

DATA SHEET

Article number: 09144807HD

residual current circuit-breaker DFS 4 063-4/0,03-HP R HD

AC/DC sensitive, fire protection according to VDE 0100-420, for heat pumps, for harsh environments



6000 --- WW KHZ (\$\$ KV

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. The AC/DC-sensitive switches detect smooth DC residual currents and all other residual currents in accordance with DIN VDE 0664-400. Switches of the HP (Heat Pump) series have been specially developed for the protection of heat pumps. The protection level of the AC/DC sensitive residual current circuit breaker meets all requirements of heat pump manufacturers. In addition, the HP-optimised short-time delay ensures increased system availability. With an airtight, encapsulated tripping mechanism from a special alloy and the stainless steel latch, residual current circuit-breakers in HD design are protected, in particular from corrosion, corrosive gases, moisture and extreme temperature fluctuations.

Features

AC/DC sensitive for residual currents with frequencies and mixed frequencies from o Hz to 20 kHz, fire protection according to VDE 0100-420, complete functionality with mains voltages from at least 50 V AC on any two active conductors, high short-circuit resistance, ouble-sided double-decker terminals for large conductor cross-section and busbar connection, switching position indicator, multifunction control toggle with three positions: "on", "off", "triggered", any neutral conductor position

Mounting

quick fastening to mounting rail, any installation position, supply preferably from above

Applications

RCCBs of the variant HP are suitable for private, commercial and industrial installations with TN-S-, TT- and TN-C-S systems which use heat pumps.

Notes

suitable for use in 50 Hz AC networks, not intended for use on the output side of controlled electrical equipment such as frequency converters

Accessories

automatic reclosing devices DFA, terminal caps KA, information stickers HAS, auxiliary switches DHi, restart locks DFS WES, software DRS

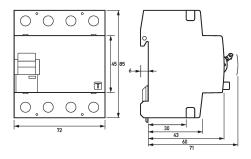
Technical data

| Series | DFS 4 HP HD |
|--|------------------|
| Number of poles | 4 |
| Residual current type | B+ |
| Rated current (AC) | 6 ₃ A |
| Rated residual current I∆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 |
| Minimum rated operating voltage (Type A/AC | o V AC |
| operation) | |

2/3

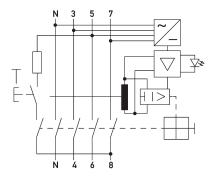
| Minimum rated operating voltage (Type B | 50 V AC |
|--|---|
| operation) | j |
| Non-trip time | 13 ms |
| Tripping frequency | o Hz 20 kHz |
| Maximum disconnection times | 1 · IΔn: ≤ 300 ms; 5 · IΔn: ≤ 40 ms |
| Internal consumption | max. 1.3 W |
| <u>'</u> | load circuit |
| Specification | load disconnect contact |
| min. Contact opening | 4 mm |
| Rated voltage (AC) | 230 V, 400 V |
| Rated current (AC) | 6 ₃ A |
| Rated short-circuit current | 6 kA |
| Surge current strength | 3 kA |
| max. Total rated switching capacity | 630 A |
| Rated insulation voltage | 400 V |
| Rated impulse withstand voltage | 4 kV |
| Rated frequency | 50 Hz |
| Current heat loss per current path | 3.1 W |
| Thermal Backup-fuse OCPD | 63 A |
| Short-circuit backup-fuse SCPD | 100 Å |
| Back-up fuse type | qG |
| | |
| I ² t strength | 48 kA²s |
| Dynamic current strength I _p | 6 kA |
| | screw-type terminal top and bottom (load circuit) |
| Neutral conductor position | right |
| Protection against direct contact | DGUV V3, VDE 0660-514, finger and back-of-hand proof |
| Connection C1 Maximum number of | 2 (conductors of same type and cross-section) |
| conductors per terminal | |
| 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. 4000 cycles |
| Surrounding atmosphere | harsh environmental conditions |
| Storage temperature | -40 °C 70 °C |
| Ambient temperature | -25 °C 60 °C |
| Climate resistance | according to IEC 60068-2-30: humid heat / cyclic (25 °C / 55 °C; 93 % / 97 % RH) |
| Housing type | distribution board housing |
| Installation type | Mounting rail (35 mm) |
| Housing material | thermoplastic |
| Protection class | IP20 (installed: IP40) |
| sealable | true |
| Width | 72 mm |
| Height | 85 mm |
| Depth | 75 mm |
| Installation depth | 69 mm |
| Module widths | 4 |
| Weight | 0.489 kg |
| Design requirements/Standards | VDE 0664-10, VDE 0664-400, ÖVE/ÖNORM E 8601, EN 61008-1, EN 62423 |
| Degree of pollution | 2 |

Dimensions



Technical changes reserved 2025_10_14 doepke_09144807HD_dbl_en.pdf

Wiring example



Wiring example residual current circuit-breaker DFS 4 063-4/0,03-HP R HD