

36kW and 54kW HVAC RANGE 3-PHASE BURST FIRE POWER CONTROLLER INSTALLATION INSTRUCTIONS

**PR3-E
SERIES**

X10593

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 Yellow and Blue phases and therefore the relay and LED can only energise when there is an over-temperature condition, a sensor fault, or a phase loss, i.e. the Red phase only is missing.

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. The 54kW unit is fitted with a fan that switches on when as the heatsink gets hot.

Temperature sensor loss

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

Phase loss with auxiliary supply

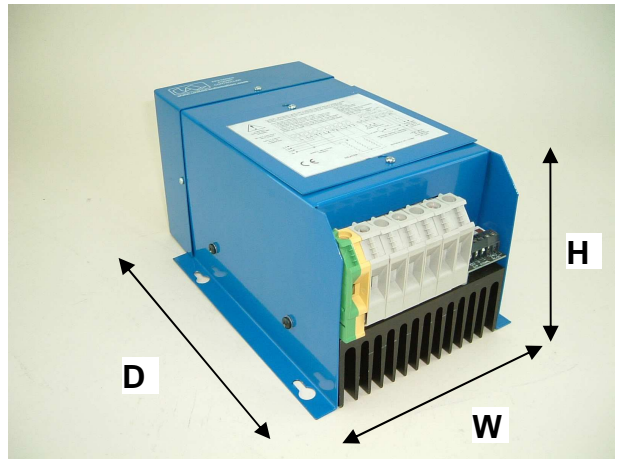
When any one of the three phase inputs are missing, the relay changes state and the LED flashes with ON/OFF bursts of 1.5 seconds. This is only functional with a remote supply (see below).

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 fault condition occurs, there is provision for an external "floating" i.e. isolated 24V ac or dc supply. The 24V ac or dc supply MUST NOT be connected (commonly linked) to the CONTROL (+/- Signal) terminal.



Sample Photo is 54kW, showing fan cowl

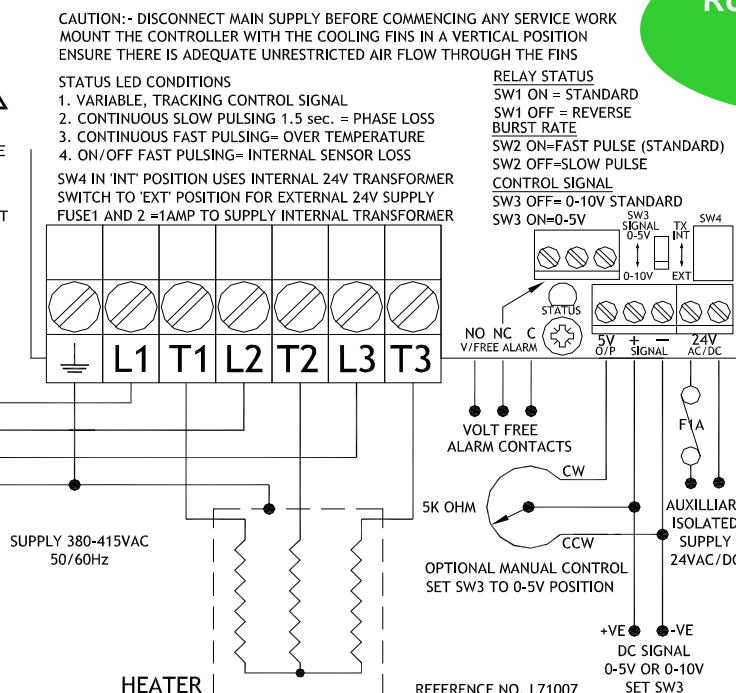
CONNECTIONS



WARNING
ISOLATE BEFORE
OPENING

DO NOT OBSTRUCT
VENT HOLES

SAFETY EARTH
MUST BE
CONNECTED



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 54kW model has a fan which is normally off, but automatically turns on at high heatsink temperatures (see SPECIFICATIONS – Fan switch-on temperatures).

