



**DATA SHEET**  
**residual current circuit-breaker**  
**DFS 2 040-2/0,30-AC S**  
**sensitive to residual currents Type AC, selective**  
**Article number 09136606**



**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. Switches with residual current characteristic AC only detect AC residual currents. They cannot detect pulsating DC residual currents so are not permitted for use as residual current operated protective devices in Germany. They are therefore only available as export models. 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**

response delay for selective design, high immunity against surge currents and mains-voltage-operated secondary current impulses , tripping not dependent on mains and auxiliary voltage, sensitive to AC residual currents (type AC) , 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**

Main distribution boards in extended power supplies with TN-S, TT and TN-C-S systems, such as campsites, marinas, allotment gardens and showrooms. Selective residual current circuit-breakers in most cases protect the cables from the main distribution board to the sub-distribution boards, Not permitted for use in TN-C networks; not permitted for protecting systems in which electronic equipment may cause pulsating or smooth DC residual currents or residual currents with frequencies not equal to 50 Hz. Comprehensive protection is not provided with an RCCB type AC. For these applications we recommend our residual current circuit-breaker type A or our AC/DC sensitive residual current circuit-breaker type B/B+.

**Notes**

To ensure the selectivity of the RCCB, the rated residual current of the selective RCCB must be set at least one level higher than the downstream instantaneous switch.

**Accessories**

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

**Technical Data**

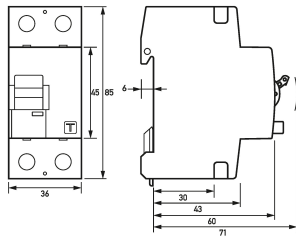
Technical Data	DFS 2 040-2/0,30-AC S
Series	DFS 2 AC S
Number of poles	2
Residual current type	AC

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Rated current (AC)	40 A
Rated residual current $I_{\Delta n}$	0.3 A
Short-time delayed	false
Selective	true
min. Operating voltage range of test circuit	100 V
max. Operating voltage range of test circuit	250 V
Non-trip time	50 ms
Maximum disconnection times	$1 \cdot I_{\Delta n} \leq 500 \text{ ms}; 5 \cdot I_{\Delta n} \leq 150 \text{ ms}$
Response delay	$1 \cdot I_{\Delta n}: 130 \text{ ms} < T \leq 500 \text{ ms}; 5 \cdot I_{\Delta n}: 50 \text{ ms} < T \leq 150 \text{ ms}$
	<b>load circuit</b>
Specification	load disconnect contact
min. Contact opening	4 mm
Rated voltage (AC)	230 V
Rated current (AC)	40 A
Rated short-circuit current	10 kA
Surge current strength	5 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	1.1 W
Thermal Backup-fuse OCPD	25 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	normal environmental conditions
Storage temperature	-35 °C ... 75 °C
Ambient temperature	-25 °C ... 40 °C

Subject to technical changes

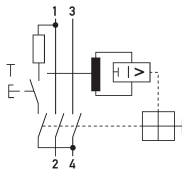
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Climate resistance	according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)
Shock resistance	20 g / 20 ms Duration
Fatigue limit	> 5 g (f ≤ 80 Hz, duration > 30 min.)
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP20 (installed: IP40)
sealable	true
Width	36 mm
Height	85 mm
Depth	75 mm
Installation depth	69 mm
Module widths	2
Weight	0.244 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1
Degree of pollution	2

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram