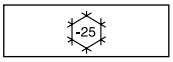
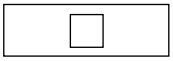
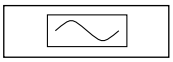
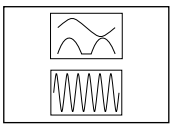
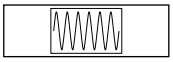
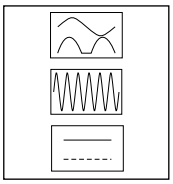
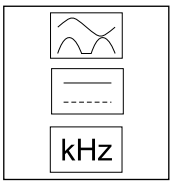
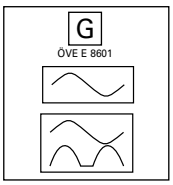
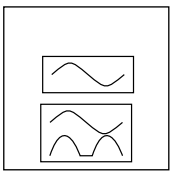
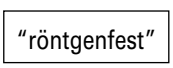
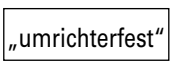
Residual Current Devices - General Data

Short description of the most important RCD types

Symbol	Description
	Eaton standard. Suitable for outdoor installation (distribution boxes for outdoor installation and building sites) up to -25° C.
	Conditionally surge-current proof (>250 A, 8/20 µs) for general application.
	Type AC: AC current sensitive RCCB
	Type A: AC and pulsating DC current sensitive RCCB, not affected by smooth DC fault currents up to 6 mA
	Type F: AC and pulsating DC current sensitive RCCB, trips also at frequency mixtures (10 Hz, 50 Hz, 1000 Hz), min. 10 ms time-delayed, min. 3 kA surge current proof, higher load capacity with smooth DC fault currents up to 10 mA
	Frequency range up to 20 kHz
	Trips also at frequency mixtures (10 Hz, 50 Hz, 1000 Hz)
	Type B: All-current sensitive RCD switchgear for applications where DC fault currents may occur. Non-selective, non-delayed. Protection against all kinds of fault currents.
	Type B+: All-current sensitive RCD switchgear for applications where DC fault currents may occur. Non-selective, non-delayed. Protection against all kinds of fault currents. Provides enhanced fire safety.
	RCD of type G (min 10 ms time delay) surge current-proof up to 3 kA. For system components where protection against unwanted tripping is needed to avoid personal injury and damage to property. Also for systems involving long lines with high capacitive reactance. Some versions are sensitive to pulsating DC. Some versions are available in all-current sensitive design.
	RCD of type S (selective, min 40 ms time delay) surge current-proof up to 5 kA. Mainly used as main switch, as well as in combination with surge arresters.This is the only RCD suitable for series connection with other types if the rated tripping current of the downstream RCD does not exceed one third of the rated tripping current of the device of type S. Some versions are sensitive to pulsating DC. Some versions are available in all-current sensitive design.
	„X-ray-proof“, for avoiding unwanted tripping caused by x-ray devices.
	„Frequency converter-proof“, for avoiding unwanted tripping caused by frequency converters, speed-controlled drives, etc.

Kind of residual current and correct use of RCD Types

Kind of current	Current profile	Correct use / application field of RCCB types AC	A	F	B	/ B+ kHz	Tripping current
Sinusoidal AC residual current		✔	✔	✔	✔		0.5 to 1.0 $I_{\Delta n}$
Pulsating DC residual current (positive or negative half-wave)		–	✔	✔	✔		0.35 to 1.4 $I_{\Delta n}$
Cut half-wave current		–	✔	✔	✔		Lead angle 90°: 0.25 to 1.4 $I_{\Delta n}$
Lead angle 90° el			✔	✔	✔		Lead angle 135°: 0.11 to 1.4 $I_{\Delta n}$
Lead angle 135° el							
Half-wave with smooth DC current of 6 mA		–	✔	✔	✔		max. 1.4 $I_{\Delta n}$ + 6 mA
Half-wave with smooth DC current of 10 mA		–	–	✔	✔		max. 1.4 $I_{\Delta n}$ + 10 mA
Smooth DC current		–	–	–	✔		0.5 to 2.0 $I_{\Delta n}$

Tripping time

Break time and non-actuating time for alternating residual currents (r.m.s. values) for type AC and A RCCB

