



DATA SHEET

MFR

pulsating AC/DC-sensitive type A

Article number 09340198



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 from the MFR series have a compact design and an increased rated voltage of up to 500 V AC. The residual response current level is determined by the corresponding transformer selected for this series. The devices also have two potential-free NO contacts for controlling the switch-off device. Modular protective devices with residual current characteristic A detect sinusoidal AC currents as well as pulsating DC residual currents. Devices in standard design are intended for monitoring circuits with a rated voltage of 500 V and a rated frequency of 50 Hz.

Features

suitable for detecting type A and AC residual currents as well as pulsating DC residual currents, connection for external residual current transformer series MFIW, rated residual currents are determined by the transformer, compact design, 2 potential-free contacts, opening when trip occurs, high immunity against transient residual currents

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.

Accessories

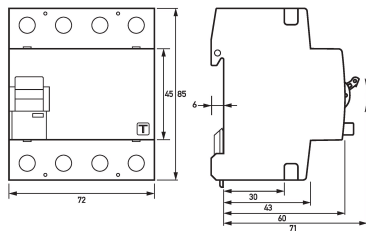
Auxiliary Switches DHi, Residual current transformers MFIW Type A, AC

Technical Data

Technical Data	MFR
Series	MFR
Error memory existent	false
Short-time delayed	true
Residual operating current $I_{\Delta n}$ (settings)	0.3 A, 0.5 A, 1 A
Frequency range response residual current Type A	50 Hz
Frequency range response residual current Type AC	50 Hz
adjustment values delay at $I_{\Delta n} = 30 \text{ mA}$	0 s
Response time (textual)	< 40 ms (for rated residual current)

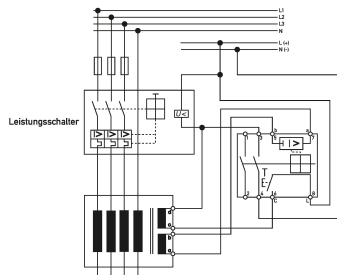
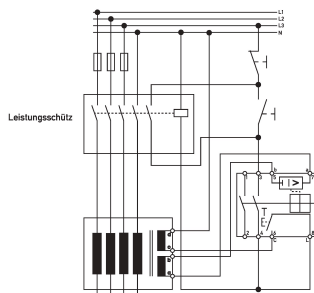
Technical Data	MFR
Rated voltage Un of circuit monitored	199 V ... 500 V
Rated frequency fn of circuit monitored	50 Hz
Current transformer external	MFIW 35/0,3, MFIW 35/0,5, MFIW 35/1,0, MFIW 70/0,3, MFIW 70/0,5, MFIW 70/1,0, MFIW 105/0,3, MFIW 105/0,5, MFIW 105/1,0, MFIW 140/0,3, MFIW 140/0,5, MFIW 140/1,0
Operating voltage (AC)	230 V, 400 V, 500 V
Operating frequency	50 Hz
Rated impulse withstand voltage	4 kV
	Display Switching position
Type	Operating lever
	Main alarm output
Specification	Relay
Rated voltage (AC)	500 V (450 V ... 550 V)
Rated current (AC)	16 A
Rated frequency	50 Hz
Back-up fuse type	B16
Overvoltage class	III
	Screw-type terminal (Load circuit)
Clamping area	1.5 mm ² ... 50 mm ²
Tightening torque	max. 3 Nm
	Screw-type terminal (Transformer input)
Clamping area	1.5 mm ² ... 25 mm ²
Tightening torque	max. 3 Nm
General data description	General data
Operating position	any
max. Operating altitude above MSL	2000 m
Storage temperature	-40 °C ... 85 °C
Ambient temperature	-25 °C ... 40 °C
Housing type	Distributor housing
Mounting type	Mounting rail
Housing material	Polycarbonate (PC)
Protection class	IP20
sealable	true
Width	72 mm
Height	85 mm
Depth	75 mm
Installation depth	71 mm
Width (modules)	4
Design requirements/Standards	EN 60947-2 Appendix M
Degree of pollution according to EN 60664	2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram

Wiring diagram with power contactor