Type: MXPRF-4W

Phase Failure, Phase Sequence and Under Voltage

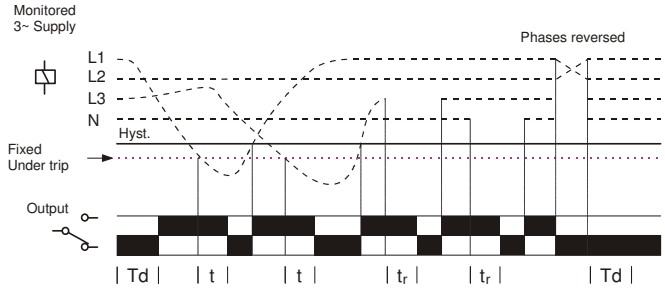
- **17.5mm DIN rail housing**
- **True R.M.S.**
- **Microprocessor based (self checking)**
- **Monitors own supply and detects an Under voltage condition on one or more phases**
- **Measures phase to neutral voltages**
- **Detects incorrect phase sequence, phase loss and neutral loss**
- **Fixed under voltage trip level**
- **Fixed time delay**
- **1 x SPDT relay output 8A**
- **Intelligent LED indication for supply and relay status**

Dims:
to DIN 43880
W. 17.5mm



Terminal Protection to IP20

FUNCTION DIAGRAM



INSTALLATION AND SETTING

Installation work must be carried out by qualified personnel.

- BEFORE INSTALLATION, ISOLATE THE SUPPLY.
- Connect the unit as required. 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 (i.e. fuse blowing), the relay will de-energise and assuming control of the external Contactor, de-energise the Contactor as well.

Applying power.

- Apply power and the green **"Power supply"❶** and red **"Relay"❷** LED's will illuminate, the relay will energise and contacts **15** and **18** will close. Refer to troubleshooting table if the unit fails to operate correctly.

Note:

If the supply voltage increases above the maximum supply/monitoring voltage range by approx. 10% or more, the relay will de-energise immediately.

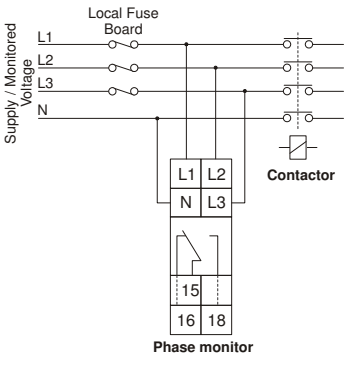
This device is not suitable for applications where there could be a percentage of re-generative voltage present during a fault condition, i.e. fuse failure. During these conditions a monitor that includes an adjustable under voltage trip level is necessary which allows this type of fault to be detected. It is therefore recommended that the Mxprt or Mxprt-4w phase monitors be considered.

Troubleshooting.

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

Supply fault	Green LED	Red LED	Relay
Phase or neutral missing	On	Off	De-energised
Phases reversed (no delay)	Flashing	Off	De-energised
Phase below 70% of Un (fixed under trip level [2])	On	Off	De-energised

CONNECTION DIAGRAM



SETTINGS



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

TECHNICAL SPECIFICATION

Supply / monitoring voltage U* (**L1, L2, L3, N**):	63.5 (110V) AC ±30% 133 (230V) AC ±30% 230 (400V) AC[1] ±30%
Frequency range:	48 - 63Hz
Isolation:	Over voltage cat. III
Rated impulse withstand voltage:	4kV[1] (1.2 / 50µS) IEC 60664
Power consumption:	6VA max.

*Please state Supply / monitoring voltage when ordering

Trip level:	
Supply voltage:	Under fixed ±2%:
63.5V AC	44.5V
133V AC	93V
230V AC	161V
Hysteresis:	≈ 2% of trip level (factory set)
Repeat accuracy:	± 0.5% @ constant conditions
Immunity from micro power cuts:	<50mS
Response time:	≈ 50mS
Time delay (t):	≈100mS Note: actual delay (t) = delay + response time
Delay from Phase/neutral loss (tr):	≈ 150mS (worst case = tr x 2)
Power on delay (Td):	≈ 1sec. (worst case = Td x 2)

Ambient temp:	-20 to +60°C
Relative humidity:	+95%

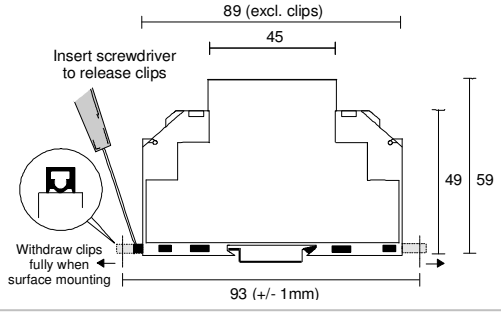
Output (**15, 16, 18**):	SPDT relay
Output rating:	AC1 250V 8A (2000VA) AC15 250V 5A (no), 3A (nc) DC1 25V 8A (200W)
Electrical life:	≥ 150,000 ops at rated load
Dielectric voltage:	2kV AC (rms) IEC 60947-1
Rated impulse withstand voltage:	4kV (1.2 / 50µS) IEC 60664

Housing:	Orange flame retardant UL94 VO
Weight:	≈ 70g
Mounting option:	On to 35mm symmetric DIN rail to BS5584:1978 (EN50 002, DIN 46277-3) 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 2.5mm^2 solid or stranded

Approvals:	Conforms to IEC. CE and and RoHS Compliant. EMC: Immunity: EN/IEC 61000-6-2 (EN/IEC 61000-4-3 15V/m 80MHz - 2.7GHz) Emissions: EN/IEC 61000-6-4

Note:
The "Supply / monitoring voltage U" refers to the phase to neutral voltage and in brackets, the equivalent phase to phase. To convert to phase to phase, multiply by approx. 1.732

MOUNTING DETAILS



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MXPRF-4W-1-A
012407

ISO 9001 REGISTERED FIRM

The Information provided in this literature is believed to be accurate (subject to change without prior notice); however, use of such information shall be entirely at the user's own risk.