



DATA SHEET

residual current monitors

DRCM 1 A

sensitive to pulsating and alternating currents Type A

Article number 09340250



Function

RCMs (residual current monitors), when used in combination with separate residual current transformers, allow the monitoring of insulation between active conductors and the earth conductor. In contrast to modular residual current devices (MRCDs) or residual current circuit-breakers (RCCBs), they are used where the system either cannot or should not be switched off. In this way, these devices alone are used to monitor or report residual currents and are therefore suitable for preventative maintenance. They are not suitable for implementing protective measure "Automatic switch-off of power supply" as per DIN VDE 0100-410. Series DRCM residual current monitors has a number of usable total current transformers and therefore also a number of conductor cross-sections or rated currents. The bar display provides a view of the current residual current. The alarm is triggered at a fixed response threshold. The current level of the residual current, and the point where the response thresholds are exceeded can be seen on a 10-way LED display on the front of the device housing. A faulty connection to the external residual current transformer is immediately indicated by the alarm LED through a flashing pattern and by the activation of the signal contacts. The adjustable response delay in the range from 0.1 s to 1 s (in increments of 100 ms) makes it possible to prevent a response to brief residual current impulses, e.g. lightning strikes and switching overvoltage. This approach allows for selectivity of devices switched in series, simplifying the localisation of faults. Two independent, potential-free changeover contacts provide the option of passing on the alarm to optional indicator panels, indicator lights, acoustic signalling devices, touch panels, PLCs, etc. Monitors with residual current characteristic A detect sinusoidal AC currents as well as pulsating DC residual currents. Devices in the standard design are intended for monitoring circuits with a rated voltage of 230 V and a rated frequency of 50 Hz.

Features

VDE-certified (DIN EN 62020), suitable for detecting type A residual currents, monitored frequency range 50-60 Hz, rated residual operating current adjustable in five levels (30, 100, 300, 1000 and 3000 mA), residual current transformers with internal diameters of 20, 30, 70 and 105 mm available, rated voltage of monitored circuit up to 690 V, fixed response threshold of alarm between 75% and 100% of the set rated residual operating current ($I_{\Delta n}$), adjustable pre-alarm threshold, alarm relays with two potential-free changeover contacts (230 V AC/5 A), selectivity adjustable in ten levels (0.1 s to 1 s in increments of 100 ms), dependent on auxiliary voltage, compact, robust plastic housing, easy mounting

Mounting

quick fastening to mounting rail, any installation position

Applications

The monitoring device is suitable for use in power supplied to purpose-built buildings and industrial facilities with TN-S, TN-C-S networks and IT networks, such as in server rooms for data centres, laboratories, in the automotive industry and in conjunction with air conditioning systems, printing machines and packaging machines, Not permitted for use in TN-C networks and direct current networks; not permitted for monitoring systems in which electronic equipment may cause DC residual currents or residual currents with frequencies not equal to the rated frequency of the RCCB.

Notes

RCMs may not be used to realise protective measure 'Automatic switch-off of power supply' as per DIN VDE 0100-410 (an RCM does not replace an RCD). Residual currents are detected separately by external residual current transformers from series DCT, which are ordered separately. No more than one transformer can be operated on one evaluation unit. The maximum cable length from the control relay to the transformer is 10 m.

Accessories

residual current transformer DCT Type A, AC

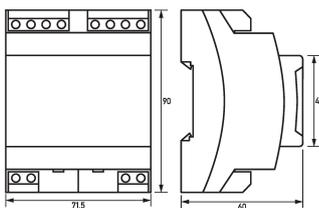
Technical Data

Technical Data	DRCM 1 A
Series	DRCM 1A
Error memory existent	true
Selectivity adjustable	true
Residual operating current characteristics	A
Residual operating current $I_{\Delta n}$ (measuring ranges) AC	0.03 A, 0.1 A, 0.3 A, 1 A, 3 A
Frequency range response residual current Type A	50 Hz ... 60 Hz
Frequency range response residual current Type AC	50 Hz ... 60 Hz
adjustment values delay at $I_{\Delta n} = 30 \text{ mA}$	0.1 s, 0.2 s, 0.3 s, 0.4 s, 0.5 s, 0.6 s, 0.7 s, 0.8 s, 0.9 s, 1 s
adjustment values delay at $I_{\Delta n} \geq 100 \text{ mA}$	0.1 s, 0.2 s, 0.3 s, 0.4 s, 0.5 s, 0.6 s, 0.7 s, 0.8 s, 0.9 s, 1 s
Response threshold range of the pre-alarm	10 % ... 90 %
Response threshold range of the main alarm	80 % ... 100 %
Rated voltage U_n of circuit monitored	0 V ... 690 V
Rated frequency f_n of circuit monitored	50 Hz ... 60 Hz
Control elements	range switch for residual operating current, range switch for pre-alarm threshold, range switch for non-response lag time, reset button, test key
Current transformer external	DCT A-20, DCT A-30, DCT A-35, DCT A-70, DCT A-105, DCT A-140, DCT A-210
Operating voltage (AC)	230 V (85 V ... 264 V)
Operating frequency	50 Hz, 60 Hz
Internal consumption	max. 4 W
Rated impulse withstand voltage	4 kV
	Display pre-alarm, nominal response residual current
Number	2
Type	LED, LED bar display
nominal response residual current range	10 % ... 100 %
	Display main alarm, nominal response residual current
Type	LED, LED bar display, relays
	Display operation
Type	LED
	pre-alarm output
Specification	relays
contact assignment	1 CO
Rated voltage (AC)	230 V
Rated current (AC)	5 A
Rated frequency	50 Hz ... 60 Hz
Overvoltage class	III
min. Rated current 230 V	15 A
	main alarm output
Specification	relays
Rated voltage (AC)	230 V
Rated current (AC)	5 A

Subject to technical changes

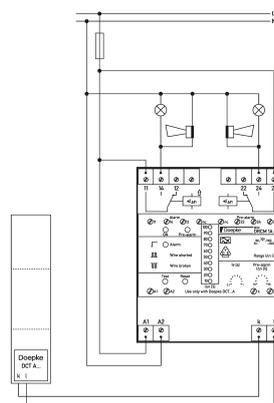
Technical Data	DRCM 1 A
Rated frequency	50 Hz ... 60 Hz
	screw-type terminal (load circuit)
Cross section solid	1-wire: 0.2 mm ² ... 4 mm ²
Cross section flexible with ferrule	0.2 mm ² ... 2.5 mm ²
Tightening torque	max. 0.64 Nm
	screw-type terminal (transformer input)
Cross section solid	1-wire: 0.2 mm ² ... 4 mm ²
Cross section flexible with ferrule	0.2 mm ² ... 2.5 mm ²
Tightening torque	max. 0.64 Nm
	General data
Operating position	optional
max. Operating altitude above MSL	2000 m
Storage temperature	-40 °C ... 85 °C
Ambient temperature	-25 °C ... 65 °C
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	polycarbonate (PC)
Specification housing cover	transparent
Protection class	IP40
sealable	true
Width	71.6 mm
Height	89.7 mm
Depth	62.2 mm
Outer diameter	1.5 mm
Installation depth	62.2 mm
Module widths	4
Design requirements/Standards	EN 62020, EN 60044
Degree of pollution according to EN 60664	2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram

Subject to technical changes