DATA SHEET

residual current circuit-breaker

DFS 4 125-4/0,30-A S FT

Article number 09176943

10000 25 S G

Function

Residual current circuit-breakers (RCCBs) are components for implementing protective measure "Automatic disconnection of the power supply" as per VDE 0100 part 410 or corresponding international installation regulations. Series DFS 4 devices are compact two or four-pole residual current circuit-breakers. In the standard design, they only take up four module width units of space. Although DFS 4 devices for AC and pulsating DC residual currents are actually designed for three-phase networks, they can also be used in single-phase networks. However, in addition to these, special variants are also available for single or three-phase operation in the form of the AC/DC sensitive designs (type B, type B+). In spite of the compact dimensions, a number of different tripping currents and characteristics are available at rated currents, depending on the design, up to 125 A. They also have large two-tier terminals for large conductor cross-sections, a practical multi-functional switch toggle and can be provided with labels using free-of-charge software. Type A residual current circuit-breakers are sensitive to pulsating and alternating currents. This function is independent of the mains voltage. With the FT design, the connections of the internal test key are wired to two terminals, so that the test device can be activated externally. An auxiliary contact also signals disconnection of the circuit-breaker. In order to trip, selective residual current circuit-breakers need the residual current to flow for longer than in the case of instantaneous breakers. Selective switch-off is therefore possible in systems with stacked distribution boards, i.e. when RCCBs are connected in series, only the RCCB responsible for the system section of the earth fault immediately downstream of it trips if a fault occurs. Due to their long switch-off times and high rated residual currents, selective residual current circuit-breakers only provide fire protection and fault protection (protection in the case of indirect contact). Additional protection (in the case of direct contact, personal protection) is therefore not provided.

Features

help function integrated, pin assignment 1 break contact/1 changeover contact , tripping not dependent on mains and auxiliary voltage, sensitive to AC residual currents and pulsating DC residual currents (type A) , compact design for all rated currents, high short-circuit resistance, double-sided two-tier terminals for large conductor cross-section and busbar, switch position indicator, viewing window for labels, multifunction switch toggle with three positions: "on", "off" and "tripped", Neutral conductor position left

Mounting

quick fastening to mounting rail, any installation position, supply from any direction

Applications

Power supplies to residential and purpose-built buildings as well as industrial facilities with TN-S, TT and TN-C-S networks. In IT networks, the residual current circuit-breakers of this series can be set to switch off in the event of a second fault, RCCBs from the FT series are especially suitable for the remote switch-off of systems and parts of systems and for being tripped by hazard alarms, amongst other devices, Excluded is the application in TN-C systems and for the protection of installations in which electronic equipment could generate smooth DC currents or residual currents with frequencies other than 50 Hz. Comprehensive protection is not provided in this case. For these applications we recommend our AC/DC sensitive residual current circuit-breakers (Type B or B+).

Notes

Devices for FT variants must not be used in emergency-stop positions. The type-A and type-B NA variants are available for this purpose, The contacts of the external command device must be designed for a rated residual current ≥ 0.5 A and for the rated voltage of the residual current circuit-breaker.

Accessories

terminal caps KA, information stickers HAS, restart locks DFS WES, software DBS

Technical Data

Technical Data	DFS 4 125-4/0,30-A S FT
Series	DFS 4 A S FT

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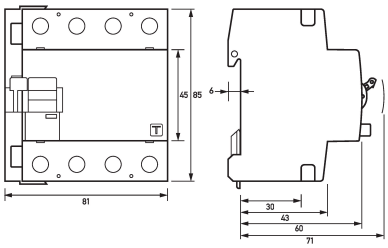
Number of poles	4
Residual current type	A
Rated current (AC)	125 A
Rated residual current IΔn	0.3 A
Short-time delayed	false
Selective	true
min. Operating voltage range of test circuit	200 V
max. Operating voltage range of test circuit	440 V
Non-trip time	50 ms
	control input
Rated voltage (AC)	400 V
	load circuit
Specification	load disconnect contact
min. Contact opening	4 mm
Rated voltage (AC)	230 V, 400 V
Rated current (AC)	125 A
Rated short-circuit current	10 kA
Surge current strength	0.25 kA
max. Total rated switching capacity	1250 A
Rated insulation voltage	400 V
Rated impulse withstand voltage	4 kV
Rated frequency	50 Hz
Current heat loss per current path	11.2 W
Thermal Backup-fuse OCPD	80 A
Short-circuit backup-fuse SCPD	125 A
Back-up fuse type	gG
	remote trip
Specification	switching contact
Contact assignment	1 NC
Tolerance of rated voltage	max. 5 %
	screw-type terminal top and bottom (load circuit)
Neutral conductor position	left
Protection against direct contact	DGUV V3, VDE 0660-514, finger and back-of-hand proof
Connection C1 Maximum number of conductors per terminal	2 (conductors of same type and cross-section)
Cross section solid	1-wire: 1.5 mm² ... 50 mm²; 2-wire: 1.5 mm² ... 16 mm²
Connecting capacity flexible	1-wire: 1.5 mm² ... 50 mm²; 2-wire: 1.5 mm² ... 16 mm²
Cross section stranded	1-wire: 1.5 mm² ... 50 mm²; 2-wire: 1.5 mm² ... 16 mm²
Cross section AWG, solid	15 ... 1
Cross section AWG, stranded	15 ... 1
Cross section AWG, flexible	15 ... 1
Cross section AWG, flexible with ferrule	15 ... 1
Tightening torque	2.5 Nm ... 3 Nm
	screw-type terminal top, bottom (remote trip)
Protection against direct contact	DGUV V3, VDE 0660-514, finger and back-of-hand proof

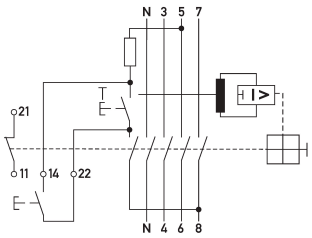
Technical Data	DFS 4 125-4/0,30-A S FT
Connection C2 Maximum number of conductors per terminal	2 (conductors of same type and cross-section)
Cross section solid	1-wire: 1 mm² ... 1.5 mm²; 2-wire: 1 mm² ... 1.5 mm²
Cross section flexible with ferrule	1 mm² ... 1.5 mm²
Cross section stranded	1-wire: 1 mm² ... 1.5 mm²; 2-wire: 1 mm² ... 1.5 mm²
Cross section AWG, solid	17 ... 16
Cross section AWG, stranded	17 ... 16
Cross section AWG, flexible with ferrule	17 ... 16
Tightening torque	max. 0.8 Nm
	General data
Operating position	optional
max. Operating altitude above MSL	2000 m
Mechanical endurance	min. 5000 cycles
Electrical endurance	min. 2000 cycles
Surrounding atmosphere	normal environmental conditions
Storage temperature	-35 °C ... 75 °C
Ambient temperature	-25 °C ... 40 °C
Climate resistance	according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)
Shock resistance	20 g / 20 ms Duration
Fatigue limit	> 5 g (f ≤ 80 Hz, duration > 30 min.)
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP20 (installed: IP40)
sealable	true
Width	81 mm
Height	85 mm
Depth	75 mm
Installation depth	69 mm
Module widths	4.5
Weight	0.5 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1
Degree of pollution	2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram