



DATA SHEET

Article number : 09145807HD

residual current circuit-breaker

DFS 4 063-4/0,10-HP R HD

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



6000

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. Devices in the DFS 4 series are compact four-pole residual current circuit-breakers for single-phase or three-phase networks. In the standard version, they only occupy four division units. 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 0 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, double-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

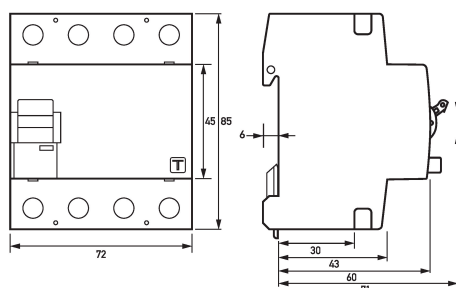
automatic reclosing devices DFA, terminal caps KA, information stickers HAS, auxiliary switches DHi, restart locks DFS WES, software DBS

Technical data

Series	DFS 4 HP HD
Number of poles	4
Residual current type	B+
Rated current (AC)	63 A
Rated residual current $I_{\Delta n}$	0.1 A
Short-time delayed	true
Selective	false
min. Operating voltage range of test circuit	200 V
max. Operating voltage range of test circuit	250 V
Minimum rated operating voltage (Type A/AC operation)	0 V AC
Minimum rated operating voltage (Type B operation)	50 V AC
Non-trip time	13 ms
Tripping frequency	0 Hz ... 20 kHz

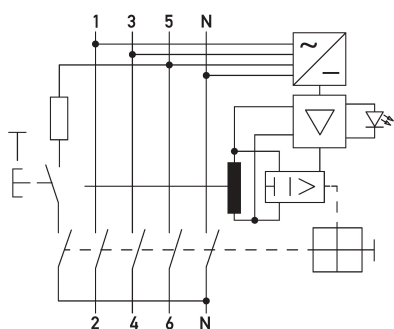
Maximum disconnection times	$1 \cdot I_{\Delta n} \leq 300 \text{ ms}; 5 \cdot I_{\Delta n} \leq 40 \text{ ms}$
Internal consumption	max. 1.3 W
Specification	load circuit
min. Contact opening	load disconnect contact
Rated voltage (AC)	4 mm
Rated current (AC)	230 V, 400 V
Rated short-circuit current	63 A
Surge current strength	6 kA
max. Total rated switching capacity	3 kA
Rated insulation voltage	630 A
Rated impulse withstand voltage	400 V
Rated frequency	4 kV
Current heat loss per current path	50 Hz
Thermal Backup-fuse OCPD	3.1 W
Short-circuit backup-fuse SCPD	63 A
Back-up fuse type	100 A
I^2t strength	gG
Dynamic current strength I_p	48 kA ² s
	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 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. 4000 cycles
Electrical endurance	min. 2000 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
Certifications	VDE

Dimensions



Dimensioned drawing residual current circuit-breaker DFS 4 063-4/0,10-HP R HD

Wiring example



Wiring example residual current circuit-breaker DFS 4 o63-4/0,10-HP R HD