Type: LPMR/AUX

3-Phase Unbalance, Failure and Sequence Monitor with Auxiliary Supply

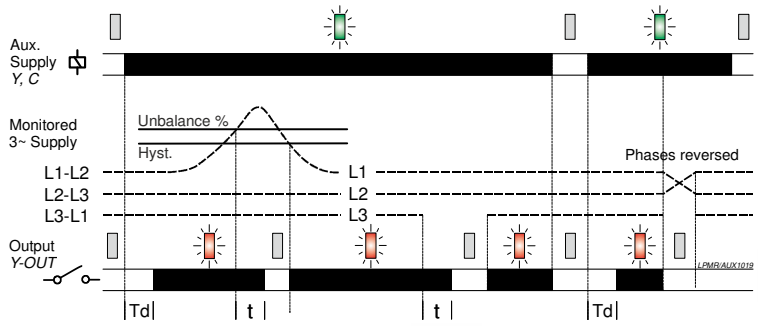
Terminal Protection to IP20

Dims: to DIN 43880
W. 17.5mm

- **Low cost, compact and simple to install and no user adjustments**
- **Wide 3-Phase voltage monitoring range 190 – 600VAC**
- **Automatically detects if monitored system is 50Hz or 60Hz**
- **True R.M.S monitoring**
- **Measures phase to phase voltages**
- **Detects phase unbalance**
- **Detects incorrect phase sequence and phase loss**
- **Powered from Auxiliary source (24VAC)**
- **1 x SPNO relay output 6A**
- **Green LED indication for Auxiliary supply status**
- **Red LED indication for relay status**

ISO 9001:2015
Cert. No. 14125771

FUNCTION DIAGRAM



INSTALLATION

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE MONITORED AND AUXILIARY SUPPLIES
- Connect the unit as per the diagram below. The auxiliary supply must be present for the unit to function.
- The Connection Diagram below shows a typical installation whereby the supply to a load is being monitored by the Phase monitoring relay. If a fault should occur in the supply (i.e. phase loss or two phases become reversed), the contactor will de-energise and Load will be turned off.

Applying power

- Apply power to terminals **Y** and **C.** The green "Power supply" ❶ LED will illuminate.
- Apply the monitored 3-phase supply to terminals **L1, L2** and **L3.** The red "Relay" ❷ LED will illuminate, and relay will energise. The voltage that is applied to the Auxiliary input will now be present on terminals **Y-OUT** and **C** and contactor (if connected) will energise.
- Refer to the troubleshooting table if the unit fails to operate correctly.

Troubleshooting.

The table below shows the status of the unit during a fault condition.

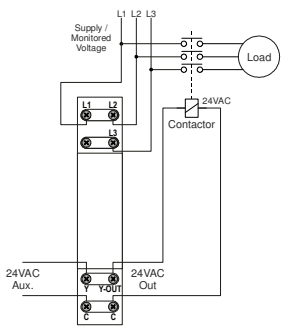
Supply fault	Green LED	Red LED	Relay
Aux. supply missing	Off	Off	De-energised
Phase missing or below threshold[1]	On	Off	De-energised
Phases reversed	On	Off	De-energised
Phase unbalance exceeds threshold	On	Off	De-energised

[1] see technical specification

TECHNICAL SPECIFICATION

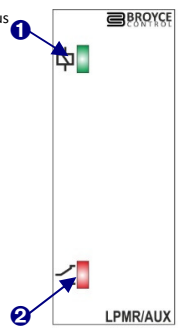
Aux. Supply voltage Un **(Y, C):**	24VAC
Frequency range:	48 – 63Hz
Supply variation:	75 – 125% Un
Power consumption (max.):	1W
Monitoring voltage U **(L1, L2, L3):**	190 – 600VAC
Frequency range:	48 – 63Hz
Overvoltage category:	III (IEC 60664)
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664
Monitoring mode:	Phase unbalance
Phase unbalance/loss threshold:	67.5V ± 2.5V (between highest and lowest phase to phase voltages)
Phase unbalance reset level (Hyst.):	6.5V ± 1.5V below trip level
Repeat accuracy:	± 0.5% at constant conditions
Delay from fault (t):	<0.2s
Power on delay (Td):	0.5s (worst case = Td x 2)
Power on indication:	Green LED
Relay status indication:	Red LED
Ambient temp:	-20 to +60°C
Relative humidity:	+95%
Output **(YOUT)**:	SPNO relay
Output rating:	6A
Electrical life:	≥ 150,000 ops at rated load
Dielectric voltage:	2kV AC (rms) IEC 60947-1
Rated impulse withstand voltage:	4kV (1.2/50µS) IEC 60664
Housing:	Orange flame retardant UL94
Weight:	90g
Mounting option:	On to 35mm symmetric DIN rail to BS EN 60715 or direct surface mounting via 2 x M3.5 or 4BA screws using the black clips provided on the rear of the unit.
Terminal conductor size	≤ 2 x 2.5mm² solid or stranded
Approvals:	Conforms to: IEC 60664-1, IEC 60947-1, UL508 CE, and RoHS Compliant.

CONNECTION DIAGRAM

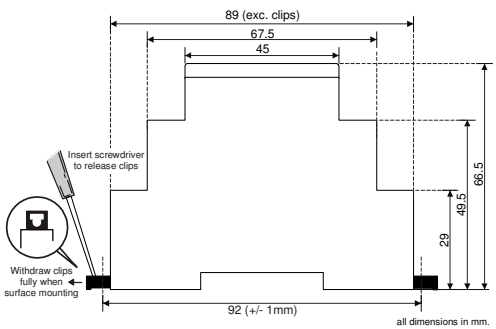


LED INDICATORS

1. Aux. Power supply status (Green) LED
2. Relay output status (Red) LED



DIMENSIONS



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