

# Programa*stat*<sup>®</sup>

## Wireless Electronic Room Thermostat

Cat. No. TRT047



Transmitter



Receiver

**TIMEGUARD<sup>®</sup>**

A **theben** Group Company

# What is a room thermostat?

## ...an explanation for householders

A room thermostat simply switches the heating system ON and OFF as necessary. It 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.

Turning a 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 room thermostat to a lower setting will result in the room being controlled at a lower temperature, and saves energy.

The heating system will not work if a time switch or programmer has switched it OFF.

The way to set and use your room thermostat is to find the lowest temperature setting that you are comfortable with, and then leave it alone to do its job. The best way to do this is to set the room thermostat to a low temperature – say 18°C – and then

turn it up by one degree each day until you are comfortable with the temperature. You won't have to adjust the thermostat further. Any adjustment above this setting will waste energy and cost you more money.

If your heating system is a boiler with radiators, there will usually be only one 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.

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.



Certification mark

## 1. Introduction

TRT products are a cost effective comprehensive range of thermostats and timers designed for internal use only.

The TRT047 is a battery powered electronic room thermostat, with night set back and frost mode. It has optional PID control (which can help to minimise temperature overshoot), and adjustable swing (difference between ON and OFF switching temperatures), from 1°C to 0.5°C.

The TRT047 comes in two parts – a thermostat/transmitter which is battery powered and totally wire-free as well as a receiver which connects into the heating system. This eases the installation in two ways – there is no need to bury cable runs to the thermostat/transmitter and the receiver can be mounted close to the boiler and other system components.

The two parts are designed to be surface mounted on their supplied wall plates.

The electrical supply **must** be isolated before removing the thermostat from the wall plate.

### TRT047 Electronic Room Thermostat

Room temperature display (control temperature displayed flashing during setting)      Border illuminates when finding out or changing set temperature      Button to find out or change set temperature

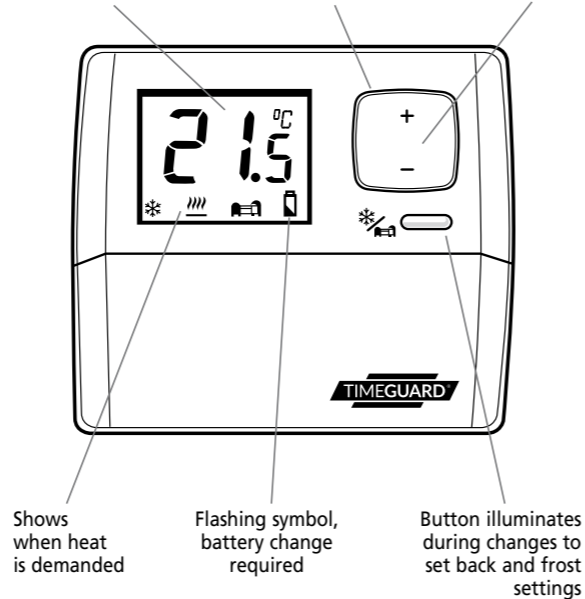


Fig. 1

Screen illuminates during setting of operating parameters      Frost/bed button      Reset button

