SALUS®

Programmable THERMOSTAT
for Model No. RT500RF

Thank you for purchasing this Salus product - if installing for someone else, please ensure that the instructions are handed to the householder.

Warning - Please read this manual prior to installation or use.

Shock Hazard

This unit must be installed by a competent person, in accordance with BS 7671 (the IEE Wiring Regulations), or other relevant national regulations and codes of good practice.

Always isolate the AC Mains supply before removing the unit from the Industry Standard Back Plate.

CE

PRIOR TO INSTALLING PLEASE READ THE INSTALLATION GUIDE

The RT500RF is easily installed using the Industry Standard back plate supplied, which can be mounted directly to the wall surface or a single gang recessed box using the holes provided.

The thermostat must be located where it would not be subjected to extraneous heat gain/loss (such as above radiators, direct sunlight or in draughts).
Normal household air circulation.

Specification

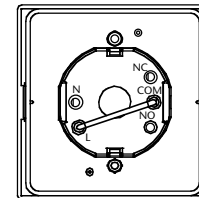|	
Switch Rating	: Volt free selectable
Power Supply	: 2 x AA size Alkaline batteries
Operating Temperature	: 0˚C - 50˚C
Temperature Setting Range	: 5˚C - 35˚C in 0.5˚C steps
Storage Conditions	: -20˚C - 55˚C to 90% RH/non condensing
Frost Protection Temperature	: 5˚C
Battery Low Warning	: 2.6 - 2.8V
Temperature Control Accuracy	: +/- 0.5˚C at 25˚C
Operating Humidity	: 0 to 90% RH/non condensing
Time Display	: 12 hour/24 hour
Clock Accuracy	: +/- 1 min/month
Protection	: Auto cut off at over 35˚C
Memory	: Memory hold up: 5 minutes
Back Light	: EL Panel blue colour
Agency Approval	: CE
Micro disconnection on operation	: Type 1.B control action
Rated Impulse Voltage	: 4kV

Switches/Jumpers:

The installer should select the jumper positions required if changing from the factory presets-these jumpers are found on the rear of the unit.

Switch/Jumpers	Function
Temperature Span	1 Jumper for +/-0.5°C (factory default setting) or 1.0°C selection.
Program Type	1 Jumper for 5-2 (factory default setting) or 7 days program.
RF Address	5 Jumper.

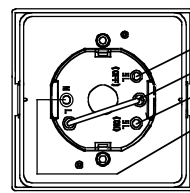## Wiring The Reciever for the RT500RF

1) Select a suitable location

2) **Remember to Isolate AC mains supply,** note this must be 230 Vac and fused at 5 amps

WIRING DIAGRAM
FOR 230V APPLICATION

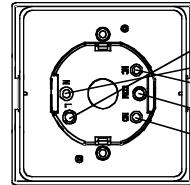The unit is default 230V, if volt free application is required you must remove link & follow diagram below.

SL (Off)	- Heat Off
L	- Live
SL (On)	- Heat On
N	- Nuetral

It is vital to connect the live into this terminal to avoid overloading of the jump wire.

WIRING DIAGRAM
FOR VOLT FREE APPLICATION
(Remove Link!!!)

The unit still requires a 230V feed for V.F. applications

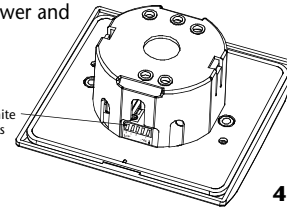| L	- Live (230V Feed)
N	- Nuetral
NC	- Normally Closed
COM	- Volt Free Feed
NO	- Switched Live (Volt Free)

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RF Address Code Setting

If there is another user nearby, e.g. in the next house, your receiver may be fault triggered by their transmitter. You may select a different RF address code to prevent this. Receiver can only response to RF coding with the same address code setting as its own address code.

1. To adjust address code of Receiver, simply push up one or more of the 5 dip switch levers.

2. To adjust address code of Control Centre, open the housing of the transmitter unit. See battery replacement section on how to open the housing.

3. Remove one or more of the jumper caps as shown in the diagram below.

Caution :

1. Address code of Control Centre must be the same as address code of Receiver. For any jumper cap removal of address code # in Control Centre, the same address code # of Receiver must be put to the UP position.

2. Disconnect AC power and remove batteries prior to adjusting address code.

Push up one or more of the white levers to adjust Receiver address code. Address code # 1 - 5, from left to right.

4

Following table is the setting of the thermostat after reset or Power on:

Function	Status after Reset or Power on
Operation Mode	Normal mode
Room Temperature	22.0°C, to be renewed within 5 seconds
°C indicator	On
Clock	12:00
AM/PM indicator	AM
Day of Week indicator	M
Program	Default factory setting
Setpoint Temperature	Default factory setting
Program Number indicator	1
SET indicator	Off
PROG indicator	Off
Frost Protection indicator	Off
Heat indicator	Off
Low-Battery Warning indicator	Off, to be renewed within 5 seconds
Output Relay	Off

After reset or power on, the thermostat will operate in Normal mode. Setpoint temperature is reset to default setting. Room temperature is updated in 5 seconds and the control process starts. Program Number is updated to indicate the running program.

User Guide

Key	Function
↑	Increase Setpoint Temperature
↓	Decrease Setpoint Temperature
BL/FROST	Turn on backlight for 5 seconds, activate/de-activate Frost Protection
SET	Key for Clock/Program settings
SELECT	Key for Clock/Program settings
RESET	System reset

Initial Power Up or Reset

- After power up or RESET is pressed, the thermostat is reset.

- During system reset, all LCD segments are turned on for 2 seconds or any key is held. After 2 seconds and all keys are released, the thermostat is initialised. The typical reset display is shown below.

- Default Program Setpoint temperatures after reset. Same for both 5-2 and 7 days program.

Default Programme

Program	Weekday (M to F)	Weekend (SA to SU)
1	Time: 6:00am	Time: 6:00am
	Setpoint Temp: 21°C	Setpoint Temp: 21°C
2	Time: 8:00am	Time: 8:00am
	Setpoint Temp: 17°C	Setpoint Temp: 21°C
3	Time: 4:00pm	Time: 4:00pm
	Setpoint Temp: 21°C	Setpoint Temp: 21°C
4	Time: 6:00pm	Time: 6:00pm
	Setpoint Temp: 21°C	Setpoint Temp: 21°C
5	Time: 10:00pm	Time: 10:00pm
	Setpoint Temp: 17°C	Setpoint Temp: 17°C

Clock Setting Mode:

- Press and hold SET and SELECT in Normal mode for 3 seconds to enter Clock setting mode.

Clock, Day-of-Week, and "SET" are displayed. All other indicators are cleared. "Hour" is flashing to indicate that it is the selected item to be adjusted.

- Release SET and SELECT, press ↑ or ↓ to increase or decrease the "hour" respectively.
- Press and release SELECT, press ↑ or ↓ to increase or decrease the "minute" respectively.
- Press and release SELECT, press ↑ or ↓ to cycle the Day of Week from "M" to "SU".
- Press and release SELECT to allow change of "hour" again.
- Press and hold ↑ or ↓ for 2 seconds to enter fast advance in 4Hz.
- Selected item will stop flashing when a key is pressed. The selected item will flash again once the key is released.
- Press SET at any time to confirm the setting and return to normal mode.
- Thermostat will return to normal mode after 15 seconds if no key is pressed, Clock is also updated with the latest setting.
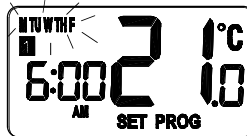
Program Setting Mode:
5-2 days program selected

- 5 different sets of Time and Setpoint temperature can be set for Weekday or Weekend. Total 10 settings.
- To review or change program, press SET in Normal mode to enter Program Setting mode. Program 1 of the Weekday, and "SET PROG" are displayed. All other indicators are cleared. "Weekday" is flashing to indicate that it is the selected item to be adjusted.
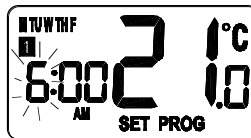
- Press ⬆ or ⬇ to select the program set for Weekday / Weekend to be reviewed or adjusted.

- Press SET at any time during program set, this will immediately return to Normal mode.

Press SELECT at any time to confirm the selection. "Hour" is flashing to indicate that it is the selected item to be adjusted.

Press SELECT at any time to confirm the selection. "Hour" is flashing to indicate that it is the selected item to be adjusted.

- Press SELECT to select the items to be reviewed or adjusted with the below sequences.

  (Program 1) "hour" → "minute" → Setpoint temp

  (Program 2) "hour" → "minute" → Setpoint temp

  (Program 3) "hour" → "minute" → Setpoint temp

  (Program 4) "hour" → "minute" → Setpoint temp

  (Program 5) "hour" → "minute" → Setpoint temp

  and then cycle back to (Program 1)

- Press SET at any time to confirm the setting and return for program set selection.

7 days program selected

- 5 different sets of Time and Setpoint temperature can be set for each Day of Week. Total 35 settings.

- To review or change program, press SET in Normal mode to enter Program Setting mode. Program 1 of Monday, and "SET PROG" are displayed. All other indicators are cleared. "Day of Week" is flashing to indicate that it is the selected item to be adjusted.

- Press ⬆ or ⬇ to select the program set for Day of Week to be reviewed or adjusted.

