

# 2 to 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 0-10V dc 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 problems. 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.

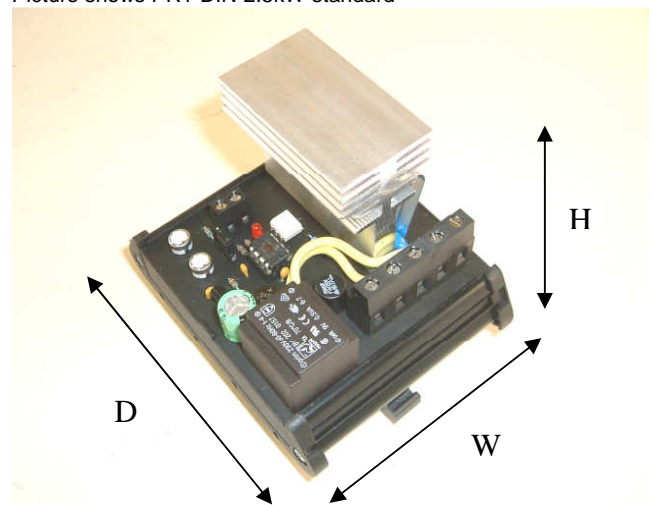
**APPLICATIONS**

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

**FEATURES**

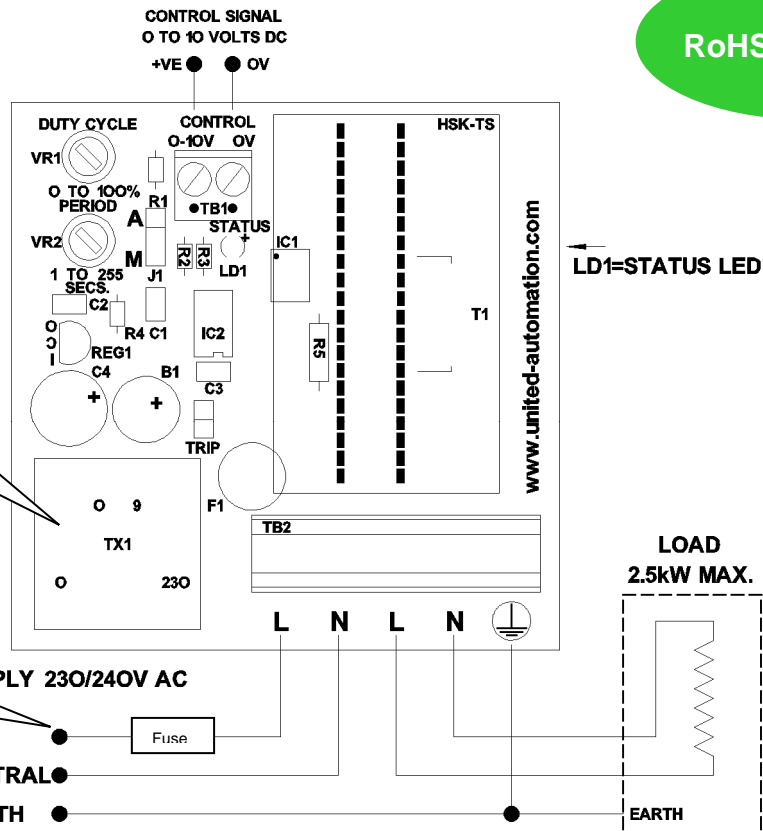
- Two models - standard or remote 24V dc input
- Integrated heat sink for maximum power capability.
- 0-10V dc control input.
- Simple DIN-rail or panel mounting.
- LED power level indication.
- Over temperature protection with auto shutdown and reset.

Picture shows PR1-DIN-2.5kW standard



**INSTALLATION**

RoHS Compliant



**NOTE1**  
For PR1-DIN-(2/2.5kW) (24V dc) Transformer (TX1) is replaced with terminal (TB3) for 24V dc remote supply.

**NOTE2**  
All models are recommended to have suitable HS fusing in the LIVE for power device protection.

## 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>	Max. 2.5kW (10.9A) @ a typical supply of 230V rms
<b>Input supply voltage:</b>	230V ac rms +/- 10%
<b>Remote 24V dc input supply:</b> (24V dc model only)	24V dc +/- 10% (2-way terminal block replaces transformer TX1)
<b>Frequency:</b>	50/60Hz
<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 Control Signal: 1.5mm <sup>2</sup> terminal 24V dc Supply: 1.5mm <sup>2</sup> terminal
<b>Fusing:</b> (Fitted - for PCB protection) (Recommended – for device protection)	PCB mount TR5-F1A, 250V ac ( <i>NOT fitted in 24V dc model</i> ) SCR 250Vrms fast acting HS fuse (16LCT) OR breaker MCB(Z-type)-16A
<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.**

It is essential that a load break switch and a contact breaker is installed in the load supply. The supply to the contactor coil should be interrupted by an over-temperature thermostat located in the heater battery and also upon detection of airflow loss.

### **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. See the SRA datasheet for further information.

### **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).
P01.1	COS	UAL Conditions of sale.

**NOTE:** It is recommended that installation and maintenance of this equipment should be done with reference to the current edition of the I.E.T. (formally I.E.E.) regulations (BS7671) by suitably qualified/trained personnel. The regulations contain important requirements regarding installation and safety of electrical equipment. Specific installers should refer to local and national regulations.

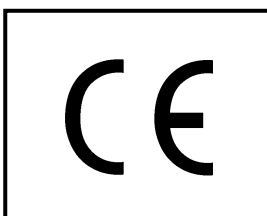
### **ORDERING**

(Description)

PR1-DIN-2.5kW  
(Standard 230V model)

or

PR1-DIN-(2 or 2.5kW)-(24V dc supply)  
(24V dc remote signal supply input model)



<b>UNITED AUTOMATION LIMITED</b>	
Southport Business Park Wight Moss Way Southport, PR8 4HQ ENGLAND	Tel: 0044 (0) 1704 – 516500 Fax: 0044 (0) 1704 – 516501 enquiries@united-automation.com www.united-automation.com
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