

Specifications | Miniature Circuit Breakers PLS..., PLZ...

Description

- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for secure isolation
- Suitable for applications up to 48 V DC (use PLS6-DC for higher DC voltages)

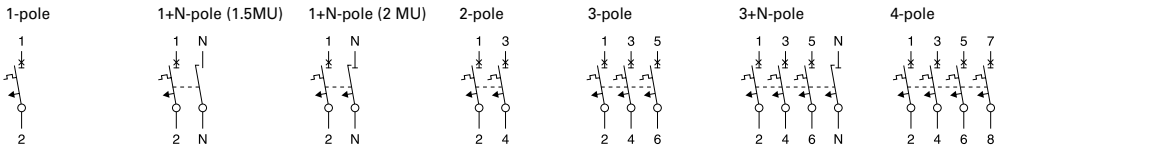
Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Remote control and automatic switching device	Z-FW/LP	248296
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Additional terminal 35 mm ²	BB-UL-TEPA/35	169823
Switching interlock	Z-IS/SPE-1TE	274418
Neutral disconnecter	Z-NTS	248443

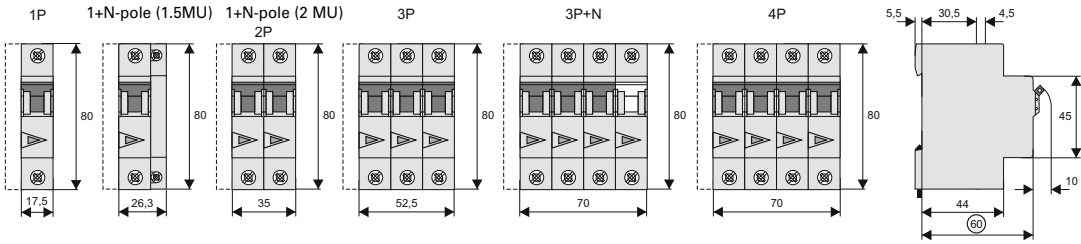
Technical Data

	PLS..., PLZ...	
Electrical		
Design according to	IEC/EN 60898-1	
Current test marks as printed onto the device		
Rated voltage	U_n	AC: 230/400 V DC: 48 V (per pole, max. 2 poles)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1 PLSM, PLZM	I_{cn}	10 kA
Characteristic	B, C, D	
Back-up fuse PLSM, PLZM	max. 125 A gL	
Selectivity class	3	
Endurance		
electrical components	$\geq 10,000$ switching operations	
mechanical components	$\geq 20,000$ switching operations	
Line voltage connection	at will (above/below)	
Mechanical		
Frame size	45 mm	
Device height	80 mm	
Device width	17.5 mm per pole (1MU) 26.3 mm: device 1P+N (1.5MU)	
Mounting	quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715	
Degree of protection	IP20	
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	
(1p+N, 1,5TE)	1-25 mm ² / 1-16 mm ² (N)	
Terminal torque	2-2.4 Nm	
(1p+N, 1,5TE)	2-2.4 Nm / 1.2-1.5 Nm (N)	
Busbar thickness	0.8 - 2 mm (except N 0.5MU)	
Mounting	independent of position	

Connection diagrams

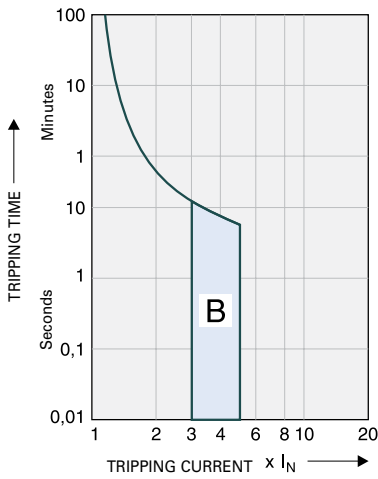


Dimensions (mm)

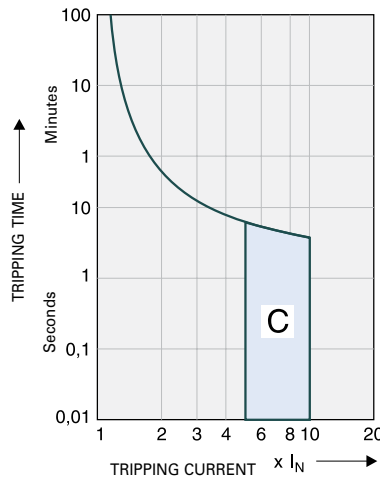


Tripping Characteristics (IEC/EN 60898-1)

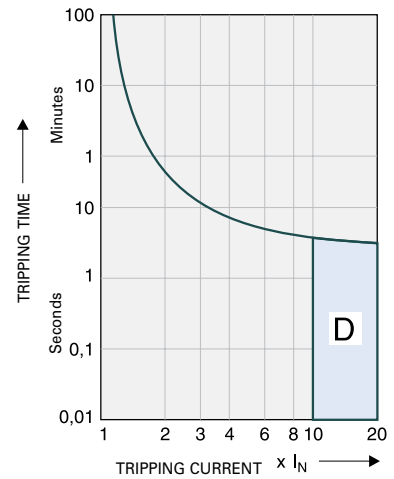
Tripping characteristic B



Tripping characteristic C



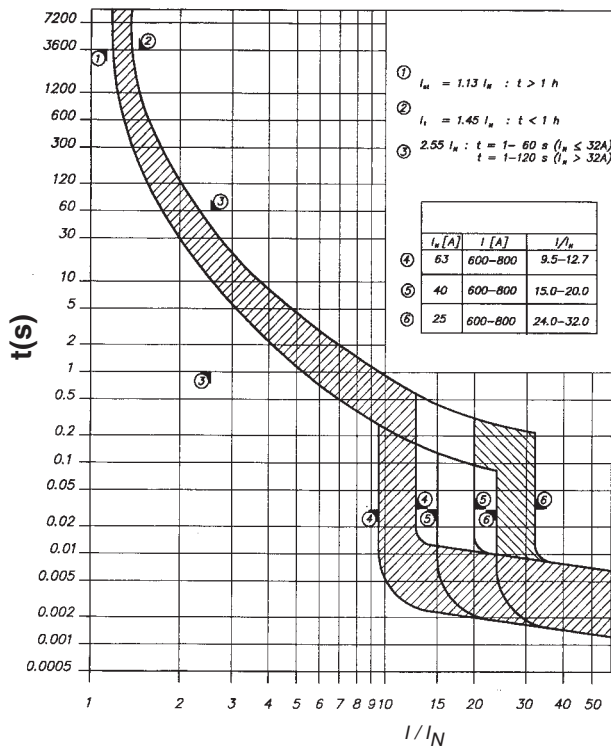
Tripping characteristic D



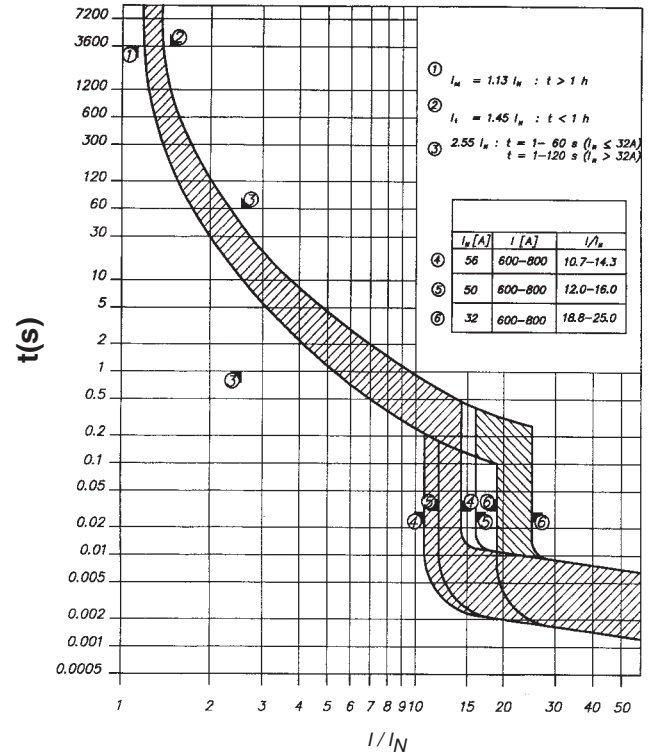
Quick-acting (B), slow (C), very slow (D)

Tripping Characteristics PLSM-.../.../OV

$I_N = 25, 40, 63 \text{ A}$



$I_N = 32, 50, 56 \text{ A}$

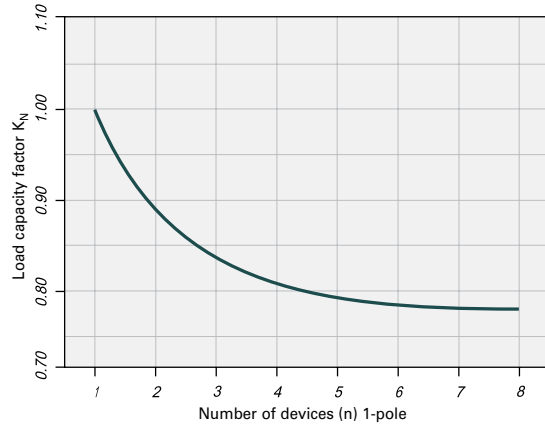


Effect of the Ambient Temperature on Thermal Tripping Behaviour

Adjusted rated current values according to the ambient temperature

I _n [A]	Ambient temperature T [°C]															
	-25	-20	-10	0	10	20	30	35	40	45	50	55	60	65	70	75
0.16	0.20	0.19	0.19	0.18	0.17	0.17	0.16	0.16	0.15	0.15	0.15	0.14	0.14	0.14	0.14	0.13
0.25	0.31	0.30	0.29	0.28	0.27	0.26	0.25	0.25	0.24	0.24	0.23	0.23	0.22	0.22	0.21	0.21
0.5	0.61	0.60	0.58	0.56	0.54	0.52	0.50	0.49	0.48	0.47	0.46	0.45	0.44	0.43	0.42	0.41
0.75	0.92	0.90	0.87	0.84	0.81	0.78	0.75	0.74	0.73	0.71	0.69	0.68	0.66	0.65	0.64	0.62
1	1.2	1.2	1.2	1.1	1.1	1.0	1.0	0.99	0.97	0.95	0.93	0.90	0.89	0.87	0.85	0.83
1.5	1.8	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.3	1.3	1.3	1.2
1.6	2.0	1.9	1.9	1.8	1.7	1.7	1.6	1.6	1.5	1.5	1.5	1.4	1.4	1.4	1.4	1.3
2	2.4	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9	1.9	1.9	1.8	1.8	1.7	1.7	1.7
2.5	3.1	3.0	2.9	2.8	2.7	2.6	2.5	2.5	2.4	2.4	2.3	2.3	2.2	2.2	2.1	2.1
3	3.7	3.6	3.5	3.4	3.3	3.1	3.0	3.0	2.9	2.8	2.8	2.7	2.7	2.6	2.5	2.5
3.5	4.3	4.2	4.1	3.9	3.8	3.7	3.5	3.4	3.4	3.3	3.2	3.2	3.1	3.0	3.0	2.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9	3.8	3.7	3.6	3.5	3.5	3.4	3.3
5	6.1	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8	4.7	4.6	4.5	4.4	4.3	4.2	4.1
6	7.3	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8	5.7	5.6	5.4	5.3	5.2	5.1	5.0
8	9.8	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7	7.6	7.4	7.2	7.1	6.9	6.8	6.6
10	12	12	12	11	11	10	10	9.9	9.7	9.5	9.3	9.0	8.9	8.7	8.5	8.3
12	15	14	14	13	13	13	12	12	12	11	11	11	11	10	10	10
13	16	16	15	15	14	14	13	13	13	12	12	12	12	11	11	11
15	18	18	17	17	16	16	15	15	15	14	14	14	13	13	13	12
16	20	19	19	18	17	17	16	16	15	15	15	14	14	14	14	13
20	24	24	23	22	22	21	20	20	19	19	19	18	18	17	17	17
25	31	30	29	28	27	26	25	25	24	24	23	23	22	22	21	21
32	39	38	37	36	35	33	32	32	31	30	30	29	28	28	27	26
40	49	48	47	45	43	42	40	39	39	38	37	36	35	35	34	33
50	61	60	58	56	54	52	50	49	48	47	46	45	44	43	42	41
63	77	76	73	71	68	66	63	62	61	60	58	57	56	55	53	52

Load Capacity of Series Connected Miniature Circuit Breakers



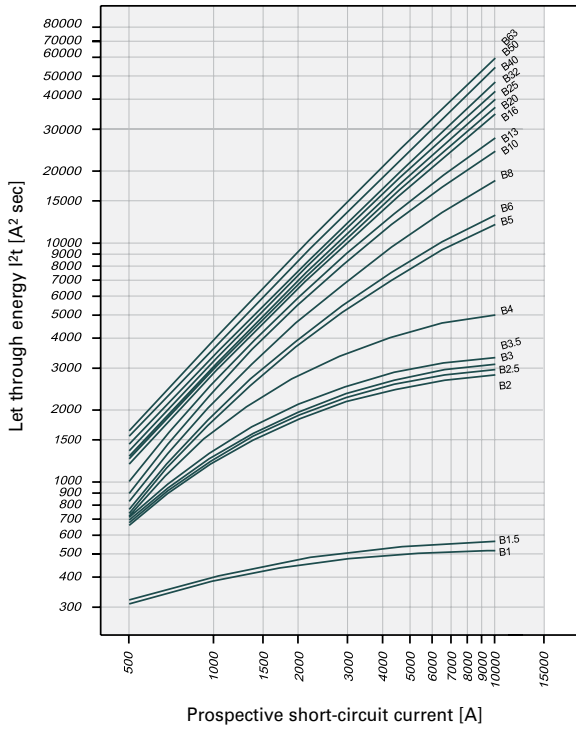
Effect of Power Frequency

Effect of power frequency on the tripping behaviour I_{MA} of the quick release

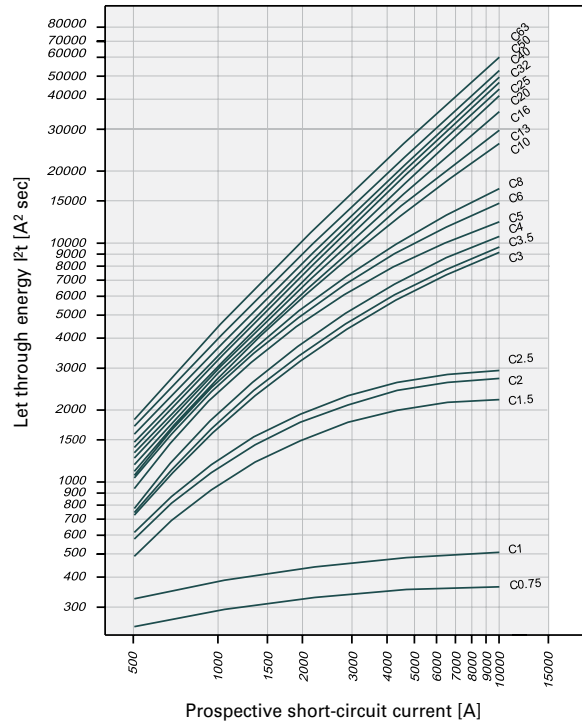
I _{MA} (f)/I _{MA} (50 Hz) [%]	Power frequency f [Hz]						
	16 ² / ₃	50	60	100	200	300	400
	91	100	101	106	115	134	141

Let-through Energy PLSM

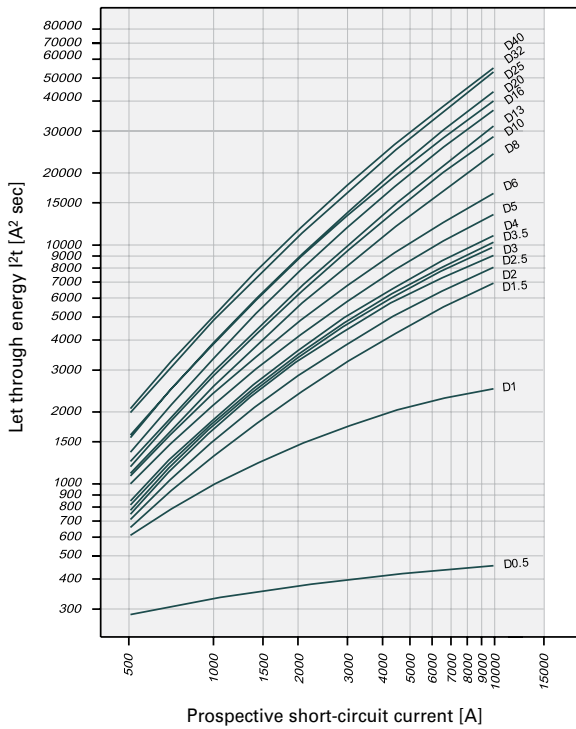
Let-through Energy PLSM, Characteristic B, 1-pole



Let-through Energy PLSM, Characteristic C, 1-pole



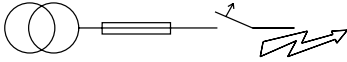
Let-through Energy PLSM, Characteristic D, 1-pole



Short-circuit Selectivity PLSM towards DII-DIV fuse link

In case of short-circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b



Short-circuit selectivity **Characteristic B** towards fuse link **DII-DIV***)

