



DATASHEET

Issue 1



Multifunction Meters

Transducers & Isolators

Temperature Controllers

Converters & Recorders

Digital Panel Meters

Current Transformers

Analogue Panel Meters

Shunts

Digital Multimeters

Clamp Meters

Insulation Testers

OMICRON-AR CURRENT PROTECTION RELAY

Product Characteristics

- Over Current, Under Current & Current Unbalance Protection
- Nominal current can be set from 1A - 5A on-site
- Adjustable trip point and time delay for Under current and Over current
- Compliance to International Safety standard IEC 61010-1- 2010
- TRMS measurement
- LED indication for Power on, & faults like Under current, Over current, Current unbalance

SUBJECT TO CHANGE WITHOUT NOTICE

This datasheet superseded all previous versions – please keep for future reference

Features

- Over Current, Under Current & Current Unbalance Protection
- Nominal current can be set from 1A - 5A on-site
- Adjustable trip point and time delay for Under current and Over current
- Compliance to International Safety standard IEC 61010-1- 2010
- TRMS measurement
- LED indication for Power on, & faults like Under current, Over current, Current unbalance



OMICRON-AR monitors AC current of a system/equipment and protects it from overcurrent, undercurrent and current unbalance. As well as it indicates the occurrence of faults with help of LED indications. It is a potentiometer based relay thus it is easy to programme trip points and time delays.

Application

- 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

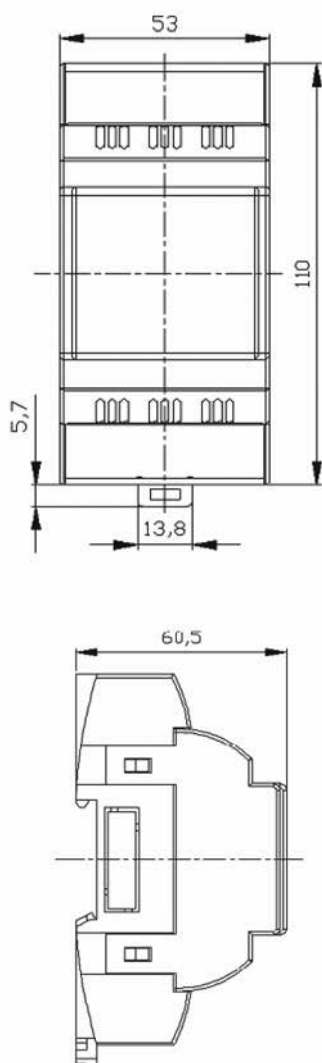
Protection feature	Over Current Protection Under Current Protection Current Unbalance Protection
Nominal current setting	Nominal current can be set from 1A - 5A
Adjustable trip point	Trip point adjustment for Under current and Over current
Unbalance current tripping	Unbalance current tripping feature 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

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

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

Dimensions Details

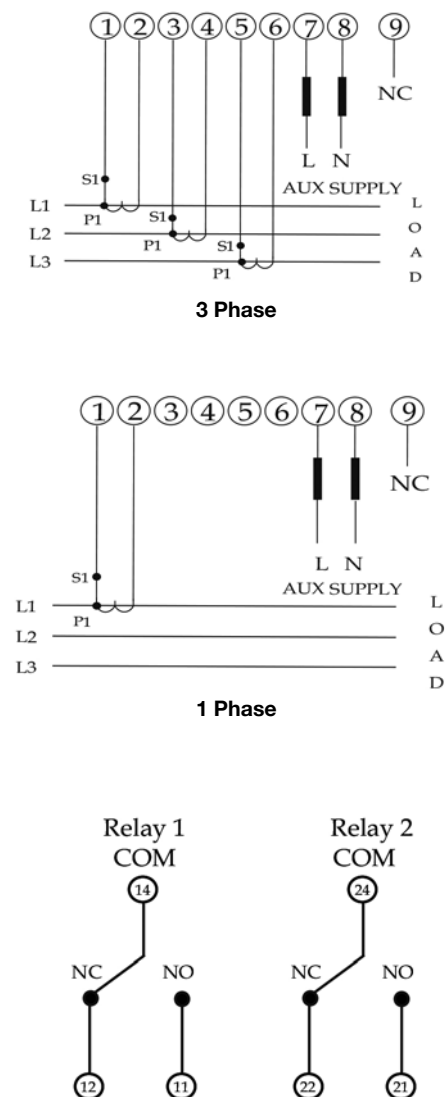


All the dimensions are in mm.

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
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	

Electrical Connection



Note: Relay Contacts are shown in power off condition

Technical Specifications

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
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 ⁷ OPS
Electrical Endurance	1x10 ⁵ OPS
Mechanical Attributes	
Weight	175 gm Approx

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

Ordering Codes

Ordering Codes													
Product Code	PR10-	X	X	X	X	X	X	0	0	0	0	0	OST
Model type for PR10	Current protection relay	A											
System Type for PR10	1P		1										
	3)		3										
System Voltage for PR10	N.A.			0									
System Freq for PR10	Not applicable				0								
Relay Configuration for PR10	Normally Energized					1							
	Normally De-energized					2							
No. of Relay for PR10	1 relay						1						
	2 relay						2						
Reserved								0	0	0	0	0	OST

Contact



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