SG02913

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 suitable for subsequent installation
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacitiy 10 kA and 6 kA

Type Super A

10 kA, 2-poles

Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, short-time delayed, Type Super A

SG02913

Characteristic B

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
10/0.03	FRBmM-B10/2/003-LiA	170886	1/60
13/0.03	FRBmM-B13/2/003-LiA	170887	1/60
16/0.03	FRBmM-B16/2/003-LiA	170888	1/60
20/0.03	FRBmM-B20/2/003-LiA	170889	1/60
25/0.03	FRBmM-B25/2/003-LiA	170890	1/60
10/0.1	FRBmM-B10/2/01-LiA	170810	1/60
13/0.1	FRBmM-B13/2/01-LiA	170811	1/60
16/0.1	FRBmM-B16/2/01-LiA	170812	1/60
20/0.1	FRBmM-B20/2/01-LiA	170813	1/60
25/0.1	FRBmM-B25/2/01-LiA	170814	1/60

SG02913

Characteristic C

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
6/0.03	FRBmM-C6/2/003-LiA	170795	1/60
10/0.03	FRBmM-C10/2/003-LiA	170796	1/60
13/0.03	FRBmM-C13/2/003-LiA	170797	1/60
16/0.03	FRBmM-C16/2/003-LiA	170798	1/60
20/0.03	FRBmM-C20/2/003-LiA	170799	1/60
25/0.03	FRBmM-C25/2/003-LiA	170800	1/60
6/0.1	FRBmM-C6/2/01-LiA	170829	1/60
10/0.1	FRBmM-C10/2/01-LiA	170830	1/60
13/0.1	FRBmM-C13/2/01-LiA	170831	1/60
16/0.1	FRBmM-C16/2/01-LiA	170832	1/60
20/0.1	FRBmM-C20/2/01-LiA	170833	1/60
25/0.1	FRBmM-C25/2/01-LiA	170834	1/60

Type A

10 kA, 2-poles
Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, Type A

SG02913

Characteristic B

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
10/0.03	FRBmM-B10/2/003-A	170879	1/60
13/0.03	FRBmM-B13/2/003-A	170880	1/60
16/0.03	FRBmM-B16/2/003-A	170881	1/60
20/0.03	FRBmM-B20/2/003-A	170882	1/60
25/0.03	FRBmM-B25/2/003-A	170883	1/60
10/0.1	FRBmM-B10/2/01-A	170803	1/60
13/0.1	FRBmM-B13/2/01-A	170804	1/60
16/0.1	FRBmM-B16/2/01-A	170805	1/60
20/0.1	FRBmM-B20/2/01-A	170806	1/60
25/0.1	FRBmM-B50/2/01-A	170807	1/60
10/0.3	FRBmM-B10/2/03-A	170844	1/60
13/0.3	FRBmM-B13/2/03-A	170845	1/60
16/0.3	FRBmM-B16/2/03-A	170846	1/60
20/0.3	FRBmM-B20/2/03-A	170847	1/60
25/0.3	FRBmM-B25/2/03-A	170848	1/60

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Characteristic C

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
6/0.03	FRBmM-C6/2/003-A	170785	1/60
10/0.03	FRBmM-C10/2/003-A	170786	1/60
13/0.03	FRBmM-C13/2/003-A	170787	1/60
16/0.03	FRBmM-C16/2/003-A	170788	1/60
20/0.03	FRBmM-C20/2/003-A	170789	1/60
25/0.03	FRBmM-C25/2/003-A	170790	1/60
6/0.1	FRBmM-C6/2/01-A	170819	1/60
10/0.1	FRBmM-C10/2/01-A	170820	1/60
13/0.1	FRBmM-C13/2/01-A	170821	1/60
16/0.1	FRBmM-C16/2/01-A	170822	1/60
20/0.1	FRBmM-C20/2/01-A	170823	1/60
25/0.1	FRBmM-C25/2/01-A	170824	1/60
6/0.3	FRBmM-C6/2/03-A	170863	1/60
10/0.3	FRBmM-C10/2/03-A	170864	1/60
13/0.3	FRBmM-C13/2/03-A	170865	1/60
16/0.3	FRBmM-C16/2/03-A	170866	1/60
20/0.3	FRBmM-C20/2/03-A	170867	1/60
25/0.3	FRBmM-C25/2/03-A	170730	1/60

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

Type AC

10 kA, 2-poles

Conditionally surge current-proof 250 A, Type AC

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Characteristic B

10/0.03	FRBmM-B10/2/003	170872	1/60
13/0.03	FRBmM-B13/2/003	170873	1/60
16/0.03	FRBmM-B16/2/003	170874	1/60
20/0.03	FRBmM-B20/2/003	170875	1/60
25/0.03	FRBmM-B25/2/003	170876	1/60
10/0.3	FRBmM-B10/2/03	170837	1/60
13/0.3	FRBmM-B13/2/03	170838	1/60
16/0.3	FRBmM-B16/2/03	170839	1/60
20/0.3	FRBmM-B20/2/03	170840	1/60
25/0.3	FRBmM-B25/2/03	170841	1/60

