

RI-R11 series RI-R11D series

INSULATION MONITORING

VERSIONS FOR NETWORKS dc MAX 250 V

GENERAL



MODELS

RI-R11 110 V
RI-R11D 110 V

Main supply and auxiliary voltage 110 Vdc / -15% +25% (80 ÷ 180 Vdc)
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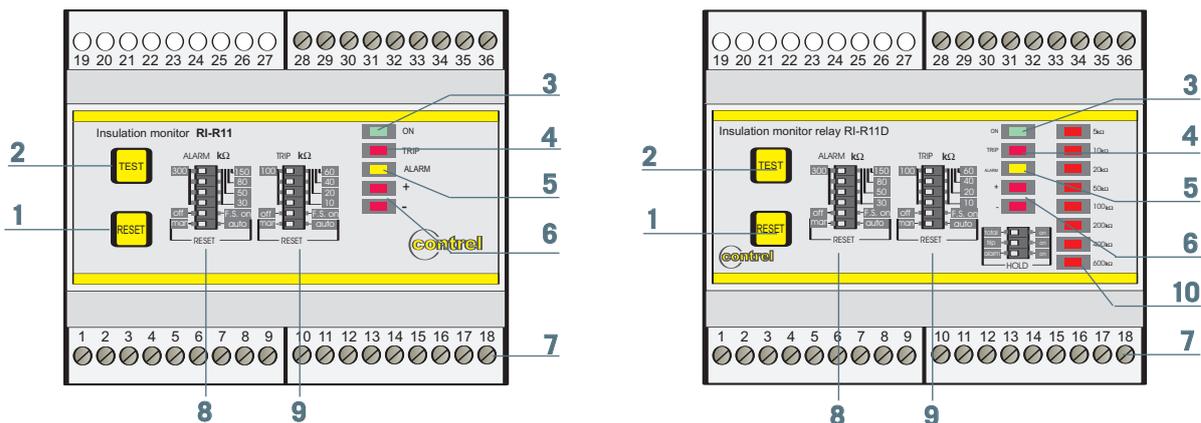
RI-R11 220 V
RI-R11D 220 V

Main supply and auxiliary voltage 220 Vdc / -15% +25% (185 ÷ 275 Vdc)
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The devices allow permanent monitoring of insulation of electrical networks in direct-current current isolated on earth (IT networks). Monitoring is carried out measuring potential's variation of two polarities of network on earth. Auxiliary supply is taken from under-control network.

These devices have two trip thresholds, which are adjustable by frontal micro switches, called ALARM and TRIP. This works in order to signal that insulation's level decreased under the threshold. Trip is signalled by frontal LED with indication of polarity (+ or -) that show low insulation. Remote trip threshold is carried out by double switch two relays with contacts voltage-free. Relays could be programmed in positive safe too (FAIL-SAFE function, normally excited). On the front, there are TEST and RESET buttons; test could be activated locally or by an external button; push button could be set manually or automatically, either with local button or with external push button. Model RI-R11D has a monitor of insulation's level of the device by a bar.

FUNCTIONS AND OPERATORS - LEGENDA

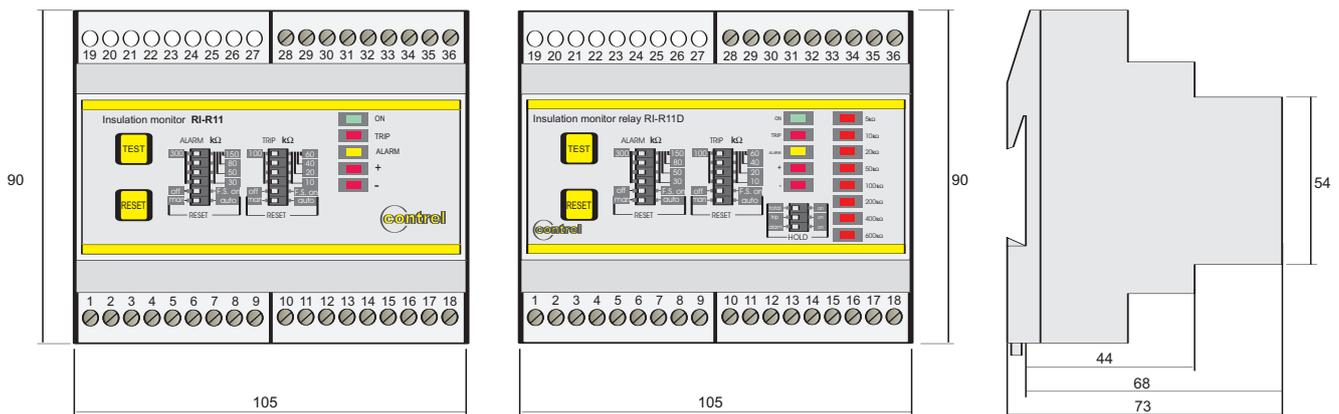


- 1 RESET button. This works only if RESET functioning is set manually.
- 2 TEST button. Pushing TEST button cause either alarm activation or trip activation with output relays' switching.
- 3 LED ON for active device signalling
- 4 LED TRIP for trip threshold TRIP signalling
- 5 LED ALARM for alarm threshold ALARM signalling
- 6 LED+ and LED- signalling which under-control network's polarity has low insulation. Ignition of one of these LED will be connected with ALARM LED and TRIP ignition.
- 7 Screw terminals for connections
- 8 Micro switches for alarm threshold setting
- 9 Micro switches for trip threshold setting
- 10 Led bar for insulation level visualising (only for RI-R11D)

ELECTRIC CHARACTERISTICS

Network voltage and auxiliary supply	RI-R11 110 V 110 Vdc -15_{-25}^{+25} % (80 ÷ 180 Vdc) RI-R11D 110 V 110 Vdc -15_{-25}^{+25} % (80 ÷ 180 Vdc) RI-R11 220 V 220 Vdc -15_{-25}^{+25} % (185 ÷ 275 Vdc) RI-R11D 220 V 220 Vdc -15_{-25}^{+25} % (185 ÷ 275 Vdc)
Self-consumption	5 W MAX
Alternating residual load	5 %
ALARM threshold setting	300 ÷ 30 kohm (5 levels adjustable by micro switches)
TRIP threshold setting	100 ÷ 10 kohm (5 levels adjustable by micro switches)
Signalling	led ON, led ALARM, led TRIP, led +, led - signalling insulation led bar (only for RI-R11D)
Tripping delay	about 1 second
Measure's current	MAX 1.8 mA
Internal impedance	RI-R11 / RI-R11D 110 V 200 kohm L+/L- 100 kohm L/earth RI-R11 / RI-R11D 220 V 400 kohm L+/L- 200 kohm L/earth
Output relay free from voltage contacts	ALARM : 2 contacts switched NO-C-NC TRIP : 2 contacts switched NO-C-NC
Capacity relay contacts	5 A 250 Vac – 0.3 A 130 Vdc – 0.2 A 280 Vdc resistive load 0.15 A 130 Vdc – 0.05 A 280 Vdc inductive load L/R < 40 ms with 2 serial contacts: 0.7 A 130 Vdc – 0.5 A 280 Vdc resistive load
Adjustable functions	output alarm function - fail safe function for both outputs manual or automatic reset (external reset)
Working temperature	- 10 ... + 60 °C
Storing temperature	- 20 ... + 70 °C
Relative humidity	< 90 %
Insulation test	2.5 kV 60 sec / 4 kV set 1.2 / 50 µs
Assembling position	indifferent
Connection type	by screw terminals - wire section MAX 2.5 mm ²
Protection's degree	IP 40 frontal with cap - IP 20 case
Mounting according with DIN 50022	easy connection snap on DIN rail 35 mm / 6 modules of 17.5 mm
Weight	approximately 400 g
Standard reference	CEI-EN 61010-1 / CEI-EN 61557-8 / VDE 0413 part.8 / CEI-EN 61326-1

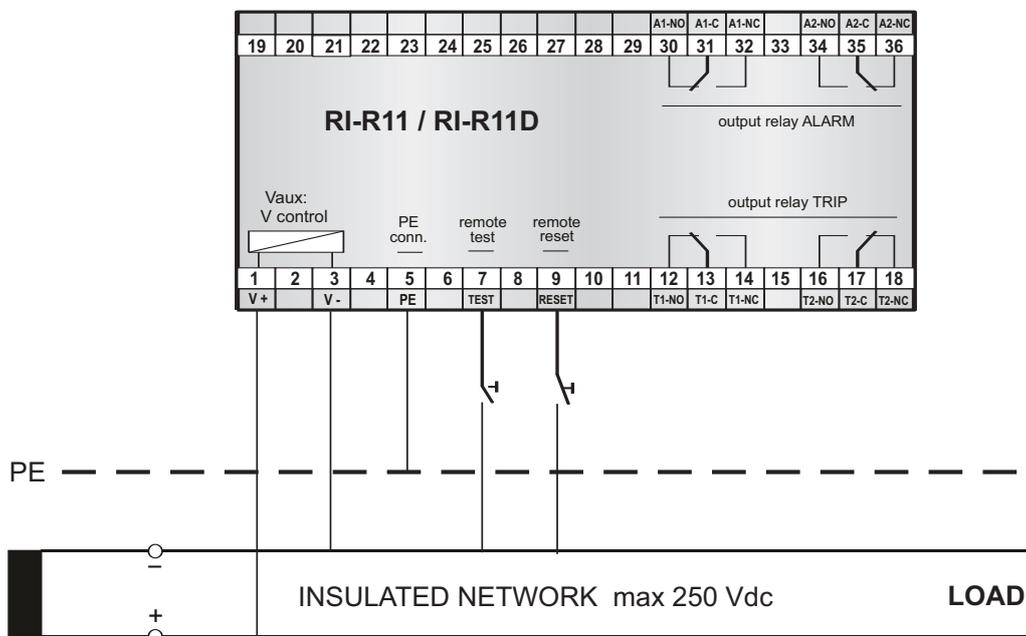
DIMENSIONS



RI-R11

RI-R11D

WIRING DIAGRAMS - LEGENDA



AUXILIARY SUPPLY AND UNDER-CONTROL NETWORK CONNECTION - TERMINALS 1-3.

Positive and negative polarities of under-control network have to be connected to these terminals. Network's voltage is used for device's supply. If positive and negative has been inverted, the device would not be damaged but (+) and (-) indications of frontal LED would be inverted too. The advice is that of making sure about the model with right functioning voltage.

CONNECTION TO EARTH - TERMINAL 5.

Terminal has to be connected with protection conductor PE (earth) in order to allow insulation's measure.

CONNECTION FOR REMOTE TEST - TERMINAL 7.

In case of willing to foresee TEST function also from an external push button, it's possible to connect a pushbutton with normally open contact NO between this terminal and under-control network. If it's connected to (+) polarity, test will cause ALARM LED, TRIP LED and (+) lighting; but if it's connected to (-) polarity, LED - will light.

CONNECTION FOR REMOTE RESET - TERMINAL 9.

In case of willing to foresee RESET function also from an external push button, it's possible to connect a pushbutton with normally open contact NO between this terminal and (-) polarity of under-control network.

OUTPUT TERMINAL FOR TRIP RELAY - TERMINALS 12-13-14 16-17-18.

In order to signal to exterior threshold TRIP activation, it's available a relay with double change over contact voltage-free. The diagram shows contacts' condition either with not supplied device or supplied at rest with FAIL SAFE function not active (relay normally not excited). If FAIL SAFE function is set, relay will be normally excited when there is not tripping (supplied device) and it will be back at rest in case of tripping, not supplied device or failure.

OUTPUT TERMINAL FOR ALARM RELAY - TERMINALS 30-31-32 34-35-36

In order to signal trip threshold ALARM activation, it's available a relay with double switch voltage-free. The diagram shows contacts' condition either with not supplied device or supplied at rest with FAIL SAFE function not active (relay normally not excited). If FAIL SAFE function is set, relay will be normally excited when there is not tripping (supplied device) and it will be back at rest in case of tripping, not supplied device or failure.