



## DATA SHEET

### circuit-breakers with residual current trip

#### DFL 8 100-4/0,03-A

#### sensitive to pulsating and alternating currents Type A

Article number 09164781



### Function

CBRs (circuit-breakers with integral residual current protection) are circuit-breakers with a magnetic and thermal overcurrent trip and a residual current trip. The circuit-breaker with residual current trip is used for overcurrent protection of equipment, cables and lines in accordance with DIN VDE 0100-430 and for protection against electrical shock by automatic switch-off of the power supply as per DIN VDE 0100-410. This series contains compact devices for rated currents up to 250 A with integrated auxiliary switch and terminals for large cable cross-sections. The devices are preferably mounted on a mounting plate. Type A residual current circuit-breakers are sensitive to pulsating and alternating currents. This function is independent of the mains voltage. Switches of this variant have a fixed residual response current of 30 mA for the protection of persons. They therefore provide fault and fire protection as well as additional protection (personal protection, protection in the event of direct contact). Standard variant devices are designed for the monitoring of circuits with a rated voltage of 400 V/690 V and a rated frequency of 50 Hz.

### Features

fixed rated residual current of 0.03 A, type range with rated currents from 100 A to 250 A, four-pole, rated voltage 400/690 V AC, detection of AC residual currents and pulsating DC residual currents, function range of the residual current trip 0-690 V, function range of the residual current operated protective device 280-690 V, trip independent of the mains voltage and auxiliary voltage when overcurrent and residual currents occur, high short-circuit switching capacity, terminals up to 185 mm<sup>2</sup>, high surge current strength, i.e. low tendency to faulty trips due to transient residual currents, thresholds adjustable for instantaneous and slow-blow overcurrent trip, integrated auxiliary switches

### Mounting

mounting on mounting plate, any installation position, supply from any direction

### Applications

power supplies to purpose-built buildings as well as industrial facilities with TN-S, TT and TN-C-S networks with high short-circuit power, In IT networks, the residual current trip of the CBR can be set to switch off in the event of a second earth fault, use for residual current protection in TN-C networks is excluded

### Notes

The type A CBR does not provide comprehensive protection in systems containing electronic equipment can cause smooth DC residual currents or residual currents with frequencies not equal to 50 Hz. For these applications we recommend our AC/DC sensitive CBR type B.

### Accessories

housing N-7

### Technical Data

| Technical Data                               | DFL 8 100-4/0,03-A |
|--|--------------------|
| Series                                       | DFL 8 A            |
| Number of poles                              | 4                  |
| Residual current type                        | A                  |
| Rated current (AC)                           | 100 A              |
| Rated residual current I $\Delta$ n          | 0.03 A             |
| Short-time delayed                           | true               |
| Selective                                    | false              |
| min. Operating voltage range of test circuit | 280 V              |

Subject to technical changes

| Technical Data  | DFL 8 100-4/0,03-A   |
|---|--|
| max. Operating voltage range of test circuit                  | 759 V  |
| Non-trip time   | 10 ms  |
| Selectivity adjustable  | false  |
| Response delay  | 1 · IΔn: 0 ms < T ≤ 300 ms; 5 · IΔn: 0 ms < T ≤ 40 ms  |
| Adjustment range of overload tripping                         | 0.8 ... 1  |
| Adjustment range of short-circuit tripping                    | 6 ... 10   |
| Power dissipation Pv release                                  | 35 W   |
| Rated operation short-circuit disconnecting capacity Ics      | 85 kA at Rated operation short-circuit disconnecting capacity Ics (240 V AC); 50 kA at Rated operation short-circuit disconnecting capacity Ics (400/415 V AC); 35 kA at Rated operation short-circuit disconnecting capacity Ics (440 V AC); 25 kA at Rated operation short-circuit disconnecting capacity Ics (525 V AC) 5 kA at Rated operation short-circuit disconnecting capacity Ics (690 V AC)                           |
| Rated short-circuit disconnecting capacity limit Icu          | 85 kA at Rated short-circuit disconnecting capacity limit Icu (240 V AC); 50 kA at Rated short-circuit disconnecting capacity limit Icu (400/415 V AC); 35 kA at Rated short-circuit disconnecting capacity limit Icu (440 V AC); 25 kA at Rated short-circuit disconnecting capacity limit Icu (525 V AC) 20 kA at Rated short-circuit disconnecting capacity limit Icu (690 V AC)  |
| Rated short-circuit connection and disconnection capacity IΔm | 85 kA at Rated short-circuit connection and disconnection capacity IΔm (240 V AC); 50 kA at Rated short-circuit connection and disconnection capacity IΔm (400/415 V AC); 35 kA at Rated short-circuit connection and disconnection capacity IΔm (440 V AC); 25 kA at Rated short-circuit connection and disconnection capacity IΔm (525 V AC) 20 kA at Rated short-circuit connection and disconnection capacity IΔm (690 V AC) |
| Operating voltage (AC)  | 690 V (max. 759 V)   |
| Operating frequency   | 50 Hz  |
| Internal consumption  | 2.5 W ... 3 W  |
| Rated insulation voltage                                      | 1000 V   |
|   | <b>Display (status output)</b>   |
| Number  | 1  |
| Type  | operating lever (black)  |
|   | <b>load circuit</b>  |
| Specification   | load disconnect contact  |
| Rated voltage (AC)  | 400 V, 690 V   |
| Tolerance of rated voltage                                    | max. 10 %  |
| Rated current (AC)  | 100 A  |
| Surge current strength  | 5 kA   |
| Rated impulse withstand voltage                               | 8 kV   |
| Rated frequency   | 50 Hz  |
| Current heat loss per current path                            | 8.6 W  |
| Electrical endurance AC-1                                     | 7500 Schaltspiele  |
| Short-circuit backup-fuse SCPD                                | 250 A  |
| Back-up fuse type   | gG   |
| Back-up fuse (textual)  | only required if the short-circuit current to be expected at the installation location exceeds the switching capacity of the circuit-breaker   |
| Overvoltage class   | III  |
|   | <b>auxiliary switches</b>  |
| Specification   | switching contact  |
| Rated insulation voltage                                      | 500 V  |
| Rated impulse withstand voltage                               | 6 kV   |
| Allowed utilization category                                  | AC-15, DC-13   |
| Rated current (AC-15)   | 6 A (230 V); 4 A (400 V) 2 A (500 V)   |
| Rated current (DC-13)   | 3 A (24 V); 0.8 A (110 V) 0.3 A (220 V)  |

