SG66512

Description

- Contact position indicator red - green
- Guide for secure terminal connection
- 3-position DIN rail clip, permits removal from existing busbar system
- Comprehensive range of accessories suitable for subsequent installation
- Rated currents up to 63 A
- Tripping characteristics B, C, D
- Rated breaking capacity according to IEC/EN 60898-1

  mMCM: 10 kA

  mMC6: 6 kA

  mMC4: 4.5 kA

10 kA, Characteristic B

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1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-B1/1	138858	12/120
2	mMCM-B2/1	138859	12/120
3	mMCM-B3/1	138860	12/120
4	mMCM-B4/1	138861	12/120
5	mMCM-B5/1	170041	12/120
6	mMCM-B6/1	138862	12/120
8	mMCM-B8/1	170042	12/120
10	mMCM-B10/1	138863	12/120
12	mMCM-B12/1	170043	12/120
13	mMCM-B13/1	138864	12/120
15	mMCM-B15/1	170044	12/120
16	mMCM-B16/1	138865	12/120
20	mMCM-B20/1	138866	12/120
25	mMCM-B25/1	138867	12/120
32	mMCM-B32/1	138868	12/120
40	mMCM-B40/1	138869	12/120
50	mMCM-B50/1	138870	12/120
63	mMCM-B63/1	138871	12/120

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1+N-pole, 2 Module Units (MU)

1	mMCM-B1/1N	139338	1/60
2	mMCM-B2/1N	139339	1/60
3	mMCM-B3/1N	139340	1/60
4	mMCM-B4/1N	139341	1/60
5	mMCM-B5/1N	170045	1/60
6	mMCM-B6/1N	139342	1/60
8	mMCM-B8/1N	170046	1/60
10	mMCM-B10/1N	139343	1/60
12	mMCM-B12/1N	170047	1/60
13	mMCM-B13/1N	139344	1/60
15	mMCM-B15/1N	170048	1/60
16	mMCM-B16/1N	139345	1/60
20	mMCM-B20/1N	139346	1/60
25	mMCM-B25/1N	139347	1/60
32	mMCM-B32/1N	139348	1/60
40	mMCM-B40/1N	139349	1/60
50	mMCM-B50/1N	139350	1/60
63	mMCM-B63/1N	139351	1/60

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2-pole

1	mMCM-B1/2	138978	1/60
2	mMCM-B2/2	138979	1/60
3	mMCM-B3/2	138980	1/60
4	mMCM-B4/2	138981	1/60
5	mMCM-B5/2	170049	1/60
6	mMCM-B6/2	138982	1/60
8	mMCM-B8/2	170050	1/60
10	mMCM-B10/2	138983	1/60
12	mMCM-B12/2	170051	1/60
13	mMCM-B13/2	138984	1/60
15	mMCM-B15/2	170052	1/60
16	mMCM-B16/2	138985	1/60
20	mMCM-B20/2	138986	1/60
25	mMCM-B25/2	138987	1/60
32	mMCM-B32/2	138988	1/60
40	mMCM-B40/2	138989	1/60
50	mMCM-B50/2	138990	1/60
63	mMCM-B63/2	138991	1/60

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3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-B1/3	139098	1/40
2	mMCM-B2/3	139099	1/40
3	mMCM-B3/3	139100	1/40
4	mMCM-B4/3	139101	1/40
5	mMCM-B5/3	170053	1/40
6	mMCM-B6/3	139102	1/40
8	mMCM-B8/3	170054	1/40
10	mMCM-B10/3	139103	1/40
12	mMCM-B12/3	170055	1/40
13	mMCM-B13/3	139104	1/40
15	mMCM-B15/3	170056	1/40
16	mMCM-B16/3	139105	1/40
20	mMCM-B20/3	139106	1/40
25	mMCM-B25/3	139107	1/40
32	mMCM-B32/3	139108	1/40
40	mMCM-B40/3	139109	1/40
50	mMCM-B50/3	139110	1/40
63	mMCM-B63/3	139111	1/40

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3+N-pole

1	mMCM-B1/3N	139458	1/30
2	mMCM-B2/3N	139459	1/30
3	mMCM-B3/3N	139460	1/30
4	mMCM-B4/3N	139461	1/30
5	mMCM-B5/3N	170057	1/30
6	mMCM-B6/3N	139462	1/30
8	mMCM-B8/3N	170058	1/30
10	mMCM-B10/3N	139463	1/30
12	mMCM-B12/3N	170059	1/30
13	mMCM-B13/3N	139464	1/30
15	mMCM-B15/3N	170060	1/30
16	mMCM-B16/3N	139465	1/30
20	mMCM-B20/3N	139466	1/30
25	mMCM-B25/3N	139467	1/30
32	mMCM-B32/3N	139468	1/30
40	mMCM-B40/3N	139469	1/30
50	mMCM-B50/3N	139470	1/30
63	mMCM-B63/3N	139471	1/30

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4-pole

1	mMCM-B1/4	139218	1/30
2	mMCM-B2/4	139219	1/30
3	mMCM-B3/4	139220	1/30
4	mMCM-B4/4	139221	1/30
5	mMCM-B5/4	170061	1/30
6	mMCM-B6/4	139222	1/30
8	mMCM-B8/4	170062	1/30
10	mMCM-B10/4	139223	1/30
12	mMCM-B12/4	170063	1/30
13	mMCM-B13/4	139224	1/30
15	mMCM-B15/4	170064	1/30
16	mMCM-B16/4	139225	1/30
20	mMCM-B20/4	139226	1/30
25	mMCM-B25/4	139227	1/30
32	mMCM-B32/4	139228	1/30
40	mMCM-B40/4	139229	1/30
50	mMCM-B50/4	139230	1/30
63	mMCM-B63/4	139231	1/30

10 kA, Characteristic C

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1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-C1/1	138872	12/120
2	mMCM-C2/1	138873	12/120
3	mMCM-C3/1	138874	12/120
4	mMCM-C4/1	138875	12/120
5	mMCM-C5/1	170065	12/120
6	mMCM-C6/1	138876	12/120
8	mMCM-C8/1	170066	12/120
10	mMCM-C10/1	138877	12/120
12	mMCM-C12/1	170067	12/120
13	mMCM-C13/1	138878	12/120
15	mMCM-C15/1	170068	12/120
16	mMCM-C16/1	138879	12/120
20	mMCM-C20/1	138880	12/120
25	mMCM-C25/1	138881	12/120
32	mMCM-C32/1	138882	12/120
40	mMCM-C40/1	138883	12/120
50	mMCM-C50/1	138884	12/120
63	mMCM-C63/1	138885	12/120

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1+N-pole, 2 Module Units (MU)

1	mMCM-C1/1N	139352	1/60
2	mMCM-C2/1N	139353	1/60
3	mMCM-C3/1N	139354	1/60
4	mMCM-C4/1N	139355	1/60
5	mMCM-C5/1N	170069	1/60
6	mMCM-C6/1N	139356	1/60
8	mMCM-C8/1N	170070	1/60
10	mMCM-C10/1N	139357	1/60
12	mMCM-C12/1N	170071	1/60
13	mMCM-C13/1N	139358	1/60
15	mMCM-C15/1N	170072	1/60
16	mMCM-C16/1N	139359	1/60
20	mMCM-C20/1N	139360	1/60
25	mMCM-C25/1N	139361	1/60
32	mMCM-C32/1N	139362	1/60
40	mMCM-C40/1N	139363	1/60
50	mMCM-C50/1N	139364	1/60
63	mMCM-C63/1N	139365	1/60

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2-pole

1	mMCM-C1/2	138992	1/60
2	mMCM-C2/2	138993	1/60
3	mMCM-C3/2	138994	1/60
4	mMCM-C4/2	138995	1/60
5	mMCM-C5/2	170073	1/60
6	mMCM-C6/2	138996	1/60
8	mMCM-C8/2	170074	1/60
10	mMCM-C10/2	138997	1/60
12	mMCM-C12/2	170075	1/60
13	mMCM-C13/2	138998	1/60
15	mMCM-C15/2	170076	1/60
16	mMCM-C16/2	138999	1/60
20	mMCM-C20/2	139000	1/60
25	mMCM-C25/2	139001	1/60
32	mMCM-C32/2	139002	1/60
40	mMCM-C40/2	139003	1/60
50	mMCM-C50/2	139004	1/60
63	mMCM-C63/2	139005	1/60

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3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-C1/3	139112	1/40
2	mMCM-C2/3	139113	1/40
3	mMCM-C3/3	139114	1/40
4	mMCM-C4/3	139115	1/40
5	mMCM-C5/3	170077	1/40
6	mMCM-C6/3	139116	1/40
8	mMCM-C8/3	170078	1/40
10	mMCM-C10/3	139117	1/40
12	mMCM-C12/3	170079	1/40
13	mMCM-C13/3	139118	1/40
15	mMCM-C15/3	170080	1/40
16	mMCM-C16/3	139119	1/40
20	mMCM-C20/3	139120	1/40
25	mMCM-C25/3	139121	1/40
32	mMCM-C32/3	139122	1/40
40	mMCM-C40/3	139123	1/40
50	mMCM-C50/3	139124	1/40
63	mMCM-C63/3	139125	1/40

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3+N-pole

1	mMCM-C1/3N	139472	1/30
2	mMCM-C2/3N	139473	1/30
3	mMCM-C3/3N	139474	1/30
4	mMCM-C4/3N	139475	1/30
5	mMCM-C5/3N	170081	1/30
6	mMCM-C6/3N	139476	1/30
8	mMCM-C8/3N	170082	1/30
10	mMCM-C10/3N	139477	1/30
12	mMCM-C12/3N	170083	1/30
13	mMCM-C13/3N	139478	1/30
15	mMCM-C15/3N	170084	1/30
16	mMCM-C16/3N	139479	1/30
20	mMCM-C20/3N	139480	1/30
25	mMCM-C25/3N	139481	1/30
32	mMCM-C32/3N	139482	1/30
40	mMCM-C40/3N	139483	1/30
50	mMCM-C50/3N	139484	1/30
63	mMCM-C63/3N	139485	1/30

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4-pole

1	mMCM-C1/4	139232	1/30
2	mMCM-C2/4	139233	1/30
3	mMCM-C3/4	139234	1/30
4	mMCM-C4/4	139235	1/30
5	mMCM-C5/4	170085	1/30
6	mMCM-C6/4	139236	1/30
8	mMCM-C8/4	170086	1/30
10	mMCM-C10/4	139237	1/30
12	mMCM-C12/4	170087	1/30
13	mMCM-C13/4	139238	1/30
15	mMCM-C15/4	170088	1/30
16	mMCM-C16/4	139239	1/30
20	mMCM-C20/4	139240	1/30
25	mMCM-C25/4	139241	1/30
32	mMCM-C32/4	139242	1/30
40	mMCM-C40/4	139243	1/30
50	mMCM-C50/4	139244	1/30
63	mMCM-C63/4	139245	1/30

10 kA, Characteristic D

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1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-D1/1	138886	12/120
2	mMCM-D2/1	138887	12/120
3	mMCM-D3/1	138888	12/120
4	mMCM-D4/1	138889	12/120
5	mMCM-D5/1	170089	12/120
6	mMCM-D6/1	138890	12/120
8	mMCM-D8/1	170090	12/120
10	mMCM-D10/1	138891	12/120
12	mMCM-D12/1	170091	12/120
13	mMCM-D13/1	138892	12/120
15	mMCM-D15/1	170092	12/120
16	mMCM-D16/1	138893	12/120
20	mMCM-D20/1	138894	12/120
25	mMCM-D25/1	138895	12/120
32	mMCM-D32/1	138896	12/120
40	mMCM-D40/1	138897	12/120

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1+N-pole, 2 Module Units (MU)

1	mMCM-D1/1N	139366	1/60
2	mMCM-D2/1N	139367	1/60
3	mMCM-D3/1N	139368	1/60
4	mMCM-D4/1N	139369	1/60
5	mMCM-D5/1N	170093	1/60
6	mMCM-D6/1N	139370	1/60
8	mMCM-D8/1N	170094	1/60
10	mMCM-D10/1N	139371	1/60
12	mMCM-D12/1N	170095	1/60
13	mMCM-D13/1N	139372	1/60
15	mMCM-D15/1N	170096	1/60
16	mMCM-D16/1N	139373	1/60
20	mMCM-D20/1N	139374	1/60
25	mMCM-D25/1N	139375	1/60
32	mMCM-D32/1N	139376	1/60
40	mMCM-D40/1N	139377	1/60

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2-pole

1	mMCM-D1/2	139006	1/60
2	mMCM-D2/2	139007	1/60
3	mMCM-D3/2	139008	1/60
4	mMCM-D4/2	139009	1/60
5	mMCM-D5/2	170097	1/60
6	mMCM-D6/2	139010	1/60
8	mMCM-D8/2	170098	1/60
10	mMCM-D10/2	139011	1/60
12	mMCM-D12/2	169941	1/60
13	mMCM-D13/2	139012	1/60
15	mMCM-D15/2	169942	1/60
16	mMCM-D16/2	139013	1/60
20	mMCM-D20/2	139014	1/60
25	mMCM-D25/2	139015	1/60
32	mMCM-D32/2	139016	1/60
40	mMCM-D40/2	139017	1/60

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3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMCM-D1/3	139126	1/40
2	mMCM-D2/3	139127	1/40
3	mMCM-D3/3	139128	1/40
4	mMCM-D4/3	139129	1/40
5	mMCM-D5/3	169943	1/40
6	mMCM-D6/3	139130	1/40
8	mMCM-D8/3	169944	1/40
10	mMCM-D10/3	139131	1/40
12	mMCM-D12/3	169945	1/40
13	mMCM-D13/3	139132	1/40
15	mMCM-D15/3	169946	1/40
16	mMCM-D16/3	139133	1/40
20	mMCM-D20/3	139134	1/40
25	mMCM-D25/3	139135	1/40
32	mMCM-D32/3	139136	1/40
40	mMCM-D40/3	139137	1/40

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3+N-pole

1	mMCM-D1/3N	139486	1/30
2	mMCM-D2/3N	139487	1/30
3	mMCM-D3/3N	139488	1/30
4	mMCM-D4/3N	139489	1/30
5	mMCM-D5/3N	169947	1/30
6	mMCM-D6/3N	139490	1/30
8	mMCM-D8/3N	169948	1/30
10	mMCM-D10/3N	139491	1/30
12	mMCM-D12/3N	169949	1/30
13	mMCM-D13/3N	139492	1/30
15	mMCM-D15/3N	169950	1/30
16	mMCM-D16/3N	139493	1/30
20	mMCM-D20/3N	139494	1/30
25	mMCM-D25/3N	139495	1/30
32	mMCM-D32/3N	139496	1/30
40	mMCM-D40/3N	139497	1/30

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4-pole

1	mMCM-D1/4	139246	1/30
2	mMCM-D2/4	139247	1/30
3	mMCM-D3/4	139248	1/30
4	mMCM-D4/4	139249	1/30
5	mMCM-D5/4	169951	1/30
6	mMCM-D6/4	139250	1/30
8	mMCM-D8/4	169952	1/30
10	mMCM-D10/4	139251	1/30
12	mMCM-D12/4	169953	1/30
13	mMCM-D13/4	139252	1/30
15	mMCM-D15/4	169954	1/30
16	mMCM-D16/4	139253	1/30
20	mMCM-D20/4	139254	1/30
25	mMCM-D25/4	139255	1/30
32	mMCM-D32/4	139256	1/30
40	mMCM-D40/4	139257	1/30

6 kA, Characteristic B

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC6-B1/1	138818	12/120
2	mMC6-B2/1	138819	12/120
3	mMC6-B3/1	138820	12/120
4	mMC6-B4/1	138821	12/120
5	mMC6-B5/1	169969	12/120
6	mMC6-B6/1	138822	12/120
8	mMC6-B8/1	169970	12/120
10	mMC6-B10/1	138823	12/120
12	mMC6-B12/1	169971	12/120
13	mMC6-B13/1	138824	12/120
15	mMC6-B15/1	169972	12/120
16	mMC6-B16/1	138825	12/120
20	mMC6-B20/1	138826	12/120
25	mMC6-B25/1	138827	12/120
32	mMC6-B32/1	138828	12/120
40	mMC6-B40/1	138829	12/120
50	mMC6-B50/1	138830	12/120
63	mMC6-B63/1	138831	12/120

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1+N-pole, 2 Module Units (MU)

1	mMC6-B1/1N	139298	1/60
2	mMC6-B2/1N	139299	1/60
3	mMC6-B3/1N	139300	1/60
4	mMC6-B4/1N	139301	1/60
5	mMC6-B5/1N	169973	1/60
6	mMC6-B6/1N	139302	1/60
8	mMC6-B8/1N	169974	1/60
10	mMC6-B10/1N	139303	1/60
12	mMC6-B12/1N	169975	1/60
13	mMC6-B13/1N	139304	1/60
15	mMC6-B15/1N	169976	1/60
16	mMC6-B16/1N	139305	1/60
20	mMC6-B20/1N	139306	1/60
25	mMC6-B25/1N	139307	1/60
32	mMC6-B32/1N	139308	1/60
40	mMC6-B40/1N	139309	1/60
50	mMC6-B50/1N	139310	1/60
63	mMC6-B63/1N	139311	1/60

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2-pole

1	mMC6-B1/2	138938	1/60
2	mMC6-B2/2	138939	1/60
3	mMC6-B3/2	138940	1/60
4	mMC6-B4/2	138941	1/60
5	mMC6-B5/2	169977	1/60
6	mMC6-B6/2	138942	1/60
8	mMC6-B8/2	169978	1/60
10	mMC6-B10/2	138943	1/60
12	mMC6-B12/2	169979	1/60
13	mMC6-B13/2	138944	1/60
15	mMC6-B15/2	169980	1/60
16	mMC6-B16/2	138945	1/60
20	mMC6-B20/2	138946	1/60
25	mMC6-B25/2	138947	1/60
32	mMC6-B32/2	138948	1/60
40	mMC6-B40/2	138949	1/60
50	mMC6-B50/2	138950	1/60
63	mMC6-B63/2	138951	1/60

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3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC6-B1/3	139058	1/40
2	mMC6-B2/3	139059	1/40
3	mMC6-B3/3	139060	1/40
4	mMC6-B4/3	139061	1/40
5	mMC6-B5/3	169981	1/40
6	mMC6-B6/3	139062	1/40
8	mMC6-B8/3	169982	1/40
10	mMC6-B10/3	139063	1/40
12	mMC6-B12/3	169983	1/40
13	mMC6-B13/3	139064	1/40
15	mMC6-B15/3	169984	1/40
16	mMC6-B16/3	139065	1/40
20	mMC6-B20/3	139066	1/40
25	mMC6-B25/3	139067	1/40
32	mMC6-B32/3	139068	1/40
40	mMC6-B40/3	139069	1/40
50	mMC6-B50/3	139070	1/40
63	mMC6-B63/3	139071	1/40

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3+N-pole

1	mMC6-B1/3N	139418	1/30
2	mMC6-B2/3N	139419	1/30
3	mMC6-B3/3N	139420	1/30
4	mMC6-B4/3N	139421	1/30
5	mMC6-B5/3N	169985	1/30
6	mMC6-B6/3N	139422	1/30
8	mMC6-B8/3N	169986	1/30
10	mMC6-B10/3N	139423	1/30
12	mMC6-B12/3N	169987	1/30
13	mMC6-B13/3N	139424	1/30
15	mMC6-B15/3N	169988	1/30
16	mMC6-B16/3N	139425	1/30
20	mMC6-B20/3N	139426	1/30
25	mMC6-B25/3N	139427	1/30
32	mMC6-B32/3N	139428	1/30
40	mMC6-B40/3N	139429	1/30
50	mMC6-B50/3N	139430	1/30
63	mMC6-B63/3N	139431	1/30

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4-pole

1	mMC6-B1/4	139178	1/30
2	mMC6-B2/4	139179	1/30
3	mMC6-B3/4	139180	1/30
4	mMC6-B4/4	139181	1/30
5	mMC6-B5/4	169989	1/30
6	mMC6-B6/4	139182	1/30
8	mMC6-B8/4	169990	1/30
10	mMC6-B10/4	139183	1/30
12	mMC6-B12/4	169991	1/30
13	mMC6-B13/4	139184	1/30
15	mMC6-B15/4	169992	1/30
16	mMC6-B16/4	139185	1/30
20	mMC6-B20/4	139186	1/30
25	mMC6-B25/4	139187	1/30
32	mMC6-B32/4	139188	1/30
40	mMC6-B40/4	139189	1/30
50	mMC6-B50/4	139190	1/30
63	mMC6-B63/4	139191	1/30

6 kA, Characteristic C

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
0.5	mMC6-C0,5/1	168562	12/120
1	mMC6-C1/1	138832	12/120
2	mMC6-C2/1	138833	12/120
3	mMC6-C3/1	138834	12/120
4	mMC6-C4/1	138835	12/120
5	mMC6-C5/1	169993	12/120
6	mMC6-C6/1	138836	12/120
8	mMC6-C8/1	169994	12/120
10	mMC6-C10/1	138837	12/120
12	mMC6-C12/1	169995	12/120
13	mMC6-C13/1	138838	12/120
15	mMC6-C15/1	169996	12/120
16	mMC6-C16/1	138839	12/120
20	mMC6-C20/1	138840	12/120
25	mMC6-C25/1	138841	12/120
32	mMC6-C32/1	138842	12/120
40	mMC6-C40/1	138843	12/120
50	mMC6-C50/1	138844	12/120
63	mMC6-C63/1	138845	12/120

SG66112

1+N-pole, 2 Module Units (MU)

1	mMC6-C1/1N	139312	1/60
2	mMC6-C2/1N	139313	1/60
3	mMC6-C3/1N	139314	1/60
4	mMC6-C4/1N	139315	1/60
5	mMC6-C5/1N	169997	1/60
6	mMC6-C6/1N	139316	1/60
8	mMC6-C8/1N	169998	1/60
10	mMC6-C10/1N	139317	1/60
12	mMC6-C12/1N	169999	1/60
13	mMC6-C13/1N	139318	1/60
15	mMC6-C15/1N	170000	1/60
16	mMC6-C16/1N	139319	1/60
20	mMC6-C20/1N	139320	1/60
25	mMC6-C25/1N	139321	1/60
32	mMC6-C32/1N	139322	1/60
40	mMC6-C40/1N	139323	1/60
50	mMC6-C50/1N	139324	1/60
63	mMC6-C63/1N	139325	1/60

SG66212

2-pole

0.5	mMC6-C0,5/2	168563	1/60
1	mMC6-C1/2	138952	1/60
2	mMC6-C2/2	138953	1/60
3	mMC6-C3/2	138954	1/60
4	mMC6-C4/2	138955	1/60
5	mMC6-C5/2	170001	1/60
6	mMC6-C6/2	138956	1/60
8	mMC6-C8/2	170002	1/60
10	mMC6-C10/2	138957	1/60
12	mMC6-C12/2	170003	1/60
13	mMC6-C13/2	138958	1/60
15	mMC6-C15/2	170004	1/60
16	mMC6-C16/2	138959	1/60
20	mMC6-C20/2	138960	1/60
25	mMC6-C25/2	138961	1/60
32	mMC6-C32/2	138962	1/60
40	mMC6-C40/2	138963	1/60
50	mMC6-C50/2	138964	1/60
63	mMC6-C63/2	138965	1/60

SG66512

3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC6-C1/3	139072	1/40
2	mMC6-C2/3	139073	1/40
3	mMC6-C3/3	139074	1/40
4	mMC6-C4/3	139075	1/40
5	mMC6-C5/3	170005	1/40
6	mMC6-C6/3	139076	1/40
8	mMC6-C8/3	170006	1/40
10	mMC6-C10/3	139077	1/40
12	mMC6-C12/3	170007	1/40
13	mMC6-C13/3	139078	1/40
15	mMC6-C15/3	170008	1/40
16	mMC6-C16/3	139079	1/40
20	mMC6-C20/3	139080	1/40
25	mMC6-C25/3	139081	1/40
32	mMC6-C32/3	139082	1/40
40	mMC6-C40/3	139083	1/40
50	mMC6-C50/3	139084	1/40
63	mMC6-C63/3	139085	1/40

SG67012

3+N-pole

1	mMC6-C1/3N	139432	1/30
2	mMC6-C2/3N	139433	1/30
3	mMC6-C3/3N	139434	1/30
4	mMC6-C4/3N	139435	1/30
5	mMC6-C5/3N	170009	1/30
6	mMC6-C6/3N	139436	1/30
8	mMC6-C8/3N	170010	1/30
10	mMC6-C10/3N	139437	1/30
12	mMC6-C12/3N	170011	1/30
13	mMC6-C13/3N	139438	1/30
15	mMC6-C15/3N	170012	1/30
16	mMC6-C16/3N	139439	1/30
20	mMC6-C20/3N	139440	1/30
25	mMC6-C25/3N	139441	1/30
32	mMC6-C32/3N	139442	1/30
40	mMC6-C40/3N	139443	1/30
50	mMC6-C50/3N	139444	1/30
63	mMC6-C63/3N	139445	1/30

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4-pole

1	mMC6-C1/4	139192	1/30
2	mMC6-C2/4	139193	1/30
3	mMC6-C3/4	139194	1/30
4	mMC6-C4/4	139195	1/30
5	mMC6-C5/4	170013	1/30
6	mMC6-C6/4	139196	1/30
8	mMC6-C8/4	170014	1/30
10	mMC6-C10/4	139197	1/30
12	mMC6-C12/4	170015	1/30
13	mMC6-C13/4	139198	1/30
15	mMC6-C15/4	170016	1/30
16	mMC6-C16/4	139199	1/30
20	mMC6-C20/4	139200	1/30
25	mMC6-C25/4	139201	1/30
32	mMC6-C32/4	139202	1/30
40	mMC6-C40/4	139203	1/30
50	mMC6-C50/4	139204	1/30
63	mMC6-C63/4	139205	1/30

6 kA, Characteristic D

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC6-D1/1	138846	12/120
2	mMC6-D2/1	138847	12/120
3	mMC6-D3/1	138848	12/120
4	mMC6-D4/1	138849	12/120
5	mMC6-D5/1	170017	12/120
6	mMC6-D6/1	138850	12/120
8	mMC6-D8/1	170018	12/120
10	mMC6-D10/1	138851	12/120
12	mMC6-D12/1	170019	12/120
13	mMC6-D13/1	138852	12/120
15	mMC6-D15/1	170020	12/120
16	mMC6-D16/1	138853	12/120
20	mMC6-D20/1	138854	12/120
25	mMC6-D25/1	138855	12/120
32	mMC6-D32/1	138856	12/120
40	mMC6-D40/1	138857	12/120

SG66112

1+N-pole, 2 Module Units (MU)

1	mMC6-D1/1N	139326	1/60
2	mMC6-D2/1N	139327	1/60
3	mMC6-D3/1N	139328	1/60
4	mMC6-D4/1N	139329	1/60
5	mMC6-D5/1N	170021	1/60
6	mMC6-D6/1N	139330	1/60
8	mMC6-D8/1N	170022	1/60
10	mMC6-D10/1N	139331	1/60
12	mMC6-D12/1N	170023	1/60
13	mMC6-D13/1N	139332	1/60
15	mMC6-D15/1N	170024	1/60
16	mMC6-D16/1N	139333	1/60
20	mMC6-D20/1N	139334	1/60
25	mMC6-D25/1N	139335	1/60
32	mMC6-D32/1N	139336	1/60
40	mMC6-D40/1N	139337	1/60

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2-pole

1	mMC6-D1/2	138966	1/60
2	mMC6-D2/2	138967	1/60
3	mMC6-D3/2	138968	1/60
4	mMC6-D4/2	138969	1/60
5	mMC6-D5/2	170025	1/60
6	mMC6-D6/2	138970	1/60
8	mMC6-D8/2	170026	1/60
10	mMC6-D10/2	138971	1/60
12	mMC6-D12/2	170027	1/60
13	mMC6-D13/2	138972	1/60
15	mMC6-D15/2	170028	1/60
16	mMC6-D16/2	138973	1/60
20	mMC6-D20/2	138974	1/60
25	mMC6-D25/2	138975	1/60
32	mMC6-D32/2	138976	1/60
40	mMC6-D40/2	138977	1/60

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3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC6-D1/3	139086	1/40
2	mMC6-D2/3	139087	1/40
3	mMC6-D3/3	139088	1/40
4	mMC6-D4/3	139089	1/40
5	mMC6-D5/3	170029	1/40
6	mMC6-D6/3	139090	1/40
8	mMC6-D8/3	170030	1/40
10	mMC6-D10/3	139091	1/40
12	mMC6-D12/3	170031	1/40
13	mMC6-D13/3	139092	1/40
15	mMC6-D15/3	170032	1/40
16	mMC6-D16/3	139093	1/40
20	mMC6-D20/3	139094	1/40
25	mMC6-D25/3	139095	1/40
32	mMC6-D32/3	139096	1/40
40	mMC6-D40/3	139097	1/40

SG67012

3+N-pole

1	mMC6-D1/3N	139446	1/30
2	mMC6-D2/3N	139447	1/30
3	mMC6-D3/3N	139448	1/30
4	mMC6-D4/3N	139449	1/30
5	mMC6-D5/3N	170033	1/30
6	mMC6-D6/3N	139450	1/30
8	mMC6-D8/3N	170034	1/30
10	mMC6-D10/3N	139451	1/30
12	mMC6-D12/3N	170035	1/30
13	mMC6-D13/3N	139452	1/30
15	mMC6-D15/3N	170036	1/30
16	mMC6-D16/3N	139453	1/30
20	mMC6-D20/3N	139454	1/30
25	mMC6-D25/3N	139455	1/30
32	mMC6-D32/3N	139456	1/30
40	mMC6-D40/3N	139457	1/30

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4-pole

1	mMC6-D1/4	139206	1/30
2	mMC6-D2/4	139207	1/30
3	mMC6-D3/4	139208	1/30
4	mMC6-D4/4	139209	1/30
5	mMC6-D5/4	170037	1/30
6	mMC6-D6/4	139210	1/30
8	mMC6-D8/4	170038	1/30
10	mMC6-D10/4	139211	1/30
12	mMC6-D12/4	170039	1/30
13	mMC6-D13/4	139212	1/30
15	mMC6-D15/4	170040	1/30
16	mMC6-D16/4	139213	1/30
20	mMC6-D20/4	139214	1/30
25	mMC6-D25/4	139215	1/30
32	mMC6-D32/4	139216	1/30
40	mMC6-D40/4	139217	1/30

4.5 kA, Characteristic B

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-B1/1	138778	12/120
2	mMC4-B2/1	138779	12/120
3	mMC4-B3/1	138780	12/120
4	mMC4-B4/1	138781	12/120
5	mMC4-B5/1	169883	12/120
6	mMC4-B6/1	138782	12/120
8	mMC4-B8/1	169884	12/120
10	mMC4-B10/1	138783	12/120
12	mMC4-B12/1	169903	12/120
13	mMC4-B13/1	138784	12/120
15	mMC4-B15/1	169904	12/120
16	mMC4-B16/1	138785	12/120
20	mMC4-B20/1	138786	12/120
25	mMC4-B25/1	138787	12/120
32	mMC4-B32/1	138788	12/120
40	mMC4-B40/1	138789	12/120
50	mMC4-B50/1	138790	12/120
63	mMC4-B63/1	138791	12/120

SG66112

1+N-pole, 2 Module Units (MU)

1	mMC4-B1/1N	139258	1/60
2	mMC4-B2/1N	139259	1/60
3	mMC4-B3/1N	139260	1/60
4	mMC4-B4/1N	139261	1/60
5	mMC4-B5/1N	169905	1/60
6	mMC4-B6/1N	139262	1/60
8	mMC4-B8/1N	169906	1/60
10	mMC4-B10/1N	139263	1/60
12	mMC4-B12/1N	169907	1/60
13	mMC4-B13/1N	139264	1/60
15	mMC4-B15/1N	169908	1/60
16	mMC4-B16/1N	139265	1/60
20	mMC4-B20/1N	139266	1/60
25	mMC4-B25/1N	139267	1/60
32	mMC4-B32/1N	139268	1/60
40	mMC4-B40/1N	139269	1/60
50	mMC4-B50/1N	139270	1/60
63	mMC4-B63/1N	139271	1/60

SG66212

2-pole

1	mMC4-B1/2	138898	1/60
2	mMC4-B2/2	138899	1/60
3	mMC4-B3/2	138900	1/60
4	mMC4-B4/2	138901	1/60
5	mMC4-B5/2	169909	1/60
6	mMC4-B6/2	138902	1/60
8	mMC4-B8/2	169910	1/60
10	mMC4-B10/2	138903	1/60
12	mMC4-B12/2	169911	1/60
13	mMC4-B13/2	138904	1/60
15	mMC4-B15/2	169912	1/60
16	mMC4-B16/2	138905	1/60
20	mMC4-B20/2	138906	1/60
25	mMC4-B25/2	138907	1/60
32	mMC4-B32/2	138908	1/60
40	mMC4-B40/2	138909	1/60
50	mMC4-B50/2	138910	1/60
63	mMC4-B63/2	138911	1/60

SG66512

3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-B1/3	139018	1/40
2	mMC4-B2/3	139019	1/40
3	mMC4-B3/3	139020	1/40
4	mMC4-B4/3	139021	1/40
5	mMC4-B5/3	169913	1/40
6	mMC4-B6/3	139022	1/40
8	mMC4-B8/3	169914	1/40
10	mMC4-B10/3	139023	1/40
12	mMC4-B12/3	169915	1/40
13	mMC4-B13/3	139024	1/40
15	mMC4-B15/3	169916	1/40
16	mMC4-B16/3	139025	1/40
20	mMC4-B20/3	139026	1/40
25	mMC4-B25/3	139027	1/40
32	mMC4-B32/3	139028	1/40
40	mMC4-B40/3	139029	1/40
50	mMC4-B50/3	139030	1/40
63	mMC4-B63/3	139031	1/40

SG67012

3+N-pole

1	mMC4-B1/3N	139378	1/30
2	mMC4-B2/3N	139379	1/30
3	mMC4-B3/3N	139380	1/30
4	mMC4-B4/3N	139381	1/30
5	mMC4-B5/3N	169917	1/30
6	mMC4-B6/3N	139382	1/30
8	mMC4-B58/3N	169918	1/30
10	mMC4-B10/3N	139383	1/30
12	mMC4-B12/3N	169919	1/30
13	mMC4-B13/3N	139384	1/30
15	mMC4-B15/3N	169920	1/30
16	mMC4-B16/3N	139385	1/30
20	mMC4-B20/3N	139386	1/30
25	mMC4-B25/3N	139387	1/30
32	mMC4-B32/3N	139388	1/30
40	mMC4-B40/3N	139389	1/30
50	mMC4-B50/3N	139390	1/30
63	mMC4-B63/3N	139391	1/30

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4-pole

1	mMC4-B1/4	139138	1/30
2	mMC4-B2/4	139139	1/30
3	mMC4-B3/4	139140	1/30
4	mMC4-B4/4	139141	1/30
5	mMC4-B5/4	169921	1/30
6	mMC4-B6/4	139142	1/30
8	mMC4-B8/4	169922	1/30
10	mMC4-B10/4	139143	1/30
12	mMC4-B12/4	169923	1/30
13	mMC4-B13/4	139144	1/30
15	mMC4-B15/4	169924	1/30
16	mMC4-B16/4	139145	1/30
20	mMC4-B20/4	139146	1/30
25	mMC4-B25/4	139147	1/30
32	mMC4-B32/4	139148	1/30
40	mMC4-B40/4	139149	1/30
50	mMC4-B50/4	139150	1/30
63	mMC4-B63/4	139151	1/30

4.5 kA, Characteristic C

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-C1/1	138792	12/120
2	mMC4-C2/1	138793	12/120
3	mMC4-C3/1	138794	12/120
4	mMC4-C4/1	138795	12/120
5	mMC4-C5/1	169925	12/120
6	mMC4-C6/1	138796	12/120
8	mMC4-C8/1	169926	12/120
10	mMC4-C10/1	138797	12/120
12	mMC4-C12/1	169927	12/120
13	mMC4-C13/1	138798	12/120
15	mMC4-C15/1	169928	12/120
16	mMC4-C16/1	138799	12/120
20	mMC4-C20/1	138800	12/120
25	mMC4-C25/1	138801	12/120
32	mMC4-C32/1	138802	12/120
40	mMC4-C40/1	138803	12/120
50	mMC4-C50/1	138804	12/120
63	mMC4-C63/1	138805	12/120

SG66112

1+N-pole, 2 Module Units (MU)

1	mMC4-C1/1N	139272	1/60
2	mMC4-C2/1N	139273	1/60
3	mMC4-C3/1N	139274	1/60
4	mMC4-C4/1N	139275	1/60
5	mMC4-C5/1N	169929	1/60
6	mMC4-C6/1N	139276	1/60
8	mMC4-C8/1N	169930	1/60
10	mMC4-C10/1N	139277	1/60
12	mMC4-C12/1N	169931	1/60
13	mMC4-C13/1N	139278	1/60
15	mMC4-C15/1N	169932	1/60
16	mMC4-C16/1N	139279	1/60
20	mMC4-C20/1N	139280	1/60
25	mMC4-C25/1N	139281	1/60
32	mMC4-C32/1N	139282	1/60
40	mMC4-C40/1N	139283	1/60
50	mMC4-C50/1N	139284	1/60
63	mMC4-C63/1N	139285	1/60

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2-pole

1	mMC4-C1/2	138912	1/60
2	mMC4-C2/2	138913	1/60
3	mMC4-C3/2	138914	1/60
4	mMC4-C4/2	138915	1/60
5	mMC4-C5/2	169933	1/60
6	mMC4-C6/2	138916	1/60
8	mMC4-C8/2	169934	1/60
10	mMC4-C10/2	138917	1/60
12	mMC4-C12/2	169935	1/60
13	mMC4-C13/2	138918	1/60
15	mMC4-C15/2	169936	1/60
16	mMC4-C16/2	138919	1/60
20	mMC4-C20/2	138920	1/60
25	mMC4-C25/2	138921	1/60
32	mMC4-C32/2	138922	1/60
40	mMC4-C40/2	138923	1/60
50	mMC4-C50/2	138924	1/60
63	mMC4-C63/2	138925	1/60

SG66512

3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-C1/3	139032	1/40
2	mMC4-C2/3	139033	1/40
3	mMC4-C3/3	139034	1/40
4	mMC4-C4/3	139035	1/40
5	mMC4-C5/3	169937	1/40
6	mMC4-C6/3	139036	1/40
8	mMC4-C8/3	169938	1/40
10	mMC4-C10/3	139037	1/40
12	mMC4-C12/3	169939	1/40
13	mMC4-C13/3	139038	1/40
15	mMC4-C15/3	169940	1/40
16	mMC4-C16/3	139039	1/40
20	mMC4-C20/3	139040	1/40
25	mMC4-C25/3	139041	1/40
32	mMC4-C32/3	139042	1/40
40	mMC4-C40/3	139043	1/40
50	mMC4-C50/3	139044	1/40
63	mMC4-C63/3	139045	1/40

SG67012

3+N-pole

1	mMC4-C1/3N	139392	1/30
2	mMC4-C2/3N	139393	1/30
3	mMC4-C3/3N	139394	1/30
4	mMC4-C4/3N	139395	1/30
5	mMC4-C5/3N	169885	1/30
6	mMC4-C6/3N	139396	1/30
8	mMC4-C8/3N	169886	1/30
10	mMC4-C10/3N	139397	1/30
12	mMC4-C12/3N	169887	1/30
13	mMC4-C13/3N	139398	1/30
15	mMC4-C15/3N	169888	1/30
16	mMC4-C16/3N	139399	1/30
20	mMC4-C20/3N	139400	1/30
25	mMC4-C25/3N	139401	1/30
32	mMC4-C32/3N	139402	1/30
40	mMC4-C40/3N	139403	1/30
50	mMC4-C50/3N	139404	1/30
63	mMC4-C63/3N	139405	1/30

SG66912

4-pole

1	mMC4-C1/4	139152	1/30
2	mMC4-C2/4	139153	1/30
3	mMC4-C3/4	139154	1/30
4	mMC4-C4/4	139155	1/30
5	mMC4-C5/4	169889	1/30
6	mMC4-C6/4	139156	1/30
8	mMC4-C8/4	169890	1/30
10	mMC4-C10/4	139157	1/30
12	mMC4-C12/4	169891	1/30
13	mMC4-C13/4	139158	1/30
15	mMC4-C15/4	169892	1/30
16	mMC4-C16/4	139159	1/30
20	mMC4-C20/4	139160	1/30
25	mMC4-C25/4	139161	1/30
32	mMC4-C32/4	139162	1/30
40	mMC4-C40/4	139163	1/30
50	mMC4-C50/4	139164	1/30
63	mMC4-C63/4	139165	1/30

4.5 kA, Characteristic D

SG65412

1-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-D1/1	138806	12/120
2	mMC4-D2/1	138807	12/120
3	mMC4-D3/1	138808	12/120
4	mMC4-D4/1	138809	12/120
5	mMC4-D5/1	169893	12/120
6	mMC4-D6/1	138810	12/120
8	mMC4-D8/1	169894	12/120
10	mMC4-D10/1	138811	12/120
12	mMC4-D12/1	169895	12/120
13	mMC4-D13/1	138812	12/120
15	mMC4-D15/1	169896	12/120
16	mMC4-D16/1	138813	12/120
20	mMC4-D20/1	138814	12/120
25	mMC4-D25/1	138815	12/120
32	mMC4-D32/1	138816	12/120
40	mMC4-D40/1	138817	12/120

SG66112

1+N-pole, 2 Module Units (MU)

1	mMC4-D1/1N	139286	1/60
2	mMC4-D2/1N	139287	1/60
3	mMC4-D3/1N	139288	1/60
4	mMC4-D4/1N	139289	1/60
5	mMC4-D5/1N	169897	1/60
6	mMC4-D6/1N	139290	1/60
8	mMC4-D8/1N	169898	1/60
10	mMC4-D10/1N	139291	1/60
12	mMC4-D12/1N	169899	1/60
13	mMC4-D13/1N	139292	1/60
15	mMC4-D15/1N	169900	1/60
16	mMC4-D16/1N	139293	1/60
20	mMC4-D20/1N	139294	1/60
25	mMC4-D25/1N	139295	1/60
32	mMC4-D32/1N	139296	1/60
40	mMC4-D40/1N	139297	1/60

SG66212

2-pole

1	mMC4-D1/2	138926	1/60
2	mMC4-D2/2	138927	1/60
3	mMC4-D3/2	138928	1/60
4	mMC4-D4/2	138929	1/60
5	mMC4-D5/2	169901	1/60
6	mMC4-D6/2	138930	1/60
8	mMC4-D8/2	169902	1/60
10	mMC4-D10/2	138931	1/60
12	mMC4-D12/2	169955	1/60
13	mMC4-D13/2	138932	1/60
15	mMC4-D15/2	169956	1/60
16	mMC4-D16/2	138933	1/60
20	mMC4-D20/2	138934	1/60
25	mMC4-D25/2	138935	1/60
32	mMC4-D32/2	138936	1/60
40	mMC4-D40/2	138937	1/60

SG66512

3-pole

Rated current I_n (A)	Type Designation	Article No.	Units per package
1	mMC4-D1/3	139046	1/40
2	mMC4-D2/3	139047	1/40
3	mMC4-D3/3	139048	1/40
4	mMC4-D4/3	139049	1/40
5	mMC4-D5/3	169957	1/40
6	mMC4-D6/3	139050	1/40
8	mMC4-D8/3	169958	1/40
10	mMC4-D10/3	139051	1/40
12	mMC4-D12/3	169959	1/40
13	mMC4-D13/3	139052	1/40
15	mMC4-D15/3	169960	1/40
16	mMC4-D16/3	139053	1/40
20	mMC4-D20/3	139054	1/40
25	mMC4-D25/3	139055	1/40
32	mMC4-D32/3	139056	1/40
40	mMC4-D40/3	139057	1/40

SG67012

3+N-pole

1	mMC4-D1/3N	139406	1/30
2	mMC4-D2/3N	139407	1/30
3	mMC4-D3/3N	139408	1/30
4	mMC4-D4/3N	139409	1/30
5	mMC4-D5/3N	169961	1/30
6	mMC4-D6/3N	139410	1/30
8	mMC4-D8/3N	169962	1/30
10	mMC4-D10/3N	139411	1/30
12	mMC4-D12/3N	169963	1/30
13	mMC4-D13/3N	139412	1/30
15	mMC4-D15/3N	169964	1/30
16	mMC4-D16/3N	139413	1/30
20	mMC4-D20/3N	139414	1/30
25	mMC4-D25/3N	139415	1/30
32	mMC4-D32/3N	139416	1/30
40	mMC4-D40/3N	139417	1/30

SG66912

4-pole

1	mMC4-D1/4	139166	1/30
2	mMC4-D2/4	139167	1/30
3	mMC4-D3/4	139168	1/30
4	mMC4-D4/4	139169	1/30
5	mMC4-D5/4	169965	1/30
6	mMC4-D6/4	139170	1/30
8	mMC4-D8/4	169966	1/30
10	mMC4-D10/4	139171	1/30
12	mMC4-D12/4	169967	1/30
13	mMC4-D13/4	139172	1/30
15	mMC4-D15/4	169968	1/30
16	mMC4-D16/4	139173	1/30
20	mMC4-D20/4	139174	1/30
25	mMC4-D25/4	139175	1/30
32	mMC4-D32/4	139176	1/30
40	mMC4-D40/4	139177	1/30

SG01611

Description	Type Designation	Article No.	Units per package
Terminal covers ASTCVMCBLH for MCB's type mMCT			
Terminal cover	ASTCVMCBLH		10/600
Terminal cover	ASTCVMCBLHBL		2000

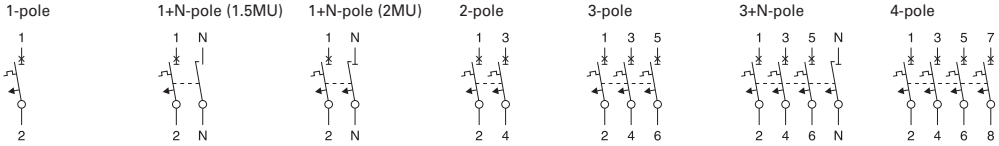
Specifications | Miniature Circuit Breakers mMC.

Description

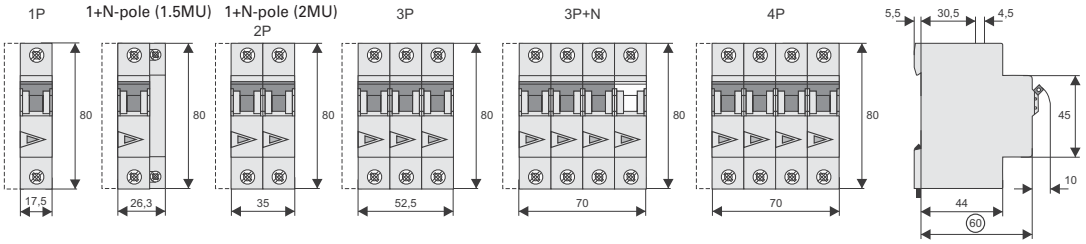
- High selectivity between MCB and back-up fuse due to low let-through energy
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for secure isolation
- Suitable for applications up to 48 V DC (use mMCMDC 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
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Additional terminal 35 mm²	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

Connection diagrams



Dimensions (mm)

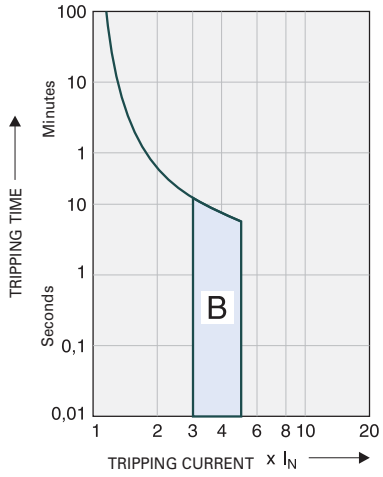


Technical Data

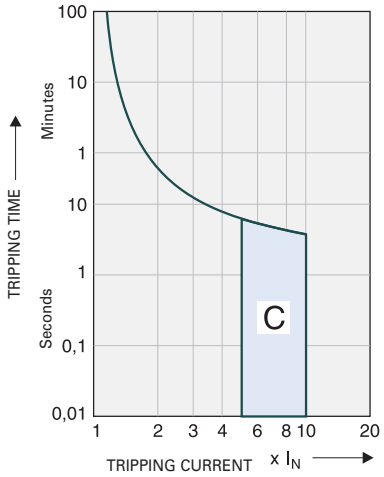
		mMC.
Electrical		
Design according to		IEC/EN 60898-1
Current test marks as printed onto the device		
Rated voltage	U_n	AC: 240/415 V
		DC: 48 V (per pole)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	I_{cn}	
mMCM		10 kA
mMC6		6 kA
mMC4		4.5 kA
Characteristic		B, C, D
Back-up fuse		
mMCM		max. 125 A gL
mMC6		max. 100 A gL
mMC4		max. 80 A gL
Selectivity class		3
Rated peak withstand voltage	U_{imp}	4 kV (1.2/50 µs)
Rated insulation voltage	U_i	440 V
Endurance		
electrical components		≥ 10,000 switching operations
mechanical components		≥ 20,000 switching operations
Line voltage connection		at will (above/below)
Design according to		IEC/EN 60947-2
Current test marks as printed onto the device		
Rated voltage	U_n	AC: 230/400 V
		DC: 60 V (per pole)
Rated frequency		50/60 Hz
Rated breaking capacity according to IEC/EN 60947-2	I_{cn}	
mMCM		15 kA
mMC6		10 kA
mMC4		4.5 kA
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

Tripping Characteristics (IEC/EN 60898-1)

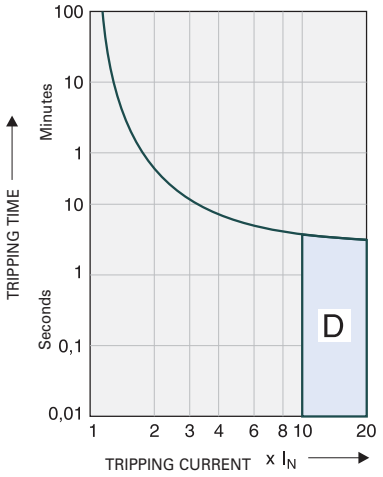
Tripping characteristic B



Tripping characteristic C



Tripping characteristic D



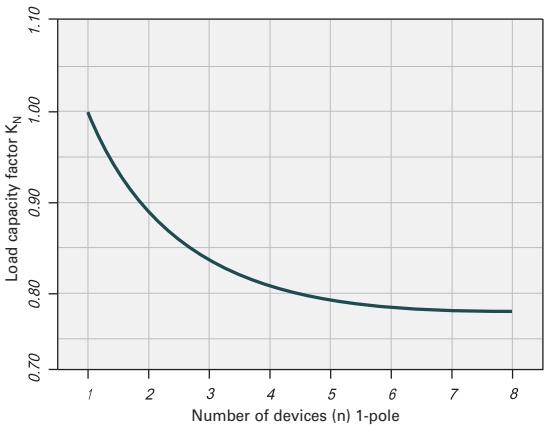
Quick-acting (B), slow (C), very slow (D)

Effect of the Ambient Temperature on Thermal Tripping Behaviour

Adjusted rated current values according to the ambient temperature

	Ambient temperature T [°C]															
I_n [A]	-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



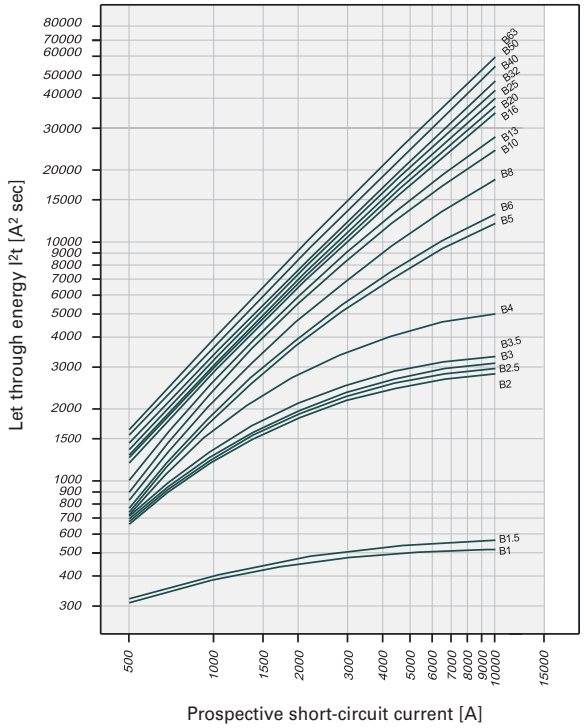
Effect of Power Frequency

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

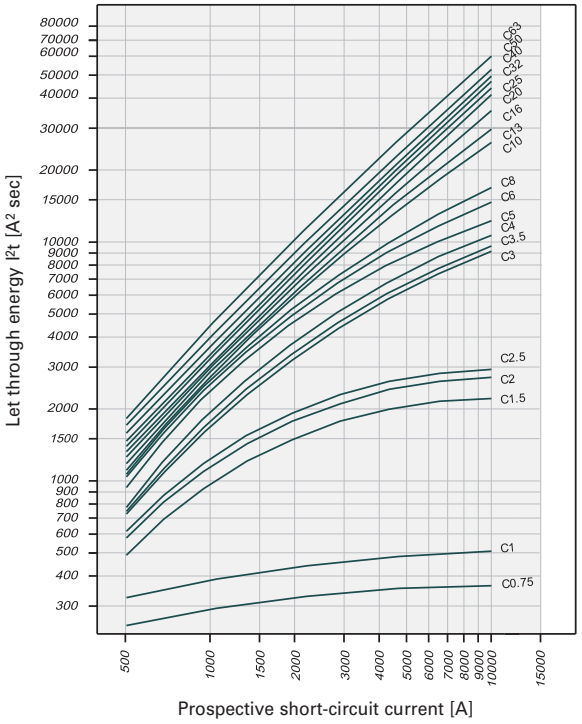
	Power frequency f [Hz]						
	$16^2/_3$	50	60	100	200	300	400
$I_{MA}(f)/I_{MA}(50\ Hz)$ [%]	91	100	101	106	115	134	141

Let-through Energy mMCM

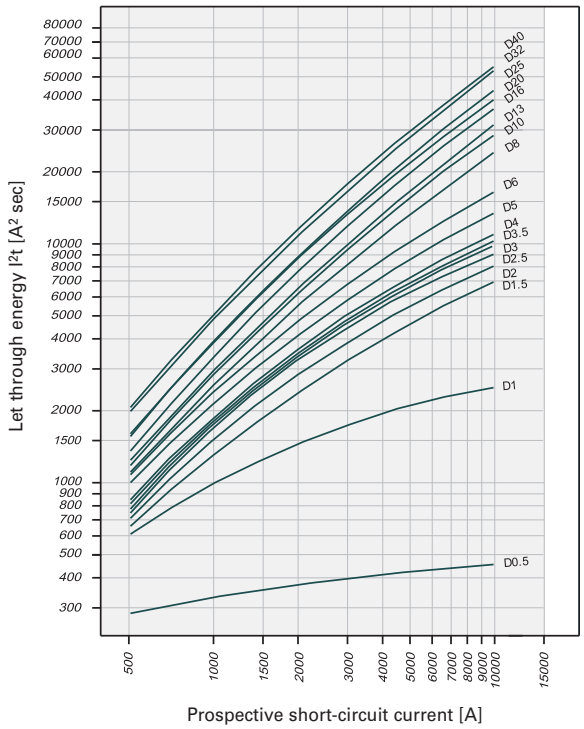
Let-through Energy mMCM, Characteristic B, 1-pole



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



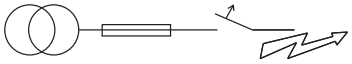
Let-through Energy mMCM, Characteristic D, 1-pole



Short Circuit Selectivity mMCM towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMCM 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***)

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

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

mMCM	DII-DIV gL/gG								
I_n [A]	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)]
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)]
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)]
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)]
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)]
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)]
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)]
4	<0.5[1)]	<0.5[1)]	0.6	0.8	1.8	3.6	9.7	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)]
6		<0.5[1)]	0.5	0.6	1.4	2.4	5.5	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			<0.5[1)]	0.6	1.3	2.0	3.6	5.4	10.0[2)]
13					1.3	1.9	3.3	5.0	9.4
16					1.2	1.8	3.2	4.4	8.0
20					1.2	1.8	3.1	4.1	7.0
25						1.7	2.8	3.8	6.5
32							2.7	3.7	6.2
40								3.5	5.9
50									5.5
63									

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

mMCM	DII-DIV gL/gG								
I_n [A]	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)]
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)]
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)]
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)]
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)]
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)]
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)]
4		<0.5[1)]	0.6	0.9	2.0	3.8	9.5	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)]
6			0.5	0.7	1.5	2.6	5.3	9.1	10.0[2)]
8			<0.5[1)]	0.7	1.4	2.2	3.9	6.0	10.0[2)]
10				0.7	1.2	1.9	3.4	5.0	9.5
13					1.2	1.8	3.2	4.6	8.6
16						1.6	2.7	4.0	7.4
20						1.5	2.5	3.5	6.7
25							2.4	3.4	6.2
32								2.8	5.0
40									4.8

[1)] Selectivity limit current I_s under 0.5 kA

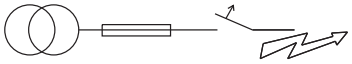
[2)] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMCM towards D01-D03 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMCM 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***)

mMCM	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]
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]
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]
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]
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]
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]
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]
5		<0.5[1]	0.5	0.8	1.7	4.0	7.0	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]
8			0.5	0.8	1.4	2.8	4.3	8.2	10.0[2]
10			0.5	0.7	1.3	2.4	3.4	6.0	10.0[2]
13			<0.5[1]	0.7	1.2	2.3	3.2	5.3	10.0[2]
16				0.6	1.1	2.2	2.9	4.6	10.0
20					1.1	2.1	2.8	4.4	9.3
25					1.1	2.0	2.7	4.2	8.7
32						2.0	2.6	4.0	8.0
40							2.5	3.8	7.5
50							2.3	3.4	6.7
63									6.2

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

mMCM	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]
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]
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]
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]
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]
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]
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]
4	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.6	4.0	7.6	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]
6		<0.5[1]	<0.5[1]	<0.5[1]	1.2	2.7	4.5	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			<0.5[1]	<0.5[1]	1.2	2.3	3.1	5.4	10.0[2]
13					1.1	2.2	3.0	4.9	10.0[2]
16					1.1	2.1	2.8	4.4	9.5
20					1.0	2.0	2.6	4.0	8.3
25						1.9	2.5	3.8	7.8
32							2.5	3.7	7.3
40								3.5	7.0
50									6.5
63									

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

mMCM	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]
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]
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]
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]
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]
3.0	<0.5[1]	<0.5[1]	0.5	0.7	1.8	4.8	9.3	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]
4		<0.5[1]	0.5	0.7	1.7	4.6	7.7	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]
6			<0.5[1]	0.5	1.3	2.9	4.5	9.0	10.0[2]
8			<0.5[1]	0.5	1.2	2.4	3.5	6.0	10.0[2]
10				0.5	1.1	2.2	3.0	5.0	10.0[2]
13					1.1	2.1	2.9	4.6	10.0[2]
16						1.9	2.6	3.9	9.0
20						1.7	2.3	3.5	8.0
25							2.2	3.4	7.5
32								2.9	6.0
40									5.7

[1] Selectivity limit current I_s under 0.5 kA

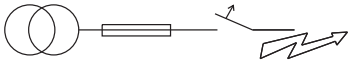
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMCM towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMCM 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***)

mMCM	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]
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]
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]
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]
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]
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]
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]
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]
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]
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		<0.5[1]	0.6	0.9	1.2	1.5	2.2	2.7	4.0	9.0	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]
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.4	9.3	10.0[2]
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0	8.7	10.0[2]
25				0.7	1.0	1.3	1.8	2.3	3.2	5.7	8.0	10.0[2]
32					0.9	1.2	1.7	2.2	3.1	5.4	7.6	10.0[2]
40								2.1	3.0	5.1	7.2	10.0[2]
50								1.9	2.8	4.7	6.6	9.5
63										4.4	6.3	8.6

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

mMCM	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]
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]
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]
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]
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]
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]
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]
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]
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]
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]
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			0.5	0.7	1.0	1.4	2.0	2.5	3.8	8.0	10.0[2]	10.0[2]
13					1.0	1.3	1.9	2.4	3.6	7.0	10.0[2]	10.0[2]
16					1.0	1.3	1.8	2.3	3.3	6.0	8.8	10.0[2]
20					1.0	1.2	1.7	2.2	3.2	5.5	7.7	10.0[2]
25							1.6	2.1	3.0	5.2	7.3	10.0[2]
32								2.1	2.9	5.0	7.0	10.0[2]
40									2.8	4.8	6.7	10.0
50										4.5	6.3	9.5
63											5.9	8.4

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

mMCM	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]
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]
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]
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]
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]
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]
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]
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]
5		<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]
6		<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]
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	8.7	10.0[2]	10.0[2]
10			0.5	0.7	1.0	1.3	1.9	2.5	3.6	7.2	10.0[2]	10.0[2]
13					1.0	1.3	1.9	2.3	3.4	6.5	9.5	10.0[2]
16						1.1	1.6	2.0	3.0	5.5	8.0	10.0[2]
20							1.4	1.8	2.8	5.0	7.5	10.0[2]
25								1.8	2.7	4.8	7.0	10.0[2]
32									2.4	4.1	6.2	9.3
40										4.0	6.0	9.0

[1] Selectivity limit current I_s under 0.5 kA

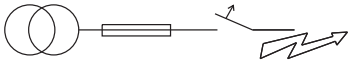
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMCM towards cylindrical fuse links

In case of short circuit, there is selectivity between the miniature circuit breakers mMCM 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*)***

mMCM	CH10x38 gG				CH15x51 gG					CH22x58 gG								
I_n [A]	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	>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	>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	>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
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	9.0
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	7.7
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	6.3
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	6.0
25				0.7			0.9	1.3	1.6				1.0	1.3	1.5	2.5	3.5	5.6
32								1.2	1.5					1.3	1.5	2.4	3.3	5.2
40									1.5						1.4	2.3	3.2	5.0
50																2.1	2.9	4.5
63																	2.8	4.2

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

mMCM	CH10x38 gG				CH15x51 gG					CH22x58 gG								
I_n [A]	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	>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

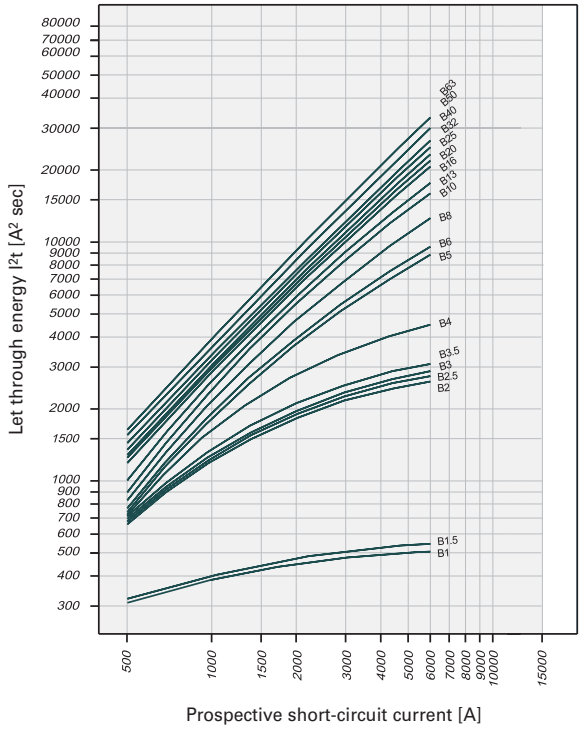
Short circuit selectivity **Characteristic C** towards fuse link **CH10x38 gG, CH14x51 gG, CH22x58 gG*)***

mMCM	CH10x38 gG				CH15x51 gG					CH22x58 gG								
I_n [A]	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

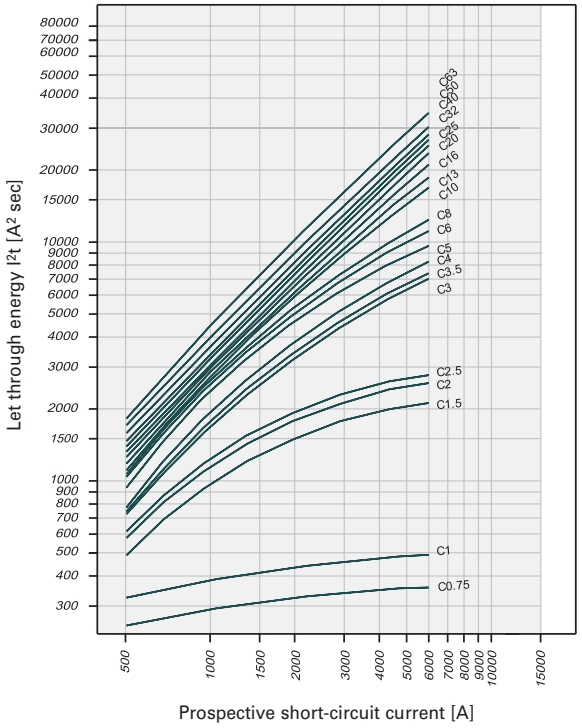
Darker areas: no selectivity

Let-through Energy mMC6

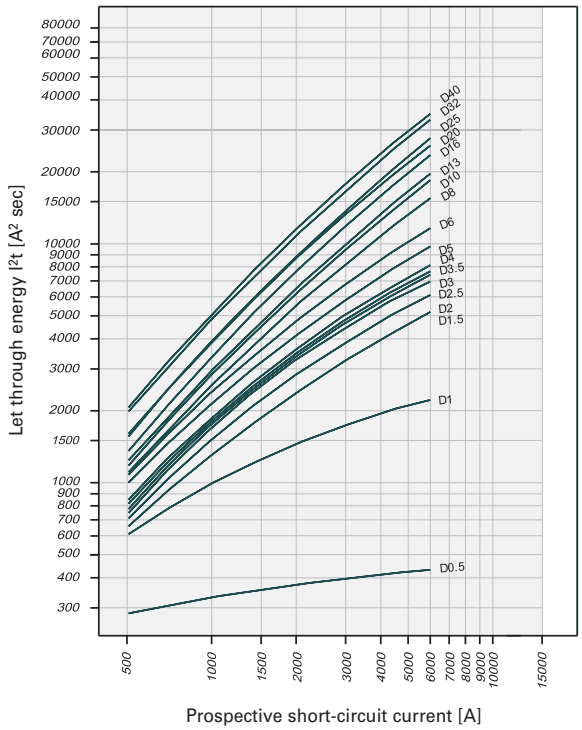
Let-through Energy mMC6, Characteristic B, 1-pole



Let-through Energy mMC6, Characteristic C, 1-pole



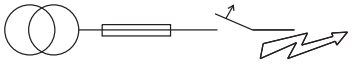
Let-through Energy mMC6, Characteristic D, 1-pole



Short Circuit Selectivity mMC6 towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC6 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***)

mMC6	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5[1)]	1.2	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
1.5	<0.5[1)]	1.0	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
2.0	<0.5[1)]	<0.5[1)]	0.8	1.6	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
2.5	<0.5[1)]	<0.5[1)]	0.8	1.5	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
3.0	<0.5[1)]	<0.5[1)]	0.8	1.4	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
3.5	<0.5[1)]	<0.5[1)]	0.7	1.3	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
4	<0.5[1)]	<0.5[1)]	0.6	1.0	3.6	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
5	<0.5[1)]	<0.5[1)]	0.6	0.9	2.0	3.5	6.0[2)]	6.0[2)]	6.0[2)]
6		<0.5[1)]	0.6	0.9	1.8	3.2	6.0[2)]	6.0[2)]	6.02)
8		<0.5[1)]	0.5	0.8	1.6	2.6	5.2	6.0[2)]	6.0[2)]
10			0.5	0.8	1.4	2.2	3.9	6.0[2)]	6.0[2)]
13			0.5	0.7	1.3	2.0	3.6	5.4	6.0[2)]
16				0.6	1.2	1.9	3.2	4.6	6.0[2)]
20					1.2	1.8	3.1	4.4	6.0[2)]
25					1.2	1.8	3.0	4.2	6.0[2)]
32						1.7	2.8	3.9	6.0[2)]
40							2.7	3.8	6.0[2)]
50							2.5	3.5	5.7
63									5.3

