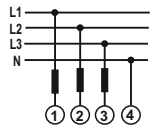
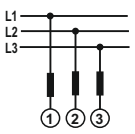
Phase Protection Relay Operating Manual and Installation guide

The Phase Protection Relay protects system from the faults occurring on voltage line. Relay protects against phase unbalance, phase failure and incorrect phase sequence.
Multiple LEDs indicate type of fault that helps for diagnosis purpose.
All faults are self resetting.
Potential free relay contacts can be used for connection / disconnection of load or trigger alarm for annunciation purpose.
relay configuration can be ordered in fail safe and normal operation depending upon application. The application includes Motor protection, conveyor system and for process industry, etc.

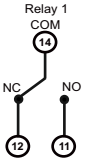
Connection diagram:



3Phase 4Wire



3Phase 3Wire



Parameter Settings:

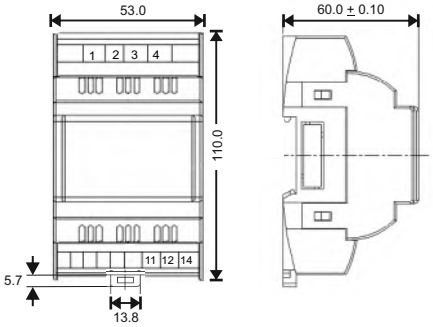
Phase failure Trip point	70 % of Vn (Fixed)
Voltage unbalance Trip point	20 % of Vn (Fixed)
Hysteresis	3 % of Vn (Fixed)
Power on , Reset delay	1 Second
Trip delay	3.5 Seconds for voltage unbalance and phase failure. Incorrect phase sequence has instantaneous tripping.

**Note : Tripping is based on VLL value of Vn for 3P3W system and VLN value of Vn for 3P4W system.*

Installation:

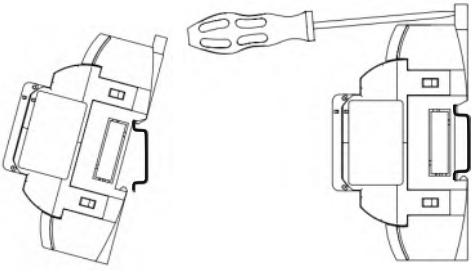
Installation to be carried out by qualified person along with life protecting equipment to prevent hazardous shock.
Isolate incoming supply before connection.
Do not expose device to Rain, Dust environment.
Keep at least 10-15 mm distance on both sides of device.
Do not install near Vibrating environment.
Do not install near Heat source.
Install Fuses of 2 Amp in series with supply.

Dimensions and Terminals:



Mounting:

To mount the device it should be fastened to a standard 35mm DIN rail (DIN50022).
To remove from DIN rail use screw driver to pullout clip as shown below.



Mounting On DIN rail *Removing From DIN rail*

Technical Specifications:

Input Voltage

Nominal Voltage Vn (AC)	3 Phase - 110 / 240 / 415 / 440 VLL
Nominal Frequency	50 / 60 Hz
Auxillary Supply	Self Aux
Input Voltage Burden	< 11 VA approx.
Operating Voltage Range	110 VLL (85 to 137) 240 VLL (204 to 300) 415 VLL (330 to 518) 440 VLL (350 to 550)
Tripping Accuracy	± 3% of Nominal Value

Operating reference condition

Reference Condition	23°C +/- 2°C
Input waveform	Sinusoidal (distortion factor 0.005)
Input Frequency	Nominal Frequency ± 2%

Applicable Standards

Safety	IEC 61010-1-2010
IP for water & dust	IEC60529
Pollution degree	2
Installation category	CAT III
High Voltage Test	2.2 kV AC, 50Hz for 1 minute between all electrical circuits

Environmental

Operating temperature	-10 to +55°C
Storage temperature	-25 to +70°C
Relative humidity	0...90% non condensing
Shock	15g in 3 planes
Vibration	10...55 Hz, 0.15mm amplitude
Enclosure	Flame retardant , IP20 (front face only)

Relay Contacts

Types of output	1CO
Relay configuration	Energised or DeEnergised (Energised - Relay is ON under healthy condition) (DeEnergised - Relay is OFF under healthy condition)
Contact Ratings	5A/250VAC/30VDC (resistive load)
Mechanical Endurance	1x10^7 OPS
Electrical Endurance	1x10^5 OPS

Mechanical Attributes

Weight	120g Approx.
Dimensions	53 x 110 x 60 mm

Connector details:

Input connectors are marked by numbers 1, 2, 3, 4 and potential free relay contacts are marked as 11, 12, 14 for relay.
Rated switchgear and fusing is required to prevent inrush. Wire of 2 sq. mm with Lug is recommended for Input connection. Use suitable screw driver so that sufficient force can be applied, excess force may result in damage to inside circuitry.
Control voltage is to be applied with fusing to the connector numbered as 14. Refer diagrams for input connection.

Test Certificate:

Model	:	Phase Protection Relay	Relay Test	:	Pass
Accuracy Test	:	Pass	Tripping Test	:	Pass

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DMAN-00IM-0756 Rev.B 10/2019