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Characteristic C

6/0.03	FRBmM-C6/2/003	170721	1/60
10/0.03	FRBmM-C10/2/003	170722	1/60
13/0.03	FRBmM-C13/2/003	170723	1/60
16/0.03	FRBmM-C16/2/003	170724	1/60
20/0.03	FRBmM-C20/2/003	170725	1/60
25/0.03	FRBmM-C25/2/003	170726	1/60
6/0.3	FRBmM-C6/2/03	170853	1/60
10/0.3	FRBmM-C10/2/03	170854	1/60
13/0.3	FRBmM-C13/2/03	170855	1/60
16/0.3	FRBmM-C16/2/03	170856	1/60
20/0.3	FRBmM-C20/2/03	170857	1/60
25/0.3	FRBmM-C25/2/03	170858	1/60

Type Super A

6 kA, 2-poles

Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, short-time delayed, Type Super A

SG02913

Characteristic B

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
32/0.03	FRBm6-B32/2/003-LiA	170891	1/60
40/0.03	FRBm6-B40/2/003-LiA	170718	1/60
32/0.1	FRBm6-B32/2/01-LiA	170815	1/60
40/0.1	FRBm6-B40/2/01-LiA	170816	1/60

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Characteristic C

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
32/0.03	FRBm6-C32/2/003-LiA	170801	1/60
40/0.03	FRBm6-C40/2/003-LiA	170802	1/60
32/0.1	FRBm6-C32/2/01-LiA	170835	1/60
40/0.1	FRBm6-C40/2/01-LiA	170836	1/60

Type A

6 kA, 2-poles

Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, Type A

SG02913

Characteristic B

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
32/0.03	FRBm6-B32/2/003-A	170884	1/60
40/0.03	FRBm6-B40/2/003-A	170885	1/60
32/0.1	FRBm6-B32/2/01-A	170808	1/60
40/0.1	FRBm6-B40/2/01-A	170809	1/60
32/0.3	FRBm6-B32/2/03-A	170849	1/60
40/0.3	FRBm6-B40/2/03-A	170850	1/60

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Characteristic C

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
32/0.03	FRBm6-C32/2/003-A	170791	1/60
40/0.03	FRBm6-C40/2/003-A	170792	1/60
32/0.1	FRBm6-C32/2/01-A	170825	1/60
40/0.1	FRBm6-C40/2/01-A	170826	1/60
32/0.3	FRBm6-C32/2/03-A	170731	1/60
40/0.3	FRBm6-C40/2/03-A	170732	1/60

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

Type AC

6 kA, 2-poles

Conditionally surge current-proof 250 A, Type AC

SG02913

Characteristic B

32/0.03	FRBm6-B32/2/003	170877	1/60
40/0.03	FRBm6-B40/2/003	170878	1/60
32/0.3	FRBm6-B32/2/03	170842	1/60
40/0.3	FRBm6-B40/2/03	170843	1/60

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Characteristic C

32/0.03	FRBm6-C32/2/003	170727	1/60
40/0.03	FRBm6-C40/2/003	170728	1/60
32/0.3	FRBm6-C32/2/03	170859	1/60
40/0.3	FRBm6-C40/2/03	170860	1/60

Specifications | Combined RCD/MCB Devices FRBmM, FRBm6, 2-poles

Description

- Combined RCD/MCB device
- 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
- 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 6 months. 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 have not been smoothed.
- **Type -Super A**: High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping.

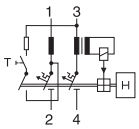
Accessories:		
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Terminal cover 2-poles	Z-TC/SD-2P	178099

Technical Data

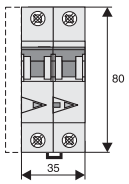
		FRBmM, FRBm6, 2-poles
Electrical		
Design according to		IEC/EN 61009
Current test marks as printed onto the device		
Tripping line voltage-independent		instantaneous 250A (8/20µs), surge current-proof
Type Super A		10 ms delay, surge current-proof
Rated voltage	U_n	240 V AC, 50 Hz
Rated tripping current	$I_{\Delta n}$	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 short circuit capacity	I_{cn}	
FRBmM		10 kA
FRBm6		6 kA
Rated current		6 - 40 A
Rated impulse withstand voltage	U_{imp}	4 kV (1.2/50µs)
Characteristic		B, C
Maximum back-up fuse (short circuit protection)		100 A gL (>10 kA)
Endurance		
electrical components		≥ 4,000 operating cycles
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 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)

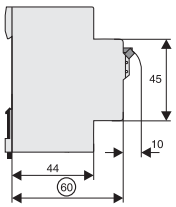
Connection diagram

2-poles

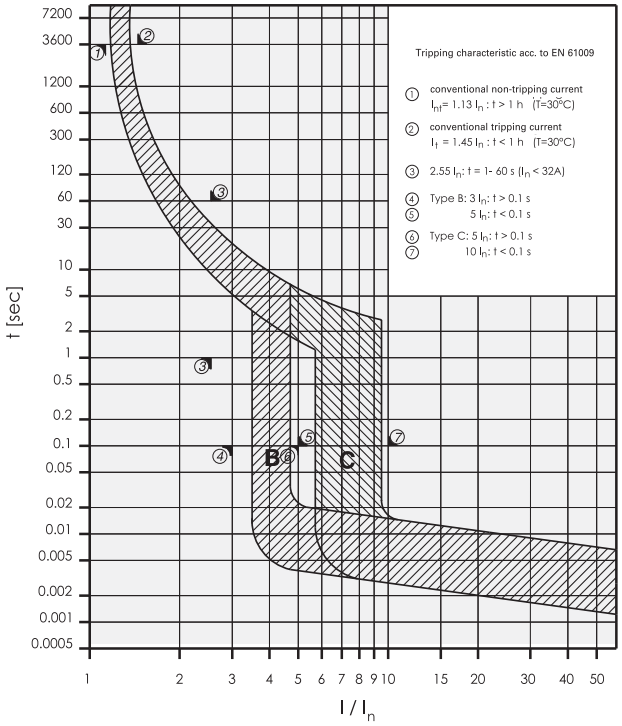


Dimensions (mm)





Tripping Characteristic FRBm. 2-poles, Characteristics B and C



Internal Resistance FRBmM 2-poles

	Type B	Type C
At room temperature (single pole)		
I_n [A]	R* [mΩ]	R* [mΩ]
6	29,7	29,7
10	19,1	19,1
13	17,4	17,4
16	12,2	12,2
20	9,3	9,3
25	4,9	4,9
32	5,6	5,6
40	4,6	4,6
* 50Hz		

Internal Resistance FRBm6 2-poles

	Type B/C
At room temperature (single pole)	
I_n [A]	R* [mΩ]
10	36.1
13	25.9
16	18.6
20	14.2
25	8.0
32	7.3
40	5.6
* 50Hz	

Power Loss at I_n FRBmM 2-poles

	Type B	Type C
(entire unit)		
I_n [A]	P* [W]	P* [W]
6	2,2	2,2
10	4,3	4,3
13	4,0	4,0
16	5,0	5,0
20	5,9	5,9
25	4,6	4,6
32	5,5	5,5
40	6,7	6,7
* 50Hz and ambient temperature		

Power Loss at I_n FRBm6 2-poles

	Type B/C
(entire unit)	
I_n [A]	P* [W]
10	4.1
13	5.2
16	5.7
20	7.0
25	5.6
32	8.7
40	10.9
* 50Hz and ambient temperature	

FRBmM: Influence of ambient temperature on load carrying capacity

- Values = max. allowed current in Ampere at the specific temperature
- Temperature factor (%/K) = 0.5

	Ambient temperature / °C									
I_n [A]	**-40**	**-30**	**-25**	**-20**	**-10**	**0**	**10**	**20**	**30**	**40**
6	8.1	7.8	7.7	7.5	7.2	6.9	6.6	6.3	6.0	5.7
10	13.5	13.0	12.8	12.5	12.0	11.5	11.0	10.5	10.0	9.5
13	17.6	16.9	16.6	16.3	15.6	15.0	14.3	13.7	13.0	12.4
16	21.6	20.8	20.4	20.0	19.2	18.4	17.6	16.8	16.0	15.2
20	27.0	26.0	25.5	25.0	24.0	23.0	22.0	21.0	20.0	19.0

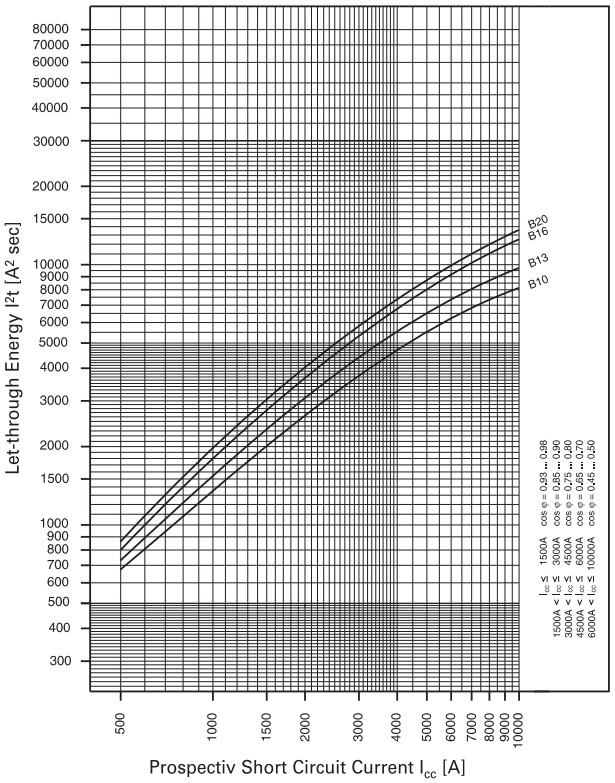
FRBm6: Influence of ambient temperature on load carrying capacity

