



## DATA SHEET

### residual current circuit-breaker

#### DFS 2 040-2/0,03-A Hz60 V120 HD

sensitive to pulsating and alternating currents Type A, for frequencies  $\neq 50$  Hz, Rated voltage  $\neq 230$  V/400 V, for harsh environments

Article number 09134031HD



#### 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 design V are made for special voltages. 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 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 2 040-2/0,03-A Hz60 V120 HD
Series	DFS 2 A Hz V HD
Number of poles	2
Residual current type	A
Rated current (AC)	40 A
Rated residual current $I_{\Delta n}$	0.03 A
Short-time delayed	false
Selective	false
min. Operating voltage range of test circuit	100 V
max. Operating voltage range of test circuit	150 V
Maximum disconnection times	$5 \cdot I_{\Delta n} \leq 40$ ms

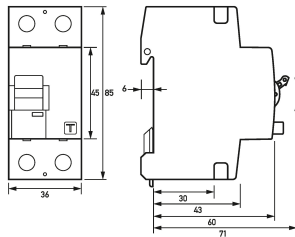
Subject to technical changes

Technical Data	DFS 2 040-2/0,03-A Hz60 V120 HD
	<b>load circuit</b>
Specification	load disconnect contact
min. Contact opening	4 mm
Rated voltage (AC)	120 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	60 Hz
Current heat loss per current path	1.1 W
Thermal Backup-fuse OCPD	40 A
Short-circuit backup-fuse SCPD	100 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	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	36 mm
Height	85 mm

Subject to technical changes

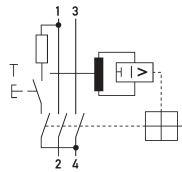
Technical Data	DFS 2 040-2/0,03-A Hz60 V120 HD
Depth	75 mm
Installation depth	69 mm
Module widths	2
Weight	0.259 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1
Degree of pollution	2

## Dimensions



Dimensional drawing Group view

## Wiring example



Wiring diagram