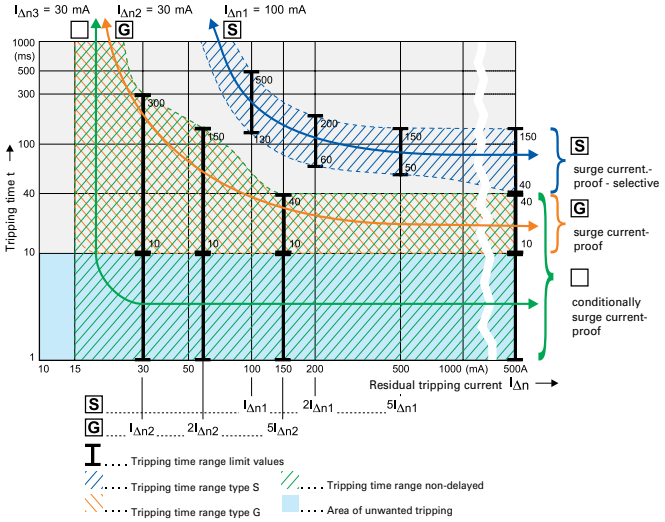
Classification	$I_{\Delta n}$ mA		$I_{\Delta n}$	$2xI_{\Delta n}$	$5xI_{\Delta n}$	5 x $I_{\Delta n}$ or 0.25A	500A
Standard RCD Conditionally surge current-proof 250 A	≤30	Max. tripping time (s)	0.3	0.15		0.04	0.04
Standard RCD Conditionally surge current-proof 250 A	>30	Max. tripping time (s)	0.3	0.15	0.04		0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	30	Min. non actuating time(s) Max. tripping time (s)	0.01 0.3	0.01 0.15		0.01 0.04	0.01 0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	>30	Min. non actuating time(s) Max. tripping time (s)	0.01 0.3	0.01 0.15	0.01 0.04		0.01 0.04
RCCB Type S (Selective) Surge current-proof 5 kA	>30	Min. non actuating time(s) Max. tripping time (s)	0.13 0.5	0.06 0.2	0.05 0.15		0.04 0.15

Break time for half-wave pulsating residual currents (r.m.s. values) for type A RCCB

Classification	$I_{\Delta n}$ mA		$1.4xI_{\Delta n}$	$2xI_{\Delta n}$	$2.8xI_{\Delta n}$	$4xI_{\Delta n}$	7 x $I_{\Delta n}$	0.35 A	0.5 A	350A
Standard RCD Conditionally surge current-proof 250 A	<30	Max. tripping time (s)		0.3		0.15			0.04	0.04
Standard RCD Conditionally surge current-proof 250 A	30	Max. tripping time (s)	0.3		0.15			0.04		0.04
Standard RCD Conditionally surge current-proof 250 A	>30	Max. tripping time (s)	0.3		0.15		0.04			0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	30	Max. tripping time (s)	0.3		0.15			0.04		0.04
RCCB Type G (Short-time-delay) Surge current-proof 3 kA	>30	Max. tripping time (s)	0.3		0.15		0.04			0.04
RCCB Type S (Selective) Surge current-proof 5 kA	>30	Max. tripping time (s)	0.5		0,2		0.15			0.15

Tripping Characteristics (IEC/EN 61008)

Tripping characteristics, tripping time range and selectivity of instantaneous, surge current-proof „G“ and surge current-proof - selective „S“ residual current devices.



IEC 60364-4-41 deals with additional protection: The use of RCDs with a rated residual operating current not exceeding 30 mA, is recognized in a.c. systems as additional protection in the event of failure of the provision for basic protection and/or the provision for fault protection or carelessness by users.

This means when using RCDs for fault current/residual current protection two RCDs must be connected in series.

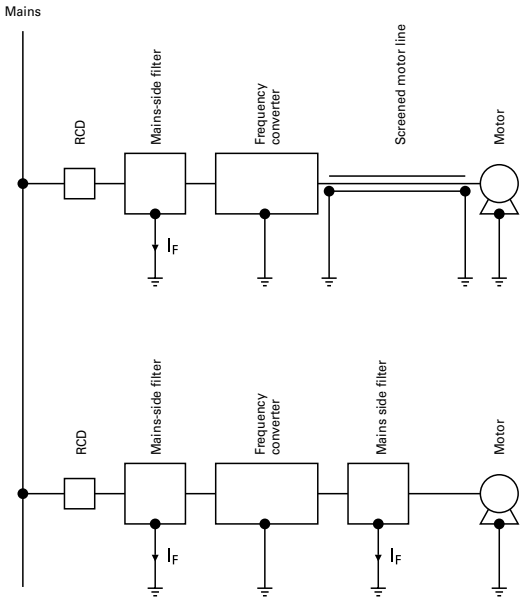
Testing:

RCDs with tripping time delay (Types -G and -S) may be function tested with conventional testing equipment which must be set according to the instructions for operation of the testing device. Due to reasons inherent in the measuring process, the tripping time determined in this way may be longer than expected in accordance with the specifications of the manufacturer of the measuring instrument.

However, the device is ok if the result of measurement is within the time range specified by the manufacturer of the measuring instrument.

Hints for the application of our frequency converter-proof RCDs:

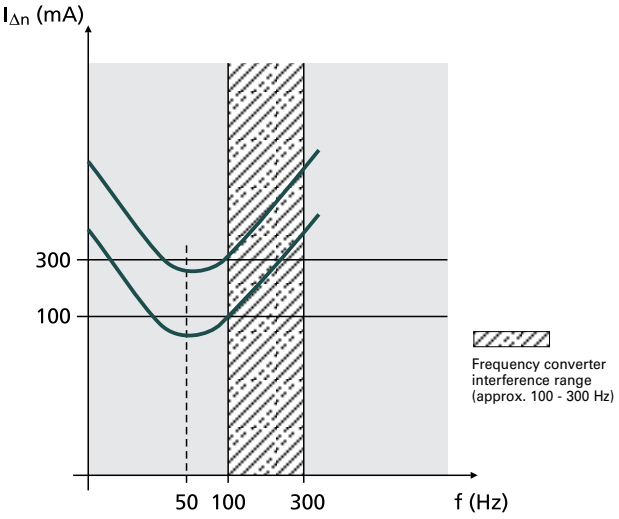
Due to the currents flowing off through the filters (designated IF), the sum of currents through the RCD is not exactly zero, which causes unwanted tripping.



Frequency converters are used in a wide variety of systems and equipment requiring variable speed, such as lifts, escalators, conveyor belts, and large washing machines. Using them for such purposes in circuits with conventional residual current devices causes frequent problems with unwanted tripping.

The technical root cause of this phenomenon is the following: Fast switching operations involving high voltages cause high interference levels which propagate through the lines on the one hand, and in the form of interfering radiation on the other. In order to eliminate this problem, a mains-side filter (also referred to as input filter or EMC-filter) is connected between the RCD and frequency converter. The anti-interference capacitors in the filters produce discharge currents against earth which may cause unwanted tripping of the RCD due to the apparent residual currents. Connecting a filter on the output side between frequency converter and 3-phase AC motor results in the same behaviour.

Tripping characteristic



This sample tripping characteristic of a 100 mA RCD and a 300 mA RCD shows the following: In the frequency range around 50 Hz, the RCDs trip as required (50 - 100 % of the indicated $I_{\Delta n}$).
In the range shown hatched in the diagram, i. e. from approx. 100 to 300 Hz, unwanted tripping occurs frequently due to the use of frequency converters. Frequency converter-proof residual current devices are much less sensitive in this frequency range than in the 50 - 60 Hz range, which leads to an enormous increase in the reliability of systems.

Therefore, we recommend to use RCDs designed for applications with frequency converter!
These special residual current devices can be recognised by an extension of the type designation („**-F**"). They meet the requirements of compatibility between RCDs and frequency converters with respect to unwanted tripping.

These are **NOT AC/DC-sensitive** (IEC 62423) RCDs of type B !!!

Our **RCDs of type „-F"** are characterised by **SENSITIVITY TO RESIDUAL PULSATING DC** and **SELECTIVITY** S or **SHORT-TIME DELAY** G

Specifications | Combined RCD/MCB Devices digital

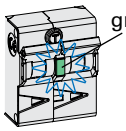
Description

- Combined RCD/MCB device
- Line voltage-dependent 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
- Contact position indicator red - green
- Fault current tripping indicator white - blue
- Comprehensive range of accessories suitable for subsequent installation
- The test key "T" must be pressed every year. The system operator must be informed of this obligation and his responsibility in a way that can be proven. Under special conditions (e.g. damply and/or dusty environments, environments with polluting and/or corroding conditions, environments with large temperature fluctuations, installations with a risk of overvoltages due to switching of equipment and/or atmospheric discharges, portable equipment ...), it's recommended to test in monthly intervals.
- 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.
- **Type -G/A**: High reliability against unwanted tripping. Suitable for any circuit where personal injury or damage to property may occur in case of unwanted tripping. Additionally protects against special forms of residual pulsating DC which have not been smoothed.
- **Type -F**: Sensitive to pulsating DC residual current and detection of multifrequency residual currents up to 1 kHz
  - Increased protection due to the detection of mixed frequencies
  - Higher load rating with DC residual currents up to 10mA
  - Reduction of nuisance tripping thanks to time delayed tripping and increased current withstand capability of 3 kA

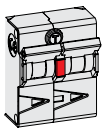
  Recommended for washing machines, dish washers, or motor applications with single-phase drives.

Accessories:		
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover 2-poles	Z-TC/SD-2P	178099

Local Indication RCD

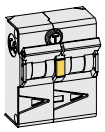


Self check (power ON) 2 s



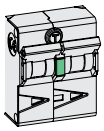
red

$I_\Delta \geq 50\% I_{\Delta n}$



amber

$I_\Delta = 30\text{-}50\% I_{\Delta n}$

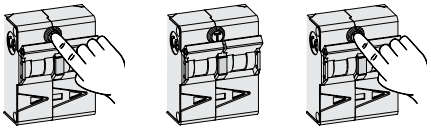


green

$I_\Delta \leq 30\% I_{\Delta n}$

Service Mode (measuring of residual current I_Δ)

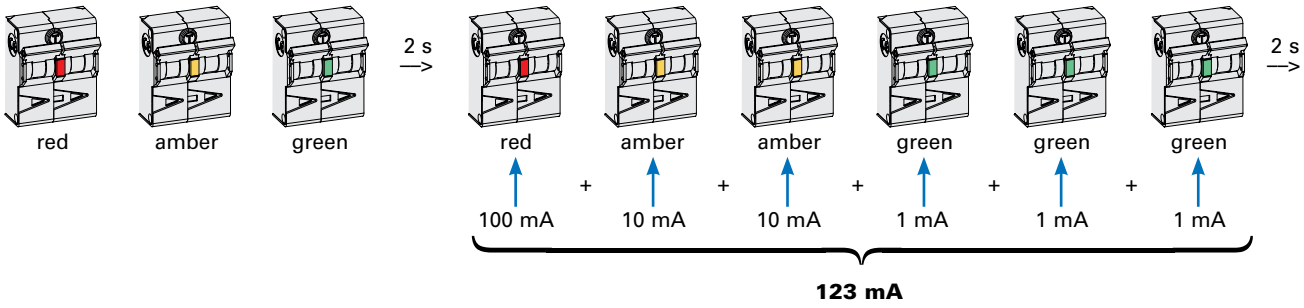
Pressing test button twice to activate Service-Mode



press (0,1 - 0,4 s) | release (0,1 - 0,4 s) | press (0,1 - 0,4 s)

Measurement delimiter	red
Measurement delimiter ON time	400 ms
10 mA measurement color	amber
1 mA measurement color	green
Double-pressing test button to activate Service Mode	press (0.1-0.4 s) -> release (0.1-0.4 s) -> press (0.1-0.4 s)
Time duration of Service Mode	4 min (during activated Service Mode all protection functions are still working)

Lamp test



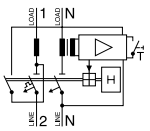
Combined RCD/MCB Devices NdRBM - Technical Data

Technical Data

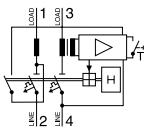
		NdRBM
Electrical		
Design according to		IEC/EN 61009 Type G according to ÖVE E 8601
Current test marks as printed onto the device		
Number of protected poles		
1+N-poles		1
2-poles		2
Tripping		
Type G / Type F		line voltage-dependent, 10 ms delay 3 kA (8/20µs), surge current-proof
Rated voltage	U_n	240 V AC, 50 Hz
Rated operational voltage	U_e	204-260 V AC
Voltage range test circuit		195-264 V AC
Rated tripping current	$I_{\Delta n}$	10, 30, 100 mA
Rated non-tripping current	$I_{\Delta no}$	0.55 $I_{\Delta n}$
Sensitivity		AC and pulsating DC, Type F according to IEC 62423
Press of test button duration		> 0.5 s
Selectivity class		3
Service short circuit capacity	I_{cs}	7.5 kA
Rated short circuit capacity	I_{cn}	10 kA
Rated current		6 - 25 A
Rated impulse withstand voltage	U_{imp}	4 kV (1.2/50µs)
Characteristic		B, C, D
Maximum back-up fuse (short circuit protection)		100 A gL (>10 kA)
Endurance		
electrical components		≥ 4,000 operating cycles (I_n, U_n, cosφ = 0.87)
mechanical components		≥ 10,000 operating cycles
Mechanical		
Frame size		45 mm
Device height		80 mm
Device width		35 mm (2MU)
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 screw		M5 (with slotted screw acc. to EN ISO 4757-Z2, Pozidriv PZ2)
Terminal torque		2 - 2.4 Nm
Busbar thickness		0.8 - 2 mm
Operation temperature		-25°C to +40°C
Storage- and transport temperature		-35°C to +60°C
Resistance to climatic conditions		acc. to IEC 68-2 (25..55°C / 90..95% RH)
Line side (supply)		lower terminals
Load side		upper terminals