- Values = max. allowed current in Ampere at the specific temperature
- Temperature factor (%/K) = 0.5

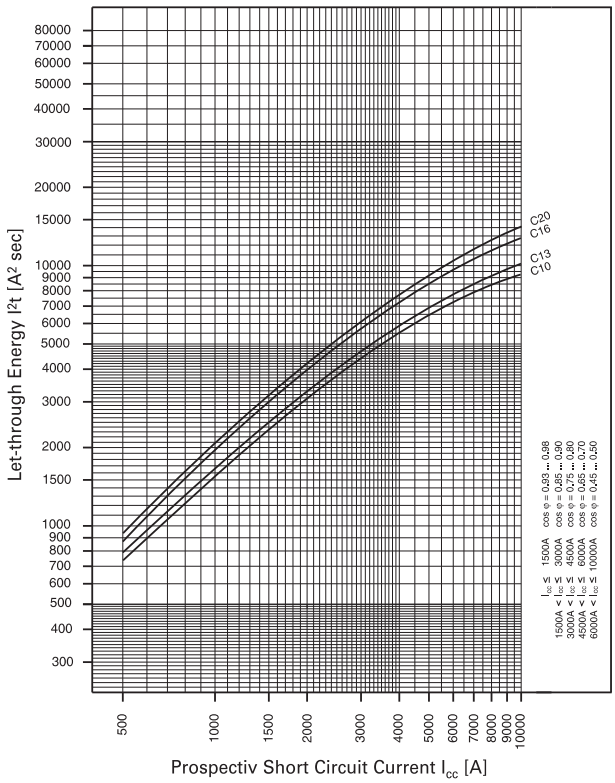
	Ambient temperature / °C									
I_n [A]	**-40**	**-30**	**-25**	**-20**	**-10**	**0**	**10**	**20**	**30**	**40**
25	33.8	32.5	31.9	31.3	30.0	28.8	27.5	26.3	25.0	23.8
32	43.2	41.6	40.8	40.0	38.4	36.8	35.2	33.6	32.0	30.4
40	54.0	52.0	51.0	50.0	48.0	46.0	44.0	42.0	40.0	38.0

Let-through Energy FRBmM 2-poles

Let-through Energy FRBmM, Characteristic B, 2polig

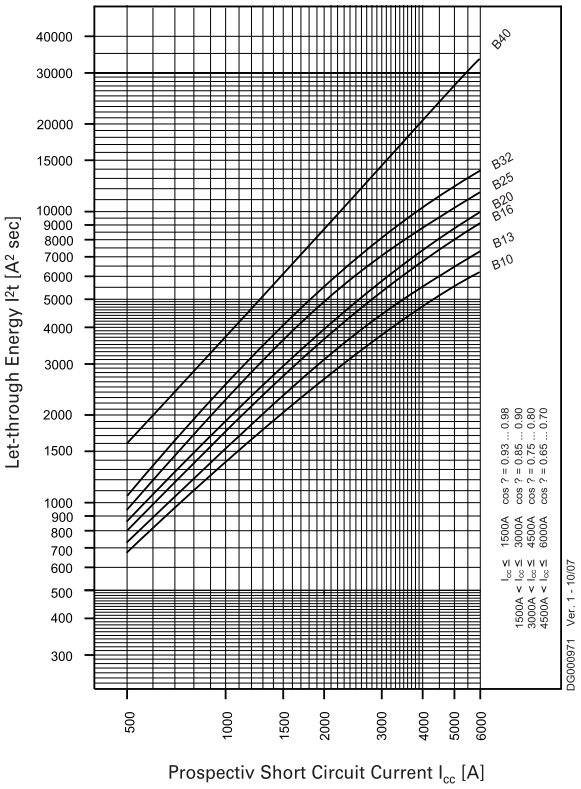


Let-through Energy FRBmM, Characteristic C, 2polig

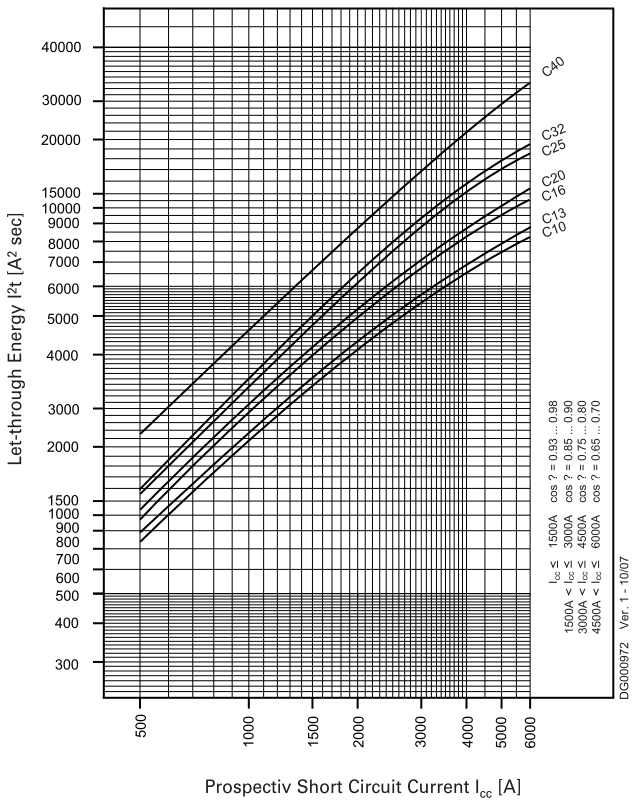


Let-through Energy FRBm6 2-poles

Let-through Energy FRBm6, Characteristic B, 2polig



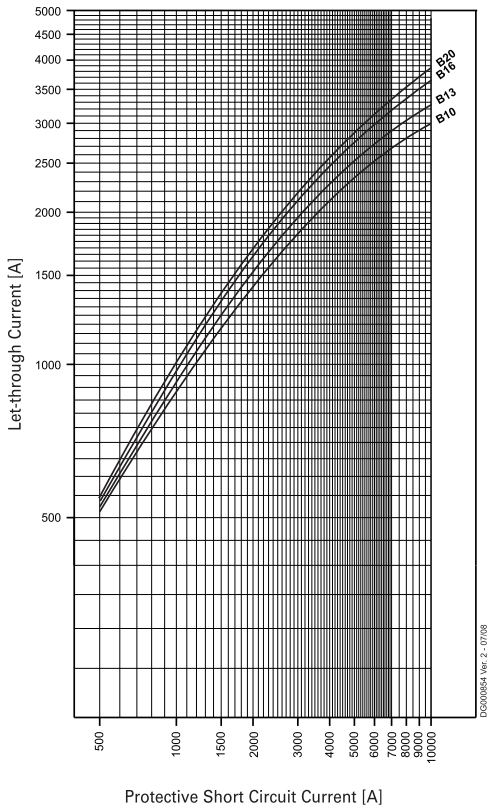
Let-through Energy FRBm6, Characteristic C, 2polig



