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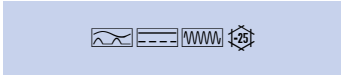


# DATA SHEET

## residual current monitors

### DCTR B-X Hz \*\*\* PoE

#### AC/DC sensitive type B



### Function

RCMs monitor leakage and residual currents flowing between the live conductors and the earth conductor. They are designed for use in installations under the permanent supervision of "Electrically Instructed Persons" - see BS7671 538.4.1.

RCMs are monitoring devices, they do not provide protection - see BS7671 411.1.

DCTR B-X Hz PoE RCMs have an integrated bushing transformer (35 or 70 mm diameter) offering compact design and easy installation. The device continuously detects the value of the differential current (leakage current or residual current) and can be transmitted via the PoE connection to the DCTR Manager software. The response thresholds (set using the software) when exceeded, operate volt-free changeover contacts. A multicoloured LED signals this status locally on the device, (red) or that the device is ready (green). Residual current monitors with characteristic B/B+ detect pulsating and smooth DC residual currents as well as AC residual currents up to 100 kHz. These device variants permit comprehensive configuration of frequencies and frequency range analyses, and adjustment of response thresholds for alarm relays. The Ethernet interface uses the Modbus TCP protocol to communicate between the RCM and the software interface. Circuits permanently monitored by an RCM do not require periodic insulation tests - see BS7671 651.2.

### Features

Suitable for detecting Type B residual currents, monitored frequency range 0 Hz – 100 kHz, Rated voltage of monitored circuit up to 690 V, compact, robust plastic housing, easy mounting, Configuration of various settings and sending of residual current values over Ethernet, 2 configurable alarm relays with potential-free changeover contacts, Operating voltage from PoE (Power over Ethernet) or direct 24 V DC connection. Test Button for functional validation - see BS7671 651.2.

### Mounting

The devices are mounted on stable backplate using the mounting brackets supplied.

### Applications

RCMs can be used to monitor and report leakage and residual currents where the system either cannot or should not be switched off: Commercial and services buildings, industrial facilities with TN-S, TN-C-S networks, IT networks and direct current networks, such as in server rooms for data centres, laboratories, in the automotive industry and in conjunction with photo-voltaic and UPS systems with frequency converters without transformers, air conditioning systems, frequency converters, switching power supplies, high-frequency converters, printing machines and packaging machines. , Suitable for monitoring DC circuits and systems in which electronic equipment may generate smooth DC residual currents or residual currents with frequencies not equal to 50 Hz.

### Notes

Custom configuration is via the free DCTR Manager software- Down load software [www.doepke.de/en/downloads/dctr-manager/](http://www.doepke.de/en/downloads/dctr-manager/)

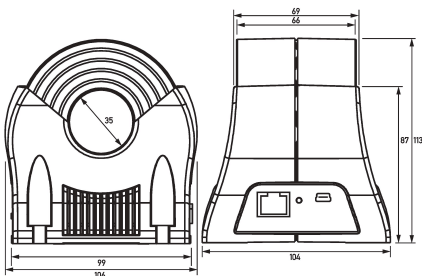
### Technical Data

Technical Data	DCTR B-X Hz ***-PoE	
Series	DCTR B-X Hz 035-PoE	DCTR B-X Hz 070-PoE
Operating mode RCM	standalone	
Error memory existent	false	
Selectivity adjustable	false	
Residual operating current characteristics	B	
Residual operating current I $\Delta$ n (measuring ranges) AC	0.3 A, 1 A, 3 A, 10 A, 30 A	

Technical Data	DCTR B-X Hz ***-PoE
Residual operating current I <sub>Δn</sub> (measuring ranges) DC	0.3 A, 3 A
Number of selective frequency ranges	7
Frequency range response residual current Type A	0 Hz ... 100 kHz
Frequency range response residual current Type AC	0 Hz ... 100 kHz
Frequency range response residual current Type B	0 Hz ... 100 kHz
Rated voltage U <sub>n</sub> of circuit monitored	0 V ... 690 V
Rated frequency f <sub>n</sub> of circuit monitored	0 Hz ... 400 Hz
Control elements	test key
	serial interface (Ethernet (LAN))
Serial IF IF1 Protocols	Modbus TCP
Serial IF IF1 Ethernet rate	10BASE-T, 100BASE-TX
	Supply voltage (PoE (Ethernet interface), external adaptor)
PoE variant	802.3 af (PoE)
Operating voltage (DC)	24 V (21.6 V ... 26.4 V)
Internal consumption	max. 3.5 W
Rated impulse withstand voltage	1.5 kV
Over voltage category	III
	Display status output
Type	LED (green, orange, red)
	transformer, primary side
rated impulse withstand voltage	8 kV
rated insulation voltage	700 V
Overvoltage class	IV
Rated current	DCTR B-X Hz 035-PoE = 200 A                      DCTR B-X Hz 070-PoE = 400 A
Measurement accuracy	AC: ± 5%, DC (< 2A): ± 5%, DC (≥ 2A): ± 10%
Frequency filter: Type 1 / cut-off frequency (-3 dB)	Butterworth, third-order / < 100 Hz, 100 Hz ... 1 kHz, > 1 kHz, > 10 kHz
Frequency filter: Type 2 / cut-off frequency (-3 dB)	Butterworth, fourth-order / 25 ... 100 Hz (rated 50/60 Hz) 85... 320 Hz (rated 150/180 Hz)
	supply
Galvanically separated	false
Rated voltage (DC)	24 V (21.6 V ... 26.4 V)
	alarm output
Specification	relays
Number	2
response delay relay	Adjustable from 0.5 s to 5.0 s in 0.5 s increments
drop delay relay	5 s
contact assignment	1 CO
Rated voltage (AC)	30 V
Rated voltage (DC)	30 V
Rated current (AC)	1 A
Rated current (DC)	1 A
	plug-in terminal (power supply, switching output)
Connection design	female
Allowed types of wires	flexible conductor, solid conductor

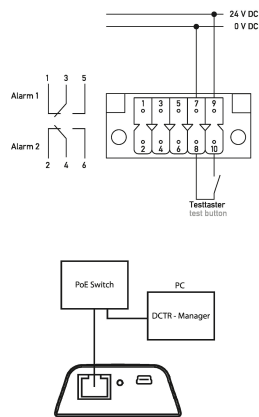
Technical Data		DCTR B-X Hz 035-PoE	
Cross section solid	1-wire: 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>		
Cross section stranded	1-wire: 0.2 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>		
RJ45 (Ethernet connection, power supply)			
Connection design	female		
max. cable length	100 m		
General data			
Operating position	optional		
max. Operating altitude above MSL	2000 m		
Storage temperature	-40 °C ... 85 °C		
Ambient temperature	-25 °C ... 70 °C		
Housing type	surface-mounted housing		
Installation type	surface-mounting		
Housing material	polycarbonate (PC)		
Protection class	IP20		
Dimensions	DCTR B-X Hz 035-PoE		DCTR B-X Hz 035-PoE
Width	99 mm		134 mm
Height	113 mm		143 mm
Depth	104 mm		104 mm
Installation depth	113 mm		143 mm
Inside diameter	35 mm		70 mm
Design requirements/Standards	EN 55024, EN 62020, EN 61000-4-3, EN 61000-4-6,		
Degree of pollution according to EN 60664	2		

**Dimensions DCTR B - X Hz 035-PoE**



Dimensional drawing Group view

**Wiring example**



Wiring diagram Pin assignment for ten-pin female connector (de-energised)

Wiring diagram PoE switch and PC with DCTR-Manager

**Dimensions DCTR B - X Hz 035-PoE**

