MODULAR CIRCUIT PROTECTION DEVICES

Technical Catalogue

Powering Business Worldwide

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Protective Devices / Components

Residual Current Devices mRCM

- A complete spectrum of compact residual current devices for a wide range of applications
- For fault current/residual current protection and additional protection
- Wide variety of nominal currents
- Comprehensive range of accessories
- Real contact position indicator

SG67412

Residual Current Devices mRCM

Conditionally surge current-proof 250 A, type AC

SG66312

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
2-pole			
16/0.01	mRCM-16/2/001	158049	1/60
16/0.03	mRCM-16/2/003	142748	1/60
25/0.03	mRCM-25/2/003	142750	1/60
25/0.1	mRCM-25/2/01	142752	1/60
25/0.3	mRCM-25/2/03	142754	1/60
40/0.03	mRCM-40/2/003	142756	1/60
40/0.10	mRCM-40/2/01	142758	1/60
40/0.30	mRCM-40/2/03	142760	1/60
63/0.03	mRCM-63/2/003	142762	1/60
63/0.10	mRCM-63/2/01	142764	1/60
63/0.30	mRCM-63/2/03	142766	1/60
80/0.03	mRCM-80/2/003	142768	1/60
80/0.10	mRCM-80/2/01	142770	1/60
80/0.30	mRCM-80/2/03	142772	1/60
100/0.03	mRCM-100/2/003	142774	1/60
100/0.10	mRCM-100/2/01	142776	1/60
100/0.30	mRCM-100/2/03	142778	1/60
4-pole			
25/0.03	mRCM-25/4/003	142781	1/30
25/0.1	mRCM-25/4/01	142783	1/30
25/0.3	mRCM-25/4/03	142785	1/30
40/0.03	mRCM-40/4/003	142787	1/30
40/0.10	mRCM-40/4/01	142789	1/30
40/0.30	mRCM-40/4/03	142791	1/30
63/0.03	mRCM-63/4/003	142793	1/30
63/0.10	mRCM-63/4/01	142795	1/30
63/0.30	mRCM-63/4/03	142797	1/30
80/0.03	mRCM-80/4/003	142799	1/30
80/0.10	mRCM-80/4/01	142801	1/30
80/0.30	mRCM-80/4/03	142803	1/30
100/0.03	mRCM-100/4/003	142805	1/30
100/0.10	mRCM-100/4/01	142807	1/30
100/0.30	mRCM-100/4/03	142809	1/30

SG67412

Residual Current Devices mRCM

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

SG66312

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
2-pole			
16/0.01	mRCM-16/2/001-A	158060	1/60
16/0.03	mRCM-16/2/003-A	142749	1/60
25/0.03	mRCM-25/2/003-A	142751	1/60
25/0.1	mRCM-25/2/01-A	142753	1/60
25/0.3	mRCM-25/2/03-A	142755	1/60
40/0.03	mRCM-40/2/003-A	142757	1/60
40/0.10	mRCM-40/2/01-A	142759	1/60
40/0.30	mRCM-40/2/03-A	142761	1/60
63/0.03	mRCM-63/2/003-A	142763	1/60
63/0.10	mRCM-63/2/01-A	142765	1/60
63/0.30	mRCM-63/2/03-A	142767	1/60
80/0.03	mRCM-80/2/003-A	142769	1/60
80/0.10	mRCM-80/2/01-A	142771	1/60
80/0.30	mRCM-80/2/03-A	142773	1/60
100/0.03	mRCM-100/2/003-A	142775	1/60
100/0.10	mRCM-100/2/01-A	142777	1/60
100/0.30	mRCM-100/2/03-A	142779	1/60

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$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
4-pole			
16/0.03	mRCM-16/4/003-A	142780	1/30
25/0.03	mRCM-25/4/003-A	142782	1/30
25/0.1	mRCM-25/4/01-A	142784	1/30
25/0.3	mRCM-25/4/03-A	142786	1/30
40/0.03	mRCM-40/4/003-A	142788	1/30
40/0.10	mRCM-40/4/01-A	142790	1/30
40/0.30	mRCM-40/4/03-A	142792	1/30
63/0.03	mRCM-63/4/003-A	142794	1/30
63/0.10	mRCM-63/4/01-A	142796	1/30
63/0.30	mRCM-63/4/03-A	142798	1/30
80/0.03	mRCM-80/4/003-A	142800	1/30
80/0.10	mRCM-80/4/01-A	142802	1/30
80/0.30	mRCM-80/4/03-A	142804	1/30
100/0.03	mRCM-100/4/003-A	142806	1/30
100/0.10	mRCM-100/4/01-A	142808	1/30
100/0.30	mRCM-100/4/03-A	142810	1/30

Residual Current Devices mRCM

Surge current-proof 3 kA, type G (ÖVE E 8601)

SG66312

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
2-pole			
25/0.03	mRCM-25/2/003-G	167024	1/60
40/0.03	mRCM-40/2/003-G	168645	1/60

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4-pole			
40/0.03	mRCM-40/4/003-G	167025	1/30
63/0.03	mRCM-63/4/003-G	167026	1/30
80/0.03	mRCM-80/4/003-G	167027	1/30

Add-on Residual Current Protection PBSM

- Combining this device with a top-quality miniature circuit breaker of type mMC will form a top-quality RCBO unit (combined RCD/MCB device)
- Draw-out connection bar locked in installation position
- For subsequent mounting onto 2-, 3-, 3+N- and 4-pole miniature circuit breakers mMC
- Rated current 40 and 63 A

SG18211

Add-on Residual Current Protection Unit PBSM MW

conditionally surge-current-proof 250 A, type AC

SG17811

SG18111

SG18211

Max. nominal current of PLS./$I_{\Delta n}$ (A)	Type designation	Article-No.	Units per package
2-pole			
40/0,03	PBSM-402/003	262323	1 / 20
40/0,10	PBSM-402/01	262324	1 / 20
40/0,30	PBSM-402/03	262325	1 / 20
40/0,50	PBSM-402/05	262326	1 / 20
40/1,00	PBSM-402/1	262327	1 / 20
63/0,03	PBSM-632/003	262426	1 / 20
63/0,10	PBSM-632/01	262427	1 / 20
63/0,30	PBSM-632/03	262428	1 / 20
63/0,5	PBSM-632/05	262429	1 / 20
63/1,00	PBSM-632/1	262431	1 / 20
3-pole			
40/0,03	PBSM-403/003	262537	1 / 20
40/0,10	PBSM-403/01	262538	1 / 20
40/0,30	PBSM-403/03	262539	1 / 20
40/0,50	PBSM-403/05	262541	1 / 20
40/1,00	PBSM-403/1	262542	1 / 20
63/0,03	PBSM-633/003	262556	1 / 20
63/0,10	PBSM-633/01	262557	1 / 20
63/0,30	PBSM-633/03	262558	1 / 20
63/0,5	PBSM-633/05	262559	1 / 20
63/1,00	PBSM-633/1	262560	1 / 20
4-pole			
40/0,03	PBSM-404/003	262568	1 / 13
40/0,10	PBSM-404/01	262569	1 / 13
40/0,30	PBSM-404/03	262570	1 / 13
40/0,50	PBSM-404/05	262571	1 / 13
40/1,00	PBSM-404/1	262572	1 / 13
63/0,03	PBSM-634/003	262590	1 / 13
63/0,10	PBSM-634/01	262591	1 / 13
63/0,30	PBSM-634/03	262592	1 / 13
63/0,5	PBSM-634/05	262595	1 / 13
63/1,00	PBSM-634/1	262596	1 / 13

Add-on Residual Current Protection Unit PBSM MW

conditionaly surge-current-proof, 250 A, sensitive to residual pulsating DC, type A

SG17811

SG18111

SG18211

2-pole			
40/0,03	PBSM-402/003-A	262328	1 / 20
40/0,10	PBSM-402/01-A	262329	1 / 20
40/0,30	PBSM-402/03-A	262420	1 / 20
40/1,00	PBSM-402/1-A	262421	1 / 20
63/0,03	PBSM-632/003-A	262530	1 / 20
63/0,10	PBSM-632/01-A	262531	1 / 20
63/0,30	PBSM-632/03-A	262532	1 / 20
63/1,00	PBSM-632/1-A	262533	1 / 20
3-pole			
40/0,03	PBSM-403/003-A	262543	1 / 20
40/0,10	PBSM-403/01-A	262544	1 / 20
40/0,30	PBSM-403/03-A	262545	1 / 20
40/1,00	PBSM-403/1-A	262546	1 / 20
63/0,03	PBSM-633/003-A	262561	1 / 20
63/0,10	PBSM-633/01-A	262562	1 / 20
63/0,30	PBSM-633/03-A	262563	1 / 20
63/1,00	PBSM-633/1-A	262564	1 / 20
4-pole			
40/0,03	PBSM-404/003-A	262573	1 / 13
40/0,10	PBSM-404/01-A	262574	1 / 13
40/0,30	PBSM-404/03-A	262575	1 / 13
40/1,00	PBSM-404/1-A	262576	1 / 13
63/0,03	PBSM-634/003-A	262597	1 / 13
63/0,10	PBSM-634/01-A	262598	1 / 13
63/0,30	PBSM-634/03-A	262600	1 / 13
63/1,00	PBSM-634/1-A	262602	1 / 13

Explanation PBSM:
P = XPole, BS = Add-on Residual Current Protection Unit onto PLS

Add-on Residual Current Protection Unit PBSM MW

surge current-proof 3 kA, type G (ÖVE E 8601)

SG17811

SG18111

SG18211

Max. nominal current of PLS./$I_{\Delta n}$ (A)	Type designation	Article-No.	Units per package
2-pole			
40/0,03	PBSM-402/003-G	262422	1 / 20
3-pole			
40/0,03	PBSM-403/003-G	262552	1 / 20
4-pole			
40/0,03	PBSM-404/003-G	262577	1 / 13

Add-on Residual Current Protection Unit PBSM MW

selective and surge current-proof 5 kA, type S

SG17811

SG18111

SG18211

Max. nominal current of PLS./$I_{\Delta n}$ (A)	Type designation	Article-No.	Units per package
2-pole			
40/0,10	PBSM-402/01-S	262423	1 / 20
40/0,30	PBSM-402/03-S	262424	1 / 20
40/1,00	PBSM-402/1-S	262425	1 / 20
63/0,10	PBSM-632/01-S	262534	1 / 20
63/0,30	PBSM-632/03-S	262535	1 / 20
63/1,00	PBSM-632/1-S	262536	1 / 20
3-pole			
40/0,10	PBSM-403/01-S	262553	1 / 20
40/0,30	PBSM-403/03-S	262554	1 / 20
40/1,00	PBSM-403/1-S	262555	1 / 20
63/0,10	PBSM-633/01-S	262565	1 / 20
63/0,30	PBSM-633/03-S	262566	1 / 20
63/1,00	PBSM-633/1-S	262567	1 / 20
4-pole			
40/0,10	PBSM-404/01-S	262586	1 / 13
40/0,30	PBSM-404/03-S	262587	1 / 13
40/1,00	PBSM-404/1-S	262588	1 / 13
63/0,10	PBSM-634/01-S	262603	1 / 13
63/0,30	PBSM-634/03-S	262605	1 / 13
63/1,00	PBSM-634/1-S	262607	1 / 13

Explanation PBSM:
P = XPole, BS = Add-on Residual Current Protection Unit onto PLS.

Add-on Residual Current Protection Unit PBSM MW

Selective + surge current-proof typ. 5 kA, sensitive to residual pulsating DC, type S/A

SG17811

SG18111

SG18211

Max. nominal current of PLS./$I_{\Delta n}$ (A)	Type designation	Article-No.	Units per package
2-pole			
40/0,10	PBSM-402/01-S/A	167015	1/20
40/0,30	PBSM-402/03-S/A	167016	1/20
63/0,30	PBSM-632/03-S/A	167017	1/20
3-pole			
40/0,10	PBSM-403/01-S/A	167018	1/20
40/0,30	PBSM-403/03-S/A	167019	1/20
63/0,30	PBSM-633/03-S/A	167020	1/20
4-pole			
40/0,10	PBSM-404/01-S/A	167021	1/13
40/0,30	PBSM-404/03-S/A	167022	1/13
63/0,30	PBSM-634/03-S/A	167023	1/13

Explanation PBSM:
P = XPole, BS = Add-on Residual Current Protection Unit onto PLS.

Add-on Residual Current Protection Unit PBHT

- By combining this device with a top-quality miniature circuit breaker of type mMCT a top-quality RCBO unit (combined RCD/MCB device) is formed.
- Add-on residual current unit (screw connection) for 80 or 125 A (2-pole and 4-pole)
- High flexibility and ease of installation thanks to variable wiring
- Free selection of main power supply
- Auxiliary switch 1 make contact included as standard in all PBHT versions
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the miniature circuit breakers mMCT which can be connected
- For commercial and industry applications
- For subsequent mounting onto 2, 3, 3+N and 4-pole-miniature circuit breakers mMCT
- The screw connection to the mMCT-device can be unscrewed at any time. Consequently, in case of modifications of the systems to be protected, the installation can be adapted to new requirements at any time.

SG17711

Add-on Residual Current Protection Unit PBHT

AC-sensitive, conditionally surge-current-proof 250 A, type AC

SG17611

SG17711

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
2-pole			
80/0.03	PBHT-80/2/003	248818	1 / 4
80/0.30	PBHT-80/2/03	248820	1 / 4
80/0.50	PBHT-80/2/05	248822	1 / 4
80/1.00	PBHT-80/2/1	248824	1 / 4
125/0.03	PBHT-125/2/003	248799	1 / 4
125/0.30	PBHT-125/2/03	248801	1 / 4
125/0.50	PBHT-125/2/05	248803	1 / 4
125/1.00	PBHT-125/2/1	248805	1 / 4
4-pole			
80/0.03	PBHT-80/4/003	248826	1 / 4
80/0.30	PBHT-80/4/03	248828	1 / 4
80/0.50	PBHT-80/4/05	248831	1 / 4
80/1.00	PBHT-80/4/1	248834	1 / 4
125/0.03	PBHT-125/4/003	248807	1 / 4
125/0.30	PBHT-125/4/03	248809	1 / 4
125/0.50	PBHT-125/4/05	248812	1 / 4
125/1.00	PBHT-125/4/1	248815	1 / 4

Add-on Residual Current Protection Unit PBHT

Sensitive to residual pulsating DC, conditionally surge current-proof 250 A, type A

SG17611

SG17711

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
2-pole			
80/0.03	PBHT-80/2/003-A	248819	1 / 4
80/0.30	PBHT-80/2/03-A	248821	1 / 4
80/0.50	PBHT-80/2/05-A	248823	1 / 4
80/1.00	PBHT-80/2/1-A	248825	1 / 4
125/0.03	PBHT-125/2/003-A	248800	1 / 4
125/0.30	PBHT-125/2/03-A	248802	1 / 4
125/0.50	PBHT-125/2/05-A	248804	1 / 4
125/1.00	PBHT-125/2/1-A	248806	1 / 4
4-pole			
80/0.03	PBHT-80/4/003-A	248827	1 / 4
80/0.30	PBHT-80/4/03-A	248829	1 / 4
80/0.50	PBHT-80/4/05-A	248832	1 / 4
80/1.00	PBHT-80/4/1-A	248835	1 / 4
125/0.03	PBHT-125/4/003-A	248808	1 / 4
125/0.30	PBHT-125/4/03-A	248810	1 / 4
125/0.50	PBHT-125/4/05-A	248813	1 / 4
125/1.00	PBHT-125/4/1-A	248816	1 / 4

Add-on Residual Current Protection Unit PBHT

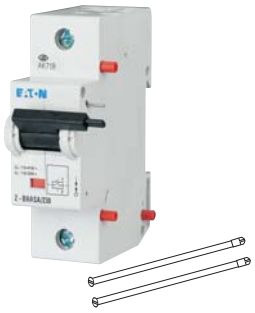
Selective + surge current-proof 5 kA, type S/A

SG17711

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
4-pole			
80/0.30	PBHT-80/4/03-S/A	248830	1 / 4
80/0.50	PBHT-80/4/05-S/A	248833	1 / 4
80/1.00	PBHT-80/4/1-S/A	248836	1 / 4
125/0.30	PBHT-125/4/03-S/A	248811	1 / 4
125/0.50	PBHT-125/4/05-S/A	248814	1 / 4
125/1.00	PBHT-125/4/1-S/A	248817	1 / 4

Accessories for residual current protection unit PBHT

SG09411



Operational voltage range V~	Type Designation	Article No.	Units per package
Shunt trip release			
110-415	Z-BHASA/230	248445	8
12-60	Z-BHASA/24	248444	8

Explanation PBHT:
P = XPole, BHT = Add-on Residual Current Protection Unit onto PLHT

Combined RCD/MCB Devices mRBM, 1+N-pole

- High-quality residual current device / miniature circuit breaker combination, line voltage-independent
- 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
- Wide variety of rated tripping currents
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 10 kA

SG66412

Combined RCD/MCB Devices mRBM

10 kA, 1+N-pole

Conditionally surge current-proof 250 A, type AC

SG66412

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic B			
2/0.01	mRBM-2/1N/B/001	147230	1 / 60
4/0.01	mRBM-4/1N/B/001	147231	1 / 60
6/0.01	mRBM-6/1N/B/001	147232	1 / 60
10/0.01	mRBM-10/1N/B/001	147233	1 / 60
13/0.01	mRBM-13/1N/B/001	147234	1 / 60
16/0.01	mRBM-16/1N/B/001	147235	1 / 60
2/0.03	mRBM-2/1N/B/003	147236	1 / 60
4/0.03	mRBM-4/1N/B/003	147237	1 / 60
6/0.03	mRBM-6/1N/B/003	147238	1 / 60
10/0.03	mRBM-10/1N/B/003	147239	1 / 60
13/0.03	mRBM-13/1N/B/003	147240	1 / 60
16/0.03	mRBM-16/1N/B/003	147241	1 / 60
20/0.03	mRBM-20/1N/B/003	147242	1 / 60
25/0.03	mRBM-25/1N/B/003	147243	1 / 60
32/0.03	mRBM-32/1N/B/003	147244	1 / 60
40/0.03	mRBM-40/1N/B/003	147245	1 / 60
2/0.1	mRBM-2/1N/B/01	147246	1 / 60
4/0.1	mRBM-4/1N/B/01	147247	1 / 60
6/0.1	mRBM-6/1N/B/01	147248	1 / 60
10/0.1	mRBM-10/1N/B/01	147249	1 / 60
13/0.1	mRBM-13/1N/B/01	147250	1 / 60
16/0.1	mRBM-16/1N/B/01	147251	1 / 60
20/0.1	mRBM-20/1N/B/01	147252	1 / 60
25/0.1	mRBM-25/1N/B/01	147253	1 / 60
32/0.1	mRBM-32/1N/B/01	147254	1 / 60
40/0.1	mRBM-40/1N/B/01	147255	1 / 60
2/0.3	mRBM-2/1N/B/03	147256	1 / 60
4/0.3	mRBM-4/1N/B/03	147257	1 / 60
6/0.3	mRBM-6/1N/B/03	147258	1 / 60
10/0.3	mRBM-10/1N/B/03	147259	1 / 60
13/0.3	mRBM-13/1N/B/03	147260	1 / 60
16/0.3	mRBM-16/1N/B/03	147261	1 / 60
20/0.3	mRBM-20/1N/B/03	147262	1 / 60
25/0.3	mRBM-25/1N/B/03	147263	1 / 60
32/0.3	mRBM-32/1N/B/03	147264	1 / 60
40/0.3	mRBM-40/1N/B/03	147265	1 / 60

SG66412

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic C			
2/0.01	mRBM-2/1N/C/001	147266	1 / 60
4/0.01	mRBM-4/1N/C/001	147267	1 / 60
6/0.01	mRBM-6/1N/C/001	147268	1 / 60
10/0.01	mRBM-10/1N/C/001	147269	1 / 60
13/0.01	mRBM-13/1N/C/001	147270	1 / 60
16/0.01	mRBM-16/1N/C/001	147271	1 / 60
2/0.03	mRBM-2/1N/C/003	147272	1 / 60
4/0.03	mRBM-4/1N/C/003	147273	1 / 60
6/0.03	mRBM-6/1N/C/003	147274	1 / 60
10/0.03	mRBM-10/1N/C/003	147275	1 / 60
13/0.03	mRBM-13/1N/C/003	147276	1 / 60
16/0.03	mRBM-16/1N/C/003	147277	1 / 60
20/0.03	mRBM-20/1N/C/003	147278	1 / 60
25/0.03	mRBM-25/1N/C/003	147279	1 / 60
32/0.03	mRBM-32/1N/C/003	147280	1 / 60
40/0.03	mRBM-40/1N/C/003	147281	1 / 60
2/0.1	mRBM-2/1N/C/01	147282	1 / 60
4/0.1	mRBM-4/1N/C/01	147283	1 / 60
6/0.1	mRBM-6/1N/C/01	147284	1 / 60
10/0.1	mRBM-10/1N/C/01	147285	1 / 60
13/0.1	mRBM-13/1N/C/01	147286	1 / 60
16/0.1	mRBM-16/1N/C/01	147287	1 / 60
20/0.1	mRBM-20/1N/C/01	147288	1 / 60
25/0.1	mRBM-25/1N/C/01	147289	1 / 60
32/0.1	mRBM-32/1N/C/01	147290	1 / 60
40/0.1	mRBM-40/1N/C/01	147291	1 / 60
2/0.3	mRBM-2/1N/C/03	147292	1 / 60
4/0.3	mRBM-4/1N/C/03	147293	1 / 60
6/0.3	mRBM-6/1N/C/03	147294	1 / 60
10/0.3	mRBM-10/1N/C/03	147295	1 / 60
13/0.3	mRBM-13/1N/C/03	147296	1 / 60
16/0.3	mRBM-16/1N/C/03	147297	1 / 60
20/0.3	mRBM-20/1N/C/03	147298	1 / 60
25/0.3	mRBM-25/1N/C/03	147299	1 / 60
32/0.3	mRBM-32/1N/C/03	147300	1 / 60
40/0.3	mRBM-40/1N/C/03	147301	1 / 60

Combined RCD/MCB Devices mRBM

10 kA, 1+N-pole

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

SG66412

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic B			
2/0.01	mRBM-2/1N/B/001-A	147302	1 / 60
4/0.01	mRBM-4/1N/B/001-A	147303	1 / 60
6/0.01	mRBM-6/1N/B/001-A	147304	1 / 60
10/0.01	mRBM-10/1N/B/001-A	147305	1 / 60
13/0.01	mRBM-13/1N/B/001-A	147306	1 / 60
16/0.01	mRBM-16/1N/B/001-A	147307	1 / 60
2/0.03	mRBM-2/1N/B/003-A	147308	1 / 60
4/0.03	mRBM-4/1N/B/003-A	147309	1 / 60
6/0.03	mRBM-6/1N/B/003-A	147310	1 / 60
10/0.03	mRBM-10/1N/B/003-A	147311	1 / 60
13/0.03	mRBM-13/1N/B/003-A	147312	1 / 60
16/0.03	mRBM-16/1N/B/003-A	147313	1 / 60
20/0.03	mRBM-20/1N/B/003-A	147314	1 / 60
25/0.03	mRBM-25/1N/B/003-A	147315	1 / 60
32/0.03	mRBM-32/1N/B/003-A	147316	1 / 60
40/0.03	mRBM-40/1N/B/003-A	147317	1 / 60
2/0.1	mRBM-2/1N/B/01-A	147318	1 / 60
4/0.1	mRBM-4/1N/B/01-A	147319	1 / 60
6/0.1	mRBM-6/1N/B/01-A	147320	1 / 60
10/0.1	mRBM-10/1N/B/01-A	147321	1 / 60
13/0.1	mRBM-13/1N/B/01-A	147322	1 / 60
16/0.1	mRBM-16/1N/B/01-A	147323	1 / 60
20/0.1	mRBM-20/1N/B/01-A	147324	1 / 60
25/0.1	mRBM-25/1N/B/01-A	147325	1 / 60
32/0.1	mRBM-32/1N/B/01-A	147326	1 / 60
40/0.1	mRBM-40/1N/B/01-A	147327	1 / 60
2/0.3	mRBM-2/1N/B/03-A	147328	1 / 60
4/0.3	mRBM-4/1N/B/03-A	147329	1 / 60
6/0.3	mRBM-6/1N/B/03-A	147330	1 / 60
10/0.3	mRBM-10/1N/B/03-A	147331	1 / 60
13/0.3	mRBM-13/1N/B/03-A	147332	1 / 60
16/0.3	mRBM-16/1N/B/03-A	147333	1 / 60
20/0.3	mRBM-20/1N/B/03-A	147334	1 / 60
25/0.3	mRBM-25/1N/B/03-A	147335	1 / 60
32/0.3	mRBM-32/1N/B/03-A	147336	1 / 60
40/0.3	mRBM-40/1N/B/03-A	147337	1 / 60

SG66412

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic C			
2/0.01	mRBM-2/1N/C/001-A	147338	1 / 60
4/0.01	mRBM-4/1N/C/001-A	147339	1 / 60
6/0.01	mRBM-6/1N/C/001-A	147340	1 / 60
10/0.01	mRBM-10/1N/C/001-A	147341	1 / 60
13/0.01	mRBM-13/1N/C/001-A	147342	1 / 60
16/0.01	mRBM-16/1N/C/001-A	147343	1 / 60
2/0.03	mRBM-2/1N/C/003-A	147344	1 / 60
4/0.03	mRBM-4/1N/C/003-A	147345	1 / 60
6/0.03	mRBM-6/1N/C/003-A	147346	1 / 60
10/0.03	mRBM-10/1N/C/003-A	147347	1 / 60
13/0.03	mRBM-13/1N/C/003-A	147348	1 / 60
16/0.03	mRBM-16/1N/C/003-A	147349	1 / 60
20/0.03	mRBM-20/1N/C/003-A	147350	1 / 60
25/0.03	mRBM-25/1N/C/003-A	147351	1 / 60
32/0.03	mRBM-32/1N/C/003-A	147352	1 / 60
40/0.03	mRBM-40/1N/C/003-A	147353	1 / 60
2/0.1	mRBM-2/1N/C/01-A	147354	1 / 60
4/0.1	mRBM-4/1N/C/01-A	147355	1 / 60
6/0.1	mRBM-6/1N/C/01-A	147356	1 / 60
10/0.1	mRBM-10/1N/C/01-A	147357	1 / 60
13/0.1	mRBM-13/1N/C/01-A	147358	1 / 60
16/0.1	mRBM-16/1N/C/01-A	147359	1 / 60
20/0.1	mRBM-20/1N/C/01-A	147360	1 / 60
25/0.1	mRBM-25/1N/C/01-A	147361	1 / 60
32/0.1	mRBM-32/1N/C/01-A	147362	1 / 60
40/0.1	mRBM-40/1N/C/01-A	147363	1 / 60
2/0.3	mRBM-2/1N/C/03-A	147364	1 / 60
4/0.3	mRBM-4/1N/C/03-A	147365	1 / 60
6/0.3	mRBM-6/1N/C/03-A	147366	1 / 60
10/0.3	mRBM-10/1N/C/03-A	147367	1 / 60
13/0.3	mRBM-13/1N/C/03-A	147368	1 / 60
16/0.3	mRBM-16/1N/C/03-A	147369	1 / 60
20/0.3	mRBM-20/1N/C/03-A	147370	1 / 60
25/0.3	mRBM-25/1N/C/03-A	147371	1 / 60
32/0.3	mRBM-32/1N/C/03-A	147372	1 / 60
40/0.3	mRBM-40/1N/C/03-A	147373	1 / 60

Combined RCD/MCB Devices mRBM

10 kA, 1+N-pole

Surge current-proof 3 kA, type G (ÖVE E 8601)

SG66412

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic B			
13/0.03	mRBM-13/1N/B/003-G	147374	1 / 60
16/0.03	mRBM-16/1N/B/003-G	147375	1 / 60
20/0.03	mRBM-20/1N/B/003-G	147376	1 / 60
25/0.03	mRBM-25/1N/B/003-G	147377	1 / 60
32/0.03	mRBM-32/1N/B/003-G	147378	1 / 60
40/0.03	mRBM-40/1N/B/003-G	147379	1 / 60
Characteristic C			
13/0.03	mRBM-13/1N/C/003-G	147380	1 / 60
16/0.03	mRBM-16/1N/C/003-G	147381	1 / 60
20/0.03	mRBM-20/1N/C/003-G	147382	1 / 60
25/0.03	mRBM-25/1N/C/003-G	147383	1 / 60
32/0.03	mRBM-32/1N/C/003-G	147384	1 / 60
40/0.03	mRBM-40/1N/C/003-G	147385	1 / 60

Electronic Combined RCD/MCB Devices eRBM-ME, 1+N-pole, 1 Module Unit

- Innovative, high-quality residual current device / miniature circuit breaker combination, line voltage-dependent
- Design width of one module unit only
- Specific for applications in the BS-distribution systems, permanently connected neutral conductors
- Contact position indicator red - green
- Comprehensive range of accessories suitable for subsequent installation
- Guide fo secure terminal connection
- Wide variety of rated tripping currents
- Rated currents up to 45 A
- Tripping characteristics C
- Rated breaking capacity 10 kA

SG07911

Electronic Combined RCD/MCB Devices eRBM-ME, 1 Module Unit

1+N-pole

Conditionally surge current-proof 250 A, type AC

SG07911

$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
Characteristic C			
6/0.01	eRBM-6/1/C/001-ME	153230	1 / 30
8/0.01	eRBM-8/1/C/001-ME	153231	1 / 30
10/0.01	eRBM-10/1/C/001-ME	153232	1 / 30
13/0.01	eRBM-13/1/C/001-ME	153233	1 / 30
16/0.01	eRBM-16/1/C/001-ME	153234	1 / 30
20/0.01	eRBM-20/1/C/001-ME	153235	1 / 30
25/0.01	eRBM-25/1/C/001-ME	153236	1 / 30
32/0.01	eRBM-32/1/C/001-ME	153237	1 / 30
40/0.01	eRBM-40/1/C/001-ME	153238	1 / 30
45/0.01	eRBM-45/1/C/001-ME	153239	1 / 30
6/0.03	eRBM-6/1/C/003-ME	153240	1 / 30
8/0.03	eRBM-8/1/C/003-ME	153241	1 / 30
10/0.03	eRBM-10/1/C/003-ME	153242	1 / 30
13/0.03	eRBM-13/1/C/003-ME	153243	1 / 30
16/0.03	eRBM-16/1/C/003-ME	153244	1 / 30
20/0.03	eRBM-20/1/C/003-ME	153245	1 / 30
25/0.03	eRBM-25/1/C/003-ME	153246	1 / 30
32/0.03	eRBM-32/1/C/003-ME	153247	1 / 30
40/0.03	eRBM-40/1/C/003-ME	153248	1 / 30
45/0.03	eRBM-45/1/C/003-ME	153249	1 / 30
6/0.1	eRBM-6/1/C/01-ME	153250	1 / 30
8/0.1	eRBM-8/1/C/01-ME	153251	1 / 30
10/0.1	eRBM-10/1/C/01-ME	153252	1 / 30
13/0.1	eRBM-13/1/C/01-ME	153253	1 / 30
16/0.1	eRBM-16/1/C/01-ME	153254	1 / 30
20/0.1	eRBM-20/1/C/01-ME	153255	1 / 30
25/0.1	eRBM-25/1/C/01-ME	153256	1 / 30
32/0.1	eRBM-32/1/C/01-ME	153257	1 / 30
40/0.1	eRBM-40/1/C/01-ME	153258	1 / 30
45/0.1	eRBM-45/1/C/01-ME	153259	1 / 30
6/0.3	eRBM-6/1/C/03-ME	153260	1 / 30
8/0.3	eRBM-8/1/C/03-ME	153261	1 / 30
10/0.3	eRBM-10/1/C/03-ME	153262	1 / 30
13/0.3	eRBM-13/1/C/03-ME	153263	1 / 30
16/0.3	eRBM-16/1/C/03-ME	153264	1 / 30
20/0.3	eRBM-20/1/C/03-ME	153265	1 / 30
25/0.3	eRBM-25/1/C/03-ME	153266	1 / 30
32/0.3	eRBM-32/1/C/03-ME	153267	1 / 30
40/0.3	eRBM-40/1/C/03-ME	153268	1 / 30
45/0.3	eRBM-45/1/C/03-ME	153269	1 / 30

Miniature Circuit Breakers mMC

- 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

SG66512

Miniature Circuit Breakers mMCM

10 kA, Characteristic B

SG65412

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG66112

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

SG66212

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

SG66512

SG67012

SG66912

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMCM

10 kA, Characteristic C

SG65412

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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
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
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

SG66112

SG66212

SG66512

SG67012

SG66912

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMCM

10 kA, Characteristic D

SG65412

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG66112

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

SG66212

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

SG66512

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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

SG67012

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

SG66912

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

Miniature Circuit Breakers mMC6

6 kA, Characteristic B

SG65512

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65712

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

SG65912

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

SG66612

SG67112

SG67312

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMC6

6 kA, Characteristic C

SG65512

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65712

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

SG65912

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

SG66612

SG67112

SG67312

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMC6

6 kA, Characteristic D

SG65512

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65712

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

SG65912

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

SG66612

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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

SG67112

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

SG67312

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

Miniature Circuit Breakers mMC4

4.5 kA, Characteristic B

SG65312

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65612

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

SG65812

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

SG66712

SG66812

SG67212

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMC4

4.5 kA, Characteristic C

SG65312

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65612

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

SG65812

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

SG66712

SG66812

SG67212

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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
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
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

Miniature Circuit Breakers mMC4

4.5 kA, Characteristic D

SG65312

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
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

SG65612

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

SG65812

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

SG66712

Rated current I_n (A)	Type Designation	Article No.	Units per package
3-pole			
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

SG66812

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

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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

Miniature Circuit Breakers PLN6

- Top-quality miniature circuit breakers 1P+N with a width of 1 module unit requiring little space for installation
- Contact position indicator red - green
- Guide for secure terminal connection
- Comprehensive range of accessories for subsequent installation
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 6 kA according to IEC/EN 60898-1

SG14511

Miniature Circuit Breaker PLN6 — MW

6 kA, 1+N-pole

SG14511

SG14511

Rated current I_n (A)	Type designation	Article-No.	Units per package
Characteristic B			
6	PLN6-B6/1N	263161	12 / 120
10	PLN6-B10/1N	263162	12 / 120
13	PLN6-B13/1N	263163	12 / 120
16	PLN6-B16/1N	263164	12 / 120
20	PLN6-B20/1N	263165	12 / 120
25	PLN6-B25/1N	263166	12 / 120
32	PLN6-B32/1N	263167	12 / 120
40	PLN6-B40/1N	263168	12 / 120
Characteristic C			
2	PLN6-C2/1N	263169	12 / 120
4	PLN6-C4/1N	263170	12 / 120
6	PLN6-C6/1N	263171	12 / 120
10	PLN6-C10/1N	263172	12 / 120
13	PLN6-C13/1N	263173	12 / 120
16	PLN6-C16/1N	263174	12 / 120
20	PLN6-C20/1N	263175	12 / 120
25	PLN6-C25/1N	263176	12 / 120
32	PLN6-C32/1N	263177	12 / 120
40	PLN6-C40/1N	263178	12 / 120

Explanation PLN6:
P = XPole, LN = Miniature Circuit Breaker 1P+N, 1MU, 6 = 6 kA

Miniature Circuit Breakers PLN4

- Top-quality miniature circuit breakers 1P+N with a width of 1 module unit requiring little space for installation
- Contact position indicator red - green
- Guide for secure terminal connection
- Comprehensive range of accessories for subsequent installation
- Rated currents up to 40 A
- Tripping characteristics B, C
- Rated breaking capacity 4,5 kA according to IEC/EN 60898-1

SG15711

Miniature Circuit Breaker PLN4 — MW

4.5 kA, 1+N-pole

SG15711

SG15711

Rated current I_n (A)	Type designation	Article-No.	Units per package
Characteristic B			
6	PLN4-B6/1N	263179	12 / 120
10	PLN4-B10/1N	263180	12 / 120
13	PLN4-B13/1N	263181	12 / 120
16	PLN4-B16/1N	263182	12 / 120
20	PLN4-B20/1N	263183	12 / 120
25	PLN4-B25/1N	263184	12 / 120
32	PLN4-B32/1N	263185	12 / 120
40	PLN4-B40/1N	263186	12 / 120
Characteristic C			
2	PLN4-C2/1N	263187	12 / 120
4	PLN4-C4/1N	263188	12 / 120
6	PLN4-C6/1N	263189	12 / 120
10	PLN4-C10/1N	263190	12 / 120
13	PLN4-C13/1N	263191	12 / 120
16	PLN4-C16/1N	263192	12 / 120
20	PLN4-C20/1N	263193	12 / 120
25	PLN4-C25/1N	263194	12 / 120
32	PLN4-C32/1N	263195	12 / 120
40	PLN4-C40/1N	263196	12 / 120

Explanation PLN4:
P = XPole, LN = Miniature Circuit Breaker 1P+N, 1MU, 4 = 4.5 kA

Miniature Circuit Breakers mMCMDC for direct current application

- High-quality miniature circuit breakers for commercial and household applications
- 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 50 A
- Tripping characteristic C
- Rated breaking capacity 10 kA according to IEC/EN 60947-2
- Up to 250 V DC per pole

SG65212

Miniature Circuit Breaker mMCMDC for direct current application

10 kA, Characteristic C

SG65212

SG66012

Rated current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
1	mMCMDC-C1/1	168552	12/120
2	mMCMDC-C2/1	129624	12/120
4	mMCMDC-C4/1	129625	12/120
6	mMCMDC-C6/1	129626	12/120
10	mMCMDC-C10/1	129627	12/120
13	mMCMDC-C13/1	129628	12/120
16	mMCMDC-C16/1	129629	12/120
20	mMCMDC-C20/1	129630	12/120
25	mMCMDC-C25/1	129631	12/120
32	mMCMDC-C32/1	129632	12/120
40	mMCMDC-C40/1	129633	12/120
50	mMCMDC-C50/1	129634	12/120
2-pole			
1	mMCMDC-C1/2	168553	1/60
2	mMCMDC-C2/2	129635	1/60
3	mMCMDC-C3/2	168564	1/60
4	mMCMDC-C4/2	129636	1/60
6	mMCMDC-C6/2	129637	1/60
10	mMCMDC-C10/2	129638	1/60
13	mMCMDC-C13/2	129639	1/60
16	mMCMDC-C16/2	129640	1/60
20	mMCMDC-C20/2	129641	1/60
25	mMCMDC-C25/2	129642	1/60
32	mMCMDC-C32/2	129643	1/60
40	mMCMDC-C40/2	129644	1/60
50	mMCMDC-C50/2	129645	1/60

Miniature Circuit Breakers mMCT

- High-quality miniature circuit breakers for commercial and industry applications
- Contact position indicator red - green
- Accessories suitable for subsequent installation
- Rated currents up to 125 A
- Tripping characteristics B, C, D
- Rated breaking capacity up to 25 kA according to EN 60947-2

SG04210

Miniature Circuit Breakers mMCT-B

Characteristic B

SG04010

SG05410

SG04210

SG05610

SG05510

Rated Current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
20	mMCT-B20/1	152562	12
25	mMCT-B25/1	152634	12
32	mMCT-B32/1	152563	12
40	mMCT-B40/1	152564	12
50	mMCT-B50/1	152565	12
63	mMCT-B63/1	152635	12
80	mMCT-B80/1	129646	12
100	mMCT-B100/1	129647	12
125	mMCT-B125/1	129648	12
2-pole			
20	mMCT-B20/2	152704	6
25	mMCT-B25/2	152636	6
32	mMCT-B32/2	152705	6
40	mMCT-B40/2	152706	6
50	mMCT-B50/2	152707	6
63	mMCT-B63/2	152637	6
80	mMCT-B80/2	129654	6
100	mMCT-B100/2	129655	6
125	mMCT-B125/2	129656	6
3-pole			
20	mMCT-B20/3	152716	4
25	mMCT-B25/3	152638	4
32	mMCT-B32/3	152717	4
40	mMCT-B40/3	152718	4
50	mMCT-B50/3	152719	4
63	mMCT-B63/3	152639	4
80	mMCT-B80/3	129662	4
100	mMCT-B100/3	129663	4
125	mMCT-B125/3	129664	4
3+N-pole			
20	mMCT-B20/3N	152740	3
25	mMCT-B25/3N	153012	3
32	mMCT-B32/3N	152741	3
40	mMCT-B40/3N	152742	3
50	mMCT-B50/3N	152743	3
63	mMCT-B63/3N	153013	3
80	mMCT-B80/3N	129678	3
100	mMCT-B100/3N	129679	3
125	mMCT-B125/3N	129680	3
4-pole			
20	mMCT-B20/4	152728	3
25	mMCT-B25/4	153010	3
32	mMCT-B32/4	152729	3
40	mMCT-B40/4	152730	3
50	mMCT-B50/4	152731	3
63	mMCT-B63/4	153011	3
80	mMCT-B80/4	129670	3
100	mMCT-B100/4	129671	3
125	mMCT-B125/4	129672	3

Miniature Circuit Breakers mMCT-C

Characteristic C

SG04010

SG05410

SG04210

SG05610

SG05510

Rated Current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
20	mMCT-C20/1	152566	12
25	mMCT-C25/1	158059	12
32	mMCT-C32/1	152567	12
40	mMCT-C40/1	152568	12
50	mMCT-C50/1	152569	12
63	mMCT-C63/1	158310	12
80	mMCT-C80/1	129649	12
100	mMCT-C100/1	129650	12
125	mMCT-C125/1	129651	12
2-pole			
20	mMCT-C20/2	152708	6
25	mMCT-C25/2	158313	6
32	mMCT-C32/2	152709	6
40	mMCT-C40/2	152710	6
50	mMCT-C50/2	152711	6
63	mMCT-C63/2	158314	6
80	mMCT-C80/2	129657	6
100	mMCT-C100/2	129658	6
125	mMCT-C125/2	129659	6
3-pole			
20	mMCT-C20/3	152720	4
25	mMCT-C25/3	158317	4
32	mMCT-C32/3	152721	4
40	mMCT-C40/3	152722	4
50	mMCT-C50/3	152723	4
63	mMCT-C63/3	158318	4
80	mMCT-C80/3	129665	4
100	mMCT-C100/3	129666	4
125	mMCT-C125/3	129667	4
3+N-pole			
20	mMCT-C20/3N	152744	3
25	mMCT-C25/3N	158325	3
32	mMCT-C32/3N	152745	3
40	mMCT-C40/3N	152746	3
50	mMCT-C50/3N	152747	3
63	mMCT-C63/3N	158326	3
80	mMCT-C80/3N	129681	3
100	mMCT-C100/3N	129682	3
125	mMCT-C125/3N	129683	3
4-pole			
20	mMCT-C20/4	152732	3
25	mMCT-C25/4	158321	3
32	mMCT-C32/4	152733	3
40	mMCT-C40/4	152734	3
50	mMCT-C50/4	152735	3
63	mMCT-C63/4	158322	3
80	mMCT-C80/4	129673	3
100	mMCT-C100/4	129674	3
125	mMCT-C125/4	129675	3

Miniature Circuit Breakers mMCT-D

Characteristic D

SG04010

SG05410

SG04210

SG05610

SG05510

Rated Current I_n (A)	Type Designation	Article No.	Units per package
1-pole			
20	mMCT-D20/1	152700	12
25	mMCT-D25/1	158311	12
32	mMCT-D32/1	152701	12
40	mMCT-D40/1	152702	12
50	mMCT-D50/1	152703	12
63	mMCT-D63/1	158312	12
80	mMCT-D80/1	129652	12
100	mMCT-D100/1	129653	12
125			
2-pole			
20	mMCT-D20/2	152712	6
25	mMCT-D25/2	158315	6
32	mMCT-D32/2	152713	6
40	mMCT-D40/2	152714	6
50	mMCT-D50/2	152715	6
63	mMCT-D63/2	158316	6
80	mMCT-D80/2	129660	6
100	mMCT-D100/2	129661	6
125			
3-pole			
20	mMCT-D20/3	152724	4
25	mMCT-D25/3	158319	4
32	mMCT-D32/3	152725	4
40	mMCT-D40/3	152726	4
50	mMCT-D50/3	152727	4
63	mMCT-D63/3	158320	4
80	mMCT-D80/3	129668	4
100	mMCT-D100/3	129669	4
125			
3+N-pole			
20	mMCT-D20/3N	152748	3
25	mMCT-D25/3N	158327	3
32	mMCT-D32/3N	152749	3
40	mMCT-D40/3N	152750	3
50	mMCT-D50/3N	152751	3
63	mMCT-D63/3N	158328	3
80	mMCT-D80/3N	129684	3
100	mMCT-D100/3N	129685	3
125			
4-pole			
20	mMCT-D20/4	152736	3
25	mMCT-D25/4	158323	3
32	mMCT-D32/4	152737	3
40	mMCT-D40/4	152738	3
50	mMCT-D50/4	152739	3
63	mMCT-D63/4	158324	3
80	mMCT-D80/4	129676	3
100	mMCT-D100/4	129677	3
125			

Accessories for RCDs, MCBs, Combined RCD/MCB Devices, Motor Starters and Power Limiters

– Auxiliary Switch
– RCD-Tripping Module
– Shunt Trip Release
– Undervoltage Release
– Switching Interlocks

SG60811

SG16011

SG78811

Accessories for Protective Devices

Auxiliary Switch Z-HK, Z-AHK, Z-HD; Tripping Signal Switch Z-NHK

Design: for screwing

SG60911

Z-AHK

For Protective Device / Function		Type Designation	Article No.	Units per package
RCCB	1NO+1NC	Z-HK	248432	4 / 120
MCB, RCBO, RCCB	1NO+1NC	Z-AHK	248433	4 / 120
MCB, RCBO, RCCB	2CO	Z-NHK	248434	4 / 120
RCCB	1CO+1NC	Z-HD	265620	1

Auxiliary Switch ZP-AHK, ZP-IHK, ZP-WHK; Tripping Signal Switch ZP-NHK

Design: for snapping

SG60811

ZP-IHK

For Protective Device / Function		Type Designation	Article No.	Units per package
MCB, RCBO	1NO+1NC	ZP-IHK	286052	4 / 120
MCB, RCBO	1CO	ZP-WHK	286053	4 / 120
MCB, RCBO	2CO	ZP-NHK	248437	4 / 120

RCD-Tripping Module Z-.AM

SG16011

Z-FAM

SG16211

Z-KAM

For Protective Device	Type Designation	Article No.	Units per package
RCCB	Z-FAM	248293	1 / 60
RCBO, RCCB	Z-KAM	248294	1 / 60

Shunt Trip Release ZP-ASA

SG00212

Operational voltage range (V~)	Type Designation	Article No.	Units per package
to be snapped on			
12-110	ZP-ASA/24	248438	1 / 60
110-415	ZP-ASA/230	248439	1 / 60

Undervoltage Release Z-USA, Z-USD

SG78811

Op. voltage range (V~)/Function		Type Designation	Article No.	Units per package
to be screwed on				
115	undelayed	Z-USA/115	248288	1 / 60
230	undelayed	Z-USA/230	248289	1 / 60
400	undelayed	Z-USA/400	248290	1 / 60
115	delayed 0.4s	Z-USD/115	248292	1 / 60
230	delayed 0.4s	Z-USD/230	248291	1 / 60

SG47812

Switching interlocks IS/SPE-1TE, Z-IS/SPE-1TE

Description	Type Designation	Article No.	Units per package
Switching interlock without lock for Isolators, RCDs, combined RCD/MCBs, ...	IS/SPE-1TE	101911	5 / 30
Switching interlock without lock for MCBs and Circuit Breaker ZP-A	Z-IS/SPE-1TE	274418	5 / 30

Surge Protection

SG11309

SPD Class T1 (formerly B), SPI

SG50312

SPI-35/440

Impulse Current I_{imp} (10/350)µs		Type Designation	Article No.	Units per package
Lightning current arresters SPI				
• No decoupling necessary, if arrester class C with Uc = 460 V are used for combination				
35kA	L - (PE)N	SPI-35/440	263137	6 / 120
50kA	N - PE	SPI-50/NPE	263138	2 / 120
100kA	N - PE	SPI-100/NPE	263139	1 / 60

SG50212

SPI-3+1

Description		Type Designation	Article No.	Units per package
Lightning current arrester Sets, Lightning protection classes I, II, III, IV				
TN-C-Set	3-pole	SPI-35/440/3	267487	1 / 40
TN-S/TT-Set	3+1-pole	SPI-3+1	267488	1 / 20
Lead-through terminal for SPI				
		SPB-D-125	248145	2 / 120

SPD Class T1&T2 (formerly B+C), SP-B+C

SG53712

SP-B+C/3+1

Description		Type Designation	Article No.	Units per package
Lightning current arrester - surge arrester Sets, Lightning protection classes I, II, III, IV				
TN-C-Set	3-pole	SP-B+C/3	267489	1
TN-S/TT-Set	3+1-pole	SP-B+C/3+1	267510	1
Accessories				
Auxiliary switch for SP-B+C		ASAUXSC-SPM	131785	8 / 80

SPD Class T1&T2 (formerly B+C), SPBT12

Lightning current arrester - surge arrester Sets, Lightning protection classes III, IV

SG29612

SPBT12-280/3

Description		Type Designation	Article No.	Units per package
Without remote indication				
TN-S/TT-Set	1+1-pole	SPBT12-280-1+NPE	158308	1 / 40
TN-S-Set	2-pole	SPBT12-280/2	158309	1 / 60
TN-C-Set	3-pole	SPBT12-280/3	158330	1 / 40
TN-S-Set	4-pole	SPBT12-280/4	158331	1 / 30
TN-S/TT-Set	3+1-pole	SPBT12-280-3+NPE	158332	1 / 20
TN-S/TT-Set	3+1-pole	SPBT12-280-3+NPE/BB	158333	1
With remote indication				
TN-S/TT-Set	1+1-pole	SPBT12-280-1+NPE-AX	158334	1 / 30
TN-S/TT-Set	3+1-pole	SPBT12-280-3+NPE-AX	158335	1
Accessories				
Auxiliary switch for SPBT12-280		ASAUXSC-SPM	131785	4 / 120
Busbar		ZV-KSBI...		

Lightning current arrester - surge arrester SPBT12
Complete

SG27112

SPBT12-280/1

Impulse Current I_{imp} (10/350)µs		Type Designation	Article No.	Units per package
12.5kA	L - (PE) N	SPBT12-280/1	158306	12 / 120
100kA	N-PE	SPBT12-NPE100	158307	1 / 60

Lightning current arrester - surge arrester SPBT12
Insert

12.5kA	Insert	SPBT12-280	167341	4 / 120

SPD Class T2 (formerly C), SPCT2

SG50112

SPCT2-280/3

NEW

Plug-in surge arrester SPCT2, 1- to 4-pole

Complete (2- and multi-pole surge arresters are supplied with busbar)

Max. Cont. Op. Volt. U_C		I_n (8/20)µs	Type Designation	Article No.	Units per package
1-pole	75VAC	20kA	SPCT2-075/1	167578	12/120
1-pole	130VAC	20kA	SPCT2-135/1	167583	12/120
1-pole	175VAC	20kA	SPCT2-175/1	167588	12/120
1-pole	280VAC	20kA	SPCT2-280/1	167593	12/120
1-pole	335VAC	20kA	SPCT2-335/1	167598	12/120
1-pole	385VAC	20kA	SPCT2-385/1	167603	12/120
1-pole	460VAC	20kA	SPCT2-460/1	167608	12/120
1-pole	580VAC	20kA	SPCT2-580/1	167613	12/120
1+N	260VAC	30kA	SPCT2-NPE60/1	167618	12/120
2-pole	75VAC	2x20kA	SPCT2-075/2	167579	1/60
2-pole	130VAC	2x20kA	SPCT2-135/2	167584	1/60
2-pole	175VAC	2x20kA	SPCT2-175/2	167589	1/60
2-pole	280VAC	2x20kA	SPCT2-280/2	167594	1/60
2-pole	335VAC	2x20kA	SPCT2-335/2	167599	1/60
2-pole	385VAC	2x20kA	SPCT2-385/2	167604	1/60
2-pole	460VAC	2x20kA	SPCT2-460/2	167609	1/60
2-pole	580VAC	2x20kA	SPCT2-580/2	167614	1/60
3-pole	75VAC	3x20kA	SPCT2-075/3	167580	1/40
3-pole	130VAC	3x20kA	SPCT2-135/3	167585	1/40
3-pole	175VAC	3x20kA	SPCT2-175/3	167590	1/40
3-pole	280VAC	3x20kA	SPCT2-280/3	167595	1/40
3-pole	335VAC	3x20kA	SPCT2-335/3	167600	1/40
3-pole	385VAC	3x20kA	SPCT2-385/3	167605	1/40
3-pole	460VAC	3x20kA	SPCT2-460/3	167610	1/40
3-pole	580VAC	3x20kA	SPCT2-580/3	167615	1/40
4-pole	75VAC	4x20kA	SPCT2-075/4	167581	1/30
4-pole	130VAC	4x20kA	SPCT2-135/4	167586	1/30
4-pole	175VAC	4x20kA	SPCT2-175/4	167591	1/30
4-pole	280VAC	4x20kA	SPCT2-280/4	167596	1/30
4-pole	335VAC	4x20kA	SPCT2-335/4	167601	1/30
4-pole	385VAC	4x20kA	SPCT2-385/4	167606	1/30
4-pole	460VAC	4x20kA	SPCT2-460/4	167611	1/30
4-pole	580VAC	4x20kA	SPCT2-580/4	167616	1/30
1+N	280VAC	20kA	SPCT2-280-1+NPE	167619	1/60
1+N	335VAC	20kA	SPCT2-335-1+NPE	167621	1/60
1+N	385VAC	20kA	SPCT2-385-1+NPE	167623	1/60
1+N	460VAC	20kA	SPCT2-460-1+NPE	167625	1/60
1+N	580VAC	20kA	SPCT2-580-1+NPE	167627	1/60
3+N	280VAC	20kA	SPCT2-280-3+NPE	167620	1/30
3+N	335VAC	20kA	SPCT2-335-3+NPE	167622	1/30
3+N	385VAC	20kA	SPCT2-385-3+NPE	167624	1/30
3+N	460VAC	20kA	SPCT2-460-3+NPE	167626	1/30
3+N	580VAC	20kA	SPCT2-580-3+NPE	167628	1/30
3+N/BB	280VAC	3x20kA	SPCT2-280-3+NPE/BB	167629	1
3+N/BB	335VAC	3x20kA	SPCT2-335-3+NPE/BB	167630	1
3+N/BB	385VAC	3x20kA	SPCT2-385-3+NPE/BB	167631	1
3+N/BB	460VAC	3x20kA	SPCT2-460-3+NPE/BB	167632	1

SG13109

SPCT2-280

NEW

Plug-in surge arrester SPCT2

Insert 1-pole

Insert 75VAC	20kA	SPCT2-075	167577	4/120
Insert 130VAC	20kA	SPCT2-130	167582	4/120
Insert 175VAC	20kA	SPCT2-175	167587	4/120
Insert 280VAC	20kA	SPCT2-280	167592	4/120
Insert 335VAC	20kA	SPCT2-335	167597	4/120
Insert 385VAC	20kA	SPCT2-385	167602	4/120
Insert 460VAC	20kA	SPCT2-460	167607	4/120
Insert 580VAC	20kA	SPCT2-580	167612	4/120
Insert 260VAC	30kA	SPCT2-NPE60	167617	4/120

Surge Protection

Max. Cont. Op. Volt. U_C	I_n (8/20)µs	Type Designation	Article No.	Units per package
NEW **Surge arrester SPET2, 1- to 4-pole**				
Complete (2- and multi-pole surge arresters are supplied with busbar)				
1-pole 280VAC	4.5kA	SPET2-280/1	168741	2/120
2-pole 280VAC	4.5kA	SPET2-280/2	168742	1/60
3-pole 280VAC	4.5kA	SPET2-280/3	168692	1/40
4-pole 280VAC	4.5kA	SPET2-280/4	168693	1/30
1-pole+N 280VAC	4.5kA	SPET2-280/1+NPE	168699	1/60
3-pole+N 280VAC	4.5kA	SPET2-280/3+NPE	168700	1/30
1-pole 335VAC	4.5kA	SPET2-335/1	168695	2/120
2-pole 335VAC	4.5kA	SPET2-335/2	168696	1/60
3-pole 335VAC	4.5kA	SPET2-335/3	168697	1/40
4-pole 335VAC	4.5kA	SPET2-335/4	168698	1/30
1-pole+N 335VAC	4.5kA	SPET2-335/1+NPE	168701	1/60
3-pole+N 335VAC	4.5kA	SPET2-335/3+NPE	168702	1/30
		SPET2-280	168740	2/120
NEW **Surge arrester SPET2**				
Insert 1-pole				
Insert 335VAC	10kA	SPET2-280	168740	2/120
Insert 335VAC	4.5kA	SPET2-335	168694	2/120

SG83311

Description	Type Designation	Article No.	Units per package
NEW **Auxiliary Switch**			
for SPBT12, SPCT2, SPET2, SPDT3	ASAUXSC-SPM	131785	8 / 80

SG59511

Description	Type Designation	Article No.	Units per package
Lead-through terminal for SPB, ASLTT-63			
	ASLTT-63	131784	12 / 120

SPD Class T3 (formerly D), SPDT3

	Max. Cont. Op. Volt. U_C	Type Designation	Article No.	Units per package
	Surge arrester SPDT3			
NEW	**Complete** (2-pole surge arresters are supplied with busbar)			
1-pole+N	335VAC	SPDT3-335-1+NPE	170487	1/60
2-pole	280VAC	SPDT3-280/2	170485	1/60
NEW	**Surge arrester SPDT3**			
	Insert 1-pole			
	280VAC	SPDT3-280	170484	2/120
	335VAC	SPDT3-335	170486	2/120

SG11009

SG11309

SG62612

Photovoltaik SPD Class T2

Max. Cont. Op. Volt. U_C	I_n (	Type Designation	Article No.	Units per package
Plug-in Surge Arrester SPPT2PA for Photovoltaic application				
For earthed systems				
600 V DC		SPPT2PA-600-2PE	132663	1 / 60
1000 V DC		SPPT2PA-1000-2PE	132664	1 / 60
with auxiliary switch				
1000 V DC		SPPT2PA-1000-2PE-AX	132666	1 / 60
For unearthed systems				
600 V DC		SPPT2PA-600-2+1PE	132661	1 / 40
1000 V DC		SPPT2PA-1000-2+1PE	132662	1 / 40
with auxiliary switch				
1000 V DC		SPPT2PA-1000-2+1PE-AX	132665	1 / 40
Inserts for replacement				
600 V DC	①	SPPT2PA-600	132667	1
1000 V DC	①	SPPT2PA-1000	132668	1
1100 V DC	②	SPPT2PA-1100	132669	1

$V_{OC} \leq U_c$: Open circuit voltage of PV-Generator shall be equal or less than maximum continuous operating voltage of Surge Protective Device (SPD) to prevent its damage.

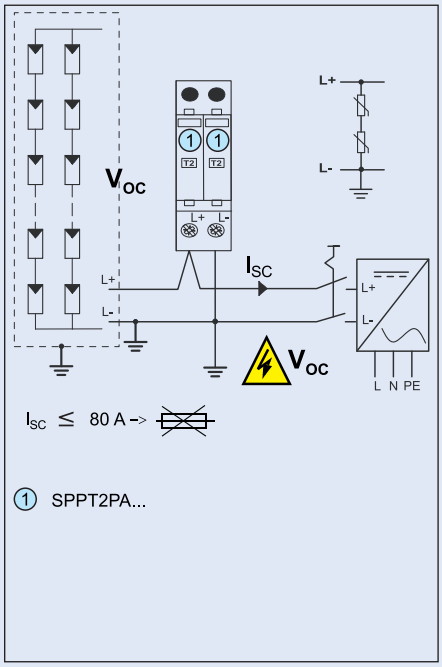
V_{OC} . . . . . .Open circuit voltage of PV-Generator.
U_C . . . . . .Maximum continuous operating voltage of SPD.

Attention: Even at switched off DC-Disconnector system stays under high voltage! Before mounting ensure de-energizing and check zero-potential.

Earthed system

SPPT2PA-600-2PE
SPPT2PA-1000-2PE(-AX)

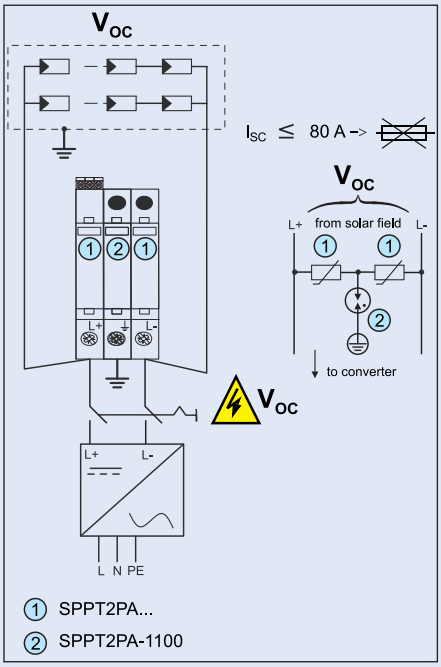
L- ⏚



Unearthed system

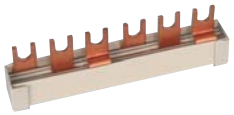
SPPT2PA-600-2+1PE
SPPT2PA-1000-2+1PE(-AX)

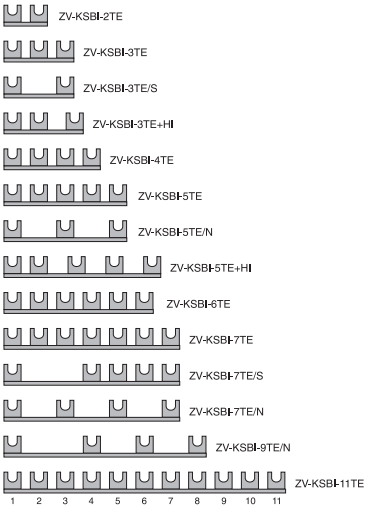
L- ⏚ L+ ⏚



Z-GV-U/9

WA_SG11202





Poles	Type Designation	Article No.	Units per package
Busbars Z-GV-U/ for SPI, SP-B+C			
2	Z-GV-U/2	272588	20 / 1200
3	Z-GV-U/3	272589	20 / 1200
4	Z-GV-U/4	274080	20 / 1200
5	Z-GV-U/5	274081	20 / 1200
6	Z-GV-U/6	274082	20 / 400
8	Z-GV-U/8	274083	20 / 200
9	Z-GV-U/9	274084	20 / 200
Busbar Z-GV-16/3P-3TE/6			
for SPI and SPC	Z-GV-16/3P-3TE/6	267511	12 / 240
Busbars ZV-KSBI for SPC			
2MU	ZV-KSBI-2TE	263961	10 / 600
3MU	ZV-KSBI-3TE	263962	10 / 600
3MU	ZV-KSBI-3TE/S	263963	10 / 600
2MU+1.5MU	ZV-KSBI-3TE+HI	112370	50 / 150
4MU	ZV-KSBI-4TE	263964	10 / 600
5MU	ZV-KSBI-5TE	263965	10 / 200
5MU	ZV-KSBI-5TE/N	263966	10 / 200
2MU+3x1.5MU	ZV-KSBI-5TE+HI	112371	50 / 150
6MU	ZV-KSBI-6TE	113118	50 / 500
7MU	ZV-KSBI-7TE	263967	50 / 500
7MU	ZV-KSBI-7TE/S	263968	10 / 100
7MU	ZV-KSBI-7TE/N	263969	10 / 100
9MU	ZV-KSBI-9TE/N	266874	50 / 500
11MU	ZV-KSBI-11TE	263970	50 / 500

Controlling & Switching

– Switches
– Installation Contactors
– Relays
– Signalling Devices
– Transformers

SG10611

SG59411

SG83911

SG82911

SG84611

wa_sg04311

SG10611

SG10711

SG10811

SG10911

SG47812

Main Load Disconnector Switch (Isolator) IS

Rated Current (A)	Poles	Type Designation	Article No.	Units per package
16	1	IS-16/1	276254	12 / 120
16	2	IS-16/2	276255	1 / 60
16	3	IS-16/3	276256	1 / 40
16	4	IS-16/4	276257	1 / 30
20	1	IS-20/1	276258	12 / 120
20	2	IS-20/2	276259	1 / 60
20	3	IS-20/3	276260	1 / 40
20	4	IS-20/4	276261	1 / 30
25	1	IS-25/1	276262	12 / 120
25	2	IS-25/2	276263	1 / 60
25	3	IS-25/3	276264	1 / 40
25	4	IS-25/4	276265	1 / 30
32	1	IS-32/1	276266	12 / 120
32	2	IS-32/2	276267	1 / 60
32	3	IS-32/3	276268	1 / 40
32	4	IS-32/4	276269	1 / 30
40	1	IS-40/1	276270	12 / 120
40	2	IS-40/2	276271	1 / 60
40	3	IS-40/3	276272	1 / 40
40	4	IS-40/4	276273	1 / 30
63	1	IS-63/1	276274	12 / 120
63	2	IS-63/2	276275	1 / 60
63	3	IS-63/3	276276	1 / 40
63	4	IS-63/4	276277	1 / 30
80	1	IS-80/1	276278	12 / 120
80	2	IS-80/2	276279	1 / 60
80	3	IS-80/3	276280	1 / 40
80	4	IS-80/4	276281	1 / 30
100	1	IS-100/1	276282	12 / 120
100	2	IS-100/2	276283	1 / 60
100	3	IS-100/3	276284	1 / 40
100	4	IS-100/4	276285	1 / 30
125	1	IS-125/1	276286	12 / 120
125	2	IS-125/2	276287	1 / 60
125	3	IS-125/3	276288	1 / 40
125	4	IS-125/4	276289	1 / 30

Accessories

Switching interlock without lock for Isolators, RCDs, combined RCD/MCBs, ...	IS/SPE-1TE	101911	5 / 30
Terminal cover	Z-IS/AK-1TE	276290	10 / 600

Circuit Breaker ZP-A

SG00912

Number of Poles/Rated Operational Current		Type Designation	Article No.	Units per package
1	40A	ZP-A40/1	248263	12 / 120
2	40A	ZP-A40/2	248264	1 / 60
3	40A	ZP-A40/3	248265	1 / 40
3+N	40A	ZP-A40/3N	248266	1 / 30
1	63A	ZP-A63/1	284906	12 / 120
2	63A	ZP-A63/2	284907	1 / 60
3	63A	ZP-A63/3	284908	1 / 40
3+N	63A	ZP-A63/3N	284909	1 / 30

Pushbutton Z-T/

SG37112

Colour of Button/Function		Type Designation	Article No.	Units per package
green	4NO	Z-T/4S-G	248328	12 / 120
black	3NO+1NC	Z-T/3S1O	248330	12 / 120

Control Switch Z-S../

SG38912

Rated Current (A)/Function		Type Designation	Article No.	Units per package
16	3NO	Z-S/3S	248334	12 / 120
16	4NO	Z-S/4S	248335	12 / 120
16	2NO+2NC	Z-S/SSOO	248337	12 / 120
16	3NO+1NC	Z-S/3S1O	248338	12 / 120

Changeover Switch Z-S/.W

SG39012

Function	Type Designation	Article No.	Units per package
1CO I-0-II	Z-S/WM	248345	12 / 120
2CO I-0-II	Z-S/2WM	248346	12 / 120
1CO DAY-0-NIGHT	Z-S/WTN	248347	12 / 120
2CO DAY-0-NIGHT	Z-S/2WTN	248348	12 / 120

Switch Z-SW, Z-SWL

- Z-SWL: with LED
- 16 A 250 VAC

SG59911

Rated voltage LED	Function	Type Designation	Article No.	Units per package
–	1NO	Z-SW/S	276300	2 / 120
–	2NO	Z-SW/SS	276301	2 / 120
–	1NO+1NC	Z-SW/SO	276302	2 / 120
–	1CO	Z-SW/W	276303	2 / 120
24 V AC/DC	2NO	Z-SWL24/SS	276304	2 / 120
24 V AC/DC	1NO+1NC	Z-SWL24/SO	276305	2 / 120
230 V AC/DC	1NO	Z-SWL230/S	292300	2 / 120
230 V AC/DC	2NO	Z-SWL230/SS	276306	2 / 120
230 V AC/DC	1NO+1NC	Z-SWL230/SO	276307	2 / 120

Additional LED colours, voltages and contact functions upon enquiry.

