The following table shows the settings of the RT500 programmable thermostat after Power on, or after RESET is pressed:

<table>
<thead>
<tr>
<th>Function</th>
<th>Status After Reset or Power On</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operation Mode</td>
<td>Normal mode</td>
</tr>
<tr>
<td>Room Temperature</td>
<td>22.0 °C, updated within 5 seconds</td>
</tr>
<tr>
<td>°C indicator</td>
<td>On</td>
</tr>
<tr>
<td>Clock</td>
<td>12:00</td>
</tr>
<tr>
<td>AM/PM indicator</td>
<td>AM</td>
</tr>
<tr>
<td>Day of Week indicator</td>
<td>M</td>
</tr>
<tr>
<td>Programme</td>
<td>Default factory setting</td>
</tr>
<tr>
<td>Set Point Temperature</td>
<td>Default factory setting</td>
</tr>
<tr>
<td>Programme Number indicator</td>
<td>5</td>
</tr>
<tr>
<td>SET indicator</td>
<td>Off</td>
</tr>
<tr>
<td>PROG indicator</td>
<td>Off</td>
</tr>
<tr>
<td>Frost Protection indicator</td>
<td>Off</td>
</tr>
<tr>
<td>Heat indicator</td>
<td>Off</td>
</tr>
<tr>
<td>Low-Battery Warning indicator</td>
<td>Off, updated within 5 seconds</td>
</tr>
<tr>
<td>Output Relay</td>
<td>Off</td>
</tr>
</tbody>
</table>

After Power on, the thermostat will operate in **Normal** mode (Normal mode is when the thermostat is displaying the room temperature):

- The set point temperature is reset to the default setting
- The room temperature display is updated within 5 seconds
- The control process starts
- The programme number is updated to indicate the running program

If the Reset Button is pressed, the RT500 will behave in the same way as described above, all user settings stored in the internal memory will be deleted and overwritten with the default settings, and all programmable thermostat control settings will be returned to default values.
RT500 ROF USER INTERFACE AND CONTROLS

One Touch Override

1. Selecting the set back temperature
On the Side of the One Touch Override (OTO) you will see a vertical slide switch. The slide switch allows you to select an override temperature that will operate when the OTO is activated. If you select 2°C, 4°C or 6°C then the active temperature selected on the RT500 programmable room thermostat will be reduced by either 2°C, 4°C or 6°C.

If you select AUTO then the RT500 will switch to the lowest temperature selected on the RT500.

2. Activating the OTO
On the front cover of the One Touch Override (OTO) you will see that there is a large button, press this to activate the OTO. When activated the red light behind the word “OUT” will flash.

To deactivate the OTO press the button again, the light will flash once and go out.

RT500 Programmable Room Thermostat

The status and operation of the RT500 is clearly shown on the display of the RT500.

This display allows the user to see at a glance the current status of the heating system, the current time and day of the week, as well as a clear indication of the current room temperature.

There are few user controls for the RT500, making the programmable thermostat very easy to operate. These controls are shown below, along with a description of each of their functions.
Function Summary
RT500 Programmable Room Thermostat

<table>
<thead>
<tr>
<th>Key / Operation</th>
<th>Symbol</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>UP key</td>
<td>![Up Arrow]</td>
<td>Increases the selected setting</td>
</tr>
<tr>
<td>DOWN key</td>
<td>![Down Arrow]</td>
<td>Decreases the selected setting</td>
</tr>
<tr>
<td>BACKLIGHT / FROST key</td>
<td>![Backlight]</td>
<td>Manually turns on the LCD backlight for 5 seconds, or activates / deactivates Frost Protection</td>
</tr>
<tr>
<td>SELECT key</td>
<td>![Selector]</td>
<td>Selects a clock or programme setting</td>
</tr>
<tr>
<td>SET key</td>
<td>![Set]</td>
<td>Sets a clock or programme setting</td>
</tr>
<tr>
<td>RESET button</td>
<td>![Reset]</td>
<td>Resets the programmable thermostat to default (original factory) settings</td>
</tr>
</tbody>
</table>

