



DATA SHEET

residual current circuit-breaker

DFS 4 040-4/0,30-A HD

sensitive to pulsating and alternating currents Type A, for harsh environments

Article number 09136901HD



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. Devices in the standard design are intended for monitoring circuits with a rated voltage of 230 V, 400 V and a rated frequency of 50 Hz. With an airtight, encapsulated tripping mechanism from a special alloy and the stainless steel latch, residual current circuit-breakers in HD design are protected, in particular from corrosion, corrosive gases, moisture and extreme temperature fluctuations.

Features

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, 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+).

Accessories

automatic reclosing devices DFA, terminal caps KA, information stickers HAS, auxiliary switches DHi, restart locks DFS WES, software DBS

Technical Data

Technical Data	DFS 4 040-4/0,30-A HD
Series	DFS 4 A HD
Number of poles	4
Residual current type	A
Rated current (AC)	40 A
Rated residual current I _{Δn}	0.3 A
Short-time delayed	false
Selective	false

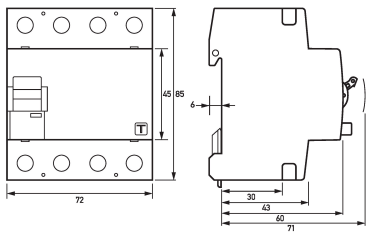
Subject to technical changes

Technical Data		DFS 4 040-4/0,30-A HD
min. Operating voltage range of test circuit		200 V
max. Operating voltage range of test circuit		440 V
Maximum disconnection times		1 · IΔn: ≤ 300 ms; 5 · IΔn: ≤ 40 ms
		load circuit
Specification		load disconnect contact
min. Contact opening		4 mm
Rated voltage (AC)		230 V, 400 V
Rated current (AC)		40 A
Rated short-circuit current		10 kA
Surge current strength		0.25 kA
max. Total rated switching capacity		500 A
Rated insulation voltage		400 V
Rated impulse withstand voltage		4 kV
Rated frequency		50 Hz
Current heat loss per current path		1.2 W
Thermal Backup-fuse OCPD		40 A
Short-circuit backup-fuse SCPD		100 A
Back-up fuse type		gG
		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
		General data
Operating position		optional
max. Operating altitude above MSL		2000 m
Mechanical endurance		min. 5000 cycles
Electrical endurance		min. 2000 cycles
Surrounding atmosphere		harsh environmental conditions
Storage temperature		-35 °C ... 75 °C
Ambient temperature		-25 °C ... 60 °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

Subject to technical changes

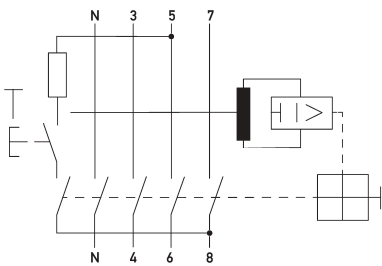
Technical Data		DFS 4 040-4/0,30-A HD
Protection class		IP20 (installed: IP40)
sealable		true
Width		72 mm
Height		85 mm
Depth		75 mm
Installation depth		69 mm
Module widths		4
Weight		0.4 kg
Design requirements/Standards		VDE 0664-10, DIN EN 61008-1
Degree of pollution		2
Certifications		VDE

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram