X10597 – PR1-E Series – 1-Phase Burst Fire Power Controllers 9-24kW HVAC Range – Installation Instructions Issue 6

1 Functions

1.1 Alarm Relay

The alarm circuit has voltage free relay contacts and are rated up to 2A @ 125V ac (RMS) load.

The internal supply to the relay is obtained from the transformer via a 20mm 1A fuse. These are connected to the Live and Neutral supply and therefore the relay and LED can only energise when there is an over-temperature condition or sensor fault, as long as the supply is present.

1.2 Over Temperature Protection

When a heatsink temperature of above 90°C is detected by the sensor, the alarms relay changes state, and the LED pulses rapidly. The power to the load will be disconnected and will not return until the temperature drops to 85°C

1.3 Temperature Sensor Loss

LED status changes to ON/OFF (fast pulsing) if the sensor fails.

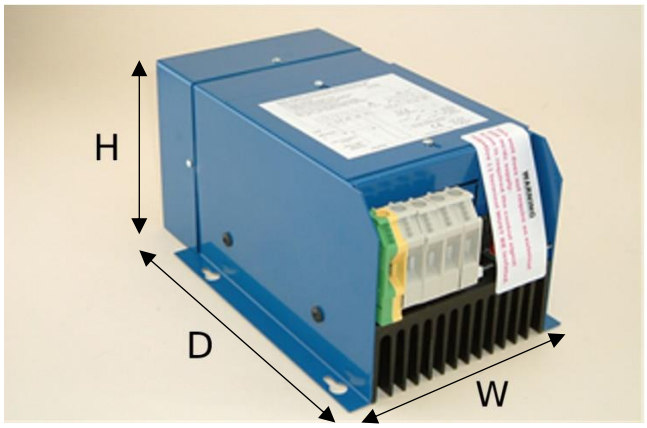
1.4 Fault Condition

The default setting of DIL switch (SW1) is in the ON position, the alarm relay will be energised under a fault condition. Changing SW1 to the off position will energise the alarm relay continuously until a fault condition occurs.

