DATA SHEET

circuit-breakers with residual current trip
DFL 8 160-4/0,03-A

sensitive to pulsating and alternating currents Type A

Article number 09184781

Function

CBRs (circuit-breakers with integral residual current protection) are circuit-breakers with a magnetic and thermal overcurrent trip and a residual current trip. The circuit-breaker with residual current trip is used for overcurrent protection of equipment, cables and lines in accordance with DIN VDE 0100-430 and for protection against electrical shock by automatic switch-off of the power supply as per DIN VDE 0100-410. This series contains compact devices for rated currents up to 250 A with integrated auxiliary switch and terminals for large cable cross-sections. The devices are preferably mounted on a mounting plate. Type A residual current circuit-breakers are sensitive to pulsating and alternating currents. This function is independent of the mains voltage. Switches of this variant have a fixed residual response current of 30 mA for the protection of persons. They therefore provide fault and fire protection as well as additional protection (personal protection, protection in the event of direct contact). Standard variant devices are designed for the monitoring of circuits with a rated voltage of 400 V/690 V and a rated frequency of 50 Hz.

Features

fixed rated residual current of 0.03 A , type range with rated currents from 100 A to 250 A, four-pole, rated voltage 400/690 V AC, detection of AC residual currents and pulsating DC residual currents, function range of the residual current trip 0-690 V, function range of the residual current operated protective device 280-690 V, trip independent of the mains voltage and auxiliary voltage when overcurrent and residual currents occur , high short-circuit switching capacity, terminals up to 185 mm² , high surge current strength, i.e. low tendency to faulty trips due to transient residual currents , thresholds adjustable for instantaneous and slow-blow overcurrent trip , integrated auxiliary switches

Mounting

mounting on mounting plate, any installation position , supply from any direction

Applications

power supplies to purpose-built buildings as well as industrial facilities with TN-S, TT and TN-C-S networks with high short-circuit power , In IT networks, the residual current trip of the CBR can be set to switch off in the event of a second earth fault. , use for residual current protection in TN-C networks is excluded

Notes

The type A CBR does not provide comprehensive protection in systems containing electronic equipment can cause smooth DC residual currents or residual currents with frequencies not equal to 50 Hz. For these applications we recommend our AC/DC sensitive CBR type B.

Accessories

housing N-7

Technical Data

Technical Data	DFL 8 160-4/0,03-A
Series	DFL 8 A
Number of poles	4
Residual current type	A
Rated current (AC)	160 A
Rated residual current IΔn	0.03 A
Short-time delayed	true
Selective	false
min. Operating voltage range of test circuit	280 V

Technical Data	DFL 8 160-4/0,03-A
max. Operating voltage range of test circuit	759 V
Non-trip time	10 ms
Selectivity adjustable	false
Response delay	1 · IΔn: 0 ms < T ≤ 300 ms; 5 · IΔn: 0 ms < T ≤ 40 ms
Adjustment range of overload tripping	0.8 ... 1
Adjustment range of short-circuit tripping	6 ... 10
Power dissipation Pv release	55 W
Rated operation short-circuit disconnecting capacity Ics	85 kA at Rated operation short-circuit disconnecting capacity Ics (240 V AC); 50 kA at Rated operation short-circuit disconnecting capacity Ics (400/415 V AC); 35 kA at Rated operation short-circuit disconnecting capacity Ics (440 V AC); 25 kA at Rated operation short-circuit disconnecting capacity Ics (525 V AC) 5 kA at Rated operation short-circuit disconnecting capacity Ics (690 V AC)
Rated short-circuit disconnecting capacity limit Icu	85 kA at Rated short-circuit disconnecting capacity limit Icu (240 V AC); 50 kA at Rated short-circuit disconnecting capacity limit Icu (400/415 V AC); 35 kA at Rated short-circuit disconnecting capacity limit Icu (440 V AC); 25 kA at Rated short-circuit disconnecting capacity limit Icu (525 V AC) 20 kA at Rated short-circuit disconnecting capacity limit Icu (690 V AC)
Rated short-circuit connection and disconnection capacity IΔm	85 kA at Rated short-circuit connection and disconnection capacity Idm (240 V AC); 50 kA at Rated short-circuit connection and disconnection capacity Idm (400/415 V AC); 35 kA at Rated short-circuit connection and disconnection capacity Idm (440 V AC); 25 kA at Rated short-circuit connection and disconnection capacity Idm (525 V AC) 20 kA at Rated short-circuit connection and disconnection capacity Idm (690 V AC)
Operating voltage (AC)	690 V (max. 759 V)
Operating frequency	50 Hz
Rated insulation voltage	1000 V
	Display (status output)
Number	1
Type	operating lever (black)
	load circuit
Specification	load disconnect contact
Rated voltage (AC)	400 V, 690 V
Tolerance of rated voltage	max. 10 %
Rated current (AC)	160 A
Surge current strength	5 kA
Rated impulse withstand voltage	8 kV
Rated frequency	50 Hz
Current heat loss per current path	12.8 W
Electrical endurance AC-1	7500 Schaltspiele
Short-circuit backup-fuse SCPD	250 A
Back-up fuse type	gG
Back-up fuse (textual)	only required if the short-circuit current to be expected at the installation location exceeds the switching capacity of the circuit-breaker
Overvoltage class	III
	auxiliary switches
Specification	switching contact
Rated insulation voltage	500 V
Rated impulse withstand voltage	6 kV
Allowed utilization category	AC-15, DC-13
Rated current (AC-15)	6 A (230 V); 4 A (400 V) 2 A (500 V)
Rated current (DC-13)	3 A (24 V); 0.8 A (110 V) 0.3 A (220 V)

