

Residual current monitor

RCM465Y

Residual current monitor
for TN and TT systems
(AC and pulsating DC currents)



RCM465Y

Device features

- Internal measuring current transformer \varnothing 26 mm
- Response values, adjustable 30 mA...300 mA (40...400 Hz)
- Time delay, adjustable 0...1 s
- Alarm relay with one voltage free changeover contact
- N/O operation
- Test button
- Transparent dust cover for ingress protection
- Separate supply voltage
- Type A according to IEC 60755

Approvals



Product description

The residual current monitor RCM465Y is designed for fault current respectively residual current monitoring in small, earthed systems (TN and TT systems) or for single loads. It can also be used for monitoring of single conductors, such as PE conductors, N-PE and PE-PAS (equipotential bonding bar) connections.

The measuring values are detected via measuring current transformers, therefore the devices are nearly independent of load current and nominal voltage of the system.

Application

- Residual current monitoring in earthed two, three or four conductor systems (TN and TT systems)
- Current monitoring of single conductors de-energized under normal conditions
- Monitoring of smaller socket outlet circuits
- Monitoring of individual sub-circuits

Function

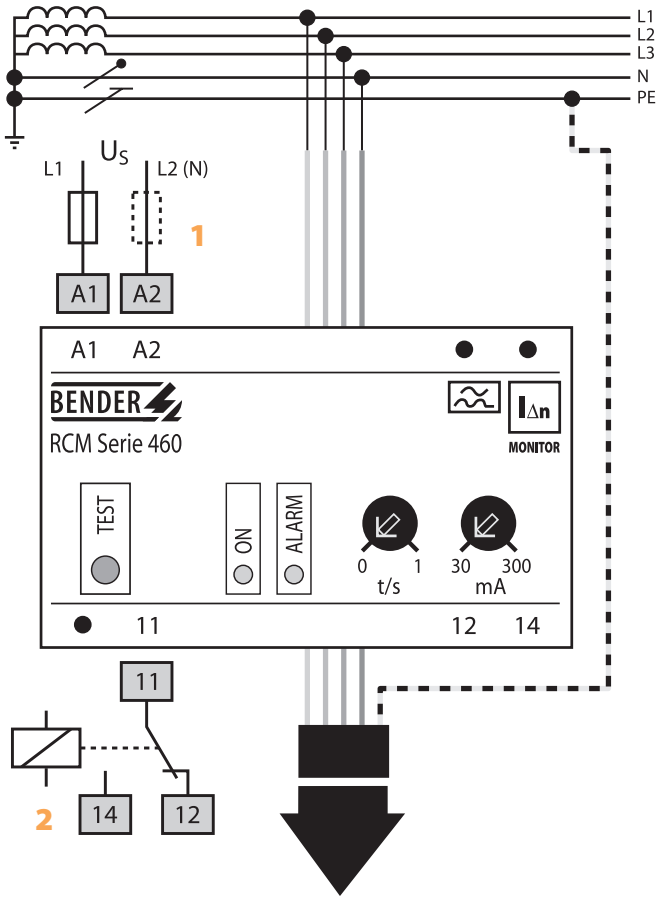
The residual current is measured using an internal measuring current transformer having a diameter of 26 mm. When the current respectively the residual current exceeds the set response value, the alarm LED lights and the alarm relay switches after the expiry of the set response time. The function of the device can be tested by pressing the test button.

Standards and regulations

The residual current monitor RCM465Y complies with the requirements of DIN EN 62020 (VDE 0663): 1999-07, IEC 62020: 2003-11.



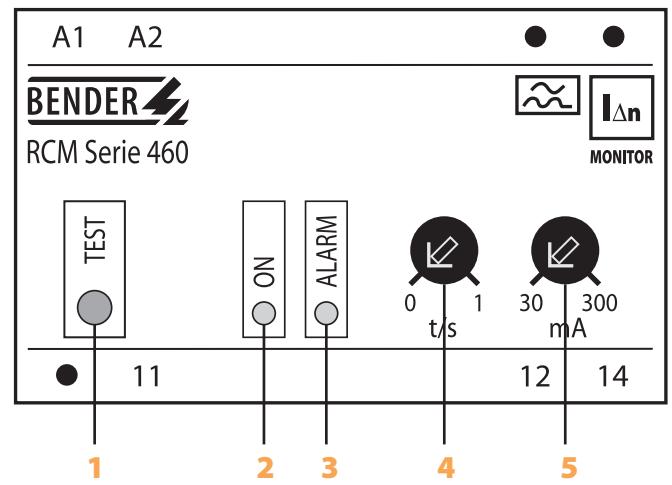
Wiring diagram – system connection, external connections



- 1 - Supply voltage U_s , 6 A fuse (recommended)
- 2 - Alarm relay: switches when the response value is reached

Do not pass the PE conductor through the measuring current transformer!