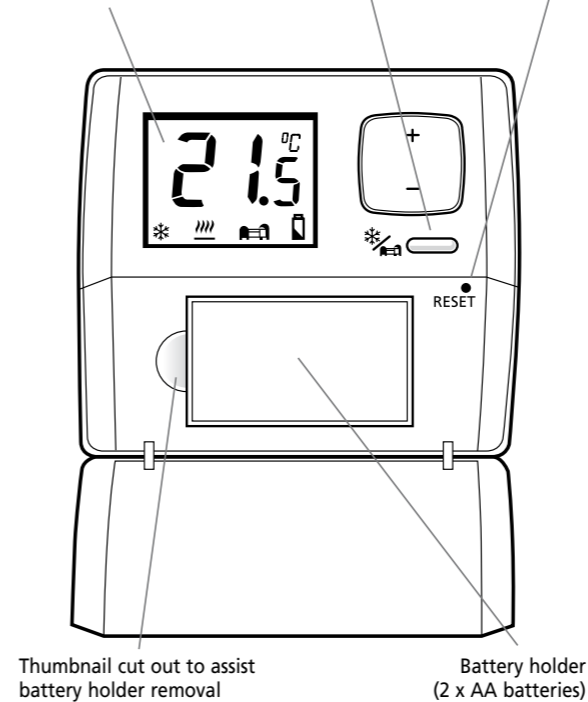


Fig. 2

### TRT047 Receiver Front View

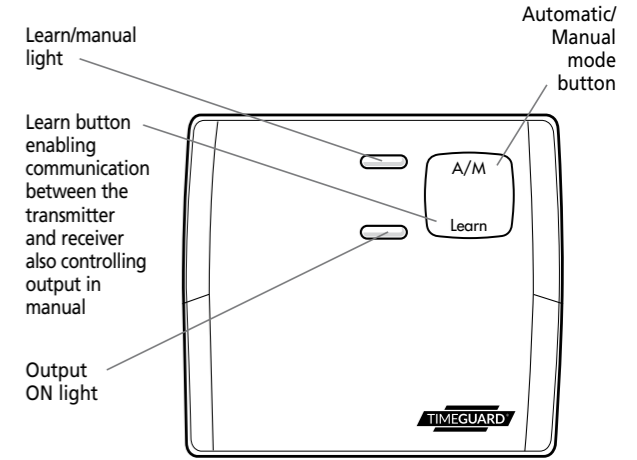
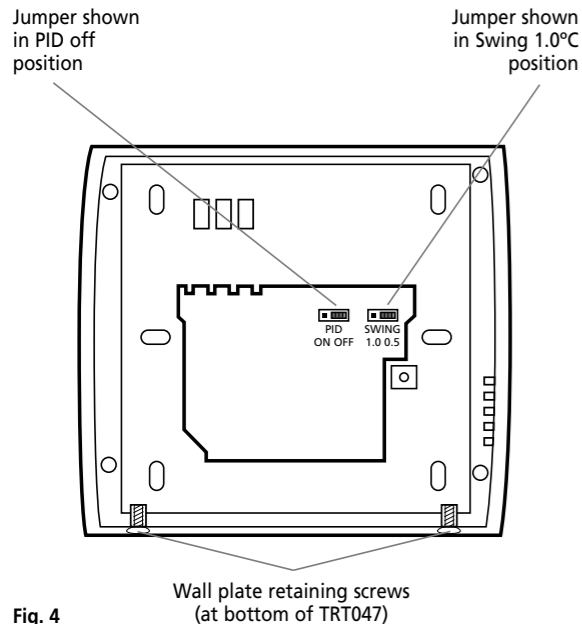
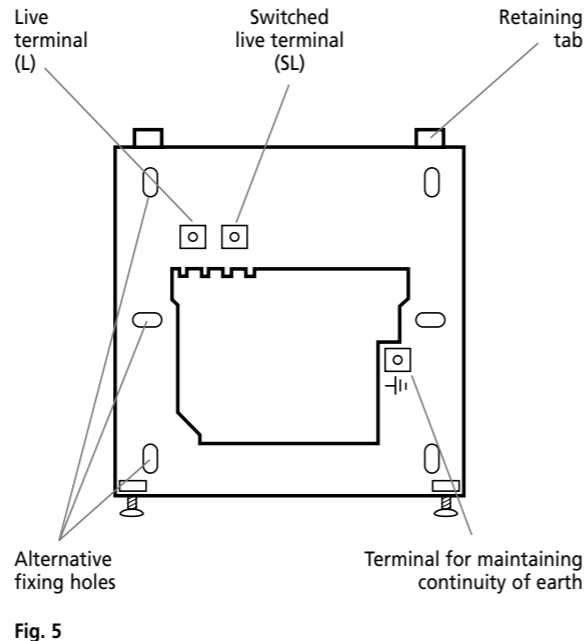


Fig. 3

## Rear View of TRT047



## Receiver Back Plate Removed



## Contents

TRT047 thermostat	TRT047 receiver wall plate
TRT047 wall plate	4x wall plugs
TRT047 instruction leaflet	4x screws
TRT047 receiver	2x AA batteries

## 2. Siting

The TRT047 must be sited where it will not be influenced by heat sources, for example above a radiator or a television or a refrigerator/freezer, or in direct sunlight or subjected to draughts.