Technical Data	DFL 8 160-4/0,03-A
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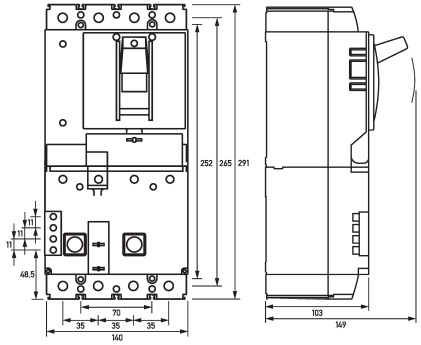
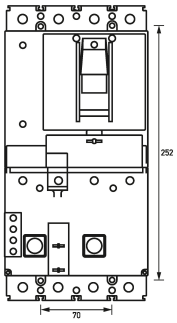
Rated short-circuit connection and disconnection capacity IΔm	85 kA at Rated short-circuit connection and disconnection capacity Idm (240 V AC); 50 kA at Rated short-circuit connection and disconnection capacity Idm (400/415 V AC); 35 kA at Rated short-circuit connection and disconnection capacity Idm (440 V AC); 25 kA at Rated short-circuit connection and disconnection capacity Idm (525 V AC) 20 kA at Rated short-circuit connection and disconnection capacity Idm (690 V AC)
	box terminal top and bottom (load circuit)
Neutral conductor position	left
Protection against direct contact	finger and back-of-hand proof
Allowed types of wires	aluminium conductor, copper conductor, solid conductor, flexible conductor, stranded conductors with ferrule
Clamping area	4 mm² ... 185 mm²
Connection C1 Maximum number of conductors per terminal	2
Cross section solid	1-wire: 4 mm² ... 16 mm²; 2-wire: 4 mm² ... 16 mm²
Cross section stranded	1-wire: 25 mm² ... 185 mm²; 2-wire: 25 mm² ... 70 mm²
Tightening torque	max. 14 Nm
	screw-type terminal left (auxiliary switches)
Protection against direct contact	finger and back-of-hand proof
Clamping area	0.75 mm² ... 2.5 mm²
Connection C2 Maximum number of conductors per terminal	2
Cross section solid	1-wire: 0.75 mm² ... 2.5 mm²; 2-wire: 0.75 mm² ... 1.5 mm²
Connecting capacity flexible	2-wire: 0.75 mm² ... 1.5 mm²
Cross section flexible with ferrule	0.75 mm² ... 2.5 mm²
Cross section stranded	1-wire: 0.75 mm² ... 2.5 mm²; 2-wire: 0.75 mm² ... 1.5 mm²
Tightening torque	max. 0.8 Nm
	General data
Operating position	90° tilted, vertical
max. Operating altitude above MSL	2000 m
Mechanical endurance	min. 2000 switching cycles
Electrical endurance	min. 2000 switching cycles
Surrounding atmosphere	normal environmental conditions
Storage temperature	-25 °C ... 70 °C
Ambient temperature	-25 °C ... 70 °C
Climate resistance	constant as per IEC 60068-2-78, cyclical as per IEC 60068-2-30
Shock resistance	20 g / 20 ms Duration
Fatigue limit	1,0 g (f = 2 - 100 Hz) (IEC 60068-2-6)
Housing type	wall-mounted housing
Installation type	Wall mounting
Protection class	IP20 (installed: IP40)
sealable	true
Width	140 mm

Technical Data	DFL 8 160-4/0,03-A
Height	291 mm
Depth	103 mm
Installation depth	149 mm
Weight	5.6 kg
Design requirements/Standards	DIN IEC 60755, EN 60947-2, EN 60947-2 Annex B, VDE 0660-101
Degree of pollution	3

Dimensions

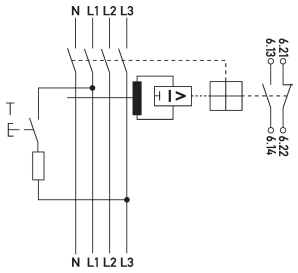




Dimensional drawing Group view

Dimensional drawing Drilling template

Wiring example



Wiring diagram