



DATA SHEET

modular residual current devices

DMRCD 1 A Hz

sensitive to pulsating and alternating currents Type A, for frequencies
 $\neq 50$ Hz

Article number 09340353



Function

MRCs (modular residual current devices) consist of a combination of residual current transformers with an evaluation unit and a separate, external switch-off device, e.g. a circuit-breaker. In this configuration, they allow the implementation of the "Protection via the automatic disconnection of the supply" measure as per DIN VDE 0100-410 and IEC 60364-4-41. They are primarily useful when no RCCBs or CRBs can be used due to high load currents or mains voltages. The MRCD detects the residual current and evaluates it in terms of its level and duration. If the residual response current thresholds and the response time are exceeded, it activates a separate switch-off device that disconnects the system part for which it is responsible from the power supply. Modular residual current circuit-breakers of series DMRCD 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. Modular protective devices with residual current characteristic A detect sinusoidal AC currents as well as pulsating DC residual currents. The "Hz" variant is suitable for monitoring circuits with frequencies from 50 Hz to 60 Hz (type A) and from 40 Hz to 2 kHz (type AC). The residual response current is fixed at 2 kHz.

Features

suitable for detecting type A residual currents, monitored frequency range type A 50 Hz - 60 Hz, type AC 40 Hz - 2 kHz, rated residual operating current 30 mA, large selection of different residual current transformers, rated voltage of monitored circuit up to 690 V, with alarm relay, one potential-free changeover contact, selectivity adjustable at ten levels, dependent on auxiliary voltage, compact, robust plastic housing, easy mounting, complies with DIN EN 60947-2 / VDE 0660-101, VDE 0100-410 / IEC 670364-4-41 and VDE 0100-530

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. , especially suitable for use in welding machines, especially suitable for protection of persons and preventative fire control, 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

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. The VDE certification is only fulfilled with approved switch-disconnector combinations and undervoltage trips (see operating instructions). To meet DIN VDE 0100-410, the electrical system must be isolated from the mains by an external isolating device with a response time of less than 15 ms.

Accessories

residual current transformer DCT Type A, AC

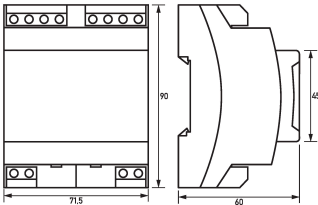
Technical Data

Technical Data		DMRCD 1 A Hz
Series		DMRCD 1 A Hz
Error memory existent		true
Selectivity adjustable		false
adjustment values delay at $I_{\Delta n} = 30 \text{ mA}$		0 s
Response time at $I_{\Delta n} = 30 \text{ mA}$		$1 \cdot I_{\Delta n} = 45 \text{ ms}$; $2 \cdot I_{\Delta n} = 35 \text{ ms}$; $5 \cdot I_{\Delta n} = 25 \text{ ms}$; $10 \cdot I_{\Delta n} = 25 \text{ ms}$
Response time at $I_{\Delta n} \geq 100 \text{ mA}$		adjustment values non-response lag time + 100 ms
Response threshold range of the main alarm		80 % ... 100 %
max. adjustable residual operating current $I_{\Delta \text{adj AC}}$		0.03 A
Frequency range response residual current Type A		50 Hz ... 60 Hz
Frequency range response residual current Type AC		40 Hz ... 2 kHz
Rated frequency of circuit monitored		50 Hz ... 60 Hz
Rated voltage U_{em} of circuit monitored AC		0 V ... 690 V
Control elements		test key, reset button
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 (DC)		24 V (22 V ... 26 V)
Internal consumption		max. 4 W
Rated impulse withstand voltage		4 kV
		Display (main alarm, residual response current)
Number		2
Type		LED, LED bar display, relays
Nominal response residual current range		10 % ... 100 %
		Display (operation)
Type		LED
Overvoltage class		I
		main alarm output
Specification		relays
Number of poles (total)		1
Rated voltage (AC)		230 V
Rated current (AC)		5 A
		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. 0.6 Nm
		screw-type terminal (transformer input)
		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)

Subject to technical changes

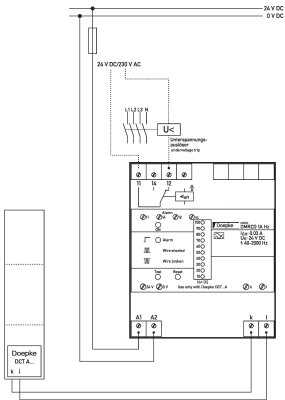
Technical Data		DMRCD 1 A Hz
Housing material		polycarbonate (PC)
Specification housing cover		transparent
Protection class		IP40
sealable		true
Width		71.6 mm
Height		89.7 mm
Depth		62.2 mm
Installation depth		62.2 mm
Module widths		4
Weight		0.191 kg
Design requirements/Standards		EN 60947-2 Annex M, VDE 0660-101 Part M, EN 60664
Degree of pollution		2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram