RI-R38

DEVICE FOR INSULATION PERMANENT CONTROL FOR NEUTRAL NETWORKS (IT)

GENERAL

RI-R38 is a device that allows to control the insulation to earth in alternating neutral networks up to 440 V (IT systems).
Putting a continuous component measure signal between the insulated line and earth it's possible to control the insulation resistance reading the dispersion current generated to earth.
On the frontal panel of RI-R38 there is the signalling of device ON, the signalling of tripping TRIP (low insulation), a test and a reset push-buttons and a series of micro-switches to regulated the threshold of trip.
It's available a changeover contact relay to use the low insulation signalling in a remote panel.

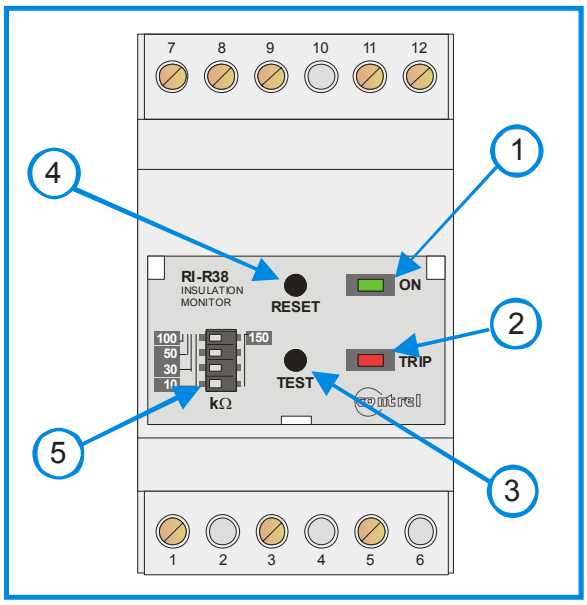
OPTIONS

Standard version 230 Vac, option version 115 Vac

INSTALLATION

The installation must be carried out by qualified and authorized personnel and in absence of voltage. Make sure that the instrument is O.K. and it has not suffered any damage during transport. Make sure that the voltage supply are compatible with the operating voltage of instrument.
The device is a 3 modules (17.5mm) DIN version with snap on 35mm DIN rail. It has a sealable transparent frontal protection cover.
The green LED ON will bright after the connections are set and the instrument is power on.