wa_sg02512

Z-EK/25

Busbar block

1-pole straight grey 10mm^2	Z-SV-10/1P-F/13	264918	10
1-pole straight blue 10mm^2	Z-SV-10/N-F/13	264919	10
1-pole straight grey 16mm^2	Z-SV-16/1P-1TE/F	269523	25
1-pole straight blue 16mm^2	Z-SV-16/N-1TE/F	269524	25
Extension terminal 25mm^2 long, straight	Z-EK/25	264935	10 / 600
Extension terminal 25mm^2 short, straight	Z-EK/25/K	269525	10 / 600
Extension terminal 25mm^2 long, crosswise	Z-EK/25/QL	264937	10 / 600
Extension terminal 25mm^2 short, crosswise	Z-EK/25/Q	264936	10 / 600

Signal Lamps

SG59211

Z-BEL/R230

Rated voltage	LED colour	Type Designation	Article No.	Units per package
Single Lamp Z-EL				
24 V AC/DC	orange	Z-EL/OR24	275444	2 / 120
24 V AC/DC	white	Z-EL/WH24	107493	2 / 120
230 V AC/DC	red	Z-EL/R230	284921	2 / 120
230 V AC/DC	green	Z-EL/G230	284922	2 / 120
230 V AC/DC	orange	Z-EL/OR230	275865	2 / 120
230 V AC/DC	blue	Z-EL/BL230	103131	2 / 120
230 V AC/DC	white	Z-EL/WH230	107494	2 / 120
Twin Lamp Z-DLD				
2 x 24 V AC/DC	red + green	Z-DLD/2/24	284926	2 / 120
2 x 230 V AC/DC	red + green	Z-DLD/2/230	284925	2 / 120
2 x 24 V AC/DC	white + white	Z-DLD/WH24	108897	2 / 120
2 x 230 V AC/DC	white + white	Z-DLD/WH230	108898	2 / 120
Universal Single Lamp - changeover function Z-UEL				
24 V AC/DC	red/green	Z-UEL24	284924	2 / 120
230 V AC/DC	red/green	Z-UEL230	284923	2 / 120
Universal Twin Lamp - changeover function Z-UDL				
2 x 24 V AC/DC	red/green	Z-UDL24	284928	2 / 120
2 x 230 V AC/DC	red/green	Z-UDL230	284927	2 / 120
Signal Lamp - with integrated flash function Z-BEL				
24 V AC/DC	red	Z-BEL/R24	284931	2 / 120
24 V AC/DC	green	Z-BEL/G24	284932	2 / 120
230 V AC/DC	red	Z-BEL/R230	284929	2 / 120
230 V AC/DC	green	Z-BEL/G230	284930	2 / 120

Pushbutton Unit Z-PU, Z-PUL

- Z-PUL: with LED
- 16 A 250 VAC

SG59811

Rated voltage LED	Function	Type Designation	Article No.	Units per package
–	1NO	Z-PU/S	276291	2 / 120
–	2NO	Z-PU/SS	276292	2 / 120
–	1NO+1NC	Z-PU/SO	276293	2 / 120
–	2NC	Z-PU/OO	276294	2 / 120
24 V AC/DC	2NO	Z-PUL24/SS	276295	2 / 120
24 V AC/DC	1NO+1NC	Z-PUL24/SO	276296	2 / 120
230 V AC/DC	2NO	Z-PUL230/SS	276297	2 / 120
230 V AC/DC	1NO+1NC	Z-PUL230/SO	276298	2 / 120
230 V AC/DC	2NC	Z-PUL230/OO	276299	2 / 120

Rotary Switch Z-DS

SG85211

Z-DSU1-102

SG85311

Z-DSA2-01-SL

Function/Switching Position		Type Designation	Article No.	Units per package
1pole OFF	0 - 1	Z-DSA1-01	248868	1 / 40
1pole CHANGE	1 - 0 - 2	Z-DSU1-102	248869	1 / 40
1pole CHANGE	HA - 0 - AU	Z-DSU1-H0A	248870	1 / 40
1pole CHANGE	TA - 0 - NA	Z-DSU1-T0N	248871	1 / 40
2pole OFF	0 - 1	Z-DSA2-01	248872	1 / 40
2pole OFF	0 - 1	Z-DSA2-01-SL	248873	1 / 40
2pole CHANGE	1 - 2	Z-DSU2-12	248874	1 / 40
2pole CHANGE	1 - 0 - 2	Z-DSU2-102	248875	1 / 40
2pole CHANGE	HA - 0 - AU	Z-DSU2-H0A	248876	1 / 40
3pole CHANGE	1 - 0 - 2	Z-DSU3-102	248877	1 / 40
Voltmeter L-N	L1 - N...	Z-DSV-LN	248878	1 / 40
Voltmeter L-L	L1 - L2...	Z-DSV-LL	248879	1 / 40
Voltmeter L+N	L1 - N3...	Z-DSV-LLLN	248880	1 / 40
Amperemeter	0-1-2-3	Z-DSAM-0123	129712	1 / 40

Relay for low-level signals RE

- electronic relay
- 2 relays for separate energizing with one changeover contact each relay per frame

SG83411

Control Voltage	Function	MU	Type Designation	Article No.	Units per package
24-230V AC/DC	1CO+1CO	1	RELLVA	120854	1 / 40
24-230V AC/DC	1CO+1CO	1	REHLVA	120855	1 / 40
24-230V AC/DC	1CO+1CO	1	REMLVA	120856	1 / 40

Installation Relays Z-R., Z-TN

SG12211

Z-R12/S

SG60411

Z-R230/2S2O

Type Z-R

- with manual operation
- 20 A 250 VAC —/⊢ AC1

Control Voltage/Function/MU			Type Designation	Article No.	Units per package
240 V 50Hz	2NO	1	Z-R240/SS	285525	2 / 120
240 V 60Hz	2NO	1	Z-R241/SS	265166	2 / 120
240 V 60Hz	2NC	1	Z-R241/SO	265179	2 / 120
230 V 50Hz	1NO	1	Z-R230/S	265149	2 / 120
230 V 50Hz	2NO	1	Z-R230/SS	265168	2 / 120
230 V 50Hz	4NO	2	Z-R230/4S	265226	1 / 60
230 V 50Hz	1NO+1NC	1	Z-R230/SO	265181	2 / 120
230 V 50Hz	2NO+2NC	2	Z-R230/2S2O	265215	1 / 60
230 V 50Hz	3NO+1NC	2	Z-R230/3S1O	265221	1 / 60
230 V 50Hz	2NC	1	Z-R230/OO	265188	2 / 120
230 V 50Hz	4NC	2	Z-R230/4O	265228	1 / 60
230 V 60Hz	2NO	1	Z-R231/SS	265167	2 / 120
230 V 60Hz	1NO+1NC	1	Z-R231/SO	265180	2 / 120
110 V 50Hz	2NO	1	Z-R110/SS	265170	2 / 120
110 V 50Hz	2NO+2NC	2	Z-R110/2S2O	265216	1 / 60
110 V 50Hz	3NO+1NC	2	Z-R110/3S1O	265222	1 / 60
110 V 60Hz	2NO	1	Z-R111/SS	265169	2 / 120
110 V DC	2NO	1	Z-R109/SS	265171	2 / 120
110 V DC	1NO+1NC	1	Z-R109/SO	265182	2 / 120
110 V DC	2NO+2NC	2	Z-R109/2S2O	265217	1 / 60
110 V DC	3NO+1NC	2	Z-R109/3S1O	265223	1 / 60
48 V 50Hz	2NO	1	Z-R48/SS	265172	2 / 120
24 V 50Hz	1NO	1	Z-R24/S	265160	2 / 120
24 V 50Hz	2NO	1	Z-R24/SS	265173	2 / 120
24 V 50Hz	4NO	2	Z-R24/4S	265227	1 / 60
24 V 50Hz	1NO+1NC	1	Z-R24/SO	265183	2 / 120
24 V 50Hz	2NO+2NC	2	Z-R24/2S2O	265218	1 / 60
24 V 50Hz	3NO+1NC	2	Z-R24/3S1O	265224	1 / 60
24 V 50Hz	2NC	1	Z-R24/OO	265189	2 / 120
24 V 50Hz	4NC	2	Z-R24/4O	265229	1 / 60
24 V 60Hz	2NO	1	Z-R25/SS	248368	2 / 120
24 V DC	1NO	1	Z-R23/S	265161	2 / 120
24 V DC	2NO	1	Z-R23/SS	265174	2 / 120
24 V DC	1NO+1NC	1	Z-R23/SO	265184	2 / 120
24 V DC	2NO+2NC	2	Z-R23/2S2O	265219	1 / 60
24 V DC	4NC	2	Z-R23/4O	101910	1 / 60
12 V 50Hz	1NO	1	Z-R12/S	265162	2 / 120
12 V 50Hz	2NO	1	Z-R12/SS	265175	2 / 120
12 V 50Hz	1NO+1NC	1	Z-R12/SO	265185	2 / 120
12 V 50Hz	2NO+2NC	2	Z-R12/2S2O	265220	1 / 60
12 V 50Hz	3NO+1NC	2	Z-R12/3S1O	265225	1 / 60
12 V DC	1NO	1	Z-R11/S	265163	2 / 120
12 V DC	2NO	1	Z-R11/SS	265176	2 / 120
12 V DC	1NO+1NC	1	Z-R11/SO	265186	2 / 120
12 V DC	2NC	1	Z-R11/OO	290198	2 / 120
8 V 50Hz	1NO	1	Z-R8/S	265164	2 / 120
8 V 50Hz	2NO	1	Z-R8/SS	265177	2 / 120
8 V 50Hz	1NO+1NC	1	Z-R8/SO	265187	2 / 120
8 V DC	1NO	1	Z-R7/S	265165	2 / 120
8 V DC	2NO	1	Z-R7/SS	265178	2 / 120

SG59411

Z-RE24/S

Type Z-RE

- with LED, without manual operation
- 20 A 250 VAC —/—

Control Voltage/Function/MU			Type Designation	Article No.	Units per package
230 V 50Hz	1NO	1	Z-RE230/S	265190	2 / 120
230 V 50Hz	2NO	1	Z-RE230/SS	265193	2 / 120
230 V 50Hz	1NO+1NC	1	Z-RE230/SO	265197	2 / 120
230 V 50Hz	2NO+2NC	2	Z-RE230/2S2O	265230	1 / 60
230 V 50Hz	3NO+1NC	2	Z-RE230/3S1O	265235	1 / 60
24 V 50Hz	1NO	1	Z-RE24/S	265191	2 / 120
24 V 50Hz	2NO	1	Z-RE24/SS	265194	2 / 120
24 V 50Hz	1NO+1NC	1	Z-RE24/SO	265198	2 / 120
24 V 50Hz	2NO+2NC	2	Z-RE24/2S2O	265231	1 / 60
24 V 50Hz	3NO+1NC	2	Z-RE24/3S1O	265236	1 / 60
24 V DC	1NO	1	Z-RE23/S	265192	2 / 120
24 V DC	2NO	1	Z-RE23/SS	265195	2 / 120
24 V DC	1NO+1NC	1	Z-RE23/SO	265199	2 / 120
24 V DC	2NO+2NC	2	Z-RE23/2S2O	265232	1 / 60
12 V 50Hz	2NO+2NC	2	Z-RE12/2S2O	265233	1 / 60
12 V 50Hz	3NO+1NC	2	Z-RE12/3S1O	265237	1 / 60
12 V DC	2NO+2NC	2	Z-RE11/2S2O	265234	1 / 60
8 V 50Hz	2NO	1	Z-RE8/SS	265196	2 / 120

SG59111

Z-RK230/SS

Type Z-RK

- with manual operation and LED
- 20 A 250 VAC —/⊢ AC1

230 V 60Hz	2NO	1	Z-RK241/SS	265202	2 / 120
230 V 60Hz	2NC	1	Z-RK241/SO	265207	2 / 120
230 V 50Hz	1NO	1	Z-RK230/S	265200	2 / 120
230 V 50Hz	2NO	1	Z-RK230/SS	265203	2 / 120
230 V 50Hz	1NO+1NC	1	Z-RK230/SO	265208	2 / 120
230 V 50Hz	2NO+2NC	2	Z-RK230/2S2O	265238	1 / 60
230 V 50Hz	3NO+1NC	2	Z-RK230/3S1O	265241	1 / 60
230 V 50Hz	2NC	1	Z-RK230/OO	265213	2 / 120
110 V DC	2NO	1	Z-RK109/SS	265204	2 / 120
24 V 50Hz	1NO	1	Z-RK24/S	265201	2 / 120
24 V 50Hz	2NO	1	Z-RK24/SS	265205	2 / 120
24 V 50Hz	1NO+1NC	1	Z-RK24/SO	265209	2 / 120
24 V 50Hz	2NO+2NC	2	Z-RK24/2S2O	265239	1 / 60
24 V 50Hz	3NO+1NC	2	Z-RK24/3S1O	265242	1 / 60
24 V 50Hz	2NC	1	Z-RK24/OO	265214	2 / 120
24 V DC	2NO	1	Z-RK23/SS	265206	2 / 120
24 V DC	1NO+1NC	1	Z-RK23/SO	265210	2 / 120
24 V DC	2NO+2NC	2	Z-RK23/2S2O	271464	1 / 60
12 V 50Hz	1NO+1NC	1	Z-RK12/SO	265211	2 / 120
12 V 50Hz	2NO+2NC	2	Z-RK12/2S2O	265240	1 / 60
12 V 50Hz	3NO+1NC	2	Z-RK12/3S1O	265243	1 / 60
8 V 50Hz	1NO+1NC	1	Z-RK8/SO	265212	2 / 120

Other control voltages, frequencies, and contact functions upon enquiry.