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):	36kW (50A); 54kW (75A) @ a typical supply of 415V RMS
Input voltage:	400V RMS +/- 10%
Frequency:	50/60Hz
Control input options:	Signal (using SW1): 0 to 10V dc (set as standard) / 0 to 5V; OR Manual: using 5K Potentiometer
Alarms relay circuit rating:	125V ac @ 2A
Status indicator:	(Tracking control signal) LED indicator changes intensity
Fan 'switch-on' Temp.:	typically 55 °C (NOTE: Fan fitted on 54kW model only)
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 (36kW) or 16mm ² (54kW) rising clamp terminal block Earth 10mm ² (36kW) or 16mm ² (54kW) 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:	2Nm (10mm ² - 36kW), 2.5Nm (16mm ² - 54kW) Power terminals only.
Fusing 36kW:	63A High-Speed Semiconductor type fuse
54kW:	100A High-Speed Semiconductor type fuse
Working temperature:	65°C (maximum operational)
Ambient temperature:	40°C (maximum recommended)
Dimensions:	205mm (D) x 155mm (W) x 120mm (H) 36kW 250mm (D) x 155mm (W) x 120mm (H) 54kW
Fixing centres:	4 x 4.5mm-clear keyhole slots on fixing centres 140mm (W) x 140mm (D)
Weight:	(36kW) 2.6kg (54kW) 3.5kg

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.

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Page No. 2 of 2 Issue 6



015

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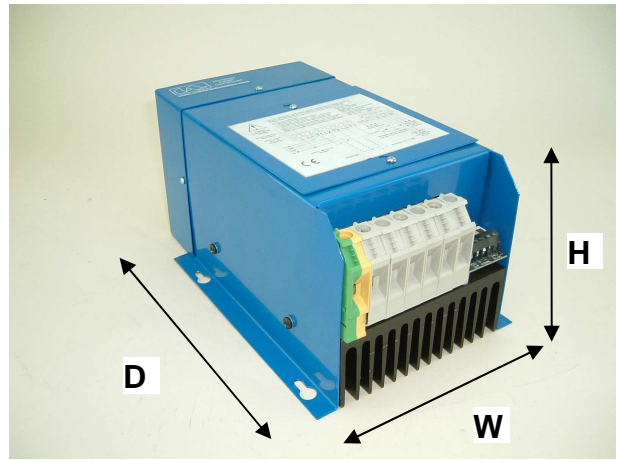
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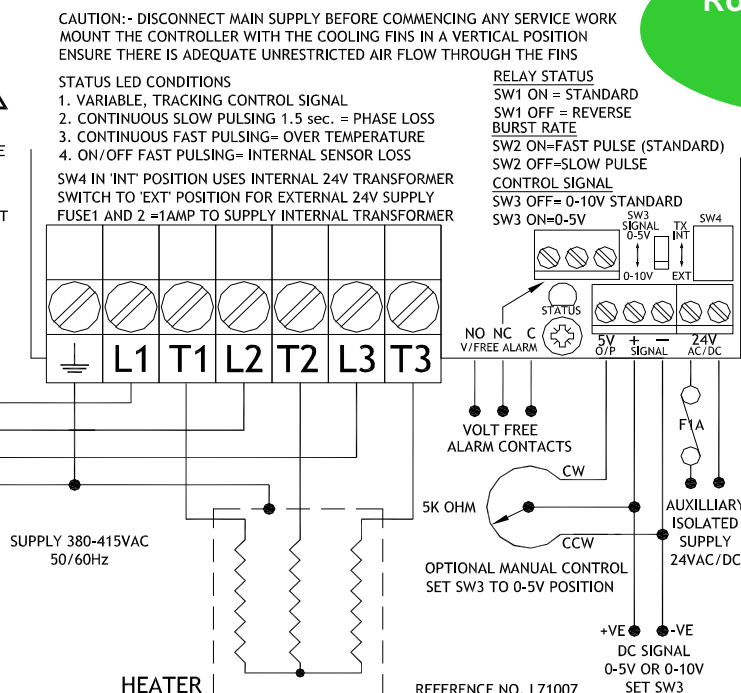
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CONNECTIONS



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

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Page No. 2 of 2 Issue 6



015