



## DATA SHEET

Article number : 09114841

### residual current circuit-breaker DFS 4 016-4/0,03-A NA

sensitive to pulsating and alternating currents Type  
A, emergency switching-off function



#### Function

Residual current circuit-breakers (RCCBs) are components for implementing protective measure "Automatic disconnection of the power supply" as per IEC 60364-4-41 or corresponding national installation regulations. Series DFS 4 devices are compact two or four-pole residual current circuit-breakers. In the standard design, they only take up four module width units of space. Although DFS 4 devices for AC and pulsating DC residual currents are actually designed for three-phase networks, they can also be used in single-phase networks. However, in addition to these, special variants are also available for single or three-phase operation in the form of the AC/DC sensitive designs (type B, type B+). 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. DFS with emergency shut-off function ('NA' variant) make it possible to connect control elements, e.g. push-buttons for disconnecting the RCCB in emergency situations. The device is connected via the compact, factory mounted module; parallel wiring of multiple DHS is also possible. The integrated LED signals tripping by a control element as well as a possible wire breakage. In this state, reclosing of the RCCB is prevented.

#### Features

tripping not dependent on mains and auxiliary voltage, sensitive to AC residual currents and pulsating DC residual currents (type A), Only 1/2 module width wider than standard device, No additional power supply required for emergency switching off circuit, Full range of emergency switching off function, 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

#### Mounting

quick fastening to mounting rail, any installation position, supply from top

#### Applications

NA series RCCBs are especially suitable for systems where an emergency switching off circuit with disconnecter properties is required, e.g. in teaching rooms or production facilities, Excluded is the application in TN-C systems and for the protection of installations in which electronic equipment could generate smooth DC currents or residual currents with frequencies other than 50 Hz. Comprehensive protection is not provided in this case. For these applications we recommend our AC/DC sensitive residual current circuit-breakers (Type B or B+).

#### Accessories

terminal caps KA, information stickers HAS, restart locks DFS WES, software DBS

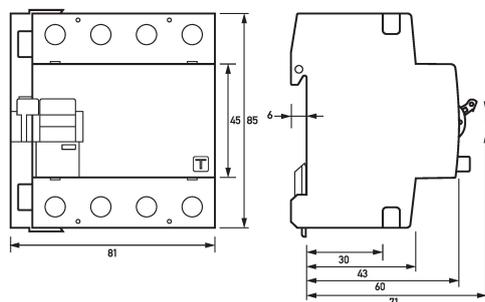
#### Technical Data

|  |                     |
|--|---------------------|
| Series   | DFS 4 A NA          |
| Number of poles  | 4                   |
| Residual current type                                  | A                   |
| Rated current (AC)                                     | 16 A                |
| Rated residual current $I_{\Delta n}$                  | 0.03 A              |
| Short-time delayed                                     | false               |
| Selective  | false               |
| min. Operating voltage range of test circuit           | 250 V               |
| max. Operating voltage range of test circuit           | 440 V               |
| Internal consumption                                   | max. 1.5 W          |
| <b>Auxiliary device (Emergency shut-off device)</b>    |                     |
| Additional device AE1 operating voltage                | 50 V ... 440 V (AC) |
| Auxiliary device AE1 Voltage of the monitoring circuit | 12 V (DC)           |

|  |   |
|--|---|
| Auxiliary device AE1 Voltage of the monitoring circuit           | max. 1 mA (DC)  |
| max. Auxiliary device AE1 Cable length of the monitoring circuit | 500 m   |
|  | <b>load circuit</b>   |
| Specification  | load disconnect contact   |
| min. Contact opening   | 4 mm  |
| Rated voltage (AC)   | 230 V, 400 V  |
| Rated current (AC)   | 16 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  | 50 Hz   |
| Current heat loss per current path                               | 0.2 W   |
| Thermal Backup-fuse OCPD   | 16 A  |
| Short-circuit backup-fuse SCPD                                   | 100 A   |
| Back-up fuse type  | gG  |
| I <sup>2</sup> t strength  | 48 kA <sup>2</sup> s  |
| Dynamic current strength I <sub>p</sub>                          | 6 kA  |
|  | <b>Auxiliary switch (additional emergency shut-off device)</b>  |
| Specification  | switching contact   |
| Number of poles (total)  | 1   |
| Contact assignment   | 1 CO  |
| Rated voltage (AC)   | 12 V ... 230 V  |
| Rated voltage (DC)   | 12 V ... 110 V  |
| Tolerance of rated voltage                                       | max. 5 %  |
|  | <b>screw-type terminal top and bottom (load circuit)</b>  |
| Neutral conductor position                                       | left  |
| 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>screw-type terminal top and bottom<br/>(Emergency shut-off device, auxiliary switches)</b>           |
| Allowed types of wires   | solid conductor, flexible conductor, stranded conductors with ferrule                                   |
| Connection C2 Maximum number of conductors per terminal          | 2 (conductors of same type and cross-section)   |
| Cross section solid  | 1-wire: 1 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> ; 2-wire: 1 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Cross section flexible with ferrule                              | 1 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Cross section stranded   | 1-wire: 1 mm <sup>2</sup> ... 1.5 mm <sup>2</sup> ; 2-wire: 1 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Cross section AWG, solid   | 17 ... 16   |
| Cross section AWG, stranded                                      | 17 ... 16   |
| Cross section AWG, flexible with ferrule                         | 17 ... 16   |
| Tightening torque  | max. 0.8 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  | -40 °C ... 70 °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  |
| Installation type  | Mounting rail (35 mm)   |
| Housing material   | thermoplastic   |
| Protection class   | IP20 (installed: IP40)  |
| sealable   | true  |
| Width  | 81 mm   |
| Height   | 85 mm   |
| Depth  | 75 mm   |

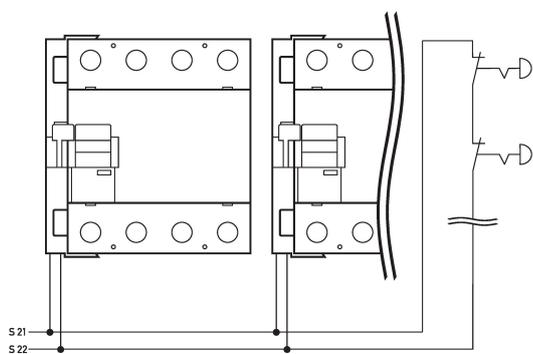
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|-------------------------------|---|
| Installation depth            | 69 mm                                       |
| Module widths                 | 4.5   |
| Weight                        | 0.517 kg                                    |
| Design requirements/Standards | VDE 0664-10, VDE V 0664-120, DIN EN 61008-1 |
| Degree of pollution           | 2   |

**Dimensions**

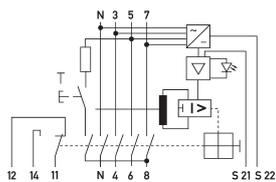


Dimensional drawing Group view

**Wiring example**



Wiring diagram



Wiring diagram additional file