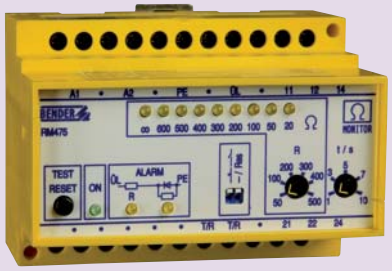
RM475 / RM475LY



RM475LY

Device features

- RM475 – permanently set response value
  Series resistance 200 Ω
  Cross resistance 1000 Ω
- RM475LY
  Series resistance, adjustable
  50…500 Ω
  Cross resistance 1000 Ω
- Adjustable response delay 1…10 s (RM475LY)
- N/O or N/C operation, selectable
- Fault memory behaviour selectable
- Internal/external test/reset button
- LEDs: Power On, alarm, extraneous voltage
- LED bar graph for series resistance
- 2 potential-free changeover contacts
- Modular DIN rail enclosure

Product description

The RM475 series relays in conjunction with a terminating device monitor a closed and voltage-free loop for interruption (series resistance) and for short-circuit (cross resistance). The RM475 version has a continuously set response value for series and cross resistance. The response delay is max. 1 s.

The response value for the series resistance of device version RM475LY can be adjusted between 50…500 Ω. The response value for the cross resistance for this version is also continuously set. The response delay can be set between 1…10 s.

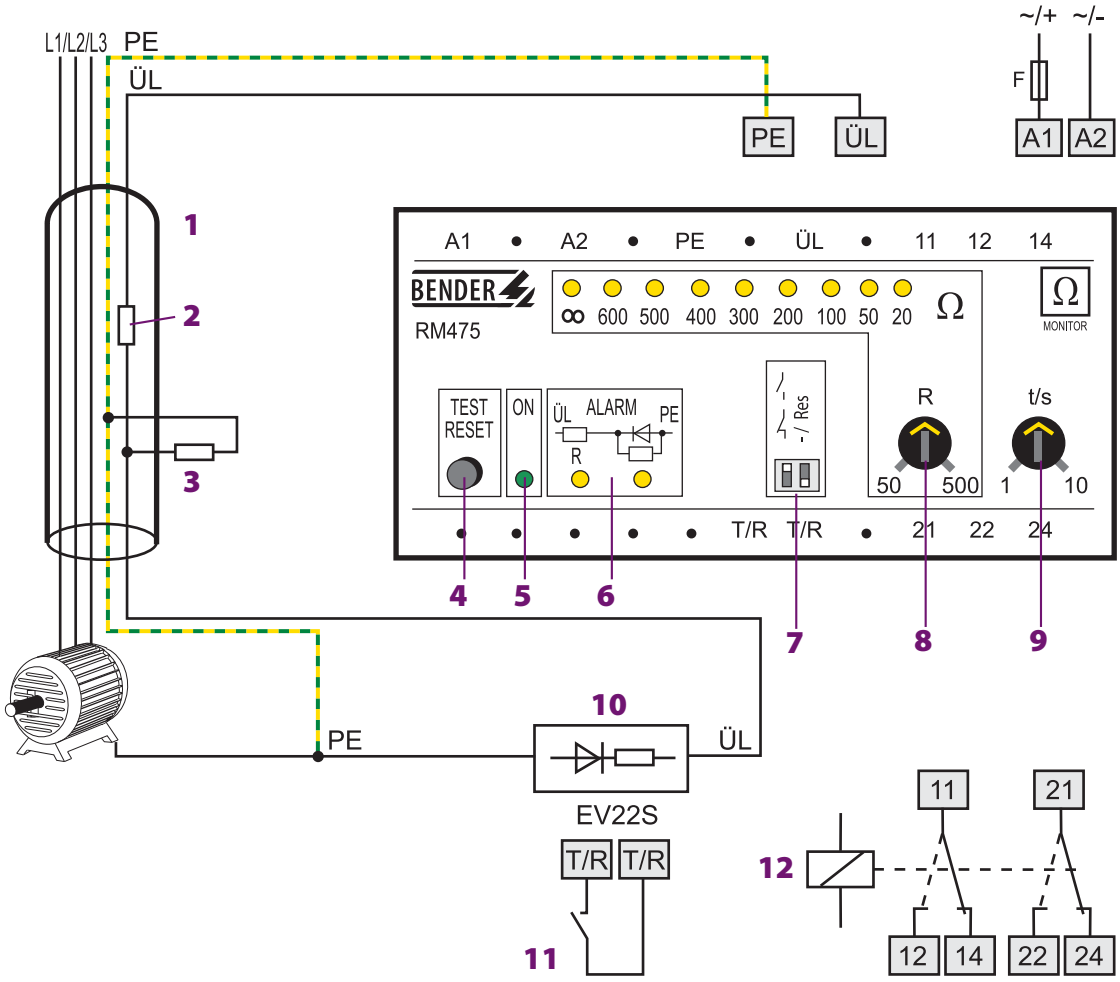
Application

- Monitoring of conductors and cables by means of a monitoring conductor
- Monitoring of PE loops

Function

The conductor loop to be monitored is connected to the terminals ÜL and PE.
The end of the conductor loop is bridged by the terminating device (EV22S). A measuring voltage is superimposed on the conductor loop. When the series or cross resistance exceeds the response value, the alarm relay switches and the alarm LEDs light up after the response delay t_v has elapsed. The alarm LEDs also light when the connection ÜL/PE (connection terminating resistor) is open while switching on. If extraneous voltage occurs on the measuring circuit, e.g. in the case of an open circuit, e.g. (PE interrupted) the alarm LED lights as well and the alarm relay switches.

Wiring diagram



1 - Conductor
2 - Series resistance
3 - Cross resistance
4 - Test and reset button "TEST/RESET"
5 - LED Power On
6 - Alarm LEDs: light when series or cross resistance errors occur and flashes in case of extraneous voltage
7 - DIP switch for setting the operating principle
– N/C or N/O operation
– Fault memory behaviour ON/OFF
8 - Adjustable response value: series resistance "R" 50…500 Ω (RM475LY only)
9 - Adjustable time delay 1…10 s (RM475LY only)
10 - Terminating device
11 - External test and reset button "T/R"
12 - Alarm relay:
—— N/C operation
- - - N/O operation
F - Short-circuit protection supply voltage 6 A fuse is recommended

Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/pollution degree	4 kV/3

Supply voltage

Supply voltage U_S	see ordering information
Operating range U_S	0.85…1.1 x U_S
Power consumption	≤ 3 VA

Measuring circuit

RM475

Response value, series resistance	200 Ω
Response value, cross resistance	1000 Ω
Response time t_{an}	< 1s

RM475LY

Response value, series resistance	50…500 Ω (200 Ω)*
Response value, cross resistance	1000 Ω
Response time t_V	1…10 s
Max. extraneous voltage measuring circuit	≤ AC 30 V
Terminating resistor conductor loop EV22S	AC 500 V 1 s

Switching elements

Number of changeover contacts	1 x 2
Operating principle	N/C operation / N/O operation (N/C operation)*
Fault memory behaviour selectable	ON/OFF
Electrical endurance, number of cycles	12000
Contact class	IIB
Rated contact voltage	AC 250 V/DC 300 V
Making capacity	AC/DC 5 A
Breaking capacity	2 A, AC 230 V, cos phi 0.4 0.2 A, DC 220 V, L/R = 0.04 s

Environment/EMC

EMC immunity	acc. to IEC 61000-6-2
EMC emission	acc. to IEC 61000-6-4
Shock resistance IEC 60068-2-27 (device in operation)	15 g/11 ms
Bumping IEC 60068-2-29 (transport)	40 g/6 ms
Vibration resistance IEC 60068-2-6 (device in operation)	1 g/10…150 Hz
Vibration resistance IEC 60068-2-6 (device not in operation)	2 g / 10…150 Hz
Ambient temperature, during operation	-10…+55 °C
Ambient temperature (storage)	-40…+70 °C
Climatic class acc. to IEC 60721-3-3	3K5 (except condensation and formation of ice)

Other

Operating mode	continuous operation
Mounting	any position
Connection type	modular terminals
Connection properties	
single wire	0.2…4 mm²
flexible	0.25…2.5 mm²
Degree of protection, internal components (IEC 60529)	IP30
Degree of protection, terminals (IEC 60529)	IP20
Screw mounting	2 x M4
DIN rail mounting acc. to	IEC 60715
Flammability class	UL94V-0
Operating manual	BP702001
Weight	≤ 400 g

( )* factory setting

Ordering information

Type	Supply voltage U_S	Art. No.
RM475	AC 50…60 Hz 230 V	B 9702 2001
RM475-13	AC 90…132 V 50…60 Hz	B 9702 2002
RM475-15	AC 50…60 Hz 400 V	B 9702 2003
RM475-16	AC 50…60 Hz 500 V	B 9702 2004
RM475-21	DC 9.8…84 V	B 9702 2005
RM475-23	DC 77…286 V	B 9702 2006
RM475LY	AC 50…60 Hz 230 V	B 9702 2007
RM475LY-13	AC 90…132 V 50…60 Hz	B 9702 2008
RM475LY-15	AC 50…60 Hz 400 V	B 9702 2009
RM475LY-16	AC 50…60 Hz 500 V	B 9702 2010
RM475LY-21	DC 9.8…84 V	B 9702 2011
RM475LY-23	DC 77…286 V	B 9702 2012
EV22S	Terminating resistor	B 984 800

Dimension diagram

Dimensions in mm