- Press SET at any time during program set and selection will immediately return to Normal mode.

- Press SELECT at any time to confirm the selection. "Hour" is flashing to indicate that it is the selected item to be adjusted.

- Press "Set" to confirm at anytime to return.

5-2 or 7 days program

- The PROG indicator is displayed accordingly to indicate the program number.
- Selected item will be flashing and can be adjusted by ⬆ or ⬇ key. Program time is changed in 10 minutes steps. Setpoint temperature range is 10°C - 35°C in steps of 0.5°C.
- Press and hold ⬆ or ⬇ for 2 seconds to enter fast advance in 4Hz.
- Selected item will stop flashing when a key is pressed. The selected item will flash again once the key is released.
- Thermostat will return to normal mode after 15 seconds of no keys pressed, Program settings are stored.

Program review/changes are allowed even when Frost Protection is enabled.
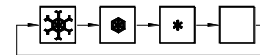
Frost Protection:

- Press and hold BL/FROST in Normal mode for 3 seconds to activate the Frost Protection.

The Setpoint temperature is automatically set to 5°C to prevent frosting.
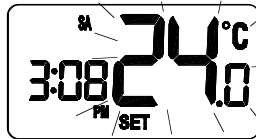

Whenever the Frost Protection is activated, the Frost Protection indicator is animating with the below sequence in 4Hz.

Press BL/FROST for 3 seconds to de-activate the Frost Protection, the Frost Protection indicator is turned off.

Temporary Override:

- Press ↑ or ↓ when reviewing Setpoint Temperature to enter Manual Override mode, the Setpoint Temperature is increased or decreased by 0.5°C accordingly.
- In Normal mode, press and hold ↑ or ↓ to display the Setpoint temperature. After 2 seconds, the Thermostat will enter Manual Override mode and start fast advance in 4Hz. If buttons are released within 2 seconds without entering Manual Override mode, this is treated as reviewing Setpoint Temperature only.
- Clock, Day-of-Week, and "SET" are displayed. All other indicators are cleared.

The Setpoint temperature is flashing to indicate that it can be changed now.

- Release and press ↑ or ↓ again to increase or decrease the manual override Setpoint temperature by 0.5°C respectively.
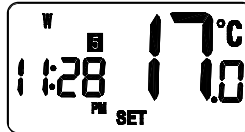- Hold ↑ or ↓ for another 2 seconds to enter fast advance in 4Hz.

- The setting range is 10°C - 35°C in steps of 0.5°C.
- Setpoint Temperature will stop flashing when a key is pressed, then flashes again once the key is released.
- Press SET at any time to confirm the setting and return to normal mode.
- Thermostat will return to normal mode after 3-4 seconds if no key is pressed.

Temporary override is effective until next program time matched, clock or program setting is adjusted, or after Frost protection.
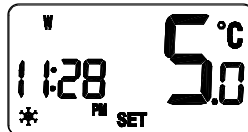
Reviewing Setpoint Temperature:

- Press ⬆ or ⬇ to review the Setpoint temperature.

When any program is running, the LCD will show the program Setpoint temperature with the "SET" indicator displayed.

When operating in Frost protection mode, the LCD will show 5°C with the Frost Protection indicator displayed.

When operating in Temporary Override mode, the LCD will show the temporary Setpoint temperature
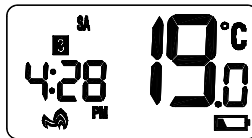

- Press any key except ⬆ or, ⬇ or wait 3-4 seconds without key press to return to normal mode, room temperature will be displayed.

LCD Backlight:

- LCD backlight is activated when BL/FROST or any key is pressed. The backlight will automatically turn off in 5 seconds after all keys are released.

- LCD backlight will not operate when battery is low.

- LCD backlight is illuminated throughout the Clock, Program, and Temporary Override Temperature settings.

Low-Battery Detection:

Battery voltage is sampled every minute. When the battery voltage drops to a certain level, the Low-Battery warning indicator appears.

- The thermostat functions normally during battery low. However, user must change the batteries as soon as possible before they are so weak that normal operation cannot be assured.

- Battery voltage is determined as "low" when it is less than or equal to 2.6V. It is determined as normal when it is higher than or equal to 2.8V, i.e. Low-Battery indicator must come out when battery voltage is <= 2.6V, and must be turn off when battery voltage is >= 2.8V.

- Battery voltage is only sampled in Normal mode and when LCD backlight is turned off.

Sleep Mode:

- Press and hold ⬆ and ⬇ in Normal mode for 3 seconds simultaneously to enter the Sleep mode.

- All the functions will be paused to save battery power.

- The whole LCD will be blank.

- Output will be turned off immediately.

- Press any key to wake up the unit.

- Clock is continuously running in background.