

## 2.5kW DIN MOUNTED SINGLE PHASE (OPEN) BURST FIRE HVAC POWER REGULATORS

# PR1-DIN 2.5kW

X10714

### INTRODUCTION

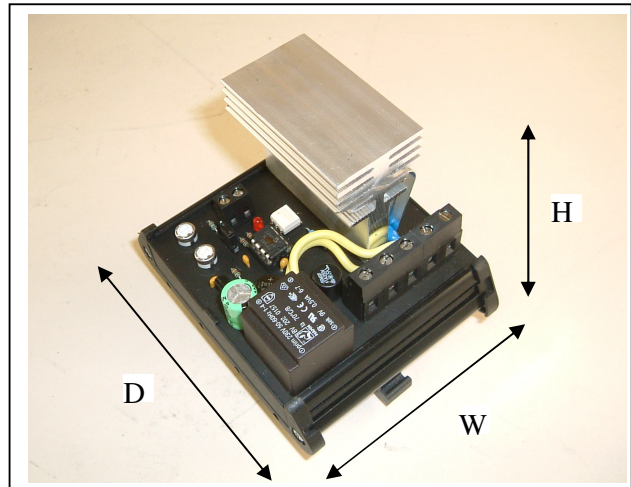
This triac control assembly provides full seamless control of resistive loads up to 2.5Kw. Control is provided by a 0-10Vdc signal, i.e. a temperature controller or BMS, (Building Management System). The units are solid state switches which uses zero volts switching technology, to minimise RFI problem. They incorporate dc voltage signal control, temperature trip with automatic reset, pcb fuse and LED 'OUTPUT-ON' indication with easy access to internal signal & power terminals. No additional heatsink is required for this power rating. The unit is Din-Rail mountable, which simplifies installation and maintenance.

### APPLICATIONS

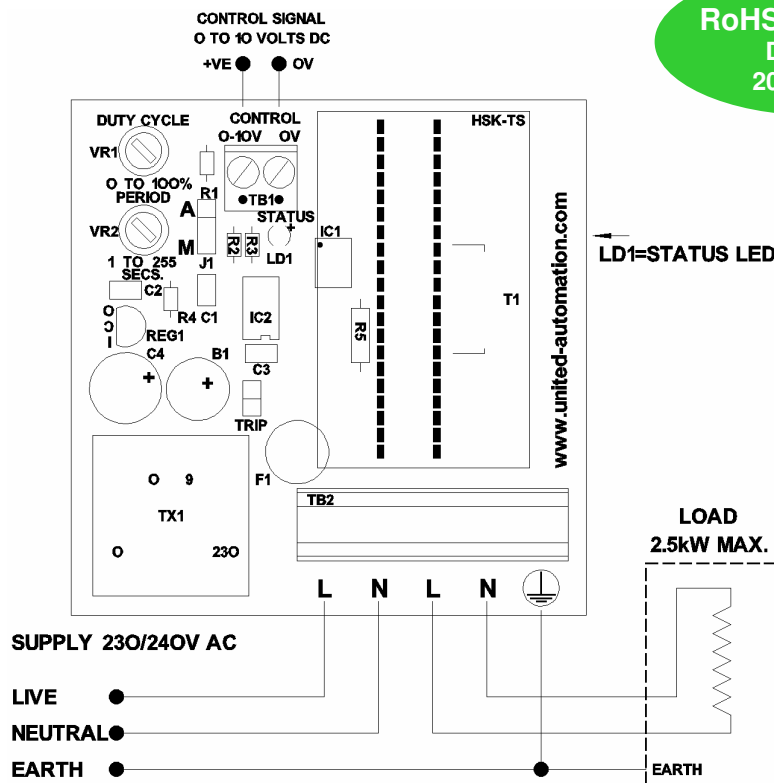
Suitable for electric heater batteries, ceiling or radiant heating, hot water tanks, heating cable, furnaces, ovens and plastic processing equipment.

### FEATURES

- 2.5KW compact (module only).
- Integral heat sink for maximum power capability.
- 0-10vdc control input.
- Solid State Control.
- Simple DIN Rail or panel mounting.
- LED power level indication.
- Over temperature protection with auto shutdown and reset.



### INSTALLATION



RoHS Compliant  
Directive  
2002/95/EC

## **FUNCTIONS**

### **Cycle Time and Signal Rescaling**

The cycle time is preset. A 0 to 10V DC input signal of 5V equates to the load being at 50% ON and likewise with a load of 2.5V the load will be 25% ON. A 10v input signal will therefore equal 100% i.e. fully ON.