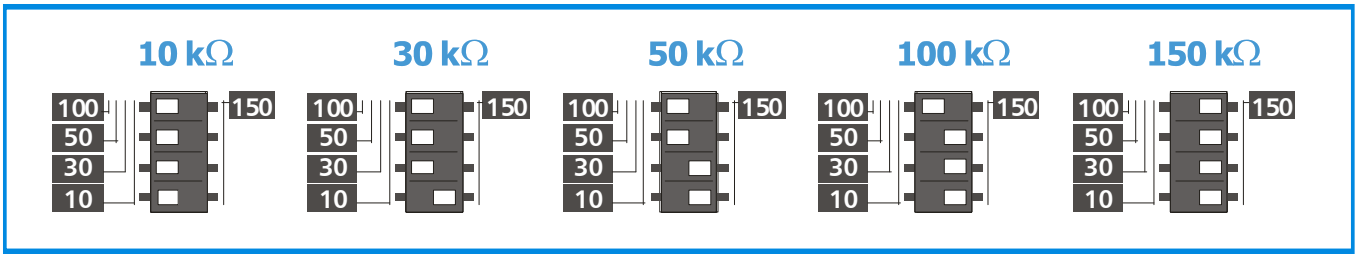
DESCRIPTION



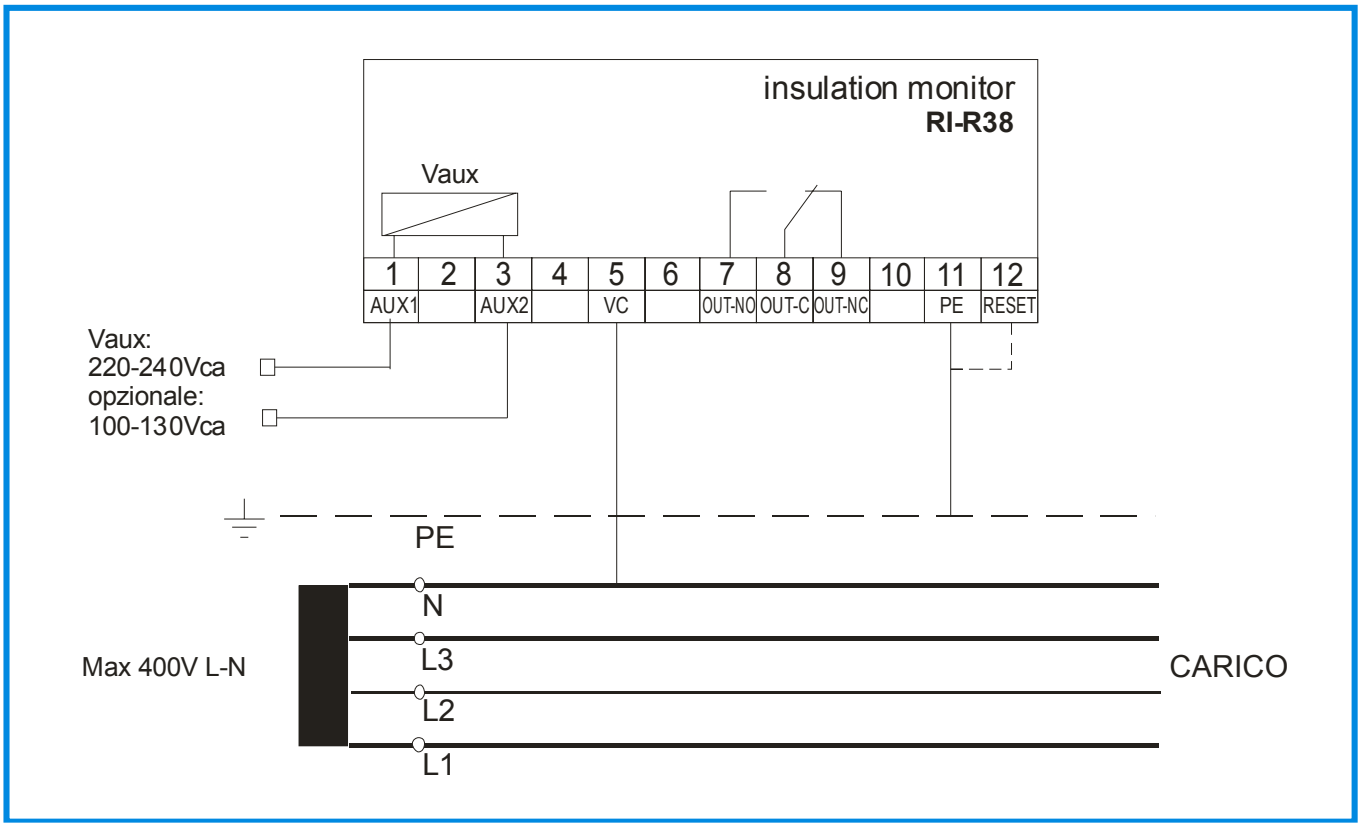
1. green LED ON
   signalling of the instrument working
2. red LED TRIP
   signalling of trip for low insulation
3. TEST button to test the instrument functionality
4. RESET button to cancel the trip signalling (manual reset)
5. micro-switches to select the threshold of trip

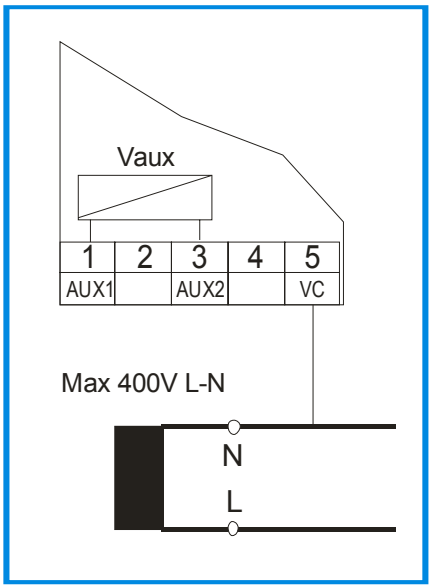
MICRO-SWITCHES SETTING

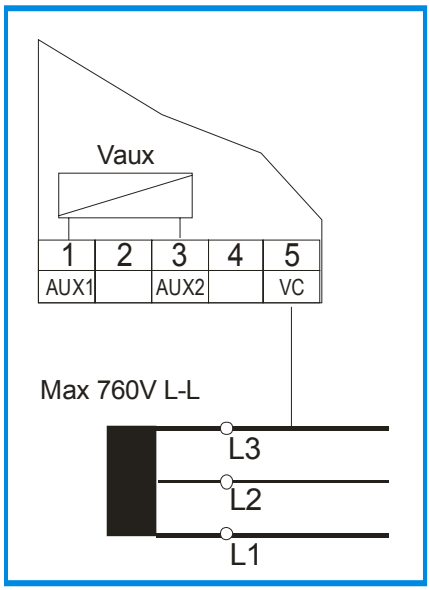
The frontal micro-switches allow to set the threshold of trip between 10 and 150 kΩ as it's showed in the following figure:

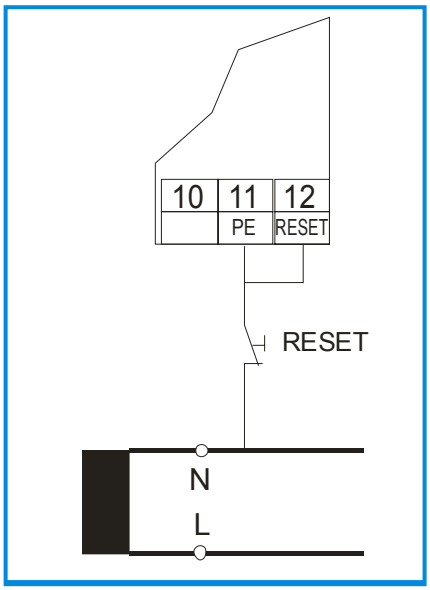


WIRING CONNECTION









LEGEND

Auxiliary power supply

Terminals 1-3

The auxiliary power supply could be the same of the network to control.