SG59711

Z-TN230/SO

SG60111

Z-TN230/3S

Type Z-TN

- with manual pre-selection of functions - permanently ON / AUTOM / OFF
- 20 A 250 VAC —/—

230 V 50Hz	2NO	1	Z-TN230/SS	265574	2 / 120
230 V 50Hz	3NO	2	Z-TN230/3S	265576	1 / 60
230 V 50Hz	4NO	2	Z-TN230/4S	265579	1 / 60
230 V 50Hz	1NO+1NC	1	Z-TN230/1S1O	267975	2 / 120
230 V 50Hz	2NO+2NC	2	Z-TN230/2S2O	103168	1 / 60
24 V 50Hz	2NO	1	Z-TN24/SS	267976	2 / 120
24 V 50Hz	3NO	2	Z-TN24/3S	267977	1 / 60
24 V 50Hz	4NO	2	Z-TN24/4S	267978	1 / 60
24 V 50Hz	1NO+1NC	1	Z-TN24/1S1O	267979	2 / 120

wa_sg02512

Z-EK/25

Accessories			
Spacer 0.5 MU	Z-DST	248949	10
Busbar block for Impulse Relays, Relays, Control and Switching Devices (Series Z-PU, Z-SW)			
1-pole straight grey 10mm^2	Z-SV-10/1P-F/13	264918	10
1-pole straight blue 10mm^2	Z-SV-10/N-F/13	264919	10
1-pole straight grey 16mm^2	Z-SV-16/1P-1TE/F	269523	25
1-pole straight blue 16mm^2	Z-SV-16/N-1TE/F	269524	25
Extension terminal 25mm^2 long, straight	Z-EK/25	264935	10 / 600
Extension terminal 25mm^2 short, straight	Z-EK/25/K	269525	10 / 600
Extension terminal 25mm^2 long, crosswise	Z-EK/25/QL	264937	10 / 600
Extension terminal 25mm^2 short, crosswise	Z-EK/25/Q	264936	10 / 600

Installation Contactors Z-SCH/CMUC

Installation Contactors Z-SCH

SG84611

Z-SCH230/25-40

SG84711

Z-SCH230/63-40

U_s / I_n AC1 / Function			Type Designation	Article No.	Units per package
230VAC	25A	2NO	Z-SCH230/1/25-20	120853	2 / 120
230VAC	25A	4NO	Z-SCH230/25-40	248847	1 / 60
230VAC	25A	4NC	Z-SCH230/25-04	248848	1 / 60
230VAC	25A	3NO+1NC	Z-SCH230/25-31	248846	1 / 60
230VAC	25A	2NO+2NC	Z-SCH230/25-22	248849	1 / 60
24VAC	25A	4NO	Z-SCH24/25-40	248851	1 / 60
24VAC	25A	2NO+2NC	Z-SCH24/25-22	248850	1 / 60
230VAC	40A	4NO	Z-SCH230/40-40	248852	1 / 40
230VAC	40A	3NO+1NC	Z-SCH230/40-31	248854	1 / 40
230VAC	40A	2NO+2NC	Z-SCH230/40-22	248853	1 / 40
230VAC	40A	2NO	Z-SCH230/40-20	248855	1 / 40
230VAC	63A	4NO	Z-SCH230/63-40	248856	1 / 40
230VAC	63A	4NC	Z-SCH230/63-04	285735	1 / 40
230VAC	63A	3NO+1NC	Z-SCH230/63-31	248858	1 / 40
230VAC	63A	2NO+2NC	Z-SCH230/63-22	248857	1 / 40
230VAC	63A	2NO	Z-SCH230/63-20	248859	1 / 40

Installation Contactors CMUC

- Universal Control Voltage U_c AC/DC

SG28812

CMUC230/25-40

U_c / I_n AC1 / Function			Type Designation	Article No.	Units per package
230V AC/DC	25A	4NO	CMUC230/25-40	137309	1 / 60
230V AC/DC	25A	4NC	CMUC230/25-04	137405	1 / 60
230V AC/DC	25A	3NO+1NC	CMUC230/25-31	137401	1 / 60
230V AC/DC	25A	2NO+2NC	CMUC230/25-22	137403	1 / 60
24V AC/DC	25A	4NO	CMUC24/25-40	137308	1 / 60
24V AC/DC	25A	4NC	CMUC24/25-04	137404	1 / 60
24V AC/DC	25A	3NO+1NC	CMUC24/25-31	137400	1 / 60
24V AC/DC	25A	2NO+2NC	CMUC24/25-22	137402	1 / 60

Accessories suitable for Z-SCH / CMUC

SG84311

Z-SC

Sealing cover	(25A)	Z-SCHAK-2TE	248860	10
Sealing cover	(40, 63A)	Z-SCHAK-3TE	248861	10
Auxiliary switch	1NO+1NC *)	Z-SC	248862	3
Spacer	(0.5 MU)	Z-DST	248949	10
Suppressor RC-Combination 12-250 VAC		Z-RC/230	101428	2 / 120

*) NOT suitable for Z-SCH230/1/25-20 (120853)

SG59611

Z-S230/SO

Impulse Relays Z-S

- 16 A 250 VAC

Control Voltage/Function/MU			Type Designation	Article No.	Units per package
240 V 50Hz	1NO	1	Z-S240/S	265261	2 / 120
240 V 50Hz	2NO	1	Z-S240/SS	265269	2 / 120
240 V 50Hz	1NO+1NC	1	Z-S240/SO	265282	2 / 120
240 V 50Hz	2NO+2NC	2	Z-S240/2S2O	265304	1 / 60
240 V 50Hz	1CO	1	Z-S240/W	265289	2 / 120
240 V 50Hz	2CO	2	Z-S240/WW	265311	1 / 60
240 V 60Hz	2NO	1	Z-S241/SS	265268	2 / 120
230 V 50Hz	1NO	1	Z-S230/S	265262	2 / 120
230 V 50Hz	2NO	1	Z-S230/SS	265271	2 / 120
230 V 50Hz	4NO	2	Z-S230/4S	270335	1 / 60
230 V 50Hz	1NO+1NC	1	Z-S230/SO	265283	2 / 120
230 V 50Hz	2NO+2NC	2	Z-S230/2S2O	265305	1 / 60
230 V 50Hz	1CO	1	Z-S230/W	265290	2 / 120
230 V 50Hz	2CO	2	Z-S230/WW	265312	1 / 60
230 V 60Hz	2NO	1	Z-S231/SS	265270	2 / 120
110 V 50Hz	1NO	1	Z-S110/S	265263	2 / 120
110 V 50Hz	2NO	1	Z-S110/SS	265273	2 / 120
110 V 50Hz	1NO+1NC	1	Z-S110/SO	265284	2 / 120
110 V 50Hz	2NO+2NC	2	Z-S110/2S2O	265306	1 / 60
110 V 50Hz	1CO	1	Z-S110/W	265291	2 / 120
110 V 50Hz	2CO	2	Z-S110/WW	265313	1 / 60
110 V 60Hz	2NO	1	Z-S111/SS	265272	2 / 120
110 V DC	2NO	1	Z-S109/SS	265274	2 / 120
110 V DC	1CO	1	Z-S109/W	265292	2 / 120
110 V DC	2CO	2	Z-S109/WW	265314	1 / 60
48VAC/24VDC*)	1NO	1	Z-S48/S	265534	2 / 120
48VAC/24VDC*)	2NO	1	Z-S48/SS	265536	2 / 120
48VAC/24VDC*)	4NO	2	Z-S48/4S	100665	1 / 60
48VAC/24VDC*)	1NO+1NC	1	Z-S48/SO	265538	2 / 120
48VAC/24VDC*)	2NO+2NC	2	Z-S48/2S2O	265540	1 / 60
48VAC/24VDC*)	1CO	1	Z-S48/W	265544	2 / 120
48VAC/24VDC*)	2CO	2	Z-S48/WW	265542	1 / 60
24VAC/12VDC*)	1NO	1	Z-S24/S	265535	2 / 120
24VAC/12VDC*)	2NO	1	Z-S24/SS	265537	2 / 120
24VAC/12VDC*)	1NO+1NC	1	Z-S24/SO	265539	2 / 120
24VAC/12VDC*)	2NO+2NC	2	Z-S24/2S2O	265541	1 / 60
24VAC/12VDC*)	1CO	1	Z-S24/W	265545	2 / 120
24VAC/12VDC*)	2CO	2	Z-S24/WW	265543	1 / 60
24 V 60Hz	2NO	1	Z-S25/SS	265276	2 / 120
12 V 50Hz	1NO	1	Z-S12/S	265266	2 / 120
12 V 50Hz	2NO	1	Z-S12/SS	265278	2 / 120
12 V 50Hz	1NO+1NC	1	Z-S12/SO	265287	2 / 120
12 V 50Hz	2NO+2NC	2	Z-S12/2S2O	265309	1 / 60
12 V 50Hz	1CO	1	Z-S12/W	265296	2 / 120
12 V 50Hz	2CO	2	Z-S12/WW	265317	1 / 60
8 V 50Hz	1NO	1	Z-S8/S	265267	2 / 120
8 V 50Hz	2NO	1	Z-S8/SS	265280	2 / 120
8 V 50Hz	1NO+1NC	1	Z-S8/SO	265288	2 / 120
8 V 50Hz	2NO+2NC	2	Z-S8/2S2O	265310	1 / 60
8 V 50Hz	1CO	1	Z-S8/W	265297	2 / 120
8 V 50Hz	2CO	2	Z-S8/WW	265318	1 / 60
8 V DC	2NO	1	Z-S7/SS	265281	2 / 120
8 V DC	1CO	1	Z-S7/W	265298	2 / 120
8 V DC	2CO	2	Z-S7/WW	265319	1 / 60

*) Double voltage AC/DC

SG69011

Z-SC230/S

SG69111

Z-SB230/SS

SG59011

Z-S/KO

wa_sg02512

Z-EK/25

Control Voltage/Function/MU			Type Designation	Article No.	Units per package
With central control Z-SC					
240 V AC 50/60Hz	3NO	2	Z-SC240/3S	265320	1 / 60
240 V AC 50/60Hz	1NO+1CO	2	Z-SC240/1S1W	265323	1 / 60
240 V AC 50/60Hz	2NO+1NC	2	Z-SC240/2S1O	265326	1 / 60
230 V AC 50/60Hz	1NO	1	Z-SC230/S	265299	2 / 120
230 V AC 50/60Hz	3NO	2	Z-SC230/3S	265321	1 / 60
230 V AC 50/60Hz	1NO+1CO	2	Z-SC230/1S1W	265324	1 / 60
230 V AC 50/60Hz	2NO+1NC	2	Z-SC230/2S1O	265327	1 / 60
110 V AC 50/60Hz	3NO	2	Z-SC110/3S	265322	1 / 60
110 V AC 50/60Hz	1NO+1CO	2	Z-SC110/1S1W	265325	1 / 60
110 V AC 50/60Hz	2NO+1NC	2	Z-SC110/2S1O	265328	1 / 60
24 V AC 50/60Hz	1NO	1	Z-SC24/S	265300	2 / 120
With switchable LED Z-SB					
230 V 50Hz	2NO	1	Z-SB230/SS	265301	2 / 120
24 V 50Hz	2NO	1	Z-SB24/SS	265302	2 / 120
24 V DC	2NO	1	Z-SB23/SS	265303	2 / 120

Other control voltages, frequencies, and contact arrangements upon enquiry.

Accessories for Z-S./.				
Compensator	1	Z-S/KO	270588	2 / 120
Group block	1	Z-SC/GP	270587	2 / 120

Busbar block			
1-pole straight grey 10mm^2	Z-SV-10/1P-F/13	264918	10
1-pole straight blue 10mm^2	Z-SV-10/N-F/13	264919	10
1-pole straight grey 16mm^2	Z-SV-16/1P-1TE/F	269523	25
1-pole straight blue 16mm^2	Z-SV-16/N-1TE/F	269524	25
Extension terminal 25mm^2 long, straight	Z-EK/25	264935	10 / 600
Extension terminal 25mm^2 short, straight	Z-EK/25/K	269525	10 / 600
Extension terminal 25mm^2 long, crosswise	Z-EK/25/QL	264937	10 / 600
Extension terminal 25mm^2 short, crosswise	Z-EK/25/Q	264936	10 / 600

Staircase Switch with switch-off warning and stop function TL

SG07312

Function	Type Designation	Article No.	Units per package
Staircase switch with switch-off warning and stop function	TLE	101064	2 / 120
Staircase switch as TLE, with additional control input for central control, zero-voltage proof	TLK	101066	2 / 120

Time-Lag Relay ZR

SG07412

ZRMF1/W

SG07912

ZRMF2/WW

Function	Contacts	Type Designation	Article No.	Units per package
E, R	1CO	ZRER/W	110405	2 / 120
E, R, Ws, Wa, Es, Wu, Bp	1CO	ZRMF1/W	110406	2 / 120
E, R, Ws, Wa, Es, Wu, Bp	2CO	ZRMF2/WW	110408	1 / 60
Ip, Ii	1CO	ZRTAK/W	110747	2 / 120

Undervoltage Relay REUVM

- Optical indication
  Power...green LED
  Fault in phases L1, L2, L3...red LED is flashing
  Loss of Neutral conductor N...green Power LED is flashing
- Single phase application is possible

SG83511

Switching Voltage	/ U_N / Kontakte	Type Designation	Article No.	Units per package
U_N x 0,85	230/400 VAC 1CO	REUVM	148598	1
U_N x 0,85	230/400 VAC 2CO	REUVM2	167284	1

Voltage indication UVA

- Optical indication
  Voltage of phases L1, L2, L3 is indicated with green LED's even at loss of Neutral conductor N
- Single-phase application, or even possible to use DC

SG00112

Rated operational voltage	Type Designation	Article No.	Units per package
230/400 VAC 50/60Hz	UVA	167285	1

Load Shedding (Current) Relay Z-LAR/

SG78711

Function/Op. Current Range (A)		Type Designation	Article No.	Units per package
NC	3-8	Z-LAR/8-O	248256	1 / 60
NC	10-16	Z-LAR/16-O	248257	1 / 60
NC	15-32	Z-LAR/32-O	248258	1 / 60
NO	3-8	Z-LAR/8-S	248259	1 / 60
NO	10-16	Z-LAR/16-S	248260	1 / 60
NO	15-32	Z-LAR/32-S	248261	1 / 60
CO	3-8	Z-LAR/8-W	248262	1 / 60

Bio-Switch FFS/16

SG08012

	Type Designation	Article No.	Units per package
Bio-Switch	FFS/16	107325	1 / 60

Timers digital TSDW...

