

### RAM1 Cylinder and/or Pipe Thermostat Installation and User Instructions



**Please note this cylinder/pipe thermostat is capable of switching any voltage from 12 volt to 240 volt AC to a maximum amperage of 16 amps.**

**For wet central heating systems the fuse rating should not exceed 3 amps!**

**Please also note this unit must be Earthed.**

The RAM1 cylinder/pipe thermostat is a mechanical thermostat with a bi-metallic sensor which, under normal operation and installed in the correct manner, is set to control with a switching differential of 6°C. However, this is adjustable if required between 5°C and 10°C.

The setting range of this thermostat is from 15°C frost protection to 90°C.

Each terminal screw has its own number shown on the plastic pillar adjacent to the screw.

#### Section A – Installation

To remove the cover gently prise off the control knob and then undo the small cross-headed type screw. Now pull the cover away from the backplate. To replace, carry out the reverse procedure. Adequate space has been allowed for the connecting cables. A special cable gland is provided at the base of the housing for securing the cable.

When used with factory insulated hot water cylinders, sufficient insulation must be removed to allow the base of the thermostat to be in contact with the cylinder wall.

The RAM1 should be mounted approx. one third of the way up from the bottom of the cylinder and on the opposite side to the heating coil. Each thermostat is supplied complete with a metal spring band, which assures a good clamping.

## Wiring

1. *Are you replacing an existing cylinder/pipe thermostat?* Then follow the information in Section (B).
2. *Is this a new installation?* Then follow the information in Section (C).

The connections to this thermostat are as shown in the wiring diagram but for clarity note the following:

**Terminal No. 1** is the Common and receives a signal either directly from the fuse spur or from your HW programmer or timeswitch circuit.

**Terminal No. 2** is the Normally Closed/Break on rise (or call/on need heat) output and should be connected to the switched live of your central heating boiler, or the switched live of a motorised two port zone valve.

**Terminal No. 3** is the Normally Open/Make on rise (or satisfied/off no heat) required and would normally be connected to the offside of valves that need power to close, or to position them; (zone valves and 3 port mid position valves).

There is also an Earth terminal on the brass plate and this **must be connected to a proper earth point, to ensure continuity.**

### Section (B) – Replacing an existing cylinder/pipe thermostat

Prior to carrying out any work, you must isolate (turn off) the electrical supply to the thermostat either at the fused spur or the mains. It is recommended that this circuit has a maximum of a 3 amp fuse and if not, replace with same. Make a note of all connections, eg. Honeywell: RED is connected to Terminal No. C; YELLOW to Terminal No. 1; BLACK to Terminal No. 2 and so on.

Now refer to the interchange table below and note the new terminal numbers; eg. Landis & Staefa RAM1: RED will go to Terminal No. 1;

Yellow to Terminal No. 2; BLACK to Terminal No. 3. Remove the old unit and reconnect using the new terminals plus ensuring the RAM1 is correctly earthed.

**NOTE:** The colours shown above are examples only and may have not been used in every installation and it is advised you primarily rely on the terminal numbers shown in the interchange guide.

### Section (C) – New installation (or adding to an existing system)

If you are installing the thermostat to an existing system you will need to identify the style of system and control you are looking for and then refer to the relevant information. Prior to carrying out any work, you must isolate (turn off) the electrical supply to the whole system. Refer to the terminal numbers and note:

1. On most current zone valve systems you will only have to use Terminal No. 1 (common) and Terminal No. 2 (call/on), ie. the supply from your timer will go to Terminal No. 1 and the load (ie pump, valve, live, etc.) to Terminal No. 2.
2. On all current 3 port mid position systems all three terminals will be used. Terminal No. 1 receives the LIVE; Terminal No. 2 connects to the WHITE wire and Terminal No. 3 connects to the GREY.
3. If you are adding this unit to an existing older type gravity HW system please note that without a motorised valve with changeover contacts the benefits will be minimal (wiring diagrams for these style of systems are available on application).

If you are still not sure, or having problems, then phone the Technical Help line on 01952 602048, open Monday to Friday (except Bank Holidays) from 9am to 5pm. There is also an answerphone message system in operation 24 hours a day.

### Cylinder Thermostat Interchange Guide

### Terminal Numbering

<b>Landis &amp; Staefa</b>	RAM1 (RAM21)	1	2	3	E	–
<b>Landis &amp; Staefa</b>	RAM2	RED	BLUE	GREY	–	–
<b>Drayton</b>	CS1	1	2	3	E	–
<b>Honeywell</b>	L641A	C	1	2	–	–
<b>Sopac</b>	SAY	C	1	2	E	–
<b>Potterton</b>	PTT1	L	H	C	–	N
<b>Danfoss</b>	AT	1	2	3	E	–
<b>Sunvic</b>	1452	3	1	2	E	–
<b>Sunvic</b>	SA 2451	3	1	2	E	–
<b>ACL</b>	HTS3	C	1	2	–	–
<b>ACL/Tower</b>	HTS2/CS1	RED	BLK	YEL	–	–
<b>Randall</b>	CN4	1	2	3	E	–