

1.5KW, 3KW and 6KW HVAC RANGE 1-PHASE BURST FIRE AC POWER REGULATOR STACKS

PR1-E SERIES

X10591

INTRODUCTION

The PR1-E range of triac. assemblies, provide full seamless control of single-phase resistive loads of 1.5KW, 3.0KW and 6.0KW, using burst fire control. Signal control is by a DC signal. These burst fire control assemblies use fast pulse zero volts switching technology, to minimise flicker and eliminate RFI problems. They also incorporate a temperature trip, automatic reset, integral semiconductor fuses and heatsink. All are housed in a bespoke enclosure and have easy access to internal signal & power terminals for simple installation.

APPLICATIONS

Suitable for furnaces, ovens, dryers, air curtains, hot plates and many other heating and ventilation applications.

SPECIFICATIONS

Power/current Ratings: 1.5KW (6.3A), 3.0KW (12.5A), 6.0KW (25A) @ a typical supply of 230V RMS
Input Voltage: 230V RMS +/- 10%
Frequency: 50/60Hz
Control Input signal: 0 to 10v DC (standard) ; 0 to 5V

Functions

Over Temperature: Trip in temperature @ 90°C, +/- 1°C (LED '**flashes**' in 0.5sec. pulse bursts)
Trip out temperature @ 85°C, +/- 1°C

Sensor Loss Detection: LED indicator flashes for 1sec. pulse bursts

Cable terminations:	Power & earth	6.0KW	4.0mm ² rising clamp terminal block
	Power & earth	3.0KW	2.5mm ² rising clamp terminal block
	Control signal	-	2.5mm ² rising clamp terminal block

Terminal torque settings: 0.25Nm for 4.0mm² Power terminals only.
Fusing 1.5KW 6.3A High-Speed Semiconductor type ferrule fuse
3.KW 20A High-Speed Semiconductor type ferrule fuse
6.0KW 30A High-Speed Semiconductor type ferrule fuse.

Working temperature: 65°C (maximum operational)

Dimensions (1.5KW): 140mm (L) x 99mm (W) x 45mm (H)

Dimensions (3 & 6KW): 140mm (L) x 99mm (W) x 80mm (H)

Fixing centres (all): 4 x 5mm holes on centres 75mm (W) x 120mm (L)

Note: SAFETY WARNING – Metal parts in particular the heatsink, may get very hot when the unit is fully operational.

FUNCTIONS

Over temperature Protection

The load is switched off when the sensor detects a heat-sink temperature of above 90°C. If the heatsink should reach a temperature of 90°C, the power to the load will be disconnected and will not return until the temperature drops to 85°C.

Sensor loss

If the sensor fails, the LED will flash for ON/OFF bursts of 1 second.

INSTALLATION

Cooling Requirements

This robust assembly is capable of an operational temperature of 65°C when naturally cooled and has a built in over temperature trip. The unit should be mounted vertically, with the heatsink fins top to bottom, and with sufficient surrounding air space to maximise natural convection cooling. If the unit is mounted in an enclosure or cabinet, adequate ventilation and/or forced air-cooling should be fitted.

Load Considerations

The PR1 series of power controllers are designed for resistive type loads, e.g. Heaters. Unusual heating loads such as Molybdenum, Platinum or Tungsten have a typical 10:1, hot to cold, resistance ratio and therefore, when cold, draw larger currents than normal.

Connections

This unit has simple clamp type connectors for all auxiliary-wiring requirements. See inside lid for wiring details.

Fusing

It is recommended that fast acting semiconductor type fuses (as supplied) be used for protection. See SRA Data sheet X10255 for further information.

CE Marking

This family carries a "CE" marking. These burst fire controllers do not normally require a remote filter. For more information see recommendations section and contact our sales desk. See Declaration of Conformity.

RECOMMENDATIONS

These supporting documents, which may be appropriate for your application, are available on request,

CODE	IDENTITY	DESCRIPTION
X10213	ITA	Interaction, uses for phase angle and for burst fire control.
X10255	SRA	Safety requirements: Addressing the Low Voltage Directive (LVD) including: Thermal data/cooling, 'Live' parts warning, Earth requirements and fuse recommendations.
X10617		Wiring connection details are attached to the inside of the lid.
X3-00-001	HVAC	Brochure - Heating Ventilation and Air Conditioning Power Controllers

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

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ORDERING

<u>Product Reference</u>	<u>Description Ratings (RMS)</u>
PR1-E-1.5KW	1.5KW, 6.3A
PR1-E-3.0KW	3KW, 12.5A
PR1-E-6.0KW	6KW, 25A

OPTIONAL EXTRAS

<u>Code</u>	<u>Description</u>
F13006	FF 6.3A HS (10mm x 38mm long) SCR type ferrule fuse
F16207	FF 6A. HS (10mm x 38mm long) SCR type ferrule fuse
F11307	FF 30A HS (10mm x 48mm long) SCR type ferrule fuse
	Room thermostat for connection to 0-10V supply input.



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