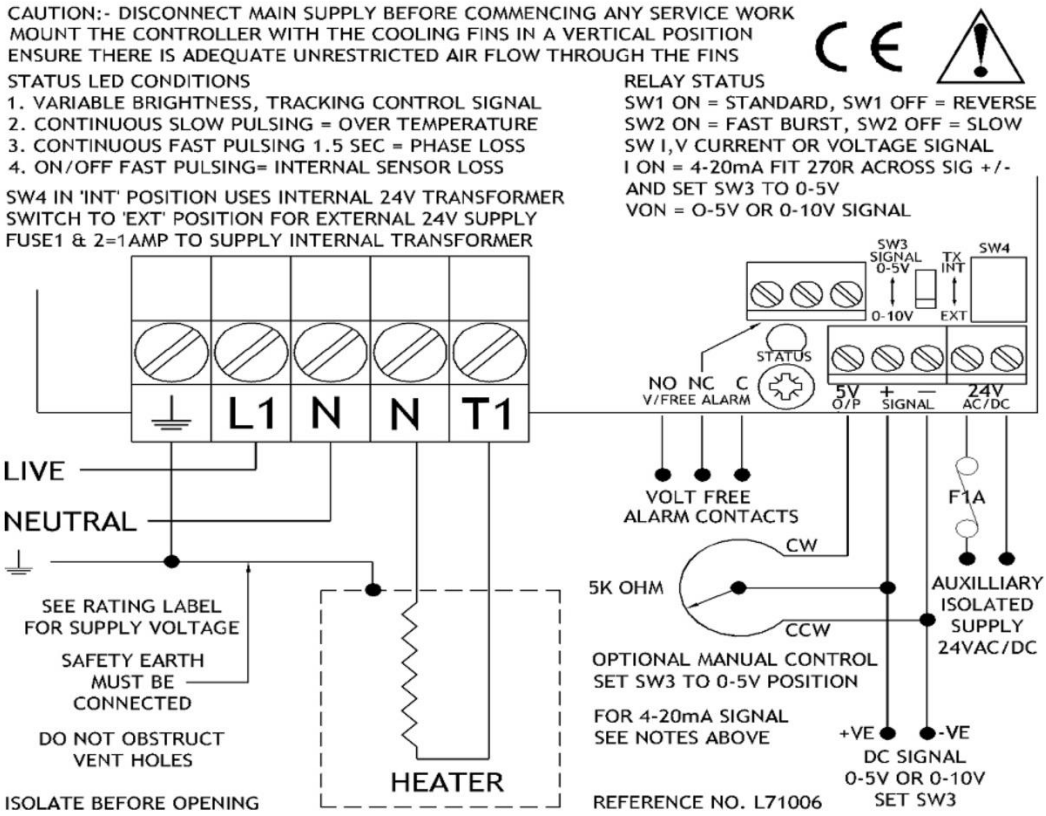
1.5 Remote Supply

The unit will be factory set for an internal supply. If there is a requirement for the alarm relay and LED to energise when a phase fault condition occurs, then there is provision for an external 24V ac or dc supply.

NOTE: If the remote supply is utilised, the main supply must come on before it is switched on.



2 Connections



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3 Installation

3.1 Cooling requirements

This robust stack assembly has an operational temperature of 65°C when naturally cooled and has a built-in 90°C over-temperature trip on the heatsink as a safety feature. The unit should be mounted vertically, with 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.

3.2 Load considerations

The PR-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

3.3 Connections

This unit has simple clamp type connectors for all auxiliary-wiring requirements.
NOTE: It is factory set for an internal power supply. For alternative volts 'free alarm' supply details see Functions section. Please contact our technical support for further details.

3.4 Fusing

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

3.5 CE Marking

This family carries a "CE" marking. These burst fire controllers do not normally require a remote filter. For more information contact our sales desk. A Declaration of Conformity available on request.

4 Technical Specifications

Power/Current Ratings	9kW (37.5A), 12KW (50A), 18kW (75A), 24kW (100A) @ a typical supply of 240V RMS			
Input Voltage	230V RMS ±10%			
Frequency	50/60Hz			
Control Input Signal	**Signal:** (using SW4): 0-10V DC (set as standard), 0-5V DC OR **Manual:** using 5KΩ potentiometer			
Alarms Relay Circuit Rating	125V AC @ 2A Max.			
Status Indictor	(Tracking Control Signal) LED Indicator changes **intensity**			
Over Temperature	Trip in temperature @ 90°C ±1°C (LED indicator '**flashes**' continuous fast pulsing)			
	Trip out temperature @ 85°C ±1°C			
	SW1 = Off → Relay is continuously energised (normally closed); trips in fault condition			
	SW1 = On → Relay is de-energised (normally open); closes in fault condition			
Phase Loss Detection	LED indicator '**flashes**' continuous slow pulsing			
Sensor Loss Detection	LED indicator '**flashes**' on/off fast pulsing			
Cable Terminations	Phase Power (unit dependent)	10, 16, 35mm² rising clamp terminal blocks		
	Earth (unit dependent)	10, 16, 35mm² rising clamp terminal blocks		
	Remote Supply Auxiliary Alarm Relay	1.5mm² rising clamp terminal block		
	Control Signal	1.5mm² rising clamp terminal block		
Terminal Torque Settings	2Nm (10mm² – 9 & 12kW)	2.5Nm (16mm² – 18kW)	4Nm (35mm² – 24kW)	
Fusing	50LET (9kW)	80LET (12kW)	100LET (18kW)	125LET (24kW)
Working Temperature	65°C (maximum operational)			
Dimensions (All models)	200 x 155 x 120 (D x W x H) (mm)			
Fixing Centres	4 x 4.5mm clear keyhole slots on fixing centres 140 x 140 (W x D) (mm)			
Weight	9kW: 1.1kg	12-24kW: 2.8kg		

5 Recommendations

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

NOTE- It is recommended that installation and maintenance of this equipment should be carried out by suitably qualified/trained personnel with reference to the current edition of the I.E.E. wiring regulations (BS7671 The regulations contain important requirements regarding the safety of electrical equipment. For International Standards refer to I.E.C/ Directive IEC 60950.

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