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

mMC6	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.75	1.0	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
1.0	<0.5[1)]	1.2	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
1.5	<0.5[1)]	<0.5[1)]	1.0	2.2	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
2.0	<0.5[1)]	<0.5[1)]	0.8	1.6	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
2.5	<0.5[1)]	<0.5[1)]	0.8	1.4	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
3.0	<0.5[1)]	<0.5[1)]	0.8	0.9	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
3.5	<0.5[1)]	<0.5[1)]	0.6	0.9	2.2	4.5	6.0[2)]	6.0[2)]	6.0[2)]
4	<0.5[1)]	<0.5[1)]	0.6	0.8	1.8	3.6	6.0[2)]	6.0[2)]	6.0[2)]
5	<0.5[1)]	<0.5[1)]	0.6	0.7	1.5	2.7	6.0[2)]	6.0[2)]	6.0[2)]
6		<0.5[1)]	0.5	0.6	1.4	2.4	5.5	6.0[2)]	6.0[2)]
8		<0.5[1)]	<0.5[1)]	0.6	1.3	2.2	4.7	6.0[2)]	6.0[2)]
10			<0.5[1)]	0.6	1.3	2.0	3.6	6.0[2)]	6.0[2)]
13					1.3	1.9	3.3	5.0	6.0[2)]
16					1.2	1.8	3.2	4.4	6.0[2)]
20					1.2	1.8	3.1	4.1	6.0[2)]
25						1.7	2.8	3.8	6.0[2)]
32							2.7	3.7	6.0[2)]
40								3.5	5.9
50									5.5
63									

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

mMC6	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.5	0.5	3.0	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
1.0	<0.5[1)]	<0.5[1)]	1.0	2.4	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
1.5	<0.5[1)]	<0.5[1)]	0.7	1.2	3.5	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
2.0	<0.5[1)]	<0.5[1)]	0.6	1.0	2.8	5.8	6.0[2)]	6.0[2)]	6.0[2)]
2.5	<0.5[1)]	<0.5[1)]	0.6	1.4	2.3	4.6	6.0[2)]	6.0[2)]	6.0[2)]
3.0	<0.5[1)]	<0.5[1)]	0.6	0.9	2.3	4.3	6.0[2)]	6.0[2)]	6.0[2)]
3.5	<0.5[1)]	<0.5[1)]	0.6	0.9	2.1	4.0	6.0[2)]	6.0[2)]	6.0[2)]
4		<0.5[1)]	0.6	0.9	2.0	3.8	6.0[2)]	6.0[2)]	6.0[2)]
5		<0.5[1)]	0.5	0.7	1.7	3.1	6.0[2)]	6.0[2)]	6.0[2)]
6			0.5	0.7	1.5	2.6	5.3	6.0[2)]	6.0[2)]
8			<0.5[1)]	0.7	1.4	2.2	3.9	6.0[2)]	6.0[2)]
10				0.7	1.2	1.9	3.4	5.0	6.0[2)]
13					1.2	1.8	3.2	4.6	6.0[2)]
16						1.6	2.7	4.0	6.0[2)]
20						1.5	2.5	3.5	6.0[2)]
25							2.4	3.4	6.0[2)]
32								2.8	5.0
40									4.8

[1)] Selectivity limit current I_s under 0.5 kA

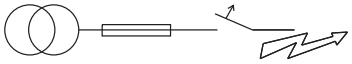
[2)] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMC6 towards D01-D03 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC6 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***)

mMC6	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5[1]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	<0.5[1]	4.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	<0.5[1]	0.6	1.0	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	<0.5[1]	0.6	1.0	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	<0.5[1]	0.5	1.0	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	<0.5[1]	0.5	0.9	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
4	<0.5[1]	<0.5[1]	0.5	0.9	2.5	6.0[2]	6.0[2]	6.0[2]	6.0[2]
5		<0.5[1]	0.5	0.8	1.7	4.0	6.0[2]	6.0[2]	6.0[2]
6		<0.5[1]	0.5	0.8	1.6	3.6	6.0[2]	6.0[2]	6.0[2]
8			0.5	0.8	1.4	2.8	4.3	6.0[2]	6.0[2]
10			0.5	0.7	1.3	2.4	3.4	6.0[2]	6.0[2]
13			<0.5[1]	0.7	1.2	2.3	3.2	5.3	6.0[2]
16				0.6	1.1	2.2	2.9	4.6	6.0[2]
20					1.1	2.1	2.8	4.4	6.0[2]
25					1.1	2.0	2.7	4.2	6.0[2]
32						2.0	2.6	4.0	6.0[2]
40							2.5	3.8	6.0[2]
50							2.3	3.4	6.0[2]
63									6.0[2]

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

mMC6	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.75	<0.5[1]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.0	<0.5[1]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	<0.5[1]	0.5	0.6	0.9	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	<0.5[1]	0.5	0.7	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	<0.5[1]	0.5	0.7	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.9	5.2	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.8	4.7	6.0[2]	6.0[2]	6.0[2]
4	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.6	4.0	6.0[2]	6.0[2]	6.0[2]
5		<0.5[1]	<0.5[1]	0.5	1.3	3.1	5.7	6.0[2]	6.0[2]
6		<0.5[1]	<0.5[1]	<0.5[1]	1.2	2.7	4.5	6.0[2]	6.0[2]
8		<0.5[1]	<0.5[1]	<0.5[1]	1.2	2.5	4.0	6.0[2]	6.0[2]
10			<0.5[1]	<0.5[1]	1.2	2.3	3.1	5.4	6.0[2]
13					1.1	2.2	3.0	4.9	6.0[2]
16					1.1	2.1	2.8	4.4	6.0[2]
20					1.0	2.0	2.6	4.0	6.0[2]
25						1.9	2.5	3.8	6.0[2]
32							2.5	3.7	6.0[2]
40								3.5	6.0[2]
50									6.0[2]
63									

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

mMC6	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.5	<0.5[1]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.0	<0.5[1]	<0.5[1]	0.7	1.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	<0.5[1]	<0.5[1]	0.6	0.9	2.8	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	<0.5[1]	0.6	0.8	2.2	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	<0.5[1]	0.5	0.7	1.9	5.4	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	<0.5[1]	0.5	0.7	1.8	4.8	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	<0.5[1]	0.5	0.7	1.7	4.7	6.0[2]	6.0[2]	6.0[2]
4		<0.5[1]	0.5	0.7	1.7	4.6	6.0[2]	6.0[2]	6.0[2]
5		<0.5[1]	<0.5[1]	0.6	1.5	3.5	5.8	6.0[2]	6.0[2]
6			<0.5[1]	0.5	1.3	2.9	4.5	6.0[2]	6.0[2]
8			<0.5[1]	0.5	1.2	2.4	3.5	6.0[2]	6.0[2]
10				0.5	1.1	2.2	3.0	5.0	6.0[2]
13					1.1	2.1	2.9	4.6	6.0[2]
16						1.9	2.6	3.9	6.0[2]
20						1.7	2.3	3.5	6.0[2]
25							2.2	3.4	6.0[2]
32								2.9	6.0[2]
40									5.7

[1] Selectivity limit current I_s under 0.5 kA

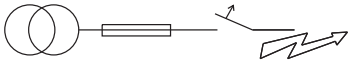
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMC6 towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC6 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***)

mMC6	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
1.0	0.9	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	0.8	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	0.5	1.0	2.5	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	0.5	1.0	2.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	0.5	0.9	2.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	0.5	0.9	1.8	5.5	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
4	<0.5[1]	<0.5[1]	0.8	1.3	2.3	4.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
5	<0.5[1]	<0.5[1]	0.7	1.1	1.6	2.2	3.6	4.8	6.0[2]	6.0[2]	6.0[2]	6.0[2]
6	<0.5[1]	<0.5[1]	0.7	1.1	1.5	2.0	3.3	4.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]
8	<0.5[1]	<0.5[1]	0.6	1.0	1.3	1.7	2.6	3.3	5.2	6.0[2]	6.0[2]	6.0[2]
10		<0.5[1]	0.6	0.9	1.2	1.5	2.2	2.7	4.0	6.0[2]	6.0[2]	6.0[2]
13		<0.5[1]	0.6	0.8	1.1	1.4	2.1	2.6	3.8	6.0[2]	6.0[2]	6.0[2]
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	6.0[2]	6.0[2]	6.0[2]
20				0.7	1.0	1.3	1.9	2.4	3.3	6.0[2]	6.0[2]	6.0[2]
25				0.7	1.0	1.3	1.8	2.3	3.2	5.7	6.0[2]	6.0[2]
32					0.9	1.2	1.7	2.2	3.1	5.4	6.0[2]	6.0[2]
40								2.1	3.0	5.1	6.0[2]	6.0[2]
50								1.9	2.8	4.7	6.0[2]	6.0[2]
63										4.4	6.0[2]	6.0[2]

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

mMC6	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
0.75	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.0	0.9	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	<0.5[1]	0.6	1.3	4.2	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	0.6	1.0	2.5	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	0.5	1.0	2.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	<0.5[1]	0.7	1.2	1.8	2.6	4.7	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	<0.5[1]	0.7	1.1	1.7	2.4	4.2	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
4	<0.5[1]	<0.5[1]	0.7	1.0	1.5	2.1	3.6	5.0	6.0[2]	6.0[2]	6.0[2]	6.0[2]
5	<0.5[1]	<0.5[1]	0.6	0.8	1.2	1.7	2.8	3.8	6.0[2]	6.0[2]	6.0[2]	6.0[2]
6	<0.5[1]	<0.5[1]	0.5	0.8	1.2	1.5	2.5	3.3	5.7	6.0[2]	6.0[2]	6.0[2]
8	<0.5[1]	<0.5[1]	0.5	0.8	1.1	1.5	2.3	2.9	4.9	6.0[2]	6.0[2]	6.0[2]
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	6.0[2]	6.0[2]	6.0[2]
13					1.0	1.3	1.9	2.4	3.6	6.0[2]	6.0[2]	6.0[2]
16					1.0	1.3	1.8	2.3	3.3	6.0[2]	6.0[2]	6.0[2]
20					1.0	1.2	1.7	2.2	3.2	5.5	6.0[2]	6.0[2]
25							1.6	2.1	3.0	5.2	6.0[2]	6.0[2]
32								2.1	2.9	5.0	6.0[2]	6.0[2]
40									2.8	4.8	6.0[2]	6.0[2]
50										4.5	6.0[2]	6.0[2]
63											5.9	6.0[2]

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

mMC6	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
0.5	2.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.0	<0.5[1]	0.6	1.4	4.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
1.5	<0.5[1]	<0.5[1]	0.9	1.6	2.7	4.0	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.0	<0.5[1]	<0.5[1]	0.8	1.3	2.1	3.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
2.5	<0.5[1]	<0.5[1]	0.7	1.2	1.8	2.6	4.8	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.0	<0.5[1]	<0.5[1]	0.7	1.1	1.7	2.4	4.3	6.0[2]	6.0[2]	6.0[2]	6.0[2]	6.0[2]
3.5	<0.5[1]	<0.5[1]	0.7	1.1	1.7	2.4	4.2	5.6	6.0[2]	6.0[2]	6.0[2]	6.0[2]
4	<0.5[1]	<0.5[1]	0.7	1.0	1.6	2.2	3.8	5.2	6.0[2]	6.0[2]	6.0[2]	6.0[2]
5		<0.5[1]	0.6	0.9	1.4	1.9	3.2	4.1	6.0[2]	6.0[2]	6.0[2]	6.0[2]
6		<0.5[1]	0.5	0.8	1.2	1.6	2.6	3.3	5.5	6.0[2]	6.0[2]	6.0[2]
8			0.5	0.8	1.1	1.5	2.2	2.7	4.1	6.0[2]	6.0[2]	6.0[2]
10			0.5	0.7	1.0	1.3	1.9	2.5	3.6	6.0[2]	6.0[2]	6.0[2]
13					1.0	1.3	1.9	2.3	3.4	6.0[2]	6.0[2]	6.0[2]
16						1.1	1.6	2.0	3.0	5.5	6.0[2]	6.0[2]
20							1.4	1.8	2.8	5.0	6.0[2]	6.0[2]
25								1.8	2.7	4.8	6.0[2]	6.0[2]
32									2.4	4.1	6.0[2]	6.0[2]
40										4.0	6.0[2]	6.0[2]