The product requires air circulation, so do not position above or below shelving or other wall mounted obstacles.

It should be mounted approximately 1.5m above floor level.

The TRT047 receiver should be mounted close to the items it will be controlling i.e. boiler, control valves and pump. It should be mounted in a position where its control buttons and indicator lights can be easily accessed.

## 3. Installation

**This product should be installed by a qualified installer to current installation standards. If in any doubt contact the Timeguard Helpline 020 8450 0515.**

The TRT047 is designed to be surface mounted on the supplied wall plate.

**Always isolate the mains supply before removing the unit from its wall plate.**

**Read these instructions in conjunction with boiler instructions**

## Transmitter

To insert battery, first lower hinged front cover and lever battery holder out using the thumbnail cut out shown in Fig. 2.

Insert the 2x AA alkaline batteries supplied into the battery holder maintaining the correct polarity as shown in the base of the battery holder.

Insert battery holder connector blades fully into their respective slots on the TRT047 and snap battery holder into place.

Remove wall plate from unit, by undoing retaining screws (see Fig. 4), and pivoting the bottom of the unit outwards. The TRT047 can then be lifted off.

Fix wall plate securely to the wall, using screws (and wall plugs if necessary) provided. The screws which secure the TRT047 transmitter to the wall plate should point downwards.

To reinstall the unit on the wall plate first ensure the wall plate retaining screws are loosened enough to clear the TRT047 transmitter body then engage the top of the TRT047 transmitter onto the wall plate retaining tabs (see Fig. 5), and push firmly downwards and then inwards. Once in place, secure with the retaining screws.

## Receiver

Isolate 230VAC mains supply. Incoming and outgoing wires should be 1.5 sq mm.

Remove wall plate from unit, by undoing retaining screws (see Fig. 4), and pivoting the bottom of the wall plate outwards. The TRT047 receiver can then be lifted off.

Thread the incoming wires through the hole in the wall plate, and fix wall plate securely to the wall, using screws (and wall plugs if necessary) provided. The screws which secure the TRT047 receiver to the wall plate should point downwards.

Allow sufficient excess cable to wire up the unit, but not too much to make it difficult to close the unit onto the wall plate.

Connect the conductors to the relevant terminals, according to the wiring diagram (Fig. 6). Ensure that the curved brass washers grip the conductors.

## Receiver Wiring Diagram

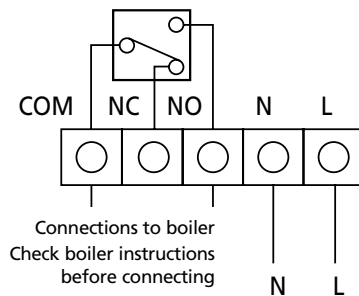


Fig. 6

This unit is double insulated, and hence does not need connection to the earth. If earth continuity is required, please use the earth terminal on the wall plate, (see Fig. 4).

To reinstall the unit on the wall plate first ensure the wall plate retaining screws are loosened enough to clear the TRT047 receiver body then engage the top of the TRT047 receiver onto the wall plate retaining tabs (see Fig. 5), and push firmly downwards and then inwards. There will be some resistance from the terminals. Once in place, secure with the retaining screws.

Finally check that the system wiring is complete and correct.

## 4. Commissioning

Initially it is important to get the two parts (transmitter and receiver) talking to each other. This is best carried out by two people, one at each of the separate locations.

Press reset on the transmitter and at the receiver connect the mains supply to the unit. Both indicator lights (learn/manual and output on the receiver) will come on for around 3 seconds and then go out. Press and hold the learn button on the receiver for around 10 seconds until the blue learn/manual light starts flashing.

At the transmitter press and hold the + and – button at the same time. Hold them both down until the flashing blue learn/manual light on the receiver goes out. The transmitter and receiver are now communicating. This can be confirmed by carrying out the following:- at the transmitter press the + button until the set temperature (identified by momentarily pressing the + or – button) is higher than the room temperature (normally displayed). After a short delay the output on light on the receiver comes ON.

Now press the – button at the transmitter until the set temperature is lower than the room temperature and after a short delay the output light will turn OFF. This proves the communication is fully functional.

There is a manual facility available at the receiver. If the auto/manual (A/M) button is pressed the blue learn/manual light will come on indicating the receiver is in manual mode. The receiver output can now be turned ON and OFF using the learn button.


## 5. Operation

Open battery access flap and press reset.


Normally current room temperature is displayed on the screen.


To find out or adjust the set temperature, press the + or – button once. The screen and button border will illuminate blue as soon as the button is pressed until 5 seconds after the button is released. The set temperature will flash to show it can be adjusted. If the set temperature is ok do nothing and the display will return to room temperature 5 seconds later. Otherwise use the + and – buttons to get to the required set temperature in 0.5°C steps. If the + or – button is held down, the display will advance rapidly.

Once the desired temperature is set, the unit will revert to displaying the current room temperature 5 seconds after the last button press. The illumination will also turn OFF after 5 seconds.

A burner symbol  is displayed when the room temperature is below the set temperature indicating that the thermostat is calling for heat from the boiler.

The night set back function reduces the set temperature by about 4°C for a given number of hours set by the user. It is activated when the bed symbol is flashing on the display and the hours of set back remaining are shown on the main display alternatively with the room temperature.

To activate night set back press the frost/bed button  and adjust the number of hours with the +/- button. To exit night set back, wait for 5 seconds after any button push (there is no blue illumination showing), and press the frost/bed button once.


The frost function reduces the set temperature to 5°C. The frost function is activated by holding down the frost/bed button for 3 seconds. The frost function is terminated by holding down this same button for 3 seconds. When in frost mode, the frost symbol  will flash on the display. The set temperature buttons remain non-functional during frost mode.

The temperature swing can be adjusted between 1°C and 0.5°C using a jumper found on the rear of the unit. If the jumper is moved, please press reset under battery access flap and adjust set temperature.

Temperature swing – difference between ON and OFF switching temperatures.

**PID control** can also be turned ON or OFF using a jumper on the rear of the unit. PID can minimise the temperature overshoot.

If the jumper is moved, please press reset under battery access flap and adjust the set temperature.

When the batteries need replacing, a battery symbol  will flash on the display.

To clean use a dry cloth only. Do not use any liquid cleaners.

## 6. Specifications

Current rating: 3 (1) A

Voltage: 230V, 50Hz

Switch type: Single pole, changeover  
Voltage free contact

Operating  
temperature

range: 0°C to 50°C

Set temperature

range: 10°C to 30°C adjustable in  
0.5°C steps

Complies with: BS EN 60730

EC directives: Conforms to latest directives

Temperature

swing: 1°C or 0.5°C

Micro

disconnection: Type 1.B control action

Batteries: 2x AA alkaline

For assistance with the product please contact:-

**HELPLINE**

**020 8450 0515**

or email [helpline@timeguard.com](mailto:helpline@timeguard.com)



### ***3 Year Guarantee***

In the unlikely event of this product becoming faulty due to defective material or manufacture within 3 years of the date of purchase, please return it to your supplier in the first year with proof of purchase and it will be replaced free of charge. For years 2 and 3 or any difficulty in the first year telephone the helpline on **020 8450 0515**.

**Note:** a proof of purchase is required in all cases. For all eligible replacements (where agreed by Timeguard Ltd) the customer is responsible for all shipping/postage charges for sending replacements outside the UK.

All shipping costs are to be paid in advance before a replacement is sent.

For a product brochure please contact:

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London NW2 6ND Tel: 020 8452 1112

or email [csc@timeguard.com](mailto:csc@timeguard.com)

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