sg00719_r

Description

- High-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Increased protection in applications with 1-phase frequency converter due to the detection of mixed frequencies (type F)
- Reduction of nuisance tripping (type F or G/A) thanks to
  - time delayed tripping
  - increased current withstand capability
  - 3 kA
- Higher load rating with DC residual currents up to 10 mA (Type F)
- Contact position indicator red - green
- The -OL types are specifically designed to fulfill the tripping characteristic requirements of I2 ≤ Iz in the Norwegian electrotechnical standard NEK 400-8-823.
- 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 10 kA

wa_sg74519_r

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Type F			
10 kA, 2-pole			
Surge current-proof 3 kA, sensitive to residual pulsating DC, type F			
Characteristic B			
10/0.03	NdRBM-10/2/B/003-F-OL	300507	1/60
13/0.03	NdRBM-13/2/B/003-F-OL	300508	1/60
15/0.03	NdRBM-15/2/B/003-F-OL	300509	1/60
20/0.03	NdRBM-20/2/B/003-F-OL	300510	1/60
16/0.03	NdRBM-16/2/B/003-F	300492	1/60
Characteristic C			
10/0.03	NdRBM-10/2/C/003-F-OL	300503	1/60
13/0.03	NdRBM-13/2/C/003-F-OL	300504	1/60
15/0.03	NdRBM-15/2/C/003-F-OL	300505	1/60
20/0.03	NdRBM-20/2/C/003-F-OL	300506	1/60
6/0.03	NdRBM-6/2/C/003-F	300485	1/60
16/0.03	NdRBM-16/2/C/003-F	300495	1/60
25/0.03	NdRBM-25/2/C/003-F	300501	1/60
6/0.1	NdRBM-6/2/C/01-F	300484	1/60
10/0.1	NdRBM-10/2/C/01-F	300487	1/60
13/0.1	NdRBM-13/2/C/01-F	300490	1/60
16/0.1	NdRBM-16/2/C/01-F	300494	1/60
20/0.1	NdRBM-20/2/C/01-F	300497	1/60
25/0.1	NdRBM-25/2/C/01-F	300498	1/60
Characteristic D			
16/0.03	NdRBM-16/2/D/003-F	300496	1/60
25/0.1	NdRBM-25/2/D/01-F	300502	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Type G/A			
10 kA, 2-pole			
Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A			
Characteristic B			
10/0.03	NdRBM-10/2/B/003-G/A-OL	300636	1/60
13/0.03	NdRBM-13/2/B/003-G/A-OL	300637	1/60
15/0.03	NdRBM-15/2/B/003-G/A-OL	193871	1/60
16/0.03	NdRBM-16/2/B/003-G/A	193875	1/60
Characteristic C			
10/0.03	NdRBM-10/2/C/003-G/A-OL	300634	1/60
13/0.03	NdRBM-13/2/C/003-G/A-OL	300635	1/60
15/0.03	NdRBM-15/2/C/003-G/A-OL	193872	1/60
20/0.03	NdRBM-20/2/C/003-G/A-OL	193873	1/60
6/0.03	NdRBM-6/2/C/003-G/A	193876	1/60
16/0.03	NdRBM-16/2/C/003-G/A	193879	1/60
25/0.03	NdRBM-25/2/C/003-G/A	193880	1/60
6/0.1	NdRBM-6/2/C/01-G/A	193865	1/60
10/0.1	NdRBM-10/2/C/01-G/A	193866	1/60
13/0.1	NdRBM-13/2/C/01-G/A	193867	1/60
16/0.1	NdRBM-16/2/C/01-G/A	193868	1/60
20/0.1	NdRBM-20/2/C/01-G/A	193869	1/60
25/0.1	NdRBM-25/2/C/01-G/A	193870	1/60
Characteristic D			
16/0.03	NdRBM-16/2/D/003-G/A	193863	1/60
25/0.1	NdRBM-25/2/D/01-G/A	193864	1/60

Specifications | Combined RCD/MCB Devices NdRBM, digital

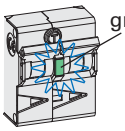
Description

- 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**: 10 ms time delay to avoid unwanted tripping (e.g. during thunderstorms).
- **Type -F**: Sensitive to pulsating DC residual current and detection of multi-frequency residual currents up to 1 kHz
  - Increased protection due to the detection of mixed frequencies
  - Higher load rating with DC residual currents up to 10 mA
  - Reduction of nuisance tripping thanks to time delayed tripping and increased current withstand capability of 3 kA

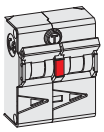
  Recommended for washing machines, dish washers, or motor applications with single-phase drives.
- **-OL Types**: Specifically designed to fulfill the tripping characteristic requirements of $I2 \leq Iz$ in the Norwegian electrotechnical standard NEK 400-8-823.

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

Local Indication RCD

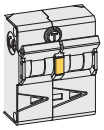


Self check (power ON) 2 s



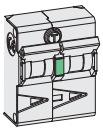
red

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



amber

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

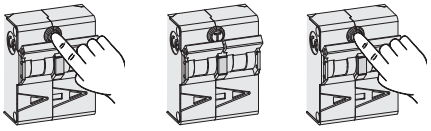


green

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

Service Mode (measuring of residual current I_Δ)

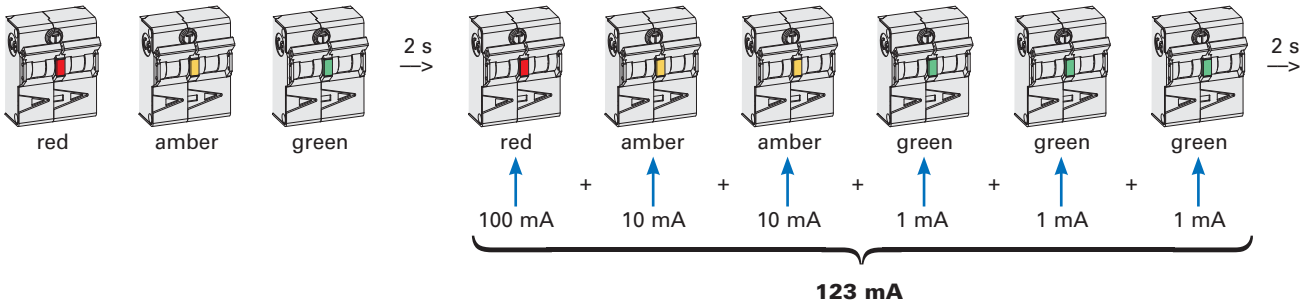
Pressing test button twice to activate Service-Mode



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

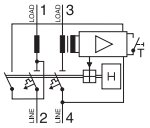


Technical Data

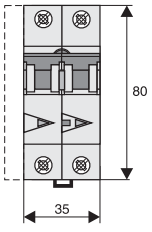
		NdRBM
Electrical		
Design according to		IEC/EN 61009 Type G according to ÖVE E 8601
Current test marks as printed onto the device		
Number of protected poles		2
Tripping		
Type G / Type F		line voltage-dependent, 10 ms delay, 3 kA (8/20µs) surge current-proof
Rated voltage	U_n	240 V AC, 50 Hz
Rated operational voltage	U_e	204-260 V AC
Voltage range test circuit		195-264 V AC
Rated tripping current	$I_{\Delta n}$	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 mm²
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

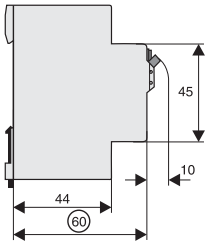
Connection diagram

2-poles



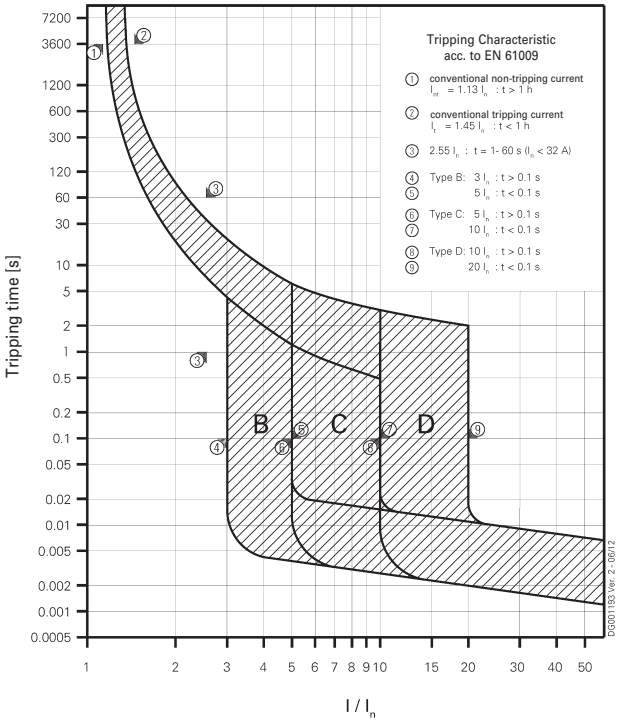
Dimensions (mm)



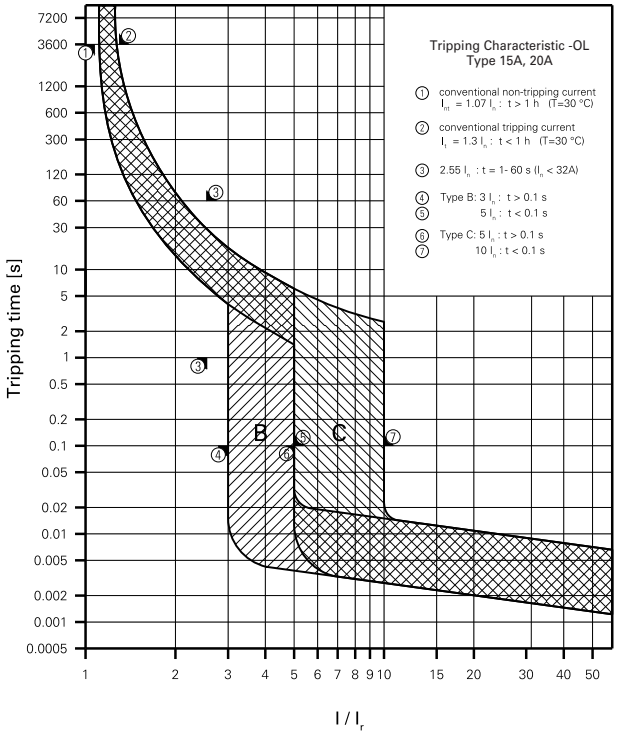


Tripping Characteristic NdRBM

Tripping Characteristic NdRBM, Characteristics B, C and D



Tripping Characteristic NdRBM, -OL Type 10,13,15, 20 A



Internal Resistance NdRBM

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 NdRBM

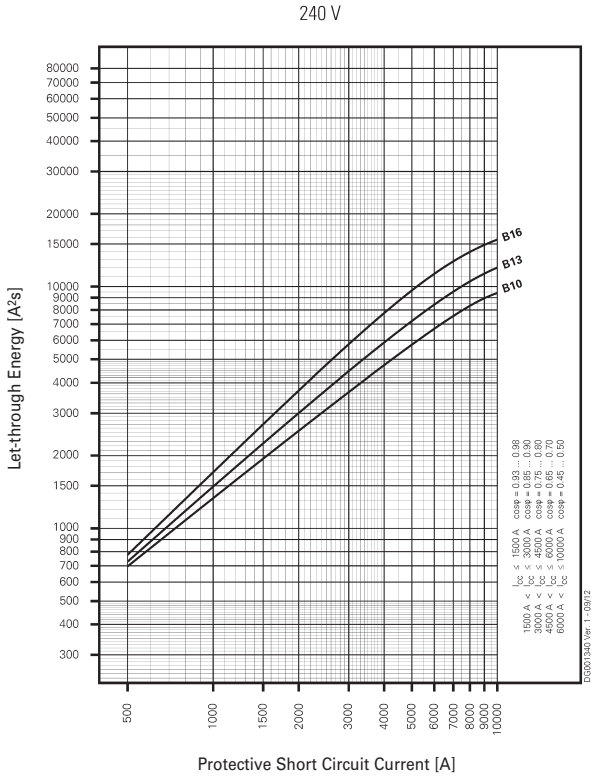
Type B	
(entire unit)	
I_n [A]	P* [W]
10	4.0
13	4.9
16	4.5
* 50Hz and ambient temperature	

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	

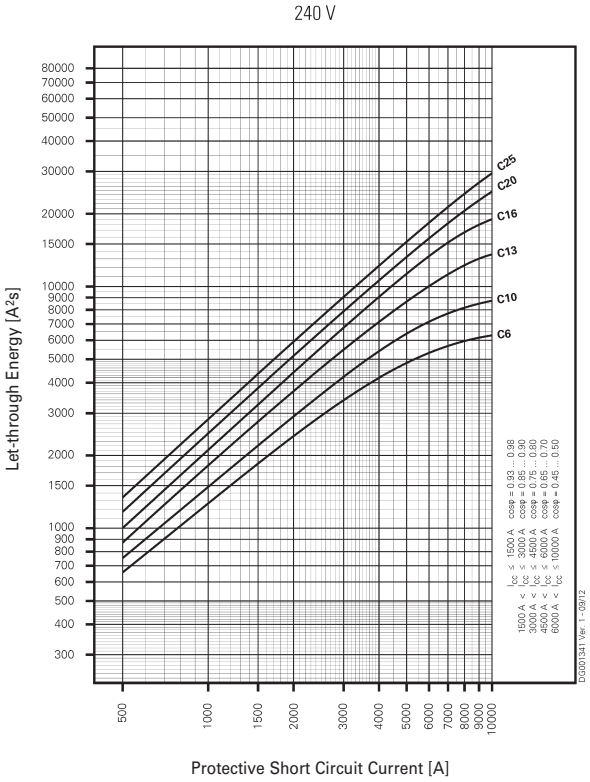
Type D	
(entire unit)	
I_n [A]	P* [W]
6	2.1
10	3.2
13	3.4
16	3.9
20	5.0
25	4.2
* 50Hz and ambient temperature	