**CAUTION:** Adjustment of the cycle time and signal rescaling is possible using VR1 and VR2 but is not normally required. Incorrect settings of these controls can cause an overload condition, failure and permanent damage.

**DO NOT ATTEMPT TO ADJUST THESE CONTROLS WITHOUT REFERENCE TO THE SUPPLIER/MANUFACTURER.**

### **Manual Override**

The PR1 controller is supplied preset to the auto 'A' position. It is possible to manually override the input signal by placing the J1 jumper plug in the 'M' position. With the jumper in the 'M' position the load will be 100% ON. The output load can be adjusted downwards using the signal rescaling facility (see above section).

### **Over Temperature Protection**

An electronic thermal cut-out is fitted to the heatsink to protect against over temperature. The PR1 regulator will switch off the load if the heatsink temperature exceeds 90°C and will reconnect to the load once the heatsink temperature has dropped below 85°C. Under normal operating conditions the heatsink temperature will not reach 90°C but this might occur, for example when the ambient temperature exceeds 35°C.

## **SPECIFICATIONS**

|                                  |  |
|----------------------------------|--|
| <b>Power/(current ratings):</b>  | 2.5kW (10.9A) @ a typical supply of 230V RMS   |
| <b>Input voltage:</b>            | 230V AC RMS +/- 10%,   |
| <b>Frequency:</b>                | 50/60Hz  |
| <b>Fusing (recommend):</b>       | 15A (15ET) High-Speed Semiconductor type fuses or equivalent MCB's                         |
| <b>Ambient temperature:</b>      | 35°C (maximum)   |
| <b>Control Signal:</b>           | 0 to 10V dc  |
| <b>Working Temperature:</b>      | 65°C maximum.  |
| <b>Cable Terminations:</b>       | Mains Supply: 2.5mm <sup>2</sup> Terminal.<br>Control Signal: 1.5mm <sup>2</sup> Terminal. |
| <b>Fusing:</b>                   |  |
| <b>Thermal cut out:</b>          | 90°C (off); 85°C (on) +/- 1°C  |
| <b>Overall Dimensions:</b>       | 83mm (H) x 75mm (W) x 94mm (D)   |
| <b>Terminal torque settings:</b> | 0.8Nm (Power terminals only)   |
| <b>Fixing (DIN):</b>             | TS35 DIN Rail mounting   |

**Note:** SAFETY WARNING – Dangerous 'HAZARDOUS LIVE' parts exist on this board. Metal parts, in particular the heatsink, may get very hot when the unit is fully operational.

## **FUSING:**

It is recommended that semiconductor, fast acting type fuses or circuit breakers (Semiconductor-MCB) be used for unit protection. On initial operation some loads may need an increased Factor of Safety (F of S) for unit and/or device protection.

## **CE MARKING**

This product family carries a "CE" marking. These burst firing type controllers do not require a filter. For information see recommendation section and contact our sales desk. See the Declaration of Conformity.

## **RECOMMENDATIONS**

These documents may be appropriate for your application. Other documents are available on request,:

| <b>CODE</b> | <b>IDENTITY</b> | <b>DESCRIPTION</b>   |
|-------------|-----------------|--|
| X10213      | ITA             | Interaction, uses for phase angle and burst fire control.  |
| X10255      | SRA             | Safety requirements: Addressing the Low Voltage Directive (LVD) including Thermal data/cooling, "Live" parts warning, Earth requirements and Fusing recommendations. |
| X10347      |                 | Semiconductor miniature circuit breakers (Z - curve type).   |
| AP02/4      | COS             | UAL Conditions of sale.  |

**NB:** It is recommended that installation and maintenance of this equipment should only be carried out by suitably qualified personnel with reference to the current edition of the I.E.E. wiring regulations BS7671. These regulations contain important requirements regarding the safety of electrical equipment. For International Standards refer to I.E.C. Directive I.E.C. 950.

## **ORDERING**

**Description**  
PR1-DIN-2.5kW



## **UNITED AUTOMATION LIMITED**

1 Southport Business Park  
Kew  
Southport, PR8 4HQ  
ENGLAND

Tel: 0044 (0) 1704 – 516500 Main  
Tel: 0044 (0) 1704 – 516516 Sales  
Fax: 0044 (0) 1704 – 516501  
Enquiry@united-automation.com  
www.united-automation.com

Page No. 2 of 2 Issue 1

Date 21/01/08

