



DATA SHEET

residual current circuit-breaker

DFS 2 040-2/0,03-F Audio

sensitive to residual currents Type F, Low-impedance design for audio systems

Article number 09134046



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 for residual current type F are mains voltage-independent and record 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. RCCB of the DFS Audio series are optimised for protecting electric circuits that are connected to high-quality audio systems, such as record players, network streamers, amplifiers or sound systems for theatres and cinemas. They have a low-impedance design to enable an unrestricted current flow and undisturbed sound quality. DFS in the "Audio" design are ideal for protecting electric circuits with high-quality audiophile components, such as record players, CD players, network streamers, amplifiers, active loudspeakers or even sound systems for theatres, cinemas. Design optimisations, such as solid silver-plated connection terminals, solid and silver-plated internal current conductors made from high-purity and low-oxygen copper, large main switching contacts with a high contact pressure and a special design of the summation current transformer, which minimises inductive parts in regular operation ensure an unrestricted current flow. This extremely low-impedance setup guarantees pure listening enjoyment thanks to the protective audiophile components.

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, high immunity against surge currents and mains-voltage-operated secondary current impulses, ideal for protecting high-quality audio components, optimised design for sound quality, e.g. silver-plated internal current conductors, silver-plated connection terminals etc, 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

The Audio is primarily used in electric circuits with high-quality audiophile components, such as record players, CD players, network streamers, amplifiers, active loudspeakers or even sound systems for theatres or cinemas, Residual current type F ensures a high system availability due to its resistance to transient surge currents as well as the reliable detection of AC and pulsating residual currents with a rated frequency (50 Hz), even if other frequency components are present in the residual current, as may occur in modern audio devices with transformer or network parts.

Notes

Also available as a 60 Hz version.

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-F Audio
Series	DFS 2 F Audio

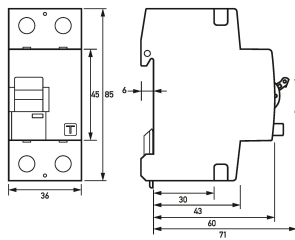
Subject to technical changes

Technical Data	DFS 2 040-2/0,03-F Audio
Number of poles	2
Residual current type	F
Rated current (AC)	40 A
Rated residual current $I_{\Delta n}$	0.03 A
Short-time delayed	true
Selective	false
min. Operating voltage range of test circuit	150 V
max. Operating voltage range of test circuit	250 V
Non-trip time	10 ms
Maximum disconnection times	$1 \cdot I_{\Delta n}: \leq 300 \text{ ms}; 5 \cdot I_{\Delta n}: \leq 40 \text{ ms}$
	load circuit
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	3 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	40 A
Short-circuit backup-fuse SCPD	100 A
Back-up fuse type	gG
	screw-type terminal top and bottom (load circuit)
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 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
	General data
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

Subject to technical changes

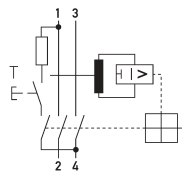
Technical Data	DFS 2 040-2/0,03-F Audio
Ambient temperature	-25 °C ... 40 °C
Climate resistance	according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH)
Shock resistance	20 g / 20 ms Duration
Fatigue limit	> 5 g (f ≤ 80 Hz, duration > 30 min.)
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP20 (installed: IP40)
sealable	true
Width	36 mm
Height	85 mm
Depth	75 mm
Installation depth	69 mm
Module widths	2
Weight	0.4 kg
Design requirements/Standards	VDE 0664-10, DIN EN 61008-1, ÖVE/ÖNORM E 8601, EN 62423
Degree of pollution	2
Certifications	VDE

Dimensions



Dimensional drawing Group view

Wiring example



Wiring diagram