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Manual Issue No. IM-RT300-001

Instruction Manual




Digital Room THERMOSTAT

for Model No. RT300

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 practise.

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



PRIOR TO INSTALLING PLEASE READ THE INSTALLATION GUIDE

The RT 300 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; cable entry is from the rear.

The RT300 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	: 230V/50Hz/3A
Switch Type	: Single pole, single throw (SPST)
Power Supply	: 2 x AA size Alkaline batteries
Operating Temperature	: 0°C - 50°C
Temperature Setting Range	: 10°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
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

1

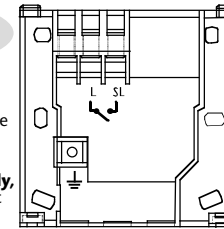
Switches/Jumpers:

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.

Back Plate & Wiring for the RT300

This unit does not require to be earthed, earth terminal provided for safe connection of all earth wires only.




- 1) Select a suitable location noting the advice in page 1 of this manual, a suitable mounting height is 1.5m above FFL
- 2) **Isolate AC mains supply**, note this must be 230 Vac and fused at 5 amps.
- 3) Optimum cable size is 1.5mm CSA; wiring colour codes vary in different countries and are not defined here.
- 4) Enter cable to rear of back plate.
- 5) Securely fix back plate to wall surface or recessed back box using holes provided.
- 6) Terminate conductors as per the wiring diagram on the unit, ensuring conductors are firmly gripped beneath square brass washer.

2

- 7) This appliance is Double Insulated and must not be earthed except at the Earth Parking terminal provided.
- 8) The Industry Standard back plate has 6 holes in which to fix to the surface of your choice. Please note that some pressure downwards is required to lock the pins in the Unit to connectors in the Back Plate, retain with the captive screws at the bottom of the Back Plate taking care not to over tighten.
- 9) Fit the batteries supplied and programme unit as desired, restore AC mains to system when all associated items are fully installed and test for correct operation. NOTE: for your convenience it is possible to install the batteries and programme the unit prior to fitting to the wall.

Terminals:

Terminal Name	Function
L	Live
SL	Switched Live
	Earth Parking

User Instructions Initial Power Up:

- After power up or **RESET** is pressed, the thermostat is reset.
- During system reset, all LCD segments are turned on for 2 seconds. After 2 seconds the thermostat is initialised. The typical reset display is shown below.



- Following table is the setting of the thermostat after reset.

Function	Status after Reset
Operation Mode	Normal mode
Room Temperature	22.0°C, to be renewed within 5 seconds
Setpoint Temperature	20.0°C
°C indicator	On
Frost Protection indicator	Off
Heat indicator	Off
Low-Battery Warning indicator	Off, to be renewed within 5 seconds
Output Relay	Off

After reset, the thermostat is operating at Normal mode. Setpoint temperature is reset to default setting. Room temperature is updated in 5 seconds and the control process starts.

Reviewing Setpoint Temperature:

- Press **▲** or **▼** to review the Setpoint temperature.
- Press **BL/FROST** or wait 3 seconds without key press to return to normal operation, room temperature will be displayed.



Setting Setpoint Temperature:

- Press **▲** or **▼** to enter Setpoint temperature setting mode. The Setpoint temperature is flashing to indicate that it can be changed.



- Release and press **▲** or **▼** again to increase or decrease the 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.

5

- Setpoint Temperature will stop flashing when a key is pressed, then flashes again once the key is released.
- Thermostat will return to normal mode after 3-4 seconds if no key is pressed.

When Frost Protection is enabled, setting of Setpoint temperature is prohibited.

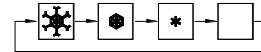
Frost Protection:

- Press and hold **BL/FROST** for 3 seconds to activate 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.

6

LCD Backlight:

- LCD backlight is activated when **BL/FROST** or any key is pressed. The backlight will automatically turn off 5 seconds after all keys are released.
- LCD backlight will not operate when battery is low.
- LCD backlight is illuminated throughout the Setpoint Temperature setting.

7

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 $\leq 2.6V$, and must be turn off when battery voltage is $\geq 2.8V$.
- Battery voltage is only sampled in Normal mode and when LCD backlight is turned off.

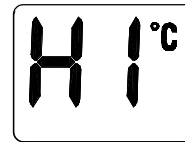
8

Sleep Mode:

- Press and hold  and  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.

Others:

- All flashing indications are 1Hz (0.5 second on, 0.5 second off).
- Temperature below 10°C is displayed without the preceding "0".
- Temperature exceeding measurement range will be indicated by "HI" for temperature exceeds upper limit and "LO" for temperature exceeds lower limit.



- Temperature sampling is performed every 15 seconds and is only in Normal mode.
- Battery status is sampled every minute in Normal mode.
- Temperature and battery sampling will not be performed when there has been any key pressed in the last 10 seconds.
- Key debounce is implemented on both key depress and release with duration longer than 20ms.