



DATA SHEET

residual current circuit-breaker

DFS 4 040-4/0,03-A ASA12 HD

sensitive to pulsating and alternating currents Type A, With operating current trip and Auxiliary switch, for harsh environments

Article number 09134855HD



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. In the ASA variant, the DFS is triggered when an external voltage is applied to the corresponding connection terminals of the additional module. The LED integrated in the RCCB indicates tripping caused by a control element. In this state, reclosing of the RCCB is prevented. The DFS 4 A ASA series also has an integrated auxiliary switch. 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

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

Technical Data

Technical Data	DFS 4 040-4/0,03-A ASA12 HD
Series	DFS 4 A ASA
Number of poles	4
Residual current type	A
Rated current (AC)	40 A
Rated residual current IΔn	0.03 A
Short-time delayed	false

Subject to technical changes

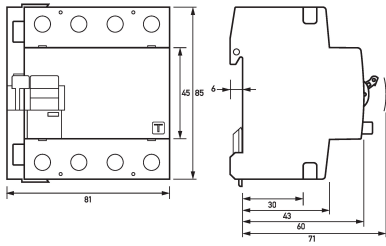
Technical Data		DFS 4 040-4/0,03-A ASA12 HD
min. Operating voltage range of test circuit		250 V
max. Operating voltage range of test circuit		440 V
		auxiliary device (Shunt release, Auxiliary switch)
		Control input (operating current trip)
Number		1
Rated voltage (DC)		12 V
Rated power		0.1 W
		load 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
		Auxiliary switch (operating current trip)
Specification		switching contact
Number of poles (total)		1
Rated voltage (AC)		230 V
Rated voltage (DC)		110 V
Rated current (AC)		max. 6 A
Rated current (DC)		max. 1 A
Current heat loss per current path		0.54 W
Back-up fuse (short-circuit)		6 A
Back-up fuse type		gL
		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 mm ² ... 50 mm ² ; 2-wire: 1.5 mm ² ... 16 mm ²
Connecting capacity flexible		1-wire: 1.5 mm ² ... 50 mm ² ; 2-wire: 1.5 mm ² ... 16 mm ²
Cross section stranded		1-wire: 1.5 mm ² ... 50 mm ² ; 2-wire: 1.5 mm ² ... 16 mm ²
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

Subject to technical changes

Technical Data	DFS 4 040-4/0,03-A ASA12 HD
	screw-type terminal top and bottom (Operating current trip, auxiliary switches)
max. Cable length	500 m
Allowed types of wires	solid conductor, flexible conductor, stranded conductors with ferrule
Connection C2 Maximum number of conductors per terminal	2 (conductors of same type and cross-section)
Cross section solid	1-wire: 1 mm ² ... 1.5 mm ² ; 2-wire: 1 mm ² ... 1.5 mm ²
Cross section flexible with ferrule	1 mm ² ... 1.5 mm ²
Cross section stranded	1-wire: 1 mm ² ... 1.5 mm ² ; 2-wire: 1 mm ² ... 1.5 mm ²
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
Thickness busbar	min. 0.8 mm
	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
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	0.461 kg
Design requirements/Standards	VDE V 0664-120, DIN EN 61008-1
Degree of pollution	2

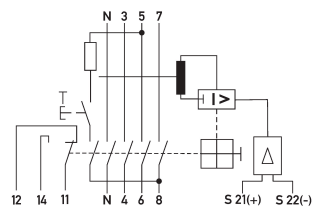
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Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram