6000 kHz KV

DATA SHEET

Article number: 09948524

residual current operated circuit-breakers with integral overcurrent protection DRCBO 4 C16/0,03/3N-HP

AC/DC sensitive, for heat pumps, increased surge-current resistant, short-time delayed, lightning resistant, fire prevention up to 20 kHz

Function

RCCB/MCB combinations (RCBO) are residual current operated circuit-breakers with integral overcurrent protection for protecting systems in the event of a short-circuit and overload as per the requirements of VDE 0100 Part 430, and for protecting persons, farm animals and material items in the event of earth leakage currents as per VDE 0100 Part 410. Overload tripping occurs at currents in the overload range through a short-time delayed, heat-sensitive bimetal trip and at short-circuit currents through an electromagnetic instantaneous trip. The rated breaking capacity of the DRCBO 4 series is 6#kA. RCCBs of the HP variant were specially developed to protect heat pumps and detect smooth DC residual currents and all other residual currents with frequencies up to 20 kHz. Thanks to its HP-optimised slow-blow, the AC-DC sensitive residual current circuit-breaker is resistant to surge currents. It therefore offers higher system availability by reducing faulty tripping. RCBOs with tripping characteristic C are primarily suitable for power circuits with high switch-on or peak currents, as their short-circuit trip value is five to ten times the rated current. Devices in standard design are intended for monitoring circuits with a rated voltage of 230 V or 400 V and a rated frequency of 50 Hz.

Features

AC/DC sensitive for residual currents with frequencies of 0 Hz (smooth direct current) up to 20,000 Hz, mains-voltage-independent tripping when type A residual currents occur, compact design for all rated currents, switch position indicator, separate indication of tripping cause, strain-relief clamps with a wide terminal cross-section range on both connection sides, neutral conductor right, labelling area

Mounting

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

Applications

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

Notes

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

Accessories

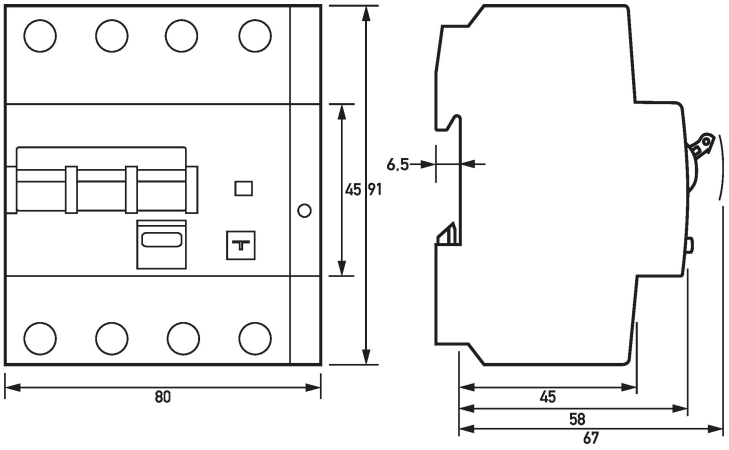
wiring components DRCBO 4-busbars 4-pole

Technical Data

Series	DRCBO 4 HP
Number of poles	3+N
Residual current type	B+
Rated current (AC)	16 A
Rated residual current IΔn	0.03 A
Short-time delayed	true
Selective	false
min. Operating voltage range of test circuit	170 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	15 ms

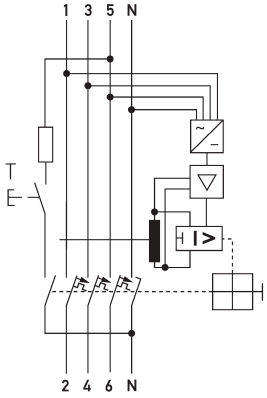
Tripping frequency	0 Hz ... 20 kHz
Maximum disconnection times	1 · IΔn: ≤ 300 ms; 5 · IΔn: ≤ 40 ms
Tripping characteristic	C
Supply side	up
Operating voltage (AC)	max. 440 V
Internal consumption	max. 1.3 W
	load circuit
Specification	load disconnect contact
Rated voltage (AC)	230 V, 400 V
Rated current (AC)	16 A
Rated short-circuit current	6 kA
Surge current strength	3 kA
max. Total rated switching capacity	6 kA
Rated insulation voltage	440 V
Rated impulse withstand voltage	4 kV
Rated frequency	50 Hz
Current heat loss per current path	2.3 W
Back-up fuse type	gG
Overvoltage class	III
	Screw-type terminal top, bottom (load circuit)
Neutral conductor position	right
max. Connection C1 Number of conductors per terminal	2 (conductors of same type and cross-section)
Cross section solid	1-wire: 1 mm² ... 35 mm²; 2-wire: 1 mm² ... 10 mm²
Connecting capacity flexible	1-wire: 1 mm² ... 25 mm²; 2-wire: 1 mm² ... 10 mm²
Cross section stranded	1-wire: 1 mm² ... 25 mm²; 2-wire: 1 mm² ... 10 mm²
Cross section AWG, solid	17 ... 2
Cross section AWG, stranded	17 ... 3
Cross section AWG, flexible	17 ... 3
Cross section AWG, flexible with ferrule	1 ... 7
Tightening torque	max. 3 Nm
	General data
Operating position	optional
mechanical endurance	min. 4000 cycles
electrical endurance	min. 2000 switching cycles
Ambient temperature	-25 °C ... 40 °C
Climate resistance	according to IEC 60068-2-30
Housing type	distribution board housing
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP20 (installed: IP40)
Width	80 mm
Height	91 mm
Depth	73.5 mm
Installation depth	67 mm
Module widths	4.5
Weight	0.541 kg
Design requirements/Standards	VDE 0664-20, VDE 0664-40, VDE 0664-401, EN 61009-1, EN 62423, ÖVE/ÖNORM E 8601
Power limitation category	3
Degree of pollution	2

Dimensions



Dimensional drawing DRCBO 4 Type B+, 3-pole+N (Group view)

Wiring example



Wiring diagram DRCBO 4 HP, 3-pole+N