

## UK Technical Data 04

### DFS 4 \*\*\*-4/\*\*\*-F 400V 50Hz

sensitive to residual currents Type F



symbolic image



#### Function

Residual current circuit-breakers (RCCBs) for implementing the protective measure "Automatic disconnection of the power supply" as per BS 7671 - 411. Series DFS 4 devices are compact 4-pole residual current circuit-breakers for three-phase networks. In the standard design, they only take up four 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. Switches for residual current type F are mains voltage-independent and detect type A sinusoidal alternating and pulsating DC residual currents as well as residual currents with mixed frequencies that differ from 50 Hz. For example, these can arise when using single-phase frequency converters in 3 phase+ N networks. Devices in the standard design are intended for monitoring circuits with a rated voltage of 400 V and a rated frequency of 50 Hz.

#### Features

Sensitive to AC residual currents and pulsating DC residual currents at the mains frequency (type A) as well as AC residual currents with multiple frequency components not equal to 50 Hz (type F). High immunity against surge currents and mains-voltage-transients, 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", also available in the "HD" design. Neutral conductor on the left.

#### Mounting

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

#### Applications

Modern domestic installations with LED lighting systems and single-phase frequency converters, Ideal for systems where RCCBs Type A have a tendency towards faulty trips due to surge residual currents. Commercial and industrial installations with TN-S, TT- and TN-C-S systems, where power electronics equipment is used without galvanic isolation from the mains, e.g. SM power supplies, high-frequency converters, photo-voltaic installations and UPS equipment with frequency converters without transformers.

Not suitable for use in TN-C systems or for the protection of installations in which electronic equipment could generate smooth DC currents requiring Type B RCCBs: Refer to BS 7671 - 531.3.3 Types of RCD.

#### Notes

Suitable for use in 50 Hz AC networks, Not designed for use in direct current networks or on the output side of controlled electrical equipment such as frequency converters.

#### Accessories

Automatic re-closing devices DFA, Clamp covers KA, Auxiliary Switches DHi.

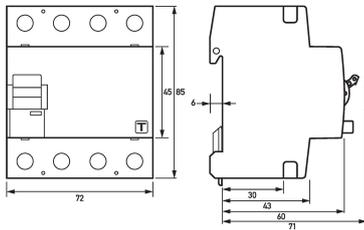
#### Technical Data

Technical Data	DFS 4 ***-4/***-F
Series	DFS 4 F
Number of poles	4

Technical Data	DFS 4 ***-4/***-F
Residual current type	F
Rated current (AC)	Refer to the individual product reference, data sheet available on request
Rated residual current I $\Delta$ n	Refer to the individual product reference, data sheet available on request
Short-time delayed	true
Selective	false
min. Operating voltage range of test circuit	200 V
max. Operating voltage range of test circuit	440 V
Non-trip time	10 ms
Maximum disconnection times	Refer to the individual product reference, data sheet available on request
	Load circuit
Specification	Load switch contact
min. Contact opening	4 mm
Rated voltage (AC)	400 V
Rated current (AC)	Refer to the individual product reference, data sheet available on request
Rated short-circuit current	10 kA
Surge current strength	3 kA
max. total rated switching capacity	Refer to the individual product reference, data sheet available on request
Rated insulation voltage	400 V
Rated impulse withstand voltage	4 kV
Rated frequency	50 Hz
Current heat loss per current path	Refer to the individual product reference, data sheet available on request
thermal Backup-fuse OCPD	Refer to the individual product reference, data sheet available on request
short-circuit backup-fuse SCPD	Refer to the individual product reference, data sheet available on request
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-safe and safe for back-of-hand
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>
Tightening torque	2.5 Nm ... 3 Nm
	General data
Operating position	any
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	Distributor housing

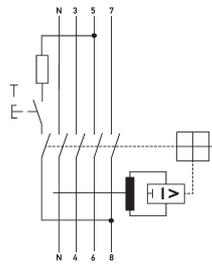
Technical Data	DFS 4 ***-4/***-F
Mounting type	Mounting rail (35 mm)
Housing material	Thermoplastic resin
Protection class	IP20 (installed: IP40)
sealable	true
Width	72 mm
Height	85 mm
Depth	75 mm
Installation depth	69 mm
Width (modules)	4
Design requirements/Standards	VDE 0664-10, EN 61008-1, EN 62423, ÖVE/ÖNORM E 8601
Certifications	VDE
Degree of pollution according to EN 60664	2

**Dimensions**



Dimensional drawing Group view

**Wiring example**



Wiring diagram