Wiring diagram – frontplate



- 1 - Test button
- 2 - Power On LED
- 3 - Alarm LED lights when the fault current exceeds the set response value
- 4 - Potentiometer for setting the response delay (0...1 s)
- 5 - Potentiometer for setting response value (30...300 mA)

Technical data residual current monitor RCM465Y

Insulation coordination according to IEC 60664-1:

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

Voltage ranges

Supply voltage U_S	see ordering details
Operating range of U_S	0.85 ... 1.1 x U_S
Frequency range U_S	50 ... 400 Hz
Max. power consumption	1.5 VA

Measuring circuit / response values

Internal diameter of CT	26 mm
Load	220 Ω
Operating characteristics acc. to IEC 60755	type A
Rated residual operating current $I_{\Delta n1}$ (Alarm 1)	30 ... 300 mA
Rated frequency	40 ... 400 Hz
Relative percentage error	0 ... 25 % of the response value
Hysteresis	approx. 25 % of the response value
Response time t_{an} at $I_{\Delta n} = 1 \times I_{\Delta n}$ ($t_v = 0$ s)	< 300 ms
Response time t_{an} at $I_{\Delta n} = 5 \times I_{\Delta n}$ ($t_v = 0$ s)	\leq 40 ms
Response delay t_v , adjustable	0 ... 1 s
Accuracy of response delay	+/- 20 %
Number of measuring channels	1

Displays and LEDs

LEDs	Power On, alarm
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Inputs / outputs

Test button	internal
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Switching elements

Switching elements	1 x 1 changeover contact
Operating principle	N/O operation
Electrical endurance / number of cycles	12000
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

General data

EMC immunity	acc. to EN 61543
EMC emission	acc. to EN 61000-6-4
Shock resistance IEC 60068-2-27 (device in operation)	15 g / 11 ms
Bumping IEC 60068-2-29 (during 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 out of operation)	2 g / 10 ... 150 Hz
Ambient temperature (during operation)	- 10 °C ... + 55 °C
Storage temperature range	- 40 °C ... + 70 °C
Climatic class according to DIN IEC 60721-3-3	3K5
Operating mode	continuous operation
Position	any position
Connection	screw terminals
Cross sectional area of connecting cable	
Rigid / flexible	0.2 ... 4 mm ² / 0.2 ... 2.5 mm ²
Flexible with ferrules without / with plastic collar	0.25 ... 2.5 mm ²
Conductor sizes (AWG)	24 ... 12
Degree of protection, internal components (DIN EN 60529)	IP30
Degree of protection, terminals (DIN EN 60529)	IP20
Enclosure	X465
Enclosure, material	polycarbonate
Screw fixing	2 x M4
DIN rail mounting according to	DIN EN 60715 / IEC 60715
Installation into standard distribution panels acc. to	DIN 43871
Flammability class	UL94V-0
Instruction leaflet No.	401001
Weight	approx. 190 g

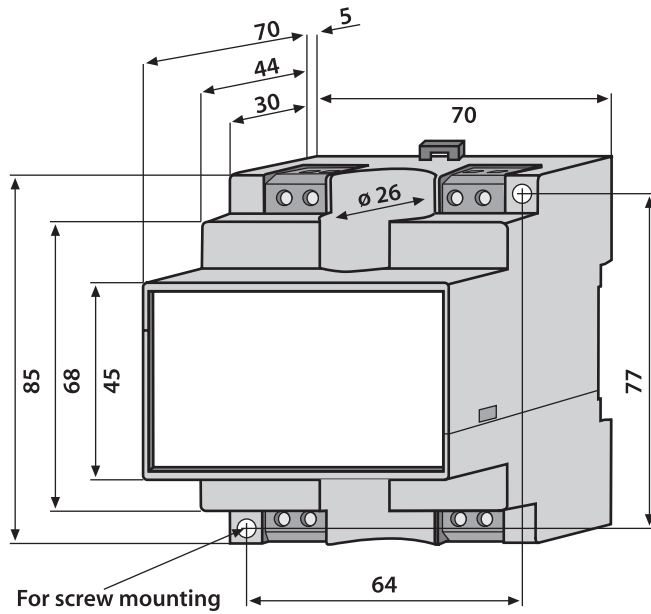
Ordering details

Type	Response range $I_{\Delta n}$	Rated frequency	Time delay	Measuring current transformer	Supply voltage U_S	Art. No.
RCM465Y	30 ... 300 mA	40 ... 400 Hz	0 ... 1 s	Internal \varnothing 26 mm	AC 230 V	B 9401 2023
RCM465Y-13	30 ... 300 mA	40 ... 400 Hz	0 ... 1 s	Internal \varnothing 26 mm	AC 90 ... 132 V*	B 9401 2033

Other supply voltages on request

*absolute values of the operating range

Dimension diagram, enclosure X465



Dimensions in mm