One touch Override Control

<table>
<thead>
<tr>
<th>Key / Operation</th>
<th>Symbol</th>
<th>Functions</th>
</tr>
</thead>
<tbody>
<tr>
<td>OUT</td>
<td></td>
<td>Switches the override feature on or off</td>
</tr>
<tr>
<td>SYNC</td>
<td></td>
<td>Puts the OTO into pairing mode to allow wireless (RF) connection</td>
</tr>
<tr>
<td>SETBACK</td>
<td></td>
<td>Allows selection of a 2 °C, 4 °C or 6 °C setback temperature setting</td>
</tr>
<tr>
<td>AUTO</td>
<td></td>
<td>Lowest set temperature in the RT500 is used (or manual override setpoint, or programme setting of that day)</td>
</tr>
</tbody>
</table>
RT500 Programming

The RT500 is configured and adjusted by the use of a minimal number of user controls.

Setting the Time

Press and hold SET and SELECT when the RT500 is in Normal mode for a few seconds to enter the Clock setting mode. Release both keys and the display will look like the image to the right:

The Time and Day are displayed along with a SET indicator, with all other indicators cleared from the display. The hour part of the time is flashing to indicate that it is the currently selected item and is ready to be adjusted.

- Press the UP or DOWN keys to increase or decrease the ‘hour’ setting – the selected item will stop flashing while a key is pressed, and will resume flashing when you release the key.
- Press the SELECT key to select the ‘minutes’ section of the time. Set the minutes in the same way as the hour by using the UP and DOWN keys.
- Press SELECT again to select the Day, and again change the setting with the UP and DOWN keys.
- Press the SET key to confirm the new time and day settings. This will store the changes and return the RT500 to Normal mode.

The RT500 will also return to Normal mode (and save the clock settings) if no keys are pressed for more than 15 seconds.
PROGRAMMING THE RT500

The RT500 offers great versatility with its programming options, allowing the user to programme the unit to operate on a 5/2 or 7 day control cycle. The programmable thermostat has a default set of Programmes that have been designed to meet the needs of most users. If these default programmes are not suitable for your particular situation, reprogramming the RT500 with your own settings is a very straightforward operation.

Selection of the default programming mode (5/2 or 7 day) is made by changing the jumper setting on the rear of the RT500, as previously described within the Installation section of this manual.

5/2 DAY MODE

5/2 day mode is the default programming mode for the RT500. With this mode selected, five different sets of time and set point temperatures can be set for Weekdays or Weekends.

To review or change a programme, press the SET key when the RT500 is in Normal mode. This will change the unit status to Programme Setting mode.

The LCD display will display programme number 1 and SET PROG, with all other indicators cleared. The weekdays will be flashing to indicate they are the selected item and are ready to be adjusted:
Press the UP or DOWN key to select the programme set for either Weekday or Weekend to be reviewed or adjusted. Pressing the SET key at any time when in programming mode will return the RT500 into Normal mode.

Press the SELECT key to confirm the Weekday or Weekend selection. Once this is set, the ‘Hour’ will flash to indicate that it is the selected item and is the next item to be adjusted:

Press the UP or DOWN key to adjust the hour setting to the desired value, and confirm your selection by pressing the SELECT key.

Pressing the SELECT key allows you to step through each of the items to be reviewed or adjusted within the programmes in the following sequence:

<table>
<thead>
<tr>
<th>Programme</th>
<th>Function Sequence</th>
<th>Set point temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hour   Minutes</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Hour   Minutes</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Hour   Minutes</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Hour   Minutes</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Hour   Minutes</td>
<td></td>
</tr>
</tbody>
</table>

...before then allowing you to cycle back to Programme 1. Pressing the SET key at any time will confirm the setting and return to the programme set selection.
7 DAY MODE

The RT500 also offers a 7 day programming mode, which allows you to programme five different sets of time and set point temperatures for each day of the week to give a total of 35 separate programme settings.

To review or change a programme, press the SET key when the RT500 is in Normal mode. This will change the unit status to Programme Setting mode.

The LCD display will display programme number 1 and SET PROG, with all other indicators cleared. The weekdays will be flashing to indicate they are the selected item and are ready to be adjusted.

Press the UP or DOWN key to change the display to indicate the single day you want to programme:

Pressing the SET key at any time when in programming mode will return the RT500 into Normal mode. Press the SELECT key to confirm the Day selection. Once this is set, the ‘Hour’ will flash to indicate that it is the selected item and is the next item to be adjusted:
Press the UP or DOWN key to adjust the hour setting to the desired value, and confirm your selection by pressing the SELECT key.

