

# Current Protection Relay

## RISH Relay - AR

### Applications:

- General application - for any electrical load monitoring
- Motors - monitoring conditions such as overload, locked rotor, etc.
- Genset - to ensure load current is within generator capacity
- Transformer protection
- Ground fault protection
- Over current protection
- Under current protection
- Current unbalance protection

### Product Features:

#### Protection feature:

- Over Current Protection
- Under Current Protection
- Current Unbalance Protection

#### Nominal current setting:

Nominal current can be set from 1A - 5A

#### Adjustable trip point:

Trip point adjustment for Under current and Over current

#### Unbalance current tripping:

Unbalance current tripping feature can be enabled / disabled on site by using front key. This fault is disabled on factory setting

#### Adjustable hysteresis:

Hysteresis adjustment for Under current and Over current

#### Adjustable Time delay for:

- Under Current
- Over Current

#### System types:

Available in Single phase and Three phase option



#### Relay option:

Relay option 1CO, 1CO+1CO is available

#### Auto/Manual reset:

In auto mode relay automatically clears itself if it comes out of the fault condition. If relay set in manual mode, the device must be manually cleared by "PRG/RST" key when fault condition is recovered.

Auto / manual resetting feature can be enabled / disabled on site by using front key

#### Compliance to International Safety standards:

Compliance to International Safety standard IEC 61010-1- 2010

#### True RMS measurement:

The instrument measures distorted waveform up to 15th harmonics

#### LED Indication:

LED indication for Power on, Under current, Over current, Current unbalance

#### Relay operation:

Relay energize and de-energize on fault option available

Parameter Settings:	
Over Current Trip point	30-140% (Variable)
Under Current Trip point	10-95% (Variable)
Current unbalance setting *	Trip point : 20% (Fixed) Trip delay : 5 second (Fixed) Hysteresis : 5% (Fixed)
Hysteresis	5 - 50% (Variable) of Trip point
Trip delay	0 - 10 second variable for Undercurrent, Overcurrent
Reset Delay	1 second (Fixed)
Power On Delay	Approx. 3 seconds (Fixed)

\* Note : Unbalance setting is not applicable in single phase model.



Measure



Control



Record



Analyze

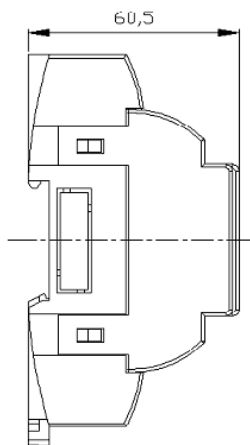
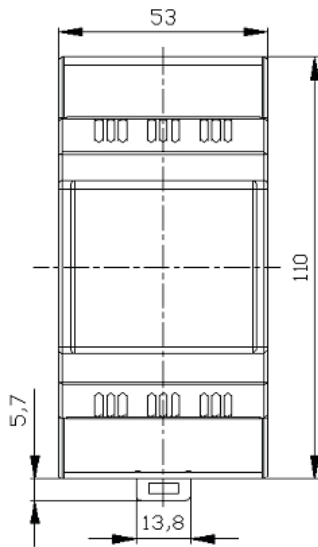


Optimize

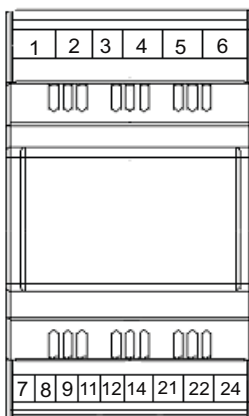
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### Dimensions Details:



### Terminal details:



### Technical Specifications:

#### Input Current

Nominal Input Current (AC RMS)	1 A to 5 A settable
Max Continuous Input Current	145% of Maximum Nominal input current

#### Overload Withstand

Current	20 x for 1 second, repeated 5 times at 5 min
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#### Auxiliary Supply

Auxiliary Supply Voltage	60 V – 300V AC/DC
Aux Nominal value	230 VAC 50/60 Hz
Aux Supply Frequency	45 to 66 Hz range

#### Operating Measuring Ranges

Current Range	5... 140% of Nominal value
Frequency	40...70Hz

#### VA Burden

Input Current Burden	< 0.25 VA approx. per phase at nominal
Auxiliary Supply Burden	< 3 VA approx.

#### Operating Reference condition

Reference Temperature	23°C +/- 2°C
Input waveform	Sinusoidal (distortion factor 0.005)
Input Frequency	50 or 60 Hz ±2%
Auxiliary supply voltage	Nominal Value ±1%
Auxiliary supply frequency	Nominal Value ±1%

#### Accuracy

Measurement Accuracy	± 2% of Nominal value
Setting Accuracy	± 6% of Nominal value ± 0.8 sec for trip delay

**Response time** Less than 140 msec

#### Applicable Standards

Safety	IEC 61010-1-2010 , Permanently connected use
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



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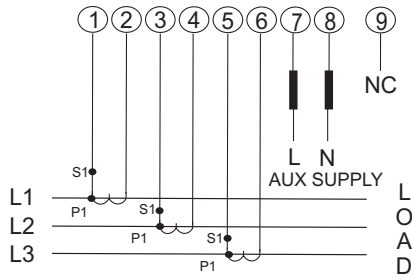


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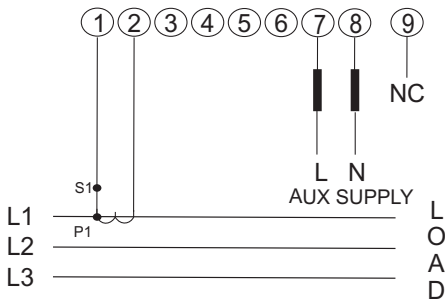
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## RISH Relay - AR

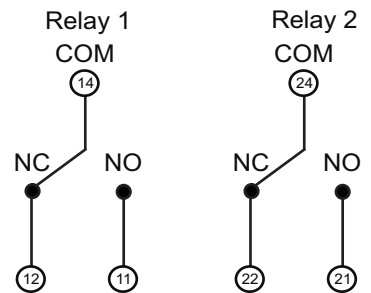
### Electrical Connection:



**3 Phase**



**1 Phase**



Note- Relay Contacts are shown in power off condition

### Technical Specifications:

#### 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, 1CO+1CO
Contact Ratings (Res. Load)	5A/250VAC/30VDC (resistive load)
Mechanical Endurance	1x10 <sup>7</sup> OPS
Electrical Endurance	1x10 <sup>5</sup> OPS

#### Mechanical Attributes

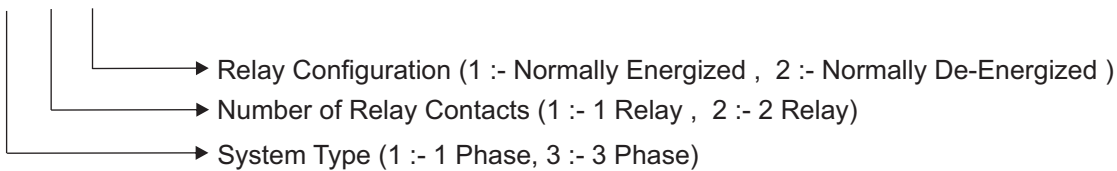
Weight	175 gm Approx.
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#### LED indication table

LED indication	Continuous ON
P-ON	Power ON
UC	Under Current
OC	Over Current
UB	UnBalance

### Ordering Information :

**AR - X - X - X**



### Order code example :

**AR-3-2-1** - Current protection relay AR, system type 3 phase, 2 relay model, relay contacts in normally 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



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