Connection diagram

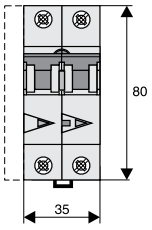
1+N-poles

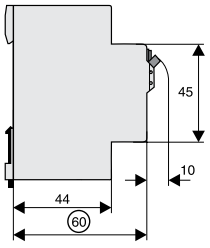


2-poles

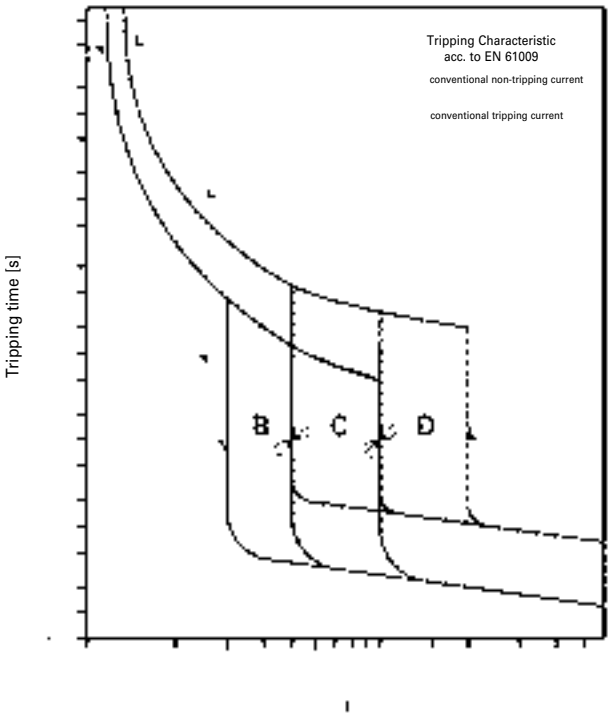


Dimensions (mm)





Tripping Characteristic, Characteristics B, C and D



Internal Resistance

Type B	
At room temperature (single pole)	
I_n [A]	R* [mΩ]
10	17.9
13	12.3
16	7.6
* 50Hz	

Type C	
At room temperature (single pole)	
I_n [A]	R* [mΩ]
6	28.5
10	17.7
13	9.0
16	6.7
20	5.5
25	3.0
* 50Hz	

Type D	
At room temperature (single pole)	
I_n [A]	R* [mΩ]
6	28.5
10	14.9
13	9.0
16	6.7
20	5.5
25	3.0
* 50Hz	

Power Loss at I_n

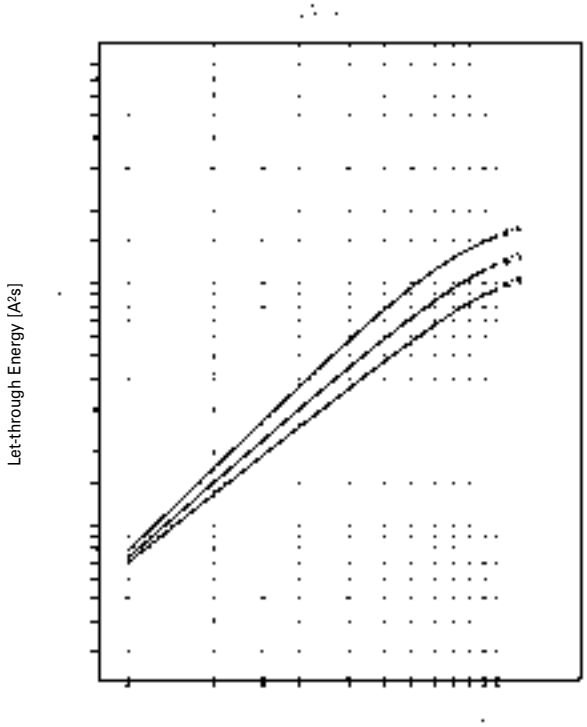
Type B	
(entire unit)	
I_n [A]	P* [W]
10	4.0
13	4.9
16	4.5
* 50Hz and ambient temperature	

Type C	
(entire unit)	
I_n [A]	P* [W]
6	2.1
10	4.0
13	3.4
16	3.9
20	5.0
25	4.2
* 50Hz and ambient temperature	

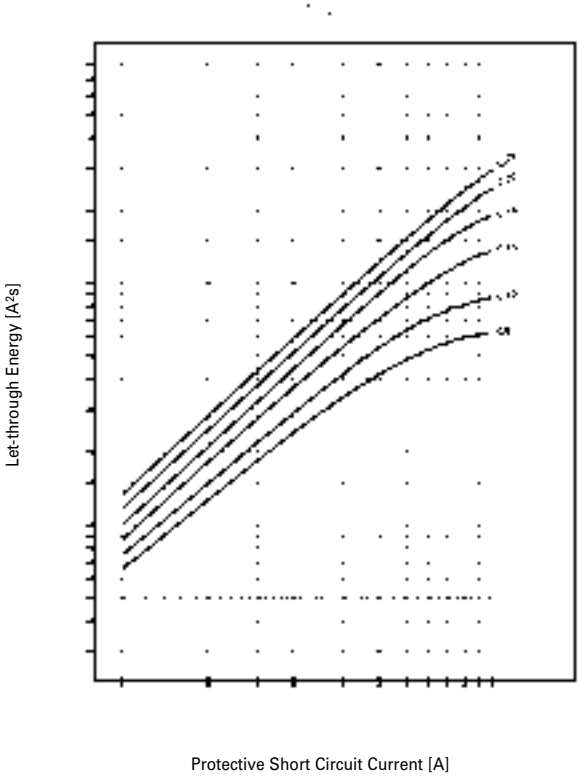
Type D	
(entire unit)	
I_n [A]	P* [W]
6	2.1
10	3.2
13	3.4
16	3.9
20	5.0
25	4.2
* 50Hz and ambient temperature	

Let-through Energy

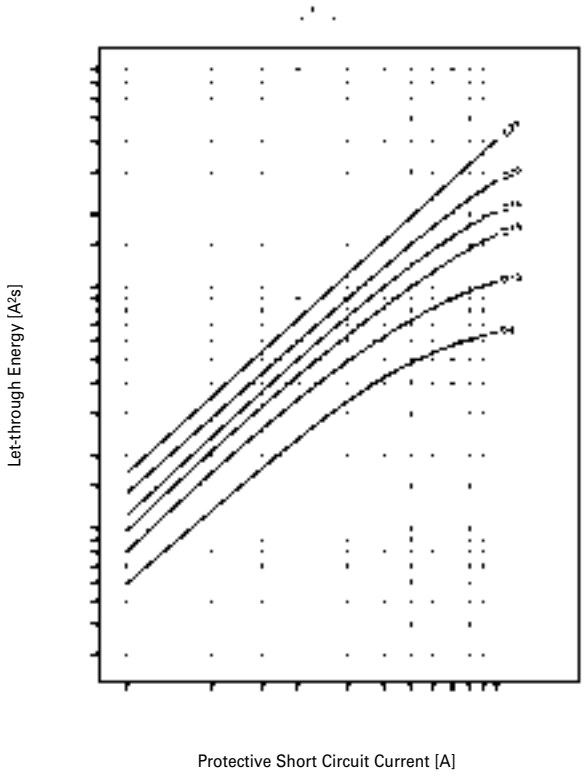
Let-through Energy, Characteristic B



Let-through Energy, Characteristic C

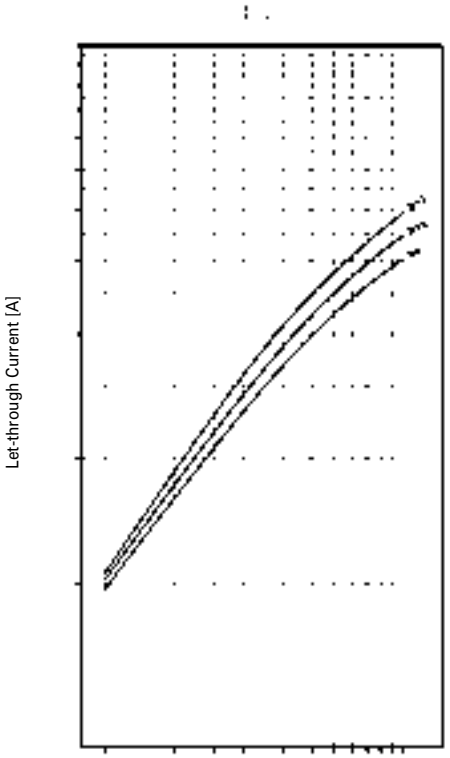


Let-through Energy, Characteristic D

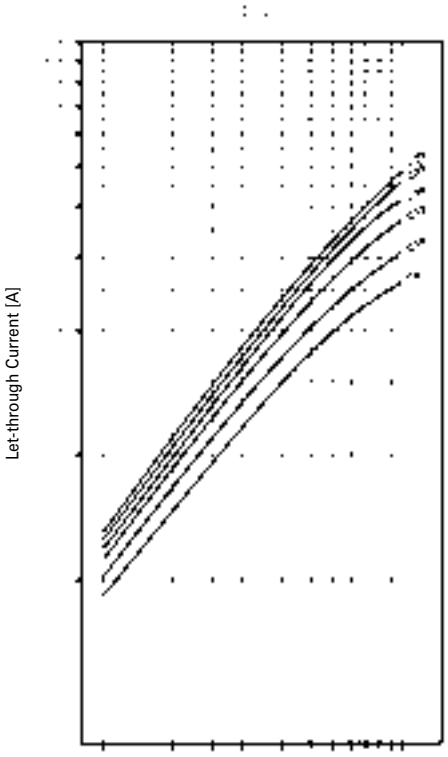


Let-through Current

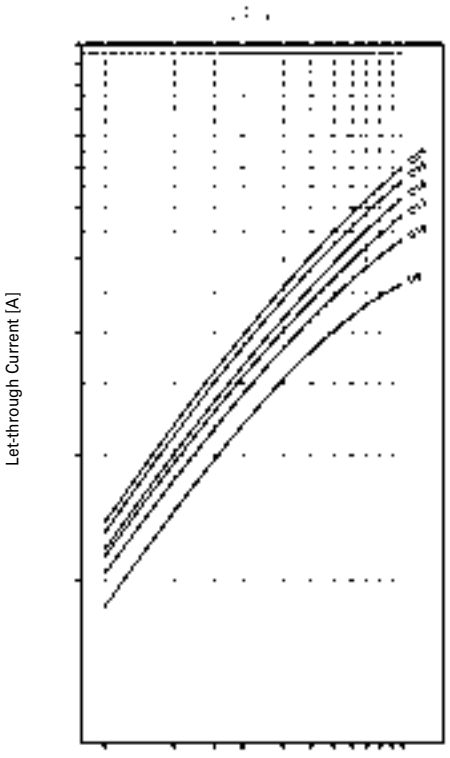
Let-through Current, Characteristic B



Let-through Current, Characteristic C



Let-through Current, Characteristic D



Short-circuit Selectivity NdRBM

In case of a short-circuit, selectivity is provided up to the specified selective current values I_s (kA) applicable between the NdRBM RCD/MCB circuit breakers and the up-stream protective devices.

When a short-circuit occurs, this means that with I_{KS} current values below I_s only the MCB will trip. However, in case of short-circuit currents beyond these values both protective devices will trip.

NdRBM and NZMB(C)(N)(H)1-A..., NZMB(C)(N)(H)2-A...

Short circuit currents in kA, rated currents of fuses in A.

Overload and short-circuit release unit NZM at max. value

NdRBM	NZM.1-A... I_{cu} = 25 (36) (50) (100) kA					
	40	50	63	80	100	125
B10	1.2	1.5	2	2	4	10
B13	1	1.5	2	2	4	10
B16	1	1.2	1.5	2	3	8
C+D6	1.2	1.5	2	2	4	10
C+D10	1.2	1.5	2	2	4	10
C+D13	1	1.5	2	2	4	10
C+D16	1	1.2	1.5	2	3	8
C+D20	0.8	1.2	1.5	1.5	3	8
C+D25	0.7	1.1	1.3	1.3	2.5	6

NdRBM	NZM.2-A... I_{cu} = 25 (36) (50) (150) kA								