Pressing the SELECT key allows you to step through each of the items to be reviewed or adjusted within the programmes.

Pressing the SET key at any time will confirm the setting and return to the programme set selection. Each programme for all the other days of the week is set in exactly the same way – just repeat the steps shown above, after entering programming mode and selecting the day you want to programme.

Regardless of which programming mode the RT500 is set for (5/2 or 7 day), not pressing any keys for 15 seconds will automatically save any programming changes and exit to Normal mode. You can also review or change programme settings when Frost Protection is enabled.
FROST PROTECTION

To enable the Frost Protection mode, press and hold the BACKLIGHT / FROST button for a few seconds with the RT500 in Normal mode. Once Frost Protection is enabled, the set point temperature is automatically set to 5°C.

Whenever Frost Protection is activated, the Frost Protection indicator will flash in the sequence shown below:

To turn off Frost Protection mode, press and hold the BACKLIGHT / FROST button for a few seconds.

REVIEWING SET POINT TEMPERATURE

You can view the set point temperature at any time by pressing either the UP or DOWN key.

When any programme is running, the LCD display will show the programme set point temperature with the SET indicator displayed:
When operating in Frost Protection mode, the LCD display will show a reading of 5 °C and also display the Frost Protection indicator:

When operating in Temporary Override mode, the LCD display will show the temporary set point temperature:

To exit from the set point review, press any key except the UP or DOWN keys, or don’t press any keys for a few seconds – either of these actions will return the RT500 to Normal mode.

**TEMPORARY OVERRIDE**

It is possible to temporarily override the current set temperature of the RT500. There are two ways to do this:

- While reviewing set point temperature: Pressing the UP or DOWN key while reviewing the set point temperature will increase or decrease the set point temperature in 0.5 °C steps.
- In Normal mode: press and hold either the UP or DOWN key to display the set point temperature. After a few seconds, the RT500 will enter Temporary Override mode and allow increase or decrease of the set point temperature in fast advance. If the key is released within a few seconds then you will only be able to review the set point temperature.
Once in Temporary Override mode, the clock and day are displayed, along with the SET indicator; all other indicators are cleared from the display. The set point temperature will flash to indicate that it can be changed:

The set point temperature can be adjusted within 5°C to 35 °C.

Temporary Override mode remains active until the new set point settings are adjusted, Frost Protection is activated or the next programme time / temperature set point is reached.

**On/Off Control**

When the RT500 is operating in NORMAL mode, if the Receiver has not received a signal from the RT500 after 1 hour, the relay of Receiver will keep the original status (turn on if it is previously on, turn off if it is previously off). But the red LED won't flash.
OTHER FUNCTIONS AND CONTROLS

Backlight
The backlight of the RT500 is switched on automatically whenever any of the keys are pressed. The backlight will remain illuminated for a few seconds after the last key press, except if you are changing settings within the Clock, Programme or Temporary Override modes – in this case, the backlight will remain illuminated throughout the setting change process. The backlight will not illuminate if the battery voltage is low.

Battery Status
The RT500 checks the battery voltage frequently during normal operation. If the battery voltage is sensed as being low (this is normally when the battery voltage falls to a level of around 2.6V), the low battery indicator will be displayed on the screen.

Although the programmable thermostat will continue to operate normally at this stage, you should replace the batteries as soon as possible to prevent any possible operating problems.

If the LED on the One Touch Override front panel is dim or does not light it means the batteries are low or discharged - you should replace the batteries as soon as possible.

Reset Button
The Reset Button is provided as a way to restore the programmable thermostat to its default factory settings. Pressing this button will delete any previously entered settings.

Sleep Mode
By pressing both the UP and DOWN keys together for a few seconds, the RT500 will enter SLEEP mode. In this mode, all the RT500 functions will be paused to save battery power, with the exception of the clock which will continue to run in the background.

While in SLEEP mode:
• The LCD display will be blank.
• All output from the RT500 will be turned off immediately.

Press any key to wake up the RT500 and exit SLEEP mode.
ENERGY TIP

One way to set and use your room thermostat is to find the lowest temperature setting that you are comfortable with, and then leave it set at this temperature. You can do this by setting the room thermostat to a low temperature, (for example 17 °C) and then increasing the setting by one degree each day until you are comfortable with the room temperature - you won’t have to adjust the thermostat further, as adjustment above this setting will waste energy - a 1 °C increase in temperature is equal to 3% of your heating costs. Additionally use the OTO when leaving the property.

