



**HORSTMANN**

# **HRT4-A, HFT4 and HTT4 User and Installation Instructions**

**Mains Operated Electronic Room Thermostat  
with TPI temperature control software**



The HRT4-A is a 230 volt electronic room thermostat designed to provide optimum comfort with close control of the energy used to heat the home. These instructions also apply to the HFT4 frost thermostat and the HTT4 tamper proof thermostat.

INSTALLATION AND CONNECTION OF THE HRT4-A, HFT4 AND HTT4 MUST BE CARRIED OUT BY A SUITABLY QUALIFIED PERSON.

WARNING: ISOLATE MAINS SUPPLY BEFORE COMMENCING INSTALLATION.

The HRT4-A will only operate on a 230 Volt mains electricity supply and until power is connected the thermostat will be inoperative.

# User Instructions

## 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.

## Additional User information

Set the dial to the required room temperature by lining up the temperature marked on the dial in degrees C against the setting mark to the left of the dial.

The indicator light will be On when the thermostat is 'calling' for heat. (In other words the thermostat has detected that the room is not warm enough compared to its set temperature).

If the indicator light is Off then either the room thermostat is sensing that it is warm enough and has switched Off or that the timeswitch/programmer has switched Off.

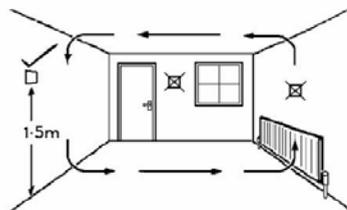
N.B. If the timeswitch or programmer has switched Off the thermostat will not operate.

# Installation Instructions – pages 3 to 6

## Positioning the Room Thermostat

The HRT4-A should be mounted on an internal wall approximately 1.5 metres from floor level and should be in a position away from draughts, direct heat and sunlight. Ensure that there will be enough space to allow easy access to the two retaining screws located at the base of the wall plate.

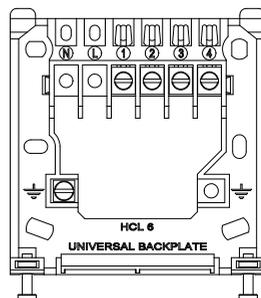
N.B. For the HFT4 Frost Thermostat, locate in the coldest part of the house to be protected.



## Fitting the wall plate

To remove the wall plate from the HRT4-A undo the two retaining screws located on the underside, the wall plate should now be easily removed. Once the wall plate has been removed from the packaging please ensure the HRT4-A is re-sealed to prevent damage from dust, debris etc.

The wall plate should be fitted with the wiring terminals located at the top and in a position which allows a total clearance of at least 50mm around the HRT4-A thermostat.



## Direct Wall Mounting

Offer the plate to the wall in the position the HRT4-A is to be mounted and mark the fixing positions through the slots in the wall plate. Drill and plug the wall, then secure the plate in position. The slots in the wall plate will compensate for any misalignment of the fixings.

## Wiring Box Mounting

The HRT4-A wall plate may be fitted directly on to a single gang steel flush wiring box complying with BS4662, using two M3.5 screws. The HRT4-A is suitable for mounting on a flat surface only, it must not be positioned on an unearthed metal surface.

## Electrical Connections

All necessary electrical connections should now be made. Flush wiring can enter from the rear through the aperture in the wall plate.

The mains supply terminals are intended to be connected to the supply by means of fixed wiring.

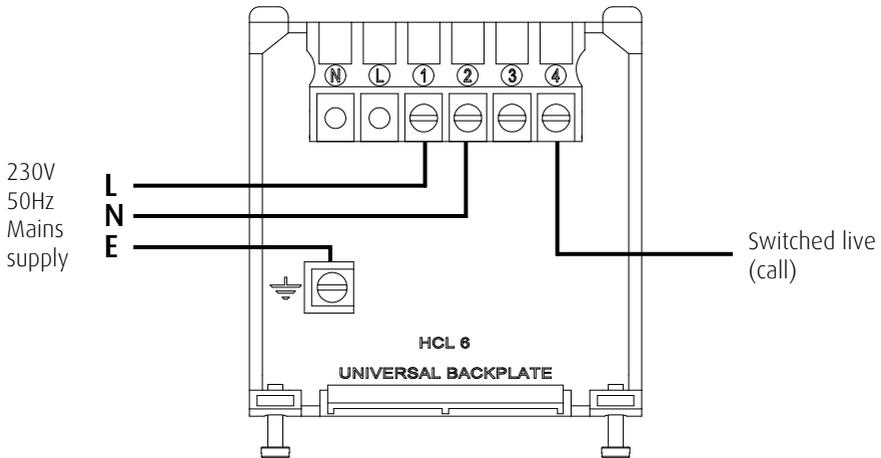
The HRT4-A is mains powered and requires a 3 Amp fused spur. The recommended cable size is 1.0mm<sup>2</sup>.

The HRT4-A is double insulated and does not require an earth connection, an earth connection block is provided on the backplate for terminating any cable earth conductors. Earth continuity must be maintained and all bare earth conductors must be sleeved. Ensure that no conductors are left protruding outside the central space enclosed by the backplate.