	40	50	63	80	100	125	160	200	250
B10	1	1.5	2.5	3	10	10	10	10	10
B13	1	1.2	2	3	10	10	10	10	10
B16	1	1.2	1.5	2.5	10	10	10	10	10
C+D6	1	1.5	2.5	3	10	10	10	10	10
C+D10	1	1.5	2.5	3	10	10	10	10	10
C+D13	1	1.2	2	3	10	10	10	10	10
C+D16	1	1.2	1.5	2.5	10	10	10	10	10
C+D20	1	1.2	1.5	1.5	10	10	10	10	10
C+D25	0.9	1.1	1.3	1.3	10	10	10	10	10

NZMB1(C1)(N1)(H1): I_{cu} (400/415V) = 25(36)(50)(100) kA (acc. to IEC/EN 60947-2)
NZMB2(C2)(N2)(H2): I_{cu} (400/415V) = 25(36)(50)(150) kA (acc. to IEC/EN 60947-2)

NdRBM and NH000/NH00/NH1 gG

Short circuit currents in kA, rated currents of fuses in A.

NdRBM	NH000/NH00/NH1 gG										
	16	20	25	32	35	40	50	63	80	100	125
B10	<0.5	<0.5	0,9	1,7	2,3	3,4	5,2	6,9	>10	>10	>10
B13	<0.5	<0.5	0,8	1,4	1,9	2,7	4,1	5,2	8,5	>10	>10
B16	<0.5	<0.5	0,7	1,2	1,6	2,2	3,1	3,8	5,7	>10	>10
C6	<0.5	0,5	0,9	1,8	2,5	3,8	8,2	>10	>10	>10	>10
C10	<0.5	<0.5	0,8	1,5	2,0	2,9	4,5	6,6	>10	>10	>10
C13	<0.5	<0.5	0,6	1,2	1,5	2,2	3,3	4,2	6,7	>10	>10
C16	<0.5	<0.5	0,6	1,0	1,3	1,8	2,6	3,3	4,8	>10	>10
C20	<0.5	<0.5	0,5	0,9	1,1	1,6	2,3	2,8	4,1	8,6	>10
C25	<0.5	<0.5	<0.5	0,8	1,0	1,4	2,0	2,5	3,6	7,1	>10
D6	<0.5	0,5	1,0	1,8	2,5	3,8	7,8	>10	>10	>10	>10
D10	<0.5	<0.5	0,7	1,2	1,6	2,4	3,8	5,2	>10	>10	>10
D13	<0.5	<0.5	0,6	1,0	1,3	1,9	2,8	3,6	5,6	>10	>10
D16	<0.5	<0.5	0,5	0,9	1,1	1,6	2,3	2,9	4,3	>10	>10
D20	<0.5	<0.5	<0.5	0,8	1,0	1,4	2,0	2,5	3,6	7,5	>10
D25	<0.5	<0.5	<0.5	0,7	0,8	1,1	1,6	2,1	3,1	5,5	7,7

