



## DATA SHEET

### residual current circuit-breaker

#### DFS 2 016-2/0,01-A Hz400

sensitive to pulsating and alternating currents Type A, for frequencies  
 $\neq 50$  Hz

Article number 09112637



#### 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 2 devices are compact two-pole residual current circuit-breakers for single-phase networks. In the standard design, they only take up two module-width units of space. 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 Hz design are intended for rated mains frequencies other than 50 Hz. Common frequencies are 60 or 400 Hz; devices for other frequencies can be manufactured upon request. The frequency range for tripping current detection remains unaffected by this. Devices in the standard design are intended for monitoring circuits with a rated voltage of 230 V or 400 V.

#### 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 or right

#### Mounting

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

#### Applications

Power supplies to TT, TN-S and TN-C-S networks with mains frequencies  $> 50$  Hz, Not permitted for use in TN-C networks and for protecting systems in which electronic equipment may cause smooth DC residual currents or residual currents with frequencies not equal to 50 Hz. Comprehensive protection is not provided with an RCCB Type A. For these applications we recommend our residual current circuit-breakers Type F or our AC/DC sensitive residual current circuit-breakers Type B/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 2 016-2/0,01-A Hz400
Series	DFS 2 A Hz
Number of poles	2
Residual current type	A
Rated current (AC)	16 A
Rated residual current $I_{\Delta n}$	0.01 A
Short-time delayed	false
Selective	false
min. Operating voltage range of test circuit	100 V
max. Operating voltage range of test circuit	250 V

Subject to technical changes

Technical Data		DFS 2 016-2/0,01-A Hz400
Maximum disconnection times		$5 \cdot I\Delta n: \leq 40 \text{ ms}$
		<b>load circuit</b>
Specification		load disconnect contact
min. Contact opening		4 mm
Rated voltage (AC)		230 V
Rated current (AC)		16 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		150 Hz ... 400 Hz
Current heat loss per current path		1.2 W
Thermal Backup-fuse OCPD		16 A
Short-circuit backup-fuse SCPD		63 A
Back-up fuse type		gG
		<b>screw-type terminal top and bottom (load circuit)</b>
Neutral conductor position		left or right
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 mm <sup>2</sup> ... 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Connecting capacity flexible		1-wire: 1.5 mm <sup>2</sup> ... 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
Cross section stranded		1-wire: 1.5 mm <sup>2</sup> ... 50 mm <sup>2</sup> ; 2-wire: 1.5 mm <sup>2</sup> ... 16 mm <sup>2</sup>
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
		<b>General data</b>
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		36 mm

Subject to technical changes

Technical Data	DFS 2 016-2/0,01-A Hz400
Height	85 mm
Depth	75 mm
Installation depth	69 mm
Module widths	2
Weight	0.262 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1
Degree of pollution	2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram