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Protective Devices
Combined RCD/MCB Devices
mRB4, 3+N-pole

Catalog

Powering Business Worldwide

wa_sg00213

Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories can be mounted subsequently
- Wide variety of rated tripping currents
- Rated currents up to 25 A
- Tripping characteristics B, C, D
- Rated breaking capacity 6 kA or 4.5 kA

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package

Type A

4.5 kA, 3+N-pole
Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A

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Characteristic C

20/0.03	mRB4-20/3N/C/003-A	120677	1/30
25/0.03	mRB4-25/3N/C/003-A	120678	1/30
32/0.03	mRB4-32/3N/C/003-A	167508	1/30
20/0.1	mRB4-20/3N/C/01-A	120679	1/30
25/0.1	mRB4-25/3N/C/01-A	120680	1/30
32/0.1	mRB4-32/3N/C/01-A	167509	1/30
20/0.3	mRB4-20/3N/C/03-A	120681	1/30
25/0.3	mRB4-25/3N/C/03-A	120682	1/30
32/0.3	mRB4-32/3N/C/03-A	167510	1/30

wa_sg00213

Characteristic D

20/0.03	mRB4-20/3N/D/003-A	120683	1/30
20/0.1	mRB4-20/3N/D/01-A	120684	1/30

Specifications | Combined RCD/MCB Devices mRB., 3+N-pole

Description

- Combined RCD/MCB Devices
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories can be mounted subsequently
- The test key “T” must be pressed every 6 month. The system operator must be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCD-label enclosed). The test intervall of 6 month is valid for residential and similar applications. Under all other conditions (e.g. damply or dusty environments), it’s recommended to test in shorter intervalls (e.g. monthly).
- Pressing the test key “T” serves the only purpose of function testing the residual current device (RCD). This test does not make earthing resistance measurement (R_E), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A**: Protects against special forms of residual pulsating DC which have not been smoothed

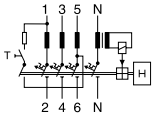
Accessories:		
Tripping signal switch for subsequent installation	ZP-IHK	286052
	ZP-NHK	248437
	ZP-WHK	286053
Shunt trip release	ZP-ASA/..	248438, 248439

Technical Data

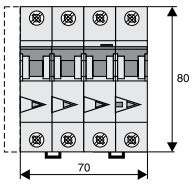
		mRB., 3+N-pole
Electrical		
Design according to Current test marks as printed onto the device		IEC/EN 61009
Line voltage-independent tripping		instantaneous 250 A (8/20 µs), surge current proof
Rated voltage	U_e	230/400V; 50 Hz
Rated tripping current	$I_{\Delta n}$	30, 100, 300 mA
Rated non-tripping current	$I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity		AC and pulsating DC
Selectivity class		3
Rated breaking capacity	I_{cn}	
mRB6		6 kA
mRB4		4.5 kA
Rated current		6 - 32 A
Rated impulse withstand voltage	U_{imp}	4 kV (1.2/50 µs)
Characteristic		B, C, D
Maximum back-up fuse (short-circuit)		100 A gL/gG
Endurance		
electrical components		≥ 4,000 switching operations
mechanical components		≥ 20,000 switching operations
Mechanical		
Frame size		45 mm
Device height		80 mm
Device width		70 mm (4 MU)
Mounting		3-position DIN rail clip, permits removal from existing busbar system
Degree of protection, switch		IP20
Degree of protection, built-in		IP40
Upper and lower terminals		open-mouthed/lift terminals
Terminal protection		finger and hand touch safe, DGUV VS3, EN 50274
Terminal capacity		1 - 25 mm^2
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Operating temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		according to IEC/EN 61009