SG84011

Drive	Program	Channels	Type Designation	Article No.	Units per package
Quartz	Week	1 chan.	TSDW1CO	167379	1
Quartz	Week	2 chan.	TSDW2CO	167380	1
DCF/GPS	Week	1 chan.	TSDW1CODG	167382	1
Quartz	Week	1 chan.	TSDW1COMIN	167383	1

Accessories

DCF antenna for timers digital TSDW1CODG	TSADCF	167384	1
GPS antenna with power supply for TSDW1CODG	TSAGPSKIT	167385	1
PC Set + memory card for SRCD1CO, TSDW1CO, TSDW2CO, TSDW1COA, TSDW1CODG	TSAMEMKIT	167386	1
Memory card	TSAMEM	167387	1

Astronomical Timer TSDW1COA

SG84011

Drive	Programme	Channels	Type Designation	Article No.	Units per package
Astronomical, digital					
Quartz	Week	1 chan.	TSDW1COA	167381	1

Timers analogue TS...

SG83911

Drive	Program	Channels	Type Designation	Article No.	Units per package
Quarz	Day	1 chan.	TSQD1NO	167388	1
Synchron.	Day	1 chan.	TSSD1NO	167389	1
Quarz	Day	1 chan.	TSQD1CO	167390	1
Synchron.	Day	1 chan.	TSSD1CO	167391	1
Quarz	Week	1 chan.	TSQW1CO	167392	1

Light Intensity Switch SR...

SG84111

Switching contact / Light intensity		Type Designation	Article No.	Units per package
1NO	2-100 Lux	SRSD1NO	167375	1
1NO	2-2000 Lux	SRSW1NO	167376	1
1NO	with timer	SRCD1CO	167377	1
1CO	2-50000 Lux	SRSD1COW	167378	1

Signalling Devices AS

wa_sg04311

ASBELL230

Function/Rated Voltage (V~)		Type Designation	Article No.	Units per package
Bell	230V AC	ASBELL230	167393	1
Bell	12V AC	ASBELL12	167394	1
Buzzer	230V AC	ASBUZZ230	167395	1
Siren	24V AC/DC	ASSIR24	167396	1

Transformers 230V, TR-G

Bell-Transformers 230V, TR-G.

- Type -S with primary switch

SG82911

MU	Sec.-Volt. (V)	Sec.-Current (A)	Type Designation	Article No.	Units per package
2	8	1	TR-G/8	272480	1 / 28
2	4-8-12	1-1-0,67	TR-G3/8	272481	1 / 28
2	8	1	TR-G/8-S	272482	1 / 28
2	4-8-12	2-2-1,5	TR-G3/18	272483	1 / 28
3	12-24	2-1	TR-G2/24	272484	1 / 20

Safety-Transformers 230V, TR-G./..-SF.

- 100% ED

SG42512

MU	Sec.-Volt. (V)	Sec.-Current (A)	Type Designation	Article No.	Units per package
5	12-24	5,2-2,6	TR-G2/63-SF	272485	1 / 12

Busbar System Easyvation

Easyvation is the modular design system for busbars. Easyvation busbars are available as yard goods with 1, 2 or 3 poles. Now, there is a special feature: each bar can easily be extended by one-pole bar as you like. The additional pole can be added completely without tools by easy clamping technique. The lugs or forks in the Easyvationbars - available in 10 and 16 mm^2 and all common distances - can be broken out at a predetermined breaking point. There is actually no more flexibility available.

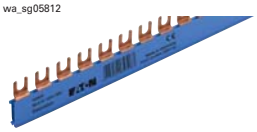
Easyvation saves time and material
The yard good can be cut with a saw of course. However, there is no need neither for deburring nor for cutting the conductor. Just cut to the required dimension and close with the fitting end cap -ready! The end caps have also breakable edges, which enable further connecting of the Easyvation. By overlapping assembly, doubling the cross section can be achieved.

Easyvation in use
Easyvation is especially well suited for solving flexible busbar applications rack-mounted models in series. Fork-pin combinations for 1+N-applications can be realized by individual combinations - for this also the one-pole version with blue isolation is available besides the one with grey isolation. Even different cross sections can be combined in this case.
Accessories, such as feeder terminals and self adhesive phase marking labels will complete the comfortable total package. Existing contact prevention caps can be used.

Easyvation at a glance:
- Yard goods can be cut
- No cutting back of copper required
- No deburring required
- Almost no waste during cutting
- End capsavailable with 1- to 4-poles, end caps can be broken out for further extensions
- 4-pole end cap molded in pairs (leftand right)
- Overlapping rail extension possible
- Rails can be extended on demand by 1-pole rails (plug-in technology)
- All step distances
- 10 and 16 mm^2
- Fork and stud
- Lugs can be broken out at any predetermined breaking point
- Self adhesive phase indication labels available
- Contact preventing caps (ZV-BS-G) can be used
- Simple, flexible handling
- All assembly requirements can be covered by Easyvation
- Low storage space requirements due to modular system
- Less time consuming (no deburring, no cutting back)
- Individual and self configurable
- Fork-pin combination for 1+N application possible, feeding through rail (terminal clamp) not possible.
- Protected technology

wa_sg05712

wa_sg05812



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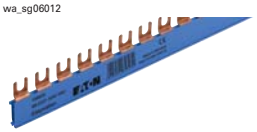


Description	Step Distance (mm)	Cu-factor	Type Designation	Article No.	Units per package

Easyvation busbar 1m 10mm², 16mm² (Fork) BB-EVF

for MCBs, RCCBs, RCBOs, SPDs

- Delivered without end caps

10 mm²

- Rated current 63 A

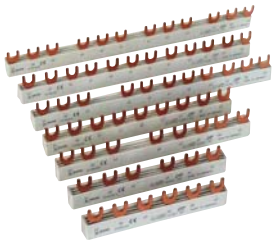
1-phase	17.8	0.22	BB-EVF-10/1P-1MU	168826	10
	27	0.24	BB-EVF-10/1P-2MU	168830	10
	36	0.24	BB-EVF-10/1P-3MU	168834	10
2-phase	17.8	0.31	BB-EVF-10/2P-1MU	168838	10
	27	0.36	BB-EVF-10/2P-2MU	168840	10
3-phase	17.8	0.46	BB-EVF-10/3P-1MU	168842	10
	27	0.58	BB-EVF-10/3P-2MU	168844	10
	36	0.56	BB-EVF-10/3P-3MU	168850	10
3-phase + AUX					
	3x17.5+1x9	0.58	BB-EVF-10/3P-1MU/AUX	168846	10
	3x17.5+2x9	0.57	BB-EVF-10/3P-1MU2AUX	168848	10
Neutral	17.8	0.22	BB-EVF-10/N-1MU	168828	10
	27	0.24	BB-EVF-10/N-2MU	168832	10
	36	0.24	BB-EVF-10/N-3MU	168836	10

16 mm²

- Rated current 80 A

1-phase	17.8	0.33	BB-EVF-16/1P-1MU	168827	10
	27	0.36	BB-EVF-16/1P-2MU	168831	10
	36	0.32	BB-EVF-16/1P-3MU	168835	10
2-phase	17.8	0.46	BB-EVF-16/2P-1MU	168839	10
	27	0.54	BB-EVF-16/2P-2MU	168841	10
3-phase	17.8	0.69	BB-EVF-16/3P-1MU	168843	10
	27	0.87	BB-EVF-16/3P-2MU	168845	10
	36	0.84	BB-EVF-16/3P-3MU	168851	10
3-phase + AUX					
	3x17.5+1x9	0.87	BB-EVF-16/3P-1MU/AUX	168847	10
	3x17.5+2x9	0.86	BB-EVF-16/3P-1MU2AUX	168849	10
Neutral	17.8	0.33	BB-EVF-16/N-1MU	168829	10
	27	0.36	BB-EVF-16/N-2MU	168833	10
	36	0.32	BB-EVF-16/N-3MU	168837	10

Busbar Systems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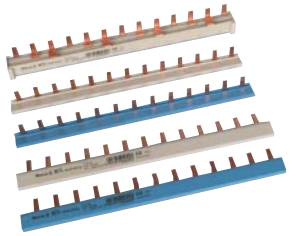
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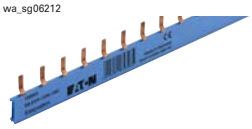
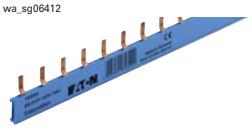
wa_sg06212



wa_sg06312

wa_sg06412



Description	Step Distance (mm)	Cu-factor	Type Designation	Article No.	Units per package

Easyvation busbar 1m 10mm², 16mm² (Pin) BB-EVP

for MCBs, RCCBs, RCBOs, SPDs

- Delivered without end caps

10 mm²

- Rated current 63 A

1-phase	17.8	0.22	BB-EVP-10/1P-1MU	168852	10
	27	0.24	BB-EVP-10/1P-2MU	168856	10
	36	0.24	BB-EVP-10/1P-3MU	168860	10
2-phase	17.8	0.31	BB-EVP-10/2P-1MU	168864	10
	27	0.36	BB-EVP-10/2P-2MU	168866	10
3-phase	17.8	0.46	BB-EVP-10/3P-1MU	168868	10
	27	0.58	BB-EVP-10/3P-2MU	168870	10
	36	0.56	BB-EVP-10/3P-3MU	168876	10
3-phase + AUX					
	3x17.5+1x9	0.58	BB-EVP-10/3P-1MU/AUX	168872	10
	3x17.5+2x9	0.57	BB-EVP-10/3P-1MU2AUX	168874	10
Neutral	17.8	0.22	BB-EVP-10/N-1MU	168854	10
	27	0.24	BB-EVP-10/N-2MU	168858	10
	36	0.24	BB-EVP-10/N-3MU	168862	10

16 mm²

- Rated current 80 A

1-phase	17.8	0.33	BB-EVP-16/1P-1MU	168853	10
	27	0.36	BB-EVP-16/1P-2MU	168857	10
	36	0.32	BB-EVP-16/1P-3MU	168861	10
2-phase	17.8	0.46	BB-EVP-16/2P-1MU	168865	10
	27	0.54	BB-EVP-16/2P-2MU	168867	10
3-phase	17.8	0.69	BB-EVP-16/3P-1MU	168869	10
	27	0.87	BB-EVP-16/3P-2MU	168871	10
	36	0.84	BB-EVP-16/3P-3MU	168877	10
3-phase + AUX					
	3x17.5+1x9	0.87	BB-EVP-16/3P-1MU/AUX	168873	10
	3x17.5+2x9	0.86	BB-EVP-16/3P-1MU2AUX	168875	10
Neutral	17.8	0.33	BB-EVP-16/N-1MU	168855	10
	27	0.36	BB-EVP-16/N-2MU	168859	10
	36	0.32	BB-EVP-16/N-3MU	168863	10

wa_sg05612

wa_sg05312

wa_sg06512

SG05705

Description	Cu-factor	Type Designation	Article No.	Units per package

Accessories

End caps, BB-EV-EC

1-phase	-	BB-EV-EC/1P	168878	40
2+3-phase	-	BB-EV-EC/2-3P	168823	40
4-phase	-	BB-EV-EC/4P	168824	20
Neutral	-	BB-EV-EC/N	168879	20

Terminal BB-EV-TE/35

	0.04	BB-EV-TE/35	168825	3

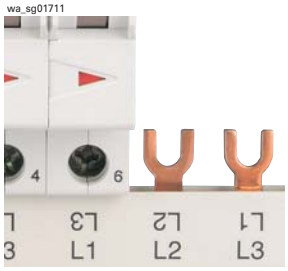
Sticker phase sequence

	-	KLEBEBOGEN-PHASENFOLGE	169831	5

Busbar Tag Shrouds ZV-BS-G

	-	ZV-BS-G	104903	10 / 600

wa_sg01711

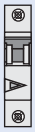
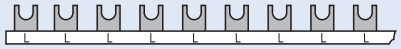
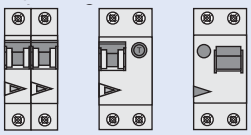
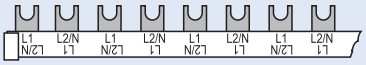
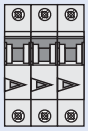
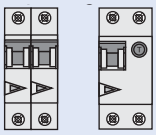
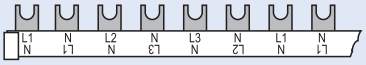
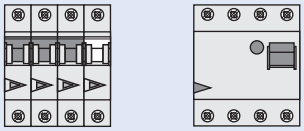
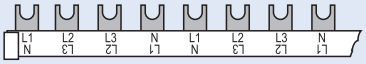
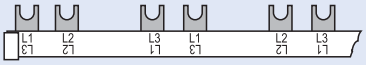
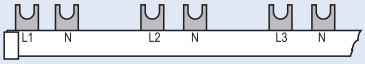
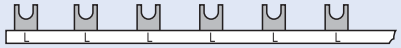
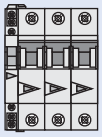
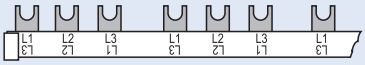


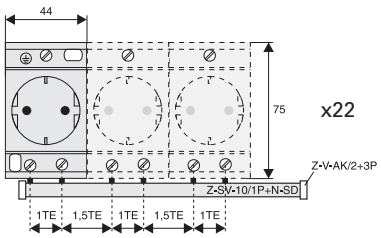
Description	Cu-factor	Type Designation	Article No.	Units per package
Busbar block (Fork) Z-GV				
for MCB, RCBO, RCCB				
• Delivered with end caps				
10 mm²				
• Rated current 63 A				
3-phases 6x PKN.	0.372	Z-GV-10/3P-4TE/17	271081