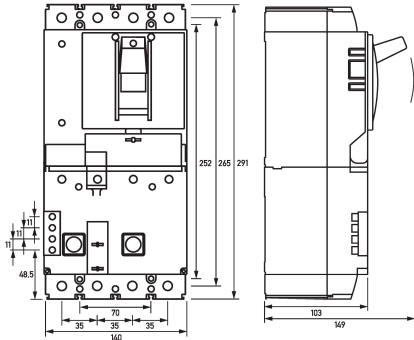
Subject to technical changes

| Technical Data  | DFL 8 100-4/0,03-A   |
|---|--|
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| Rated short-circuit connection and disconnection capacity IΔm | 85 kA at Rated short-circuit connection and disconnection capacity IΔm (240 V AC); 50 kA at Rated short-circuit connection and disconnection capacity IΔm (400/415 V AC); 35 kA at Rated short-circuit connection and disconnection capacity IΔm (440 V AC); 25 kA at Rated short-circuit connection and disconnection capacity IΔm (525 V AC) 20 kA at Rated short-circuit connection and disconnection capacity IΔm (690 V AC) |
| <b>box terminal top and bottom (load circuit)</b>             |  |
| Neutral conductor position                                    | left   |
| Protection against direct contact                             | finger and back-of-hand proof  |
| Allowed types of wires  | aluminium conductor, copper conductor, solid conductor, flexible conductor, stranded conductors with ferrule   |
| Clamping area   | 4 mm <sup>2</sup> ... 185 mm <sup>2</sup>  |
| Connection C1 Maximum number of conductors per terminal       | 2  |
| Cross section solid   | 1-wire: 4 mm <sup>2</sup> ... 16 mm <sup>2</sup> ; 2-wire: 4 mm <sup>2</sup> ... 16 mm <sup>2</sup>  |
| Cross section stranded  | 1-wire: 25 mm <sup>2</sup> ... 185 mm <sup>2</sup> ; 2-wire: 25 mm <sup>2</sup> ... 70 mm <sup>2</sup>   |
| Tightening torque   | max. 14 Nm   |
| <b>screw-type terminal left (auxiliary switches)</b>          |  |
| Protection against direct contact                             | finger and back-of-hand proof  |
| Clamping area   | 0.75 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>   |
| Connection C2 Maximum number of conductors per terminal       | 2  |
| Cross section solid   | 1-wire: 0.75 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> ; 2-wire: 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Connecting capacity flexible                                  | 2-wire: 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>   |
| Cross section flexible with ferrule                           | 0.75 mm <sup>2</sup> ... 2.5 mm <sup>2</sup>   |
| Cross section stranded  | 1-wire: 0.75 mm <sup>2</sup> ... 2.5 mm <sup>2</sup> ; 2-wire: 0.75 mm <sup>2</sup> ... 1.5 mm <sup>2</sup>  |
| Tightening torque   | max. 0.8 Nm  |
| <b>General data</b>   |  |
| Operating position  | 90° tilted, vertical   |
| max. Operating altitude above MSL                             | 2000 m   |
| Mechanical endurance  | min. 2000 switching cycles   |
| Electrical endurance  | min. 2000 switching cycles   |
| Surrounding atmosphere  | normal environmental conditions  |
| Storage temperature   | -25 °C ... 70 °C   |
| Ambient temperature   | -25 °C ... 70 °C   |
| Climate resistance  | constant as per IEC 60068-2-78, cyclical as per IEC 60068-2-30   |
| Shock resistance  | 20 g / 20 ms Duration  |
| Fatigue limit   | 1,0 g (f = 2 - 100 Hz) (IEC 60068-2-6)   |
| Housing type  | wall-mounted housing   |
| Installation type   | Wall mounting  |
| Protection class  | IP20 (installed: IP40)   |
| sealable  | true   |
| Width   | 140 mm   |

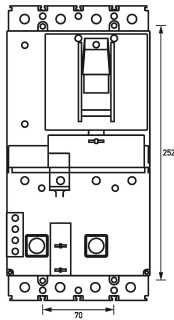
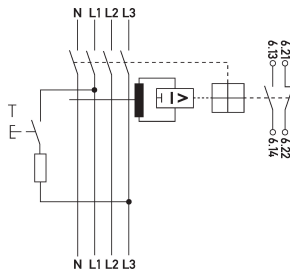
Subject to technical changes

| Technical Data                | DFL 8 100-4/0,03-A  |
|-------------------------------|---|
| Height                        | 291 mm  |
| Depth                         | 103 mm  |
| Installation depth            | 149 mm  |
| Weight                        | 6.2 kg  |
| Design requirements/Standards | DIN IEC 60755, EN 60947-2, EN 60947-2 Annex B, VDE 0660-101 |
| Degree of pollution           | 3   |

**Dimensions**



**Wiring example**



Wiring diagram

Dimensional drawing Group view

Dimensional drawing Drilling template