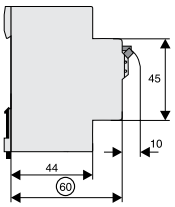
Connection diagram

3+N-pole

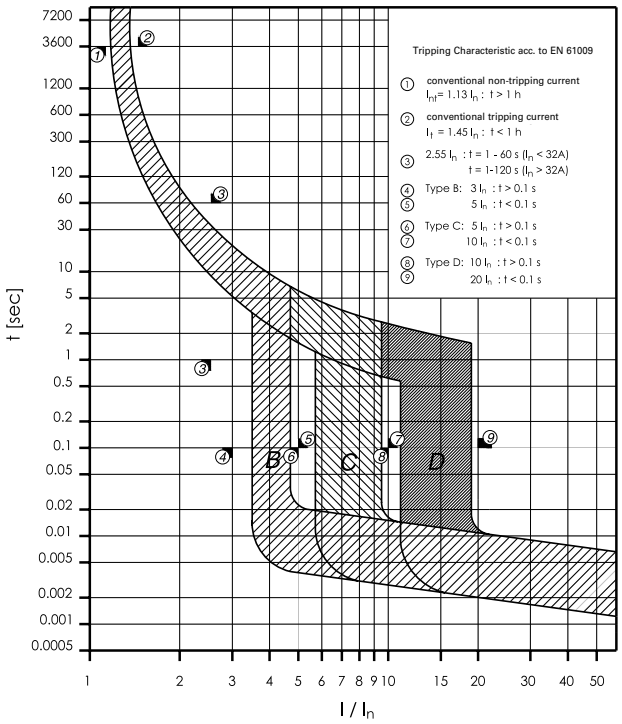


Dimensions (mm)





Tripping Characteristic mRB., Characteristics B, C and D



Power Loss at I_n mRB. 3+N-poles

	Typ B	Typ C	Typ D
(entire unit)			
I_n [A]	P* [W]	P* [W]	P* [W]
6	-	4.8	4.8
10	-	8.2	7.8
13	10.2	9.4	7.7
16	11.6	10.9	11.2
20	-	11.8	12.0
25	-	11.6	-
32	-	15.6	-

* 50Hz and ambient temperature

Back-up Protection between mRB. and NZM1

Short-circuit currents in kA.

mRB4/mRB6	NZMB1(C1)(N1)(H1)-A…		
	U_e = 415 V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

U_e = 415V: I_{cn} (mRB4) = 4.5 kA (acc. to IEC/EN 61009)
U_e = 415V: I_{cn} (mRB6) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMB1) = 25 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMC1) = 36 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMN1) = 50 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMH1) = 100 kA (acc. to IEC/EN 60947-2)

Back-up Protection between mRB. and NZM2

Short-circuit currents in kA.

mRB4/mRB6	NZMB2(C2)(N2)(H2)-A…		
	U_e = 415 V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

U_e = 415V: I_{cn} (mRB4) = 4.5 kA (acc. to IEC/EN 61009)
U_e = 415V: I_{cn} (mRB6) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMB2) = 25 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMC2) = 36 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMN2) = 50 kA (acc. to IEC/EN 60947-2)
U_e = 400/415V: I_{cu} (NZMH2) = 150 kA (acc. to IEC/EN 60947-2)

Back-up Protection between mRB. and PLSM-OV63

Short-circuit currents in kA.

mRB4/mRB6	PLSM-OV63		
	U_e = 400 V		
	B	C	D
6	-	10	10
10	-	10	10
13	10	10	10
16	10	10	10
20	-	10	10
25	-	10	-

U_e = 415V: I_{cn} (mRB4) = 4.5 kA (acc. to IEC/EN 61009)
U_e = 415V: I_{cn} (mRB6) = 6 kA (acc. to IEC/EN 61009)
U_e = 400V: I_{cu} (PLSM-OV) = 10 kA (acc. to IEC/EN 60947-2)

Back-up Protection between mRB. and PLHT-OV80

Short-circuit currents in kA.

mRB4/mRB6	PLHT-OV80		
	U_e = 400 V		
	B	C	D
6	-	20	20
10	-	20	20
13	20	20	20
16	20	20	20
20	-	20	20
25	-	20	-

U_e = 415V: I_{cn} (mRB4) = 4.5 kA (acc. to IEC/EN 61009)
U_e = 415V: I_{cn} (mRB6) = 6 kA (acc. to IEC/EN 61009)
U_e = 400V: I_{cu} (PLHT-80) = 20 kA (acc. to IEC/EN 60947-2)

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Publication No. CA019058EN
Article number 302762-MK
November 2021

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