

# **DATA SHEET**

Article number 09134046

residual current circuit-breaker DFS 2 040-2/0,03-F Audio sensitive to residual currents Type F, Low-impedance design for audio systems



Internetlink

10000 🖂 WWW 🕸 🗠 KV G

## Function

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, 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 twotier 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            |
| Number of poles | 2                        |

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| Technical Data  | DFS 2 040-2/0,03-F Audio  |
|---|---|
| Residual current type   | F   |
| Rated current (AC)  | 40 A  |
| Rated residual current IAn                                    | 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 · IΔn: ≤ 300 ms; 5 · IΔn: ≤ 40 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<br>number of conductors per<br>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  | optional  |
| max. Operating altitude above<br>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  | distribution board housing  |

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| Technical Data                               | DFS 2 040-2/0,03-F Audio                                |
|--|---|
| 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   |
| Design requirements/Standards                | VDE 0664-10, DIN EN 61008-1, ÖVE/ÖNORM E 8601, EN 62423 |
| Degree of pollution according to<br>EN 60664 | 2   |
| Certifications                               | VDE   |

## Dimensions

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# Wiring example



Dimensional drawing Group view

STEP file

Wiring diagram