**THESE INSTRUCTIONS ALSO APPLY TO THE HFT4 AND HTT4**

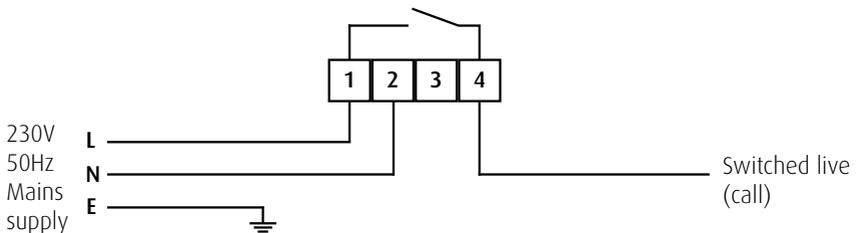
# Wiring Diagram and Electrical Connections for the HRT4-A, HFT4 and HTT4

Maximum load 3 Amps @ 230V AC



## Internal wiring diagram

These thermostats have an internal connection which makes them only suitable for mains voltage applications. No additional linking between terminals is required.



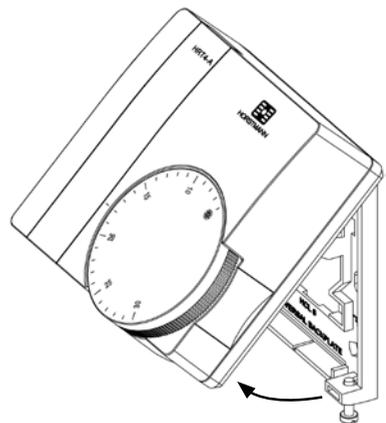
**This diagram is schematic and should be used for guidance only. Please ensure that all electrical wiring complies with the current IEE regulations.**

## Fitting the thermostat to the wall plate

Complete the installation by swinging the room thermostat into position by engaging with the lugs at the top of the wall plate before pushing it firmly home into its plug-in terminal block.

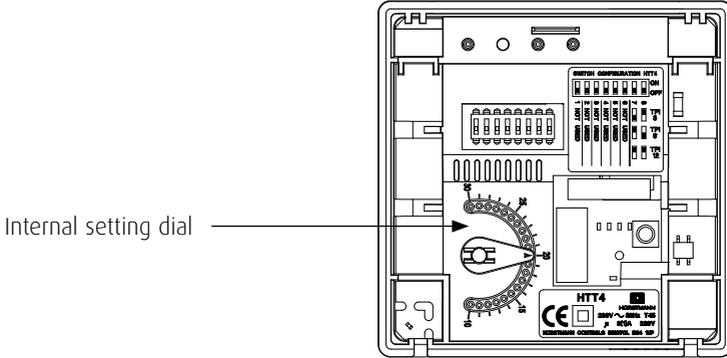
Tighten the 2 captive screws on the underside of the unit.

Now ensure that the heating system is responding to the On/Off commands from the room thermostat and explain its operation to the householder before handing over these instructions highlighting the 'explanation for householders' on page 2.



# HFT4 frost thermostat and HTT4 tamper proof thermostat

Follow the same instructions as for the HRT4-A but set the temperature using internal setting dial. Frost thermostats would normally be sited in the most vulnerable part of the building for maximum protection.



## Wiring conversion charts

### Replacing existing Horstmann thermostats

	HRT4-A	HRT 3	HRT 2	HRT 1
LIVE	1	1	1	1
NEUTRAL	2	4	4	4
EARTH	E	-	-	3
SWITCHED LIVE	4	3	3	2

### Replacing other thermostats

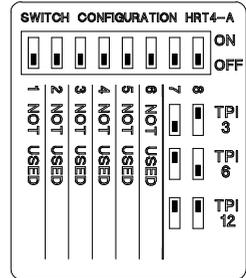
	HRT4-A	Drayton RTS 1,2 & 3	Danfoss RET 230/230F	Honeywell T6360B
LIVE	1	L	L	1
NEUTRAL	2	N	N	2
EARTH	E	E	E	E
SWITCHED LIVE	4	3	3	3

# DIL switch settings – TPI temperature control software

Thermostats using TPI (Time Proportional Integral) control algorithms will reduce the temperature swing that normally occurs when using traditional bellows or thermally operated thermostats. As a consequence, a TPI regulating thermostat will maintain the comfort level far more efficiently than any traditional thermostat.

When used with a condensing boiler, the TPI thermostat will help to save energy as the control algorithm allows the boiler to operate in condensing mode more consistently compared to older types of thermostat.

- DIL switch numbers 7 and 8 should be set as diagram opposite.
- For Gas boilers set the TPI setting to 6 cycles per hour. (Default setting)
- For Oil boilers set the TPI setting to 3 cycles per hour.
- For Electric heating set the TPI setting to 12 cycles per hour.



Switch positions for different TPI settings.

## Thermostat specifications HRT4-A/HTT4/HFT4

Power Supply	230v 50Hz
Contact rating	3 (1)amp at 230v AC
Temperature accuracy	+/- 0.5°C
Contact type	Micro disconnection
Dimensions	86mm x 86mm x 36.25mm
Pollution control	Degree2
Design standard	EN60730 – 2-9
Temperature range	HRT4-A 5-30°C HTT4 10-30°C HFT4 0-20°C
Rated Impulse voltage	Cat 1 - 1500v
Enclosure protection	IP30



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