Rated breaking capacity (NH) AC 500 V = 120 kA (acc. to IEC/EN 60269)

NdRBM and PLSM-0V/PLHT-0V...

Short circuit currents in kA, rated currents of fuses in A.

NdRBM	PLSM-0V/PLHT-0V I_{cu} = 10 kA						
	25	32	40	50	56	63	80
B10	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B13	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B16	1.5	1.5	1.5	1.5	1.5	1.5	1.5
C+D6	1.5	1.5	1.5	1.5	1.5	1.5	1.5
C+D10	1.5	1.5	1.5	1.5	1.5	1.5	1.5
C+D13	1.5	1.5	1.5	1.5	1.5	1.5	1.5
C+D16	1.5	1.5	1.5	1.5	1.5	1.5	1.5
C+D20	-	1.5	1.5	1.5	1.5	1.5	1.5
C+D25	-	-	1.5	1.5	1.5	1.5	1.5

Back-up Protection

The up-stream protective devices will protect the down-stream NdRBM up to the short-circuit current specified.

NdRBM and NZM.1-A..., 240 V

Short circuit currents in kA.

NdRBM	NZMB1-A... U_e = 240 V		
	B	**C**	**D**
6	-	25	25
10	25	25	25
13	25	25	25
16	25	25	25
20	-	20	20
25	-	20	20

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMB1) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMC1-A... U_e = 240 V		
	B	**C**	**D**
6	-	36	36
10	36	36	36
13	36	36	36
16	36	36	36
20	-	20	20
25	-	20	20

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMC1) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMN1-A... U_e = 240 V		
	B	**C**	**D**
6	-	40	40
10	40	40	40
13	40	40	40
16	40	40	40
20	-	20	20
25	-	20	20

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMN1) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMH1-A... U_e = 240 V		
	B	**C**	**D**
6	-	40	40
10	40	40	40
13	40	40	40
16	40	40	40
20	-	20	20
25	-	20	20

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMH1) = 100 kA (acc. to IEC/EN 60947-2)

NdRBM and NZM.2-A..., 240 V

Short circuit currents in kA.

NdRBM	NZMB2-A... U_e = 240 V		
	B	**C**	**D**
6	-	25	25
10	25	25	25
13	25	25	25
16	25	25	25
20	-	20	20
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMB2) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMC2-A... U_e = 240 V		
	B	**C**	**D**
6	-	36	36
10	36	36	36
13	36	36	36
16	25	25	25
20	-	20	20
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMC2) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMN2-A... U_e = 240 V		
	B	**C**	**D**
6	-	40	40
10	40	40	40
13	40	40	40
16	25	25	25
20	-	15	15
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMN2) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

NdRBM	NZMH2-A... U_e = 240 V		
	B	**C**	**D**
6	-	40	40
10	40	40	40
13	40	40	40
16	25	25	25
20	-	15	15
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415V: I_{cu} (NZMH2) = 150 kA (acc. to IEC/EN 60947-2)

NdRBM and NH00-125 A, 240 V

Short circuit currents in kA.

NdRBM	NH00-125A gG U_e = 240 V		
	B	**C**	**D**
6	-	40	40
10	40	40	40
13	40	40	40
16	40	40	40
20	-	20	20
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009) AC 500 V (NH00-125A gG) = 120 kA (acc. to IEC/EN 60269)

NdRBM and PLSM-OV63, 230 V

Short circuit currents in kA.

NdRBM	PLSM-OV63/2, 3, 4, 3N IT-system U = 230 V		
	B	**C**	**D**
6	-	10	10
10	10	10	10
13	10	10	10
16	10	10	10
20	-	10	10
25	-	10	10

U_e = 240V: I_{cn} (NdRBM) = 10 kA (acc. to IEC/EN 61009)
U_e = 230/400V: I_{cu} (PLSM-OV63) = 10 kA (acc. to IEC/EN 60947-2)