MAINTENANCE

The RT500ROF requires no special maintenance. Periodically, the outer casing of all components can be wiped clean using a dry cloth (please DO NOT use solvents, polishes, detergents or abrasive cleaners, as these can damage the thermostat).

There are no user serviceable parts within the units; any servicing or repairs should only be carried out by SALUS Controls or their appointed agents.

Should the RT500 programmable thermostat fail to function correctly, check:

- The RT500 or One Touch Override batteries are the correct type, fitted correctly and are not exhausted - fit new batteries if in doubt.
- Heating system is switched on.
- The RT500 Receiver is switched on.
- If the RT500 is still not functioning correctly, press the Reset Button.

WARRANTY

SALUS Controls warrants that this product will be free from any defect in materials or workmanship, and shall perform in accordance with its specification, for a period of two years from the date of installation. SALUS Controls sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.
PRODUCT SPECIFICATION

Model: RT500ROF
Type: Electronic programmable thermostat with One Touch Override, designed for Volt Free and AC heating applications.

Programming
Programming Modes: User selectable for 5/2 or 7 day option
Number of Programmes: Five (5) user programmes plus factory default programme.
Override Facility: User selectable programme override facility.

Default Programmes

<table>
<thead>
<tr>
<th>Programme</th>
<th>Output</th>
<th>Weekday</th>
<th>Weekend</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>ON</td>
<td>6:00 AM</td>
<td>6:00 AM</td>
</tr>
<tr>
<td></td>
<td>TEMP</td>
<td>21 ºC</td>
<td>21 ºC</td>
</tr>
<tr>
<td>2</td>
<td>ON</td>
<td>8:00 AM</td>
<td>8:00 AM</td>
</tr>
<tr>
<td></td>
<td>TEMP</td>
<td>14 ºC</td>
<td>21 ºC</td>
</tr>
<tr>
<td>3</td>
<td>ON</td>
<td>4:00 PM</td>
<td>4:00 PM</td>
</tr>
<tr>
<td></td>
<td>TEMP</td>
<td>21 ºC</td>
<td>21 ºC</td>
</tr>
<tr>
<td>4</td>
<td>ON</td>
<td>6:00 PM</td>
<td>6:00 PM</td>
</tr>
<tr>
<td></td>
<td>TEMP</td>
<td>21 ºC</td>
<td>21 ºC</td>
</tr>
<tr>
<td>5</td>
<td>ON</td>
<td>10:00 PM</td>
<td>10:00 PM</td>
</tr>
<tr>
<td></td>
<td>TEMP</td>
<td>14 ºC</td>
<td>14 ºC</td>
</tr>
</tbody>
</table>

Temperature
Scale: Celsius
Setpoint Temperature Range: 5 ºC to 35 ºC
Resolution: 0.5 ºC
Tolerance: Less than ± 0.5 ºC at 25 ºC
Display Resolution: 0.5 ºC
Measured Air Temperature Range: 5 ºC to 45 ºC (Displayed on LCD)
If room temp is higher than 45ºC, LCD will show HI, if less than 5ºC, LCD will show LO.
Clock
Accuracy: ± 1 minute per month
Display: 12 hour

Frost Protection
Setting: 5 ºC

RT500
Power Source: 2 x AA alkaline batteries
(do not use rechargeable batteries)

One Touch Override
Power Source: 2 x AAA alkaline batteries
(do not use rechargeable batteries)
Operating Frequency: 868 MHz

Receiver
Power Source: 230V AC / 50Hz
Operating Frequency: 868 MHz

Switch Rating
Switching Voltage: 230V AC / 50Hz
Switching Current: 16A resistive, 5A inductive

Environment
Operating Temperature: 0 ºC to + 40 ºC
Storage Temperature: -20 ºC to +60 ºC
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Customer Name: ............................................................
Customer Address: .....................................................
Post Code: .................. Tel No: ..............................
Email: .................................................................
Engineers Company: ..............................................
Tel No: ...................................................................
Email: ..................................................................
Installation Date: ...................................................
Engineers Name: ....................................................
Engineers Signature: ..............................................