PLSM I_n [A]	DII-DIV gL/gG									
	10	16	20	25	35	50	63	80	100	
1.0	<0.5 ¹⁾	1.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	1.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.0	3.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.0	3.5	8.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6		<0.5 ¹⁾	0.6	0.9	1.8	3.2	7.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8		<0.5 ¹⁾	0.5	0.8	1.6	2.6	5.2	8.3	10.0 ²⁾	10.0 ²⁾
10			0.5	0.8	1.4	2.2	3.9	6.0	10.0 ²⁾	10.0 ²⁾
13			0.5	0.7	1.3	2.0	3.6	5.4	10.0 ²⁾	10.0 ²⁾
16				0.6	1.2	1.9	3.2	4.6	8.4	10.0 ²⁾
20					1.2	1.8	3.1	4.4	7.8	10.0 ²⁾
25					1.2	1.8	3.0	4.2	7.3	10.0 ²⁾
32						1.7	2.8	3.9	6.8	10.0 ²⁾
40							2.7	3.8	6.5	10.0 ²⁾
50							2.5	3.5	5.7	10.0 ²⁾
63									5.3	10.0 ²⁾

Short-circuit selectivity **Characteristic C** towards fuse link **DII-DIV***)

PLSM I_n [A]	DII-DIV gL/gG									
	10	16	20	25	35	50	63	80	100	
0.75	1.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	<0.5 ¹⁾	1.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	<0.5 ¹⁾	1.0	2.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.8	0.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.2	4.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.8	1.8	3.6	9.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.7	1.5	2.7	7.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6		<0.5 ¹⁾	0.5	0.6	1.4	2.4	5.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8		<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.3	2.2	4.7	8.7	10.0 ²⁾	10.0 ²⁾
10			<0.5 ¹⁾	0.6	1.3	2.0	3.6	5.4	10.0 ²⁾	10.0 ²⁾
13					1.3	1.9	3.3	5.0	9.4	10.0 ²⁾
16					1.2	1.8	3.2	4.4	8.0	10.0 ²⁾
20					1.2	1.8	3.1	4.1	7.0	10.0 ²⁾
25						1.7	2.8	3.8	6.5	10.0 ²⁾
32							2.7	3.7	6.2	10.0 ²⁾
40								3.5	5.9	10.0 ²⁾
50									5.5	10.0 ²⁾
63										10.0 ²⁾

Short-circuit selectivity **Characteristic D** towards fuse link **DII-DIV***)

PLSM I_n [A]	DII-DIV gL/gG									
	10	16	20	25	35	50	63	80	100	
0.5	0.5	3.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	<0.5 ¹⁾	<0.5 ¹⁾	1.0	2.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.2	3.5	7.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.0	2.8	5.8	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.4	2.3	4.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.3	4.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.1	4.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4		<0.5 ¹⁾	0.6	0.9	2.0	3.8	9.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5		<0.5 ¹⁾	0.5	0.7	1.7	3.1	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6			0.5	0.7	1.5	2.6	5.3	9.1	10.0 ²⁾	10.0 ²⁾
8			<0.5 ¹⁾	0.7	1.4	2.2	3.9	6.0	10.0 ²⁾	10.0 ²⁾
10				0.7	1.2	1.9	3.4	5.0	9.5	10.0 ²⁾
13					1.2	1.8	3.2	4.6	8.6	10.0 ²⁾
16						1.6	2.7	4.0	7.4	10.0 ²⁾
20						1.5	2.5	3.5	6.7	10.0 ²⁾
25							2.4	3.4	6.2	10.0 ²⁾
32								2.8	5.0	10.0 ²⁾
40									4.8	10.0 ²⁾

¹⁾ Selectivity limit current I_s under 0.5 kA

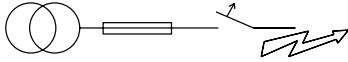
²⁾ Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short-circuit Selectivity PLSM towards D01-D03 fuse link

In case of short-circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b



Short-circuit selectivity **Characteristic B** towards fuse link **D01-D03***)