Let-through Energy NdRBM

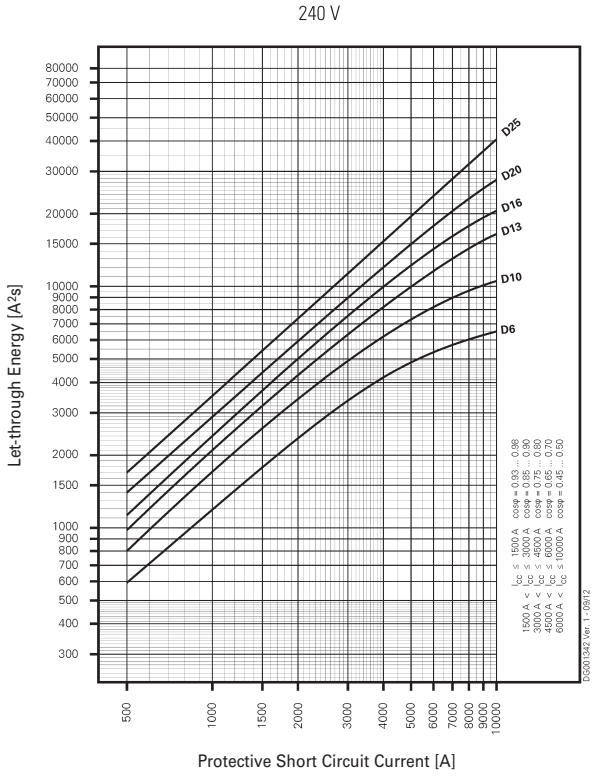
Let-through Energy NdRBM, Characteristic B



Let-through Energy NdRBM, Characteristic C

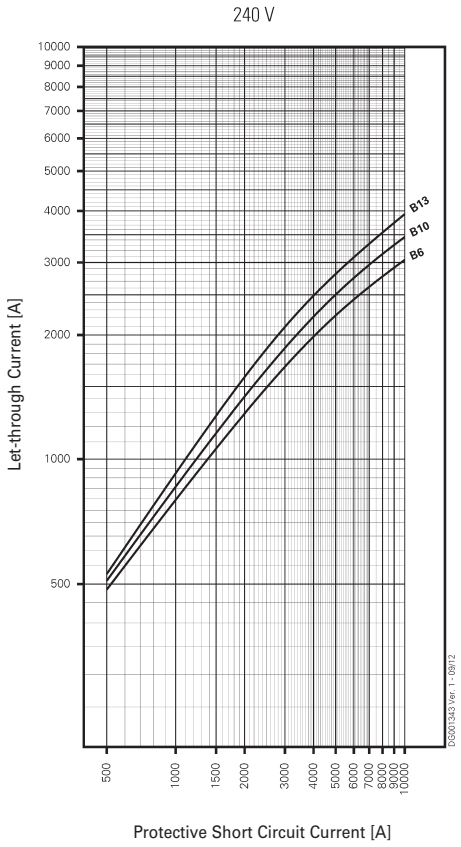


Let-through Energy NdRBM, Characteristic D

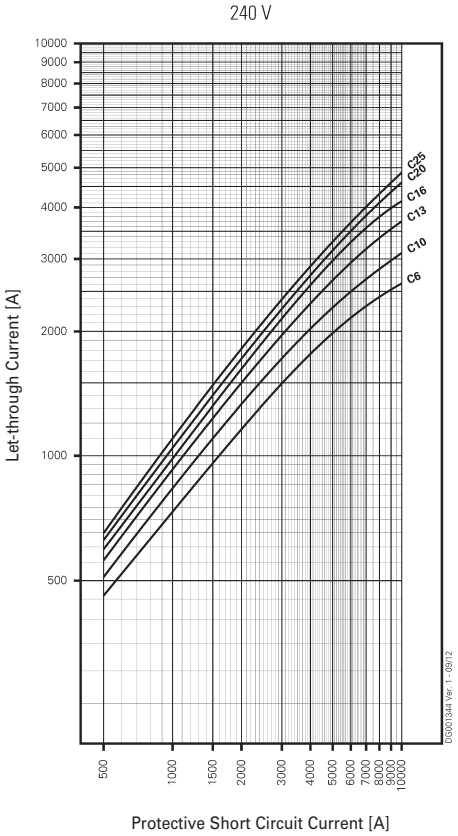


Let-through Current NdRBM

Let-through Current NdRBM, Characteristic B



Let-through Current NdRBM, Characteristic C



Let-through Current NdRBM, Characteristic D