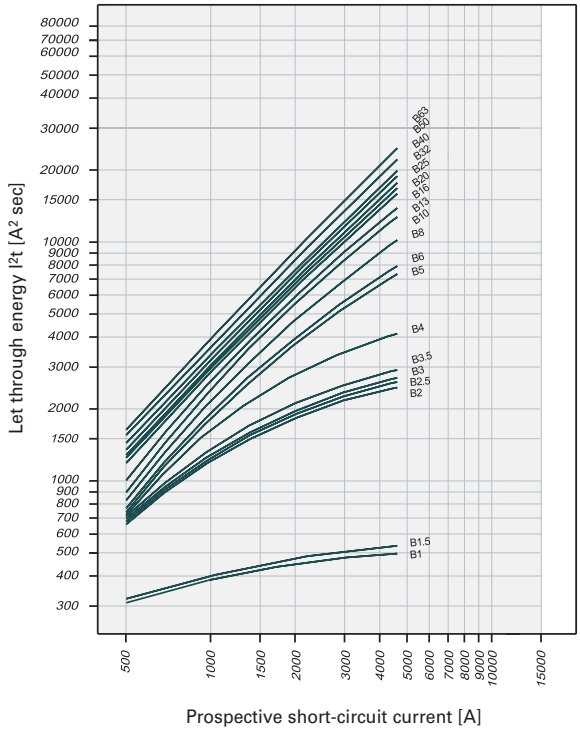
[1] Selectivity limit current I_s under 0.5 kA

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

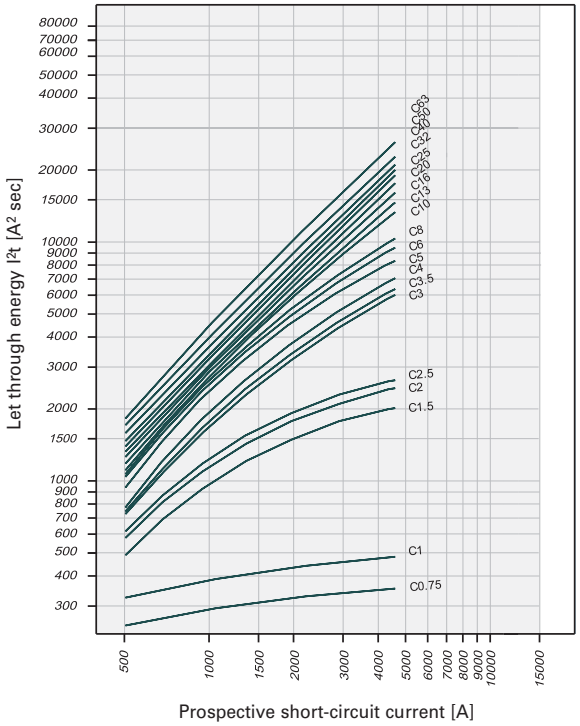
Darker areas: no selectivity

Let-through Energy mMC4

Let-through Energy mMC4, Characteristic B, 1-pole



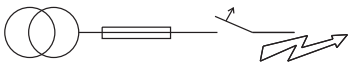
Let-through Energy mMC4, Characteristic C, 1-pole



Short Circuit Selectivity mMC4 towards DII-DIV fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC4 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***)

mMC4	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5[1]	1.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	<0.5[1]	0.8	1.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	<0.5[1]	0.8	1.5	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	<0.5[1]	0.8	1.4	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	<0.5[1]	0.7	1.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	0.6	1.0	3.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]
5	<0.5[1]	<0.5[1]	0.6	0.9	2.0	3.5	4.5[2]	4.5[2]	4.5[2]
6		<0.5[1]	0.6	0.9	1.8	3.2	4.5[2]	4.5[2]	4.5[2]
8		<0.5[1]	0.5	0.8	1.6	2.6	4.5[2]	4.5[2]	4.5[2]
10			0.5	0.8	1.4	2.2	3.9	4.5[2]	4.5[2]
13			0.5	0.7	1.3	2.0	3.6	4.5[2]	4.5[2]
16				0.6	1.2	1.9	3.2	4.5[2]	4.5[2]
20					1.2	1.8	3.1	4.4	4.5[2]
25					1.2	1.8	3.0	4.2	4.5[2]
32						1.7	2.8	3.9	4.5[2]
40							2.7	3.8	4.5[2]
50							2.5	3.5	4.5[2]
63									4.5[2]

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

mMC4	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.75	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.0	<0.5[1]	1.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	<0.5[1]	1.0	2.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	<0.5[1]	0.8	1.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	<0.5[1]	0.8	1.4	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	<0.5[1]	0.8	0.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	<0.5[1]	0.6	0.9	2.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	0.6	0.8	1.8	3.6	4.5[2]	4.5[2]	4.5[2]
5	<0.5[1]	<0.5[1]	0.6	0.7	1.5	2.7	4.5[2]	4.5[2]	4.5[2]
6		<0.5[1]	0.5	0.6	1.4	2.4	4.5[2]	4.5[2]	4.5[2]
8		<0.5[1]	<0.5[1]	0.6	1.3	2.2	4.5[2]	4.5[2]	4.5[2]
10			<0.5[1]	0.6	1.3	2.0	3.6	4.5[2]	4.5[2]
13					1.3	1.9	3.3	4.5[2]	4.5[2]
16					1.2	1.8	3.2	4.4	4.5[2]
20					1.2	1.8	3.1	4.1	4.5[2]
25						1.7	2.8	3.8	4.5[2]
32							2.7	3.7	4.5[2]
40								3.5	4.5[2]
50									4.5[2]
63									

[1] Selectivity limit current I_s under 0.5 kA

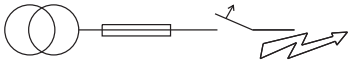
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Darker areas: no selectivity

Short Circuit Selectivity mMC4 towards D01-D03 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC4 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***)

mMC4	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5[1]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	4.1	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	<0.5[1]	0.6	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	<0.5[1]	0.6	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	<0.5[1]	0.5	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	<0.5[1]	0.5	0.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	0.5	0.9	2.5	4.5[2]	4.5[2]	4.5[2]	4.5[2]
5		<0.5[1]	0.5	0.8	1.7	4.0	4.5[2]	4.5[2]	4.5[2]
6		<0.5[1]	0.5	0.8	1.6	3.6	4.5[2]	4.5[2]	4.5[2]
8			0.5	0.8	1.4	2.8	4.3	4.5[2]	4.5[2]
10			0.5	0.7	1.3	2.4	3.4	4.5[2]	4.5[2]
13			<0.5[1]	0.7	1.2	2.3	3.2	4.5[2]	4.5[2]
16				0.6	1.1	2.2	2.9	4.5[2]	4.5[2]
20					1.1	2.1	2.8	4.4	4.5[2]
25					1.1	2.0	2.7	4.2	4.5[2]
32						2.0	2.6	4.0	4.5[2]
40							2.5	3.8	4.5[2]
50							2.3	3.4	4.5[2]
63									4.5[2]

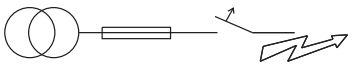
Short circuit selectivity **Characteristic C** towards fuse link **D01-D03***)

mMC4	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
0.75	<0.5[1]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.0	<0.5[1]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	0.5	0.6	0.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	<0.5[1]	0.5	0.7	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	<0.5[1]	0.5	0.7	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.8	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	<0.5[1]	0.6	1.6	4.0	4.5[2]	4.5[2]	4.5[2]
5		<0.5[1]	<0.5[1]	0.5	1.3	3.1	4.5[2]	4.5[2]	4.5[2]
6		<0.5[1]	<0.5[1]	<0.5[1]	1.2	2.7	4.5[2]	4.5[2]	4.5[2]
8		<0.5[1]	<0.5[1]	<0.5[1]	1.2	2.5	4.0	4.5[2]	4.5[2]
10			<0.5[1]	<0.5[1]	1.2	2.3	3.1	4.5[2]	4.5[2]
13					1.1	2.2	3.0	4.5[2]	4.5[2]
16					1.1	2.1	2.8	4.4	4.5[2]
20					1.0	2.0	2.6	4.0	4.5[2]
25						1.9	2.5	3.8	4.5[2]
32							2.5	3.7	4.5[2]
40								3.5	4.5[2]
50									4.5[2]
63									

Short Circuit Selectivity mMC4 towards NH-00 fuse link

In case of short circuit, there is selectivity between the miniature circuit breakers mMC4 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***)

mMC4	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
1.0	0.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	0.8	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	0.5	1.0	2.5	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	0.5	1.0	2.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	0.5	0.9	2.1	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	0.5	0.9	1.8	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	0.8	1.3	2.3	4.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
5	<0.5[1]	<0.5[1]	0.7	1.1	1.6	2.2	3.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
6	<0.5[1]	<0.5[1]	0.7	1.1	1.5	2.0	3.3	4.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]
8	<0.5[1]	<0.5[1]	0.6	1.0	1.3	1.7	2.6	3.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]
10		<0.5[1]	0.6	0.9	1.2	1.5	2.2	2.7	4.0	4.5[2]	4.5[2]	4.5[2]
13		<0.5[1]	0.6	0.8	1.1	1.4	2.1	2.6	3.8	4.5[2]	4.5[2]	4.5[2]
16			0.5	0.7	1.0	1.3	1.9	2.4	3.4	4.5[2]	4.5[2]	4.5[2]
20				0.7	1.0	1.3	1.9	2.4	3.3	4.5[2]	4.5[2]	4.5[2]
25				0.7	1.0	1.3	1.8	2.3	3.2	4.5[2]	4.5[2]	4.5[2]
32					0.9	1.2	1.7	2.2	3.1	4.5[2]	4.5[2]	4.5[2]
40								2.1	3.0	4.5[2]	4.5[2]	4.5[2]
50								1.9	2.8	4.5[2]	4.5[2]	4.5[2]
63										4.4	4.5[2]	4.5[2]

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

mMC4	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
0.75	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.0	0.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	0.6	1.3	4.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	0.6	1.0	2.5	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	0.5	1.0	2.1	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.0	<0.5[1]	<0.5[1]	0.7	1.2	1.8	2.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
3.5	<0.5[1]	<0.5[1]	0.7	1.1	1.7	2.4	4.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
4	<0.5[1]	<0.5[1]	0.7	1.0	1.5	2.1	3.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
5	<0.5[1]	<0.5[1]	0.6	0.8	1.2	1.7	2.8	3.8	4.5[2]	4.5[2]	4.5[2]	4.5[2]
6	<0.5[1]	<0.5[1]	0.5	0.8	1.2	1.5	2.5	3.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]
8	<0.5[1]	<0.5[1]	0.5	0.8	1.1	1.5	2.3	2.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]
10			0.5	0.7	1.0	1.4	2.0	2.5	3.8	4.5[2]	4.5[2]	4.5[2]
13					1.0	1.3	1.9	2.4	3.6	4.5[2]	4.5[2]	4.5[2]
16					1.0	1.3	1.8	2.3	3.3	4.5[2]	4.5[2]	4.5[2]
20					1.0	1.2	1.7	2.2	3.2	4.5[2]	4.5[2]	4.5[2]
25							1.6	2.1	3.0	4.5[2]	4.5[2]	4.5[2]
32								2.1	2.9	4.5[2]	4.5[2]	4.5[2]
40									2.8	4.5[2]	4.5[2]	4.5[2]
50										4.5[2]	4.5[2]	4.5[2]
63											4.5[2]	4.5[2]