PLSM	D01-D03 gL/gG									
	I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5 ¹⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	4.1	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.5	1.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.9	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.9	2.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5		<0.5 ¹⁾	0.5	0.8	1.7	4.0	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6		<0.5 ¹⁾	0.5	0.8	1.6	3.6	6.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8			0.5	0.8	1.4	2.8	4.3	8.2	10.0 ²⁾	10.0 ²⁾
10			0.5	0.7	1.3	2.4	3.4	6.0	10.0 ²⁾	10.0 ²⁾
13			<0.5 ¹⁾	0.7	1.2	2.3	3.2	5.3	10.0 ²⁾	10.0 ²⁾
16				0.6	1.1	2.2	2.9	4.6	10.0	10.0
20					1.1	2.1	2.8	4.4	9.3	9.3
25					1.1	2.0	2.7	4.2	8.7	8.7
32						2.0	2.6	4.0	8.0	8.0
40							2.5	3.8	7.5	7.5
50							2.3	3.4	6.7	6.7
63									6.2	6.2

Short-circuit selectivity **Characteristic C** towards fuse link **D01-D03***)

PLSM	D01-D03 gL/gG									
	I_n [A]	10	16	20	25	35	50	63	80	100
0.75	<0.5 ¹⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	<0.5 ¹⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	0.5	0.6	0.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.9	5.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.8	4.7	9.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.6	4.0	7.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5		<0.5 ¹⁾	<0.5 ¹⁾	0.5	1.3	3.1	5.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6		<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	1.2	2.7	4.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8		<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	1.2	2.5	4.0	8.6	10.0 ²⁾	10.0 ²⁾
10			<0.5 ¹⁾	<0.5 ¹⁾	1.2	2.3	3.1	5.4	10.0 ²⁾	10.0 ²⁾
13					1.1	2.2	3.0	4.9	10.0 ²⁾	10.0 ²⁾
16					1.1	2.1	2.8	4.4	9.5	9.5
20					1.0	2.0	2.6	4.0	8.3	8.3
25						1.9	2.5	3.8	7.8	7.8
32							2.5	3.7	7.3	7.3
40								3.5	7.0	7.0
50									6.5	6.5
63										6.5

Short-circuit selectivity **Characteristic D** towards fuse link **D01-D03***)

PLSM	D01-D03 gL/gG									
	I_n [A]	10	16	20	25	35	50	63	80	100
0.5	<0.5 ¹⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	2.8	9.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.8	2.2	6.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.9	5.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.8	4.8	9.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.7	4.7	8.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4		<0.5 ¹⁾	0.5	0.7	1.7	4.6	7.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5		<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.5	3.5	5.8	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6			<0.5 ¹⁾	0.5	1.3	2.9	4.5	9.0	10.0 ²⁾	10.0 ²⁾
8			<0.5 ¹⁾	0.5	1.2	2.4	3.5	6.0	10.0 ²⁾	10.0 ²⁾
10				0.5	1.1	2.2	3.0	5.0	10.0 ²⁾	10.0 ²⁾
13					1.1	2.1	2.9	4.6	10.0 ²⁾	10.0 ²⁾
16						1.9	2.6	3.9	9.0	9.0
20						1.7	2.3	3.5	8.0	8.0
25							2.2	3.4	7.5	7.5
32								2.9	6.0	6.0
40									5.7	5.7

¹⁾ Selectivity limit current I_s under 0.5 kA

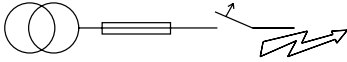
²⁾ Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short-circuit Selectivity PLSM towards NH-00 fuse link

In case of short-circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b



Short-circuit selectivity **Characteristic B** towards fuse link **NH-00***)

PLSM	NH-00 gL/gG												
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160	
1.0	0.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	0.8	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	0.5	1.0	2.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	0.5	1.0	2.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	0.5	0.9	2.1	8.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	0.5	0.9	1.8	5.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.3	2.3	4.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.1	1.6	2.2	3.6	4.8	8.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.1	1.5	2.0	3.3	4.3	7.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8	<0.5 ¹⁾	<0.5 ¹⁾	0.6	1.0	1.3	1.7	2.6	3.3	5.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
10	<0.5 ¹⁾	0.6	0.9	1.2	1.5	2.2	2.7	4.0	9.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
13	<0.5 ¹⁾	0.6	0.8	1.1	1.4	2.1	2.6	3.8	7.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
16	<0.5 ¹⁾	0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.4	9.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
20	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.0	1.3	1.9	2.4	3.3	6.0	8.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
25	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.0	1.3	1.8	2.3	3.2	5.7	8.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
32	<0.5 ¹⁾	<0.5 ¹⁾	0.9	1.2	1.7	2.2	3.1	5.4	7.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
40	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾
50	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾
63	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾	<0.5 ¹⁾

Short-circuit selectivity **Characteristic C** towards fuse link **NH-00***)

PLSM	NH-00 gL/gG												
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160	
0.75	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	0.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	0.6	1.3	4.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	0.6	1.0	2.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	0.5	1.0	2.1	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.2	1.8	2.6	4.7	6.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.1	1.7	2.4	4.2	6.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.0	1.5	2.1	3.6	5.0	10.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.8	1.2	1.7	2.8	3.8	8.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.8	1.2	1.5	2.5	3.3	5.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.8	1.1	1.5	2.3	2.9	4.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
10	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.4	2.0	2.5	3.8	8.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
13	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.3	1.9	2.4	3.6	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
16	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.3	1.8	2.3	3.3	6.0	8.8	10.0 ²⁾	10.0 ²⁾
20	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.2	1.7	2.2	3.2	5.5	7.7	10.0 ²⁾	10.0 ²⁾
25	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.6	2.1	3.0	5.2	7.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
32	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	2.1	2.9	5.0	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
40	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	2.8	4.8	6.7	10.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
50	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	4.5	6.3	9.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
63	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	5.9	8.4	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾

Short-circuit selectivity **Characteristic D** towards fuse link **NH-00***)

PLSM	NH-00 gL/gG												
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160	
0.5	2.1	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.0	<0.5 ¹⁾	0.6	1.4	4.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
1.5	<0.5 ¹⁾	<0.5 ¹⁾	0.9	1.6	2.7	4.0	8.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.0	<0.5 ¹⁾	<0.5 ¹⁾	0.8	1.3	2.1	3.1	6.0	8.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
2.5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.2	1.8	2.6	4.8	6.9	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.0	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.1	1.7	2.4	4.3	6.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
3.5	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.1	1.7	2.4	4.2	5.6	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
4	<0.5 ¹⁾	<0.5 ¹⁾	0.7	1.0	1.6	2.2	3.8	5.2	10.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
5	<0.5 ¹⁾	<0.5 ¹⁾	0.6	0.9	1.4	1.9	3.2	4.1	7.1	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
6	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.8	1.2	1.6	2.6	3.3	5.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
8	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.8	1.1	1.5	2.2	2.7	4.1	8.7	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
10	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.3	1.9	2.5	3.6	7.2	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
13	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.3	1.9	2.3	3.4	6.5	9.5	10.0 ²⁾	10.0 ²⁾
16	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.1	1.6	2.0	3.0	5.5	8.0	10.0 ²⁾	10.0 ²⁾
20	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.4	1.8	2.8	5.0	7.5	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
25	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	1.8	2.7	4.8	7.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
32	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	2.4	4.1	6.2	9.3	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾
40	<0.5 ¹⁾	<0.5 ¹⁾	0.5	0.7	1.0	4.0	6.0	9.0	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾	10.0 ²⁾

¹⁾ Selectivity limit current I_s under 0.5 kA

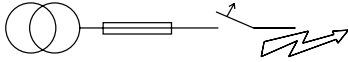
²⁾ Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short-circuit Selectivity PLSM towards cylindrical fuse links

In case of short-circuit, there is selectivity between the miniature circuit breakers PLSM and the upstream fuses up to the specified values of the selectivity limit current I_s [kA] (i. e. in case of short-circuit currents I_{ks} under I_s only the MCB will trip, in case of short-circuit currents above this value both protective devices will respond).

*) basically in accordance with EN 60898-1 D.5.2.b



Short-circuit selectivity **Characteristic B** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG*)**

PLSM I_n [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
1	0.5	>10	>10	>10	>10	>10	>10	>10	>10	1.2	>10	>10	>10	>10	>10	>10	>10	>10
2	<0.5	0.6	1.2	3.6	0.5	1.0	5.2	>10	>10	<0.5	0.5	1.1	>10	>10	>10	>10	>10	
3	<0.5	0.5	0.8	1.4	0.5	0.9	3.7	>10	>10	<0.5	0.5	1.0	8.0	>10	>10	>10	>10	
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.7	4.0	>10	<0.5	<0.5	0.8	2.3	5.1	>10	>10	>10	
6	<0.5	<0.5	0.6	0.9	<0.5	0.7	1.3	2.0	2.7	<0.5	<0.5	0.7	1.5	2.2	2.6	5.6	10	
10	<0.5	<0.5	0.6	0.9	<0.5	0.6	1.1	1.5	2.0	<0.5	<0.5	0.6	1.2	1.6	1.9	3.2	4.8	
13	<0.5	<0.5	0.6	0.8	<0.5	0.6	1.0	1.4	1.9	<0.5	<0.5	0.6	1.2	1.5	1.7	3.0	4.3	
16		<0.5	0.5	0.8	<0.5	0.5	1.0	1.4	1.8		<0.5	0.5	1.1	1.4	1.6	2.7	3.8	
20			0.5	0.8		<0.5	0.9	1.3	1.6			0.5	1.1	1.4	1.6	2.6	3.7	
25				0.7			0.9	1.3	1.6				1.0	1.3	1.5	2.5	3.5	
32								1.2	1.5					1.3	1.5	2.4	3.3	
40									1.5						1.4	2.3	3.2	
50																2.1	2.9	
63																	2.8	4.2

Short-circuit selectivity **Characteristic C** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG*)**

PLSM I_n [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
0.5	1.9	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
1	<0.5	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
2	<0.5	0.6	1.2	3.6	0.5	1.0	4.5	>10	>10	<0.5	0.6	1.1	>10	>10	>10	>10	>10	
3	<0.5	0.5	0.8	1.4	<0.5	0.7	1.4	2.4	3.7	<0.5	<0.5	0.8	1.8	2.7	3.5	9.3	>10	>10
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.2	2.0	2.9	<0.5	<0.5	0.7	1.5	2.2	2.7	6.7	>10	>10
6	<0.5	<0.5	0.6	0.9	<0.5	<0.5	1.0	1.4	2.0	<0.5	<0.5	0.6	1.1	1.6	1.9	4.2	7.0	>10
10	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.6	1.1	1.5	1.8	2.9	4.1	7.5
13	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.5	1.0	1.4	1.7	2.7	3.8	6.5
16		<0.5	0.5	0.8	<0.5	<0.5	0.8	1.2	1.6		<0.5	<0.5	1.0	1.3	1.5	2.6	3.5	5.8
20			<0.5	0.7		<0.5	0.8	1.2	1.5			<0.5	0.9	1.2	1.4	2.5	3.3	5.4
25				0.7			0.8	1.1	1.4				0.9	1.2	1.4	2.3	3.2	5.0
32								1.1	1.4					1.1	1.3	2.2	3.0	4.8
40									1.3						1.2	2.0	2.8	4.6
50																1.9	2.6	4.2
63																	2.3	3.7

Short-circuit selectivity **Characteristic C** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG*)**

PLSM I_n [A]	CH10x38 gG				CH15x51 gG					CH22x58 gG								
	16	20	25	32	20	25	32	40	50	16	20	25	32	40	50	63	80	100
0.5	0.9	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10	>10
1	<0.5	>10	>10	>10	>10	>10	>10	>10	>10	<0.5	0.6	1.5	>10	>10	>10	>10	>10	>10
2	<0.5	0.5	0.6	1.6	<0.5	1.0	1.7	>10	>10	<0.5	0.5	0.8	2.1	3.3	4.3	>10	>10	>10
3	<0.5	<0.5	0.8	1.3	<0.5	0.7	1.4	2.4	3.4	<0.5	<0.5	0.7	1.7	2.5	3.2	8.2	>10	>10
4	<0.5	<0.5	0.7	1.2	<0.5	0.7	1.3	2.0	3.1	<0.5	<0.5	0.7	1.6	2.3	3.0	7.0	>10	>10
6	<0.5	<0.5	0.6	1.0	<0.5	<0.5	1.0	1.6	2.0	<0.5	<0.5	0.6	1.3	1.7	2.1	4.2	7.0	>10
10	<0.5	<0.5	0.6	0.8	<0.5	<0.5	0.9	1.3	1.7	<0.5	<0.5	0.5	1.1	1.4	1.6	2.8	4.1	7.1
13	<0.5	<0.5	0.5	0.8	<0.5	<0.5	0.9	1.3	1.6	<0.5	<0.5	0.5	1.0	1.4	1.6	2.7	3.8	6.5
16		<0.5	0.5	0.7	<0.5	<0.5	0.8	1.1	1.4		<0.5	<0.5	1.0	1.2	1.4	2.3	3.2	5.5
20			<0.5	0.7		<0.5	0.7	1.0	1.3			<0.5	0.8	1.1	1.3	2.1	2.9	4.6
25				0.7			0.7	1.0	1.2				0.8	1.0	1.2	2.0	2.8	4.0
32														0.9	1.0	1.7	2.3	3.8
40															1.0	2.0	2.2	3.6

Darker areas: no selectivity