

Protective Devices

Combined RCD/MCB Devices

mRB6, 3+N-pole



Catalog



Powering Business Worldwide

SG14211



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**6 kA, 3+N-pole****Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A****Characteristic B**

13/0.03	mRB6-13/3N/B/003-A	120651	1/30
16/0.03	mRB6-16/3N/B/003-A	120652	1/30
13/0.1	mRB6-13/3N/B/01-A	120653	1/30
16/0.1	mRB6-16/3N/B/01-A	120654	1/30
13/0.3	mRB6-13/3N/B/03-A	120655	1/30
16/0.3	mRB6-16/3N/B/03-A	120656	1/30

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**Characteristic C**

6/0.03	mRB6-6/3N/C/003-A	120657	1/30
10/0.03	mRB6-10/3N/C/003-A	120658	1/30
13/0.03	mRB6-13/3N/C/003-A	120659	1/30
16/0.03	mRB6-16/3N/C/003-A	120660	1/30
6/0.1	mRB6-6/3N/C/01-A	120661	1/30
10/0.1	mRB6-10/3N/C/01-A	120662	1/30
13/0.1	mRB6-13/3N/C/01-A	120663	1/30
16/0.1	mRB6-16/3N/C/01-A	120664	1/30
6/0.3	mRB6-6/3N/C/03-A	120665	1/30
10/0.3	mRB6-10/3N/C/03-A	120666	1/30
13/0.3	mRB6-13/3N/C/03-A	120667	1/30
16/0.3	mRB6-16/3N/C/03-A	120668	1/30

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**Characteristic D**

6/0.03	mRB6-6/3N/D/003-A	120669	1/30
10/0.03	mRB6-10/3N/D/003-A	120670	1/30
13/0.03	mRB6-13/3N/D/003-A	120671	1/30
16/0.03	mRB6-16/3N/D/003-A	120672	1/30
6/0.1	mRB6-6/3N/D/01-A	120673	1/30
10/0.1	mRB6-10/3N/D/01-A	120674	1/30
13/0.1	mRB6-13/3N/D/01-A	120675	1/30
16/0.1	mRB6-16/3N/D/01-A	120676	1/30

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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 interval 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 intervals (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

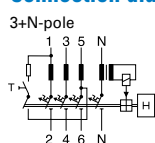
Accessories:

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

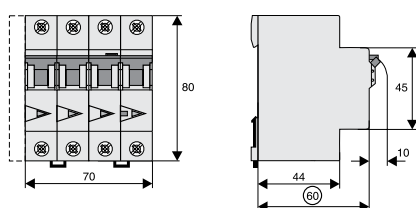
Technical Data

mRB., 3+N-pole	
Electrical	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Line voltage-independent tripping	instantaneous 250 A (8/20 μ s), 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 μ s)
Characteristic	B, C, D
Maximum back-up fuse (short-circuit)	100 A gL/gG
Endurance	
electrical components	$\geq 4,000$ switching operations
mechanical components	$\geq 20,000$ 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

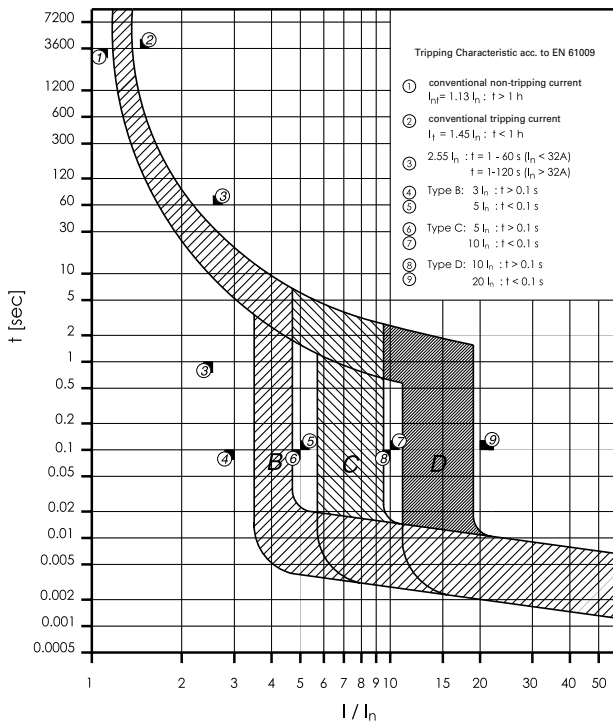
Connection diagram



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	-

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

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

$U_e = 415$ V: I_{cn} (mRB4) = 4.5 kA (acc. to IEC/EN 61009)
 $U_e = 415$ V: I_{cn} (mRB6) = 6 kA (acc. to IEC/EN 61009)
 $U_e = 400$ V: 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	-

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

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