

Phase Protection Relay

RISH Relay - PHR

Applications:

Motor protection
Conveyor system
Control close loop operations
Incorrect phase sequence protection
Phase failure protection

Product Features:

True RMS measurement:

The instrument measures distorted waveform up to 15th harmonics

Protection feature:

Phase Unbalance Protection
Phase Failure Protection
Phase Incorrect Sequence Protection

Self Powered:

Needs no external power supply

Auto reset:

Instrument automatically clears itself if fault condition is recovered

LED Indication:

LED indication for Unbalance, Phase Fail condition and Incorrect Phase Sequence condition

Relay operation:

Relay energize and de-energize on fault option available



System type:

3 Phase 3 Wire device uses VLL values for tripping and
3 Phase 4 Wire device uses VLN for tripping

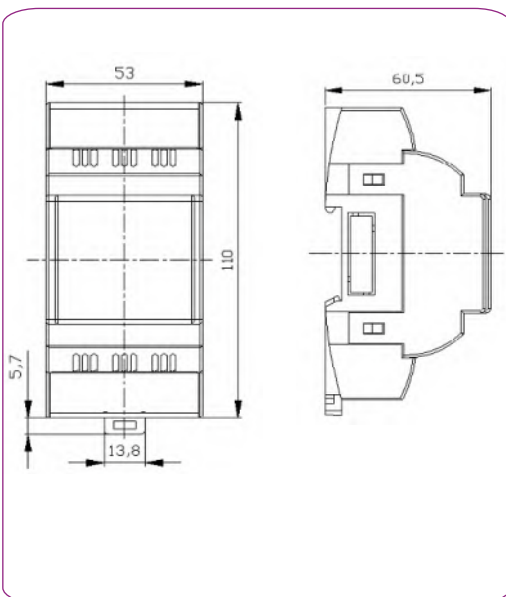
Compliance to International Safety standards:

Compliance to International Safety standard IEC
61010-1-2010

LED indication table

LED indication	Continuous ON	Blinking LED
P-ON	Power ON	Phase Reversal
UB	Unbalance Voltage	---
PF	Phase Fail	---

Dimensions Details:



Technical Specifications:

Input Voltage

Nominal Input Voltage (AC RMS) 110 VLL / 240 VLL / 415VLL / 440VLL
(to be specified while ordering)

Nominal Frequency 50 Hz / 60 Hz (to be specified while ordering)

Auxiliary Supply Self Auxiliary VA burden < 11 VA

Operating Ranges

Voltage Range 110VLL(85 to 137VLL)
240VLL(204 to 300VLL)
415VLL(330 to 518VLL)
440VLL(350 to 550VLL)

Operating Reference condition

Reference Condition 23°C +/- 2°C

Input waveform Sinusoidal (distortion factor 0.005)

Input Frequency Nominal Frequency ± 2%



Measure



Control



Record

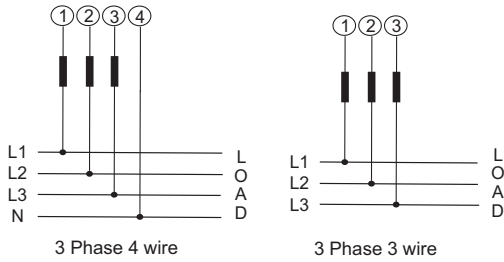


Analyze

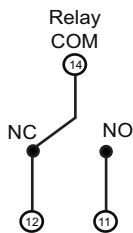
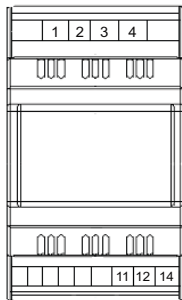
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Electrical Connection:



Terminal Details:



Note:- Relay Contacts are shown in power off condition

Technical Specifications:

Accuracy	± 3% of Nominal Voltage
Applicable Standards	
Safety	IEC 61010-1-2010
IP for water & dust	IEC 60529
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	IP20 (front face only)
Relay Contacts	
Types of output	1CO
Contact Ratings	5A/250VAC/30VDC (resistive load)
Mechanical Endurance	1x10 ⁷ OPS
Electrical Endurance	1x10 ⁵ OPS
Mechanical Attributes	
Weight	120 gm Approx.

Default Settings:

1. Phase Failure Tripping value	70% of Nominal Voltage
2. Phase failure Trip delay	Instantaneous Tripping
3. Incorrect Phase Sequence Trip delay	Instantaneous Tripping
4. Voltage Unbalance Tripping value	20 % of Nominal voltage
5. Trip delay for voltage unbalance	3.5 Seconds
6. Reset , Power on delay	1 Second Approx.
7. Hysteresis	3 % of Trip Value

Ordering Information :

PHR - X - X - X - X

- Relay Configuration (1:- Normally Energized , 2:- Normally De-Energized)
- System Frequency (1:- 50 Hz , 2:- 60 Hz)
- System voltage VLL (1:- 110, 2:- 240 3:- 415 , 4:- 440)
- System Type (2:-3PH3W, 3:-3PH4W)

Order Code Example:

PHR - 3 - 415 - 1 - 1 - Phase protection relay PHR 3 phase 4 wire ,input voltage 415 VLL, system frequency 50 Hz relay contacts in energized configuration

Note:-

1. Energized configuration : Relay is normally energized (ON) condition and become de-energized (OFF) upon fault.
2. De-Energized configuration:- Relay is normally de-energized (OFF) condition and become energized (ON) upon fault.

Rishabh Instruments always tries for Improvement and therefore product specifications are subject to change without notice



Measure



Control



Record



Analyze