DATA SHEET

residual current operated circuit-breakers with integral overcurrent protection

DRCBO 4 B06/0,03/1N-B NK

AC/DC sensitive type B, fire protection according to VDE 0100-420

Article number 09949201

6000 kHz KV G

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 DRCBO 4 have a rated switching capacity of 6 kA. They provide a labelling area in addition to the tripping indicator. Type B residual current circuit-breakers detect smooth DC residual currents and all other residual currents at frequencies up to 150,000 Hz. The operating voltage required for this is taken from the mains supply. Correct power supply is ensured when the voltage between the mains conductors is ≥ 50 V. Pulsating and AC residual currents are detected independent of the mains voltage. For switches with characteristic curve NK, the tripping current frequency response runs below human tolerance levels for shock currents with different frequencies. With an upper tripping threshold of 300 mA at frequencies up to 150 kHz, wider-reaching protection from earth leakage currents is provided compared to type B+ switches or type B switches with the characteristic curve SK. As a result, extensive fire protection is also possible even with electronic equipment with high clock frequencies. The wide scope of protection thanks to the NK tripping characteristic curve requires the monitored system to be set up with low leakage currents. RCBOs with characteristic B ensure standard protection for lighting and socket circuits. As their short-circuit trip is three to five times the rated current, they should not be used to fuse-protect load circuits with high inrush currents. 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 150 kHz, 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

commercial and industrial installations with TT, TN-S and TN-C-S systems, where power electronics equipment is used without galvanic isolation from the mains, e.g. frequency converters, switching power supplies, high-frequency converters, photovoltaic installations and UPS equipment with frequency converters without transformers, Type B+ and type B RCBOs with characteristic curve NK should be used where fire protection is legally required.

Notes

suitable for use in 50 Hz AC networks, RCBOs are also available for other frequencies upon request, not designed for use in direct current networks or on the output side of controlled electrical equipment such as frequency converters

Accessories

auxiliary switches DRCBO 4 Hi 2, wiring components DRCBO 4-busbars 2-pole, wiring components DRCBO 4-busbars 4-pole

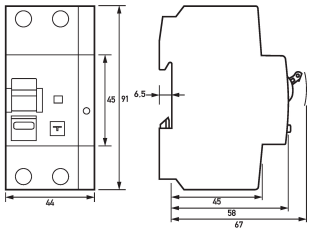
Technical Data

Technical Data	DRCBO 4 B06/0,03/1N-B NK
Series	DRCBO 4
Number of poles	1+N
Residual current type	B
Tripping characteristic curve	NK

Technical Data	DRCBO 4 B06/0,03/1N-B NK
Rated current (AC)	6 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	10 ms
Tripping frequency	0 Hz ... 150 kHz
Maximum disconnection times	1 · IΔn: ≤ 300 ms; 5 · IΔn: ≤ 40 ms
Tripping characteristic	B
Supply side	up
Operating voltage (AC)	max. 253 V
Internal consumption	max. 2.2 W
	load circuit
Specification	load disconnect contact
Rated voltage (AC)	230 V
Rated current (AC)	6 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	2.1 W
Back-up fuse type	gG
Overvoltage class	III
	screw-type terminal top, bottom (load circuit)
Neutral conductor position	right
Connection C1 Maximum 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
Tightening torque	2 Nm ... 2.4 Nm
	General data
Operating position	optional
Mechanical endurance	min. 5000 switching cycles
Electrical endurance	min. 2000 switching cycles
Ambient temperature	-25 °C ... 40 °C
Climate resistance	according to IEC 60068-2-30
Shock resistance	20 g / 20 ms Duration
Fatigue limit	> 5 g (f ≤ 80 Hz, duration > 30 min.)
Housing type	distribution board housing

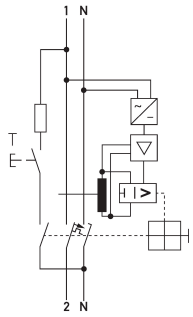
Technical Data	DRCBO 4 B06/0,03/1N-B NK
Installation type	Mounting rail (35 mm)
Housing material	thermoplastic
Protection class	IP20 (installed: IP40)
Width	44 mm
Height	91 mm
Depth	73.5 mm
Installation depth	67 mm
Module widths	2.5
Weight	0.275 kg
Design requirements/Standards	VDE 0664-20, VDE 0664-40, VDE 0664-401, EN 61009-1, EN 62423, ÖVE/ÖNORM E 8601
Power limitation category	3
Degree of pollution	2
Certifications	VDE

Dimensions



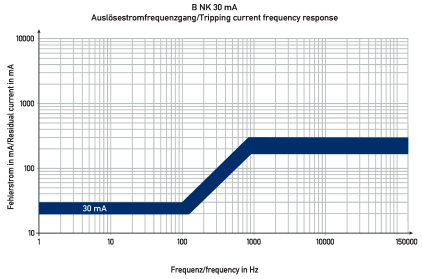
Dimensional drawing Group view

Wiring example



Wiring diagram

Diagrams



Characteristic B NK 30 mA