

12kW, 18kW and 27kW HVAC RANGE 3-PHASE BURST FIRE POWER CONTROLLER INSTALLATION INSTRUCTIONS

**PR3-E
SERIES**

X10592

FUNCTIONS

Alarm relay

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

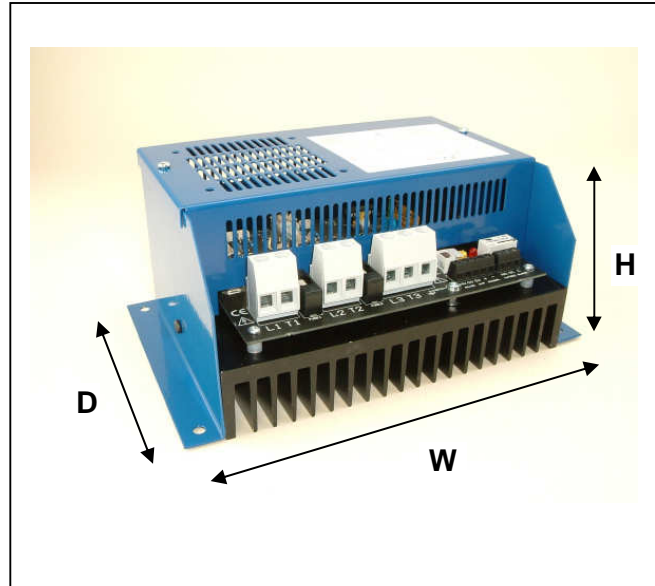
The internal supply to the relay is obtained from the transformer via two 20mm 1A fuses. These are connected to the L1 and L2 phases and therefore the relay and LED can only energise when there is an over-temperature condition, a sensor fault, or a L3 phase loss.

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.

Temperature sensor loss

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



Phase loss with auxiliary supply

When any one of the three phase inputs are missing, the relay changes state and the LED flashes with ON/OFF bursts of 1.5 seconds. This is only functional with a remote supply (see below).

Fault condition

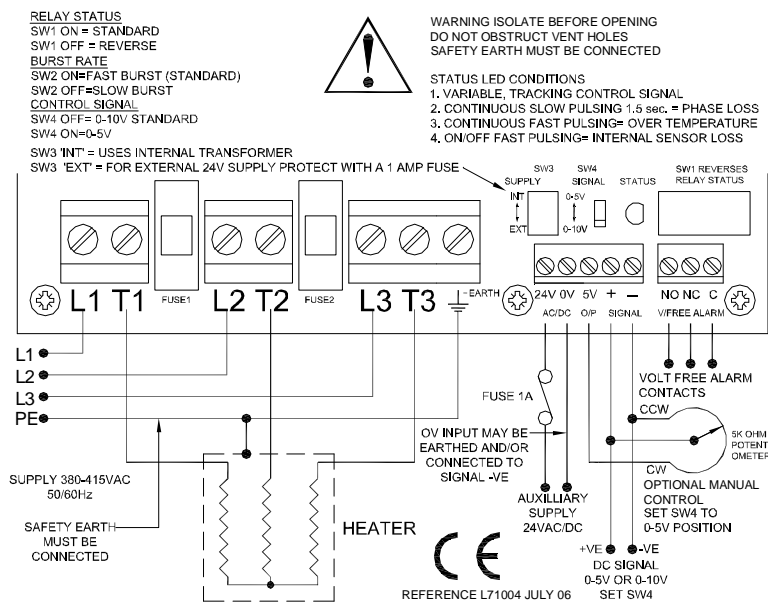
The default setting of DIL switch (SW1) is in the ON position, the alarm relay will be energised under a fault condition. Changing SW1 to the off position will energise the alarm relay continuously until a fault condition occurs.

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 (L1, L2 and L3) supply must come on before this supply is switched on.

CONNECTIONS



**RoHS Compliant
Directive
2002/95/EC**

INSTALLATION

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. The 27kW unit has a built-in fan that switches on when the heatsink gets hot (see SPECIFICATIONS).

Load considerations

The PR3 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.

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.

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.

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 is available on request.

SPECIFICATIONS

| | | |
|-------------------------------------|--|--|
| Power/(current ratings): | 12kW (17A); 18kW (25A); 27kW (38A) @ a typical supply of 415V RMS | |
| Input voltage: | 400V RMS +/- 10% | |
| Frequency: | 50/60Hz | |
| Control input options: | Signal: (using SW4): 0 to 10V dc (set as standard) / 0 to 5V OR Manual: using 5K Potentiometer | |
| Alarms relay circuit rating: | 2A @ 125V ac Max. | |
| Fan 'switch-on' Temp.: | Typically 55 °C (For 27kW model only) | |
| Status indicator: | (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 | - 10mm ² rising clamp terminal block |
| | Earth | - 10mm ² rising clamp terminal block |
| | Remote supply Auxiliary alarm (relay) | 2.5mm ² rising clamp terminal block |
| | Control signal | - 2.5mm ² rising clamp terminal block |
| Terminal torque settings: | 1.2Nm (10mm ²) Power terminals only. | |
| Fusing 12 to 18kW: | 20A, 30A, High-Speed Semiconductor type, ferrule fuse (10mm ø x 38mm long) | |
| 27kW only: | 40A High-Speed Semiconductor type, ferrule fuse (14mm ø x 51mm long) | |
| Working temperature: | 65°C (maximum operational) | |
| Dimensions: | 150mm (D) x 240mm (W) x 100mm (H) | |
| Fixing centres: | 4 x 5.5mm ø holes on centres 220mm (W) x 130mm (D) | |
| Weight: | (all models) 2.6kg | |

Note: SAFETY WARNING – Isolate supply before removing cover; Metal parts, in particular the heatsink, may get very hot when the unit is fully operational; DO NOT COVER enclosure ventilation slots.

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 950.



UNITED AUTOMATION LIMITED

1Southport Business Park
Kew
Southport, PR8 4HQ
ENGLAND

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

www.united-automation.com
Date 13/07/07

Page No. 2 of 2 Issue 8

