SALUS

Model No: ERT20T Triac

ERT20T Triac Noiseless Electronic Room Thermostat for Underfloor Heating Applications, with Night Setback input.

Product Compliance

This product complies with the essential requirements of the following EC Directives:

• Electro-Magnetic Compatibility Directive 2004/108/EC
• Low Voltage Directive 2006/95/EEC
• EC Marking Directive 93/68/EEC

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.

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

INTRODUCTION

A thermostat is a device that is used to switch the heating system in your home on and off as needed. It works by sensing the air temperature and switching on the heating when the air temperature falls below the thermostat setting, and switching it off once the set temperature has been reached.

The ERT20T Triac from Salus Controls is a stylish and accurate electronic thermostat with a large, easy to adjust setting dial. The thermostat has been specifically designed to be used in underfloor heating applications.

FEATURES

• Valve Protection Function (VPF)
• 2°C/4°C selectable Night Setback (NSB) function
• Noiseless thermostat
• Heat/Cool switch
• PWM On/Off control
• Local Mode and Communication Mode
• Solid State (Triac) output
• Stylish casing
• User friendly

Installation

Please read the important safety information at the start of this manual before you begin to install the device.

The ideal position to locate the ERT20T Triac electronic room thermostat is about 1.5m above floor level. It should be mounted in a location where the thermostat is easily accessible, reasonably lit and free from extremes of temperature.

The electrical connections to the ERT20T Triac are made to the internal terminal strip. Connection details are shown below - no Earth connection is required for the correct and safe operation of the thermostat as the device is double insulated.

Electrical Connections

Terminal	Description	Wiring Diagram
←	Switched Output	
L	Mains Live	
N	Mains Neutral	
🕐	Night Setback (NSB - 230V AC input)	

After installing the ERT20T Triac in a suitable location, wiring connections can be made as shown above. The following criteria apply to the installation:

• The incoming AC mains supply should be 230V AC and fused at 2 amps.

• Optimum cable size for installation is 1.5 mm²; wiring colours should be in accordance with the current requirements of the IEE Wiring Regulations.

• All wiring connections should be securely made, and be firmly terminated within each of the terminal screw clamps.

Do not restore the mains supply to the system until all associated items are fully installed.

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 thermostat consult either with a qualified electrician, heating engineer or your boiler / heating system supplier for advice on how to continue.

Do not remove or refit the ERT20T Triac wiring without the mains supply to the system being isolated.

Switch and Jumper Settings

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

The installer should select the switch or jumper positions required if changes need to be made to the factory default settings.

Switch	Position	Function
SW1	**HEAT** ▮ **COOL**	HEAT – Heating system (default) COOL – Cooling system

Jumper	Position		Function
🕐	**4C**	**2C**	4C – 4 °C Setback (default) 2C - 2 °C Setback
PWM	**PWM**	**On/Off**	ON – PWM output (default) OFF – On/Off output
VP	**On**	**Off**	ON - Enable (default) OFF - Disable

NOTE: If switch SW1 is set to 'Cool', PWM mode is automatically disabled. In this case the ERT20T Triac will only operate in On-Off mode, even if the PWM jumper is set in the ON position.

Operation

The ERT20T Triac can work by itself,i.e DIP switch setting (this is called Local Mode) and is adjusted very easily by turning the rotary dial on the front of the thermostat to the required temperature setting. To adjust the set temperature, turn the rotary dial to the left to set a lower temperature, or to the right to set a higher temperature.

The orange Light Emitting Diode (LED) backlight will light when the temperature is below the set value, showing that the thermostat is calling for heat or cooling from the system. Once the room reaches the set temperature, the backlight will turn off.

All the other functions are controlled by use of the switch or jumpers as described in the previous section – a brief description of each function is given here.

Heat/Cool:

The ERT20T Triac can be used in cooling as well as heating applications. The operating mode can be changed using the switch SW1 – if cooling mode is selected, the PWM option is switched off automatically.

Night Setback(NSB)

Timed and demand-oriented heating control is one of the best ways to manage heating energy in an economical way. The ERT20T Triac has an integrated temperature reduction (setback) function which allows you to automatically reduce or increase the set temperature by 2 °C or 4 °C, depending on whether the ERT20T Triac is set for heating or cooling.

The Setback function is activated by an external signal (e.g. signal from an external time clock or timer). The Setback feature will only operate if a connection is made to the Setback terminal 🕐 .

If the terminal state is HIGH (above 175Vac) the Setback temperature will be applied.

Pulse Width Modulation (PWM):

Heating systems can have a problem with overshoot (rooms continue to be heated even after the set temperature has been reached). The ERT20T Triac solves this problem electronically using a method of control called Pulse Width Modulation (PWM).

By continuously comparing the set temperature with the actual temperature, the opening times for the system valve actuators are regulated so that the set temperature can be reached and regulated in a precise and accurate way.

The PWM function only works when the ERT20T Triac is set to operate in Heat mode.

Valve Protection (VP):

The Valve Protection (VP) function is provided as a way to avoid the control valve from sticking or seizing when not being used for long periods (e.g. during the summer). When enabled, the VP function will turn on the thermostat output to operate the control valve for a period of 5 minutes every week.

The VP function will still operate even if the room temperature is higher than 35 °C, and regardless of whether the ERT20T Triac is set in Heat or Cool mode.

ERT20T Triac not only works by itself(Local Mode),but also can be controlled by its master via Clock terminal(communication),the external signal is 230Vac constant voltage or pulse (this is called Communication Mode).

For example,you can connect ERT20T with ERT50T via Clock terminal,in this network,ERT50T Triac is a master and ERT20 is a slave.In this mode, the communication between master and slave contains Heat/Cool+ Setback 2°C/4°C/off, the communication is not a simple voltage, there are 6 kinds of commands, i.e. Heat+ setback off, Heat + 4°C, Heat+2°C, Cool + setback off, Cool+4°C, Cool+2°C, and the pulse width is different for the different command. Even the setback is off, the master still can control slave (still has Heat/Cool command).

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.

Maintenance

The ERT20T Triac electronic room thermostat requires no special maintenance. Periodically, the outer casing 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 unit; any servicing or repairs should only be carried out by Salus Controls or their appointed agents.

Should the ERT20T Triac thermostat fail to function correctly, check:

• The ERT20T Triac temperature has been set correctly.
• Heating system time switch or programmer is switched on.

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 purchase. Salus Controls sole liability for breach of this warranty will be (at its option) to repair or replace the defective product.

Product Specification

Model: ERT20T Triac
Type: Electronic room thermostat designed for underfloor heating applications.

Operation

Control Method:
1. PWM control (default)
2. On – Off control

Temperature Measurement

Temperature setting range: 5.0 °C – 30.0 °C
Temperature setting accuracy: ± 1.0 °C

Environment

Operating Temperature: 0°C to + 40°C
Storage Temperature: - 20°C to + 60°C

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