Insulation control

Terminals 5-11

The two terminals must be connected between the line under control and the earth of measure reference.

The terminal 5 must be connected to the neutral conductor of the single-phase or the three-phase line of the line to control. If the three-phase network is at three wires, the terminal must be connected to a phase.

The maximum voltage required between these terminals is 440V and for this reason it's possible to put the insulation controller on single-phase line or on three-phase line with 3 wires without neutral up to 440V and with 4 wires with neutral up to 760V.

Relay output connections

Terminals 7-8-9

To remote signalling by relays with changeover contact max 5A 250V on resistive load.

Automatic or remote RESET connection

terminal 12

Connecting the terminal 12 to the 11 (ground) it's possible to have a manual RESET functioning (using the push-button on the frontal of the instrument). Without the connection on the terminal 12 the instrument will function with automatic RESET when the low insulation stops.

It's possible to connect an external N.C. contact push-button between the monitoring device and the ground.

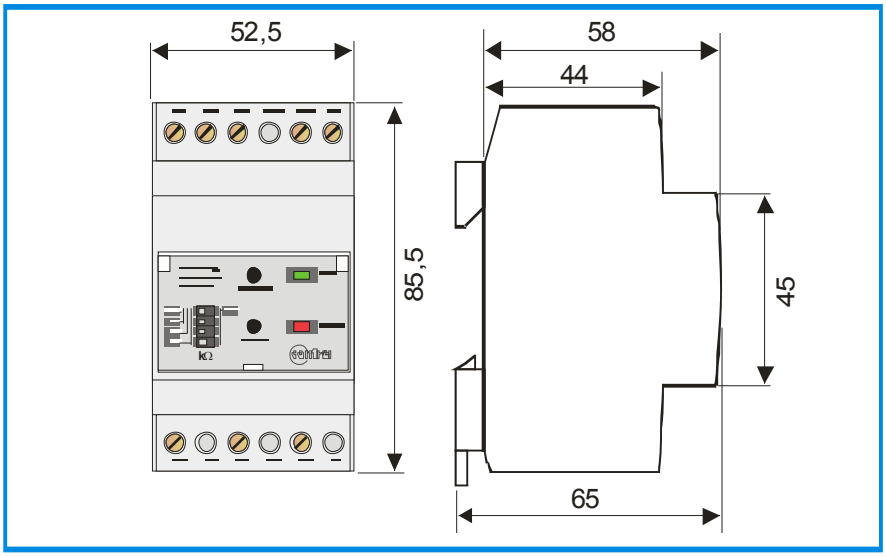
FUNCTIONALITY

In normal condition, with insulation value higher than the set threshold, the instrument has the green LED on. Pressing the TEST button the TRIP LED of alarm signalling and the output relay will be activated.

Depending of the connection the RESET will be automatic when the TEST button is released or using a remote button or manual using the RESET button on the front panel.

If there is a low insulation on the line (resistance value under the set threshold) will be activated the TRIP signalling and the output relay. When the insulation on the line will come back higher than the set threshold, the trip signalling will disappear.

DIMENSIONS



Snap on DIN rail 35mm
(DIN 50022)
3 modules 17,5 mm

TECNICAL FEATURES

Auxiliary voltage supply	230V 50-60Hz ± 20% or 110V 50-60Hz ± 20%
Maximum consumption	3 VA
Network to control	24 ÷ 440Vca +10% (760V on three-phase line with neutral)
Measure voltage	Max 24V
Measure current	Max 0,5 mA
Internal impedance	100 kohm
Threshold tripping	Settable 10 ÷ 150 kohm (4 level with micro-switches)
Tripping delay	About 1 second
Signalling and button	Led ON, led TRIP; TEST and RESET button
Output	Relay changeover contact NA-C-NC max 5A 250Vca
Working and storing temperature	-10 ÷ 60°C / -20 ÷ 70°C
Relative humidity	≤ 95 %
Insulation test	3 kV 60 sec. / 4 kV imp. 1,2/50µs
Mounting position	Any
Wiring type	Screw terminals / cross section cables 4 mm^2
Protection degree	Frontal with cover: IP 40 – Enclosure: IP 20
Mounting according DIN 50022	Snap on DIN rail 35mm / 3 modules 17,5 mm
Weight	About 300 g
Standards	Safety CEI-EN 61010-1 Product CEI-EN 61557-8 Electromagnetic compatibility CEI-EN 61326-1

For application not described in this manual it's better to see specific document or to contact the technical service.

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