Let-through Current FRBmM 2-poles

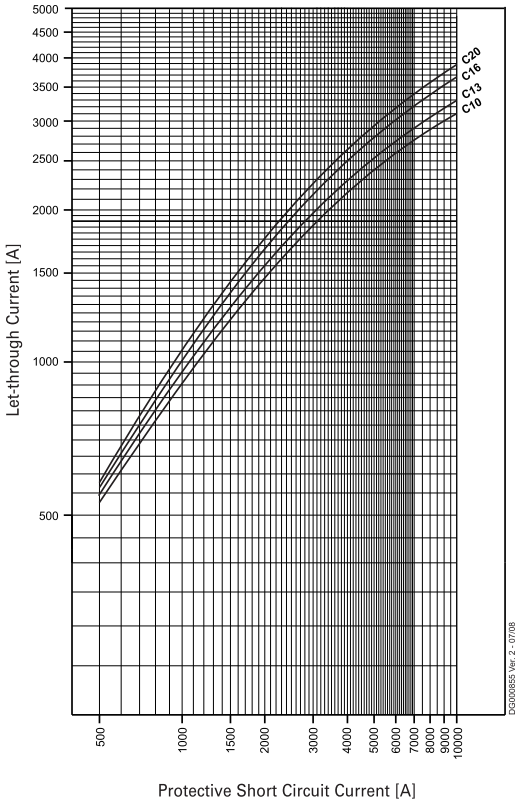
Characteristic B

230 V



Characteristic C

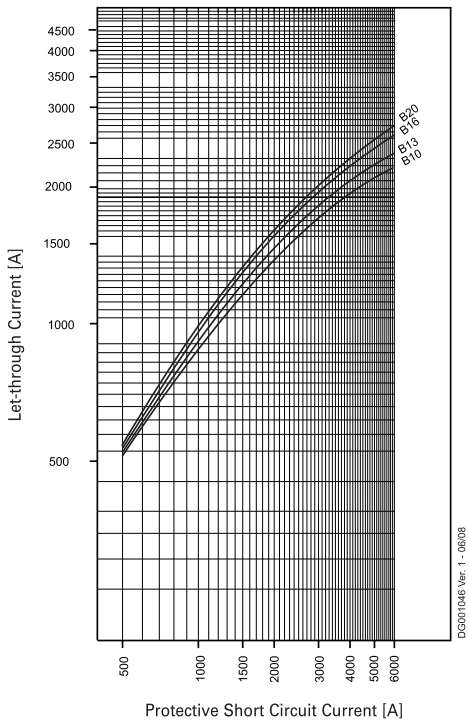
230 V



Let-through Current FRBm6 2-poles

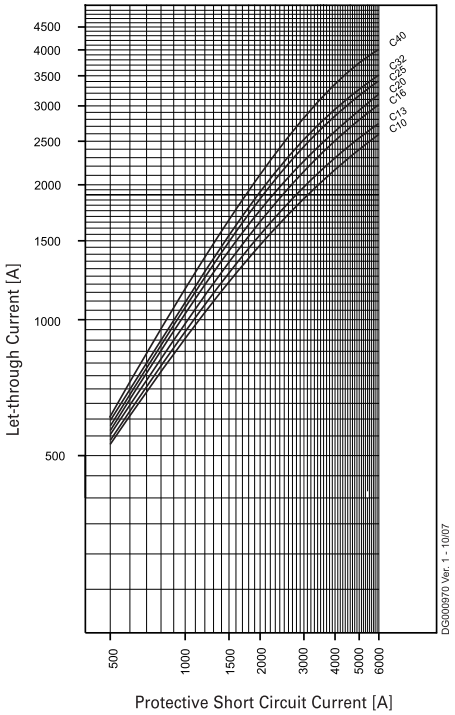
Characteristic B

230V



Characteristic C

230V



Short-circuit Selectivity FRBmM 2-poles

In case of a short-circuit, selectivity is provided up to the specified selective current values I_s (kA) applicable between the FRBmM 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.

FRBmM 2-poles and NZM1/NZM2

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

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

FRBmM	NZM...1-A... I_{cu} = 25 (50) 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
B20	0.8	1.2	1.5	1.5	3	8
C10	1.2	1.5	2	2	4	10
C13	1	1.5	2	2	4	10
C16	1	1.2	1.5	2	3	8
C20	0.8	1.2	1.5	1.5	3	8

FRBmM	NZM...2-A... I_{cu} = 25 (50)(100)(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
B20	1	1.2	1.5	1.5	10	10	10	10	10
C10	1	1.5	2.5	3	10	10	10	10	10
C13	1	1.2	2	3	10	10	10	10	10
C16	1	1.2	1.5	2.5	10	10	10	10	10
C20	1	1.2	1.5	1.5	10	10	10	10	10

FRBmM 2-poles and PLSM-OV/PLHT-OV

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

FRBmM	PLSM-OV/PLHT-OV I_{cu} = 10 kA						
	25	32	40	50	56	63	80
B+C10	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C13	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C16	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C20	-	1.5	1.5	1.5	1.5	1.5	1.5

FRBmM 2-poles and Neozed[1] / Diazed[2] / NH00[3]

Short circuit currents in kA, Rated currents of fuses in A

Short-circuit Selectivity **FRBmM** towards fuse link **Neozed** [1]

FRBmM	Neozed [1]									
	16	**20**	**25**	**32**	**35**	**40**	**50**	**63**	**80**	**100**
B10	<0,5	0,5	0,9	2	2,3	3,7	8	10	10	10
B13	<0,5	0,5	0,8	1,7	1,9	3	6	10	10	10
B16	-	0,5	0,7	1,5	1,7	2,4	4,4	6,8	10	10
B20	-	-	0,7	1,4	1,5	2,2	3,9	6	9,2	10
C10	<0,5	0,5	0,8	1,7	1,9	3	6,1	10	10	10
C13	<0,5	0,5	0,7	1,6	1,8	2,8	5,5	9,5	10	10
C16	-	<0,5	0,7	1,3	1,5	2,2	4	6,2	10	10
C20	-	-	0,6	1,3	1,4	2,1	3,7	5,6	8,5	10

Short-circuit Selectivity **FRBmM** towards fuse link **Diazed** [2]

FRBmM	Diazed [2]								
	16	20	25	32	35	50	63	80	100
B10	<0,5	0,5	0,9	1,8	2,9	5,6	10	10	10
B13	<0,5	0,5	0,8	1,5	2,4	4,5	10	10	10
B16	-	0,5	0,8	1,3	2	3,4	8	10	10
B20	-	-	0,7	1,3	1,9	3,1	7,1	10	10
C10	<0,5	0,5	0,8	1,5	2,4	4,4	10	10	10
C13	<0,5	0,5	0,8	1,4	2,3	4,2	10	10	10
C16	-	<0,5	0,7	1,2	1,9	3,2	7,6	10	10
C20	-	-	0,7	1,2	1,8	2,9	6,5	9,7	10

Short-circuit Selectivity **FRBmM** towards fuse link **NH00** [3]

FRBmM	NH00 [3]											
	16	**20**	**25**	**32**	**35**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
B10	<0,5	<0,5	0,8	1,5	2,3	3,2	5,7	9,1	10	10	10	10
B13	<0,5	<0,5	0,8	1,3	1,9	2,7	4,4	6,5	10	10	10	10
B16	-	<0,5	0,7	1,1	1,6	2,2	3,4	4,8	8	10	10	10
B20	-	-	0,6	1	1,4	2	3,1	4,3	7	10	10	10
C10	<0,5	<0,5	0,7	1,3	1,9	2,7	4,5	6,9	10	10	10	10
C13	<0,5	<0,5	0,7	1,2	1,8	2,5	4,1	6,1	10	10	10	10
C16	-	<0,5	0,6	1	1,5	2	3,1	4,4	7,5	10	10	10
C20	-	-	0,6	0,9	1,4	1,9	2,9	4,1	6,5	10	10	10

[1] SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

[2] SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

[3] SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

FRBm6 2-poles and NZM1/NZM2

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

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

FRBm6	NZMB(C)(N)(H)1-A... I_{cu} = 25 (36)(50)(100) kA					
	40	50	63	80	100	125
B10	1	1.3	1.6	1.6	3.5	6
B13	0.9	1.3	1.6	1.6	3.5	6
B16	0.9	1	1.5	1.6	2.5	6
B20	0.6	1	1.3	1.3	2.5	6
B25	0.6	1	1.3	1.3	2.5	6
B32	-	1	0.9	1.3	1.6	5
B40	-	-	0.9	1.3	1.6	4.3
C10	1	1.3	1.6	1.6	3.5	6
C13	0.9	1.3	1.6	1.6	3.5	6
C16	0.9	1	1.5	1.6	2.5	6
C20	0.6	1	1.3	1.3	2.5	6
C25	0.6	1	1.3	1.3	2.5	6
C32	-	1	0.9	1.3	1.6	5
C40	-	-	0.9	1.3	1.6	4.3

FRBm6	NZMB(C)(N)(H)2-A... I_{cu} = 25 (36)(50)(150) kA								
	40	50	63	80	100	125	160	200	250
B10	0.9	1.3	2.5	2.5	6	6	6	6	6
B13	0.9	1	1.6	2.5	6	6	6	6	6
B16	0.9	1	1.3	2.1	6	6	6	6	6
B20	0.9	1	1.3	1.3	6	6	6	6	6
B25	0.6	0.9	1.3	1.6	6	6	6	6	6
B32	-	0.9	1.3	1.6	6	6	6	6	6
B40	-	-	1	1.3	5	5	5	5	6
C10	0.9	1.3	2.5	2.5	6	6	6	6	6
C13	0.9	1	1.6	2.5	6	6	6	6	6
C16	0.9	1	1.3	2.1	6	6	6	6	6
C20	0.9	1	1.3	1.3	6	6	6	6	6
C25	0.6	0.9	1.3	1.6	6	6	6	6	6
C32	-	0.9	1.3	1.6	6	6	6	6	6
C40	-	-	1	1.3	5	5	5	5	6

FRBm6 2-poles and PLSM-OV/PLHT-OV

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

FRBm6	PLSM-OV/PLHT-OV I_{cu} = 10 kA						
	25	32	40	50	56	63	80
B+C10	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C13	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C16	1.5	1.5	1.5	1.5	1.5	1.5	1.5
B+C20	-	1.5	1.5	1.5	1.5	1.5	1.5
B+C25	-	-	1.5	1.5	1.5	1.5	1.5
B+C32	-	-	-	1.5	1.5	1.5	1.5
B+C40	-	-	-	-	1.5	1.5	1.5

FRBm6 2-poles and Neozed[1] / Diazed[2] / NH00[3]

Short circuit currents in kA, Rated currents of fuses in A

Short-circuit Selectivity **FRBm6** towards fuse link **Neozed** [1]

FRBm6	Neozed [1]									
	16	**20**	**25**	**32**	**35**	**40**	**50**	**63**	**80**	**100**
B25	-	-	-	1,2	1,3	1,8	3,1	4,7	6	6
B32	-	-	-	-	1,2	1,7	2,7	3,8	5,5	6
B40	-	-	-	-	-	1,3	1,7	2,2	2,7	4,2
C25	-	-	-	1,1	1,3	1,8	2,8	3,9	5,6	6
C32	-	-	-	-	1,2	1,7	2,6	3,6	5,1	6
C40	-	-	-	-	-	1,3	1,9	3,3	3,2	5,8

Short-circuit Selectivity **FRBm6** towards fuse link **Diazed** [1]

FRBm6	Diazed [2]								
	16	20	25	32	35	50	63	80	100
B25	-	-	-	1,1	1,5	2,4	5,5	6	6
B32	-	-	-	-	1,4	2,1	4,3	6	6
B40	-	-	-	-	-	1,4	2,4	2,9	5,1
C25	-	-	-	1,1	1,5	2,3	4,4	6	6
C32	-	-	-	-	1,4	2,2	4,1	5,6	6
C40	-	-	-	-	-	1,6	2,8	3,6	6

Short-circuit Selectivity **FRBm6** towards fuse link **NH00** [3]

FRBm6	NH00 [3]											
	16	**20**	**25**	**32**	**35**	**40**	**50**	**63**	**80**	**100**	**125**	**160**
B25	-	-	-	0,9	1,2	1,6	2,4	3,4	5,5	6	6	6
B32	-	-	-	-	1,1	1,4	2,1	2,9	4,3	6	6	6
B40	-	-	-	-	-	-	1,4	1,9	2,8	4,1	6	6
C25	-	-	-	0,9	1,2	1,6	2,3	3	4,6	6	6	6
C32	-	-	-	-	1,1	1,5	2,1	2,8	4,3	6	6	6
C40	-	-	-	-	-	-	1,5	2,1	3,1	5,4	6	6

[1] SIEMENS Type 5SE2; Size: D01, D02, D03; Operating class gG; Rated voltage: AC 400 V/DC 250 V

[2] SIEMENS Type 5SB2, 5SB4, 5SC2; Size: DII, DIII, DIV; Operating class gG; Rated voltage: AC 500 V/DC 500 V

[3] SIEMENS Type 3NA3 8, 3NA6 8, 3NA7 8; Size: 000, 00; Operating class gG; Rated voltage: AC 500 V/DC 250 V

Back-up Protection FRBmM 2-poles

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

FRBmM 2-poles and NZM1

Short circuit currents in kA.

FRBmM	NZMB1 IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMB1) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMC1 IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMC1) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMN1 IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMN1) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMH1 IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH1) = 100 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBmM 2-poles and NZM2

Short circuit currents in kA.

FRBmM	NZMB2 IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	25

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH2) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMC2 IT-system U = 230 V
B, C, D	
10	36
13	36
16	36
20	36

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH2) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMN2 IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH2) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NZMH2 IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH2) = 100 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBmM 2-poles and LZM1

Short circuit currents in kA.

FRBmM	LZMB1
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} ((LZMB1) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMC1
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMC1) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMN1
	IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMN1) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMS1
	IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	20

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMS1) = 70 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBmM 2-poles and LZM2

Short circuit currents in kA.

FRBmM	LZMB2
	IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	25

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMB2) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMC2
	IT-system U = 230 V
B, C, D	
10	36
13	36
16	36
20	36

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMC2) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMN2
	IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMN2) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	LZMS2
	IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMS2) = 70 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBmM 2-poles and PLSM-OV, NH00 gG/gL

Short circuit currents in kA.

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

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
U_e = 230/400 V: I_{cn} (PLSM-OV63) = 10 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBmM	NH00 125 A gG/gL IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40

U_e = 230 V: I_{cu} (FRBmM2) = 10 kA (acc. to IEC/EN 61009)
AC 500 V: (NH00 125A gG/gL) = 120 kA (acc. to IEC60269)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

Back-up Protection FRBm6 2-poles

The up-stream protective devices will protect the down-stream FRBm6 up to the short-circuit current specified.

FRBm6 2-poles and NZM1

Short circuit currents in kA.

FRBm6	NZMB1-A... IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15
25	15
32	15
40	15

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMB1) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMC1-A... IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMC1) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMN1-A... IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMN1) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMH1-A... IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15
25	15
32	15
40	15

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH1) = 100 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBm6 2-poles and NZM2

Short circuit currents in kA.

FRBm6	NZMB2-A... IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15
25	15
32	15
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMB2) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMC2-A... IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20
25	20
32	20
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMC2) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMN2-A... IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	20
25	20
32	20
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMN2) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NZMH2-A... IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	25
25	25
32	25
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (NZMH2) = 100 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBm6 2-poles and LZM1

Short circuit currents in kA.

FRBm6	LZMB1-A...
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15
25	15
32	15
40	15

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMB1) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMC1-A...
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMC1) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMN1-A...
	IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMN1) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMS1-A...
	IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMS1) = 70 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBm6 2-poles and LZM2

Short circuit currents in kA.

FRBm6	LZMB2-A...
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	15
25	15
32	15
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMB2) = 25 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMC2-A...
	IT-system U = 230 V
B, C, D	
10	20
13	20
16	20
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMC2) = 36 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMN2-A...
	IT-system U = 230 V
B, C, D	
10	25
13	25
16	25
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMN2) = 50 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	LZMS2-A...
	IT-system U = 230 V
B, C, D	
10	30
13	30
16	30
20	20
25	20
32	20
40	20

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 400/415 V: I_{cu} (LZMS2) = 70 kA (acc. to IEC/EN 60947-2)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

FRBm6 2-poles and PLSM-OV, NH00 gG/gL

Short circuit currents in kA.

FRBm6	PLSM-OV63/2, 3, 4, 3N IT-system U = 230 V
B, C, D	
10	10
13	10
16	10
20	10
25	10
32	10
40	10

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
U_e = 230/400 V: I_{cn} PLSM-OV63) = 10 kA (acc. to IEC/EN 60947-2)

Short circuit currents in kA.

FRBm6	NH00 100 A gG/gL IT-system U = 230 V
B, C, D	
10	40
13	40
16	40
20	40
25	40
32	40
40	40

U_e = 230 V: I_{cu} (FRBm62) = 6 kA (acc. to IEC/EN 61009)
AC 500 V: (NH00 125A gG/gL) = 120 kA (acc. to IEC60269)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)

Backup tests acc. to IEC/EN 60947-2, app. A: U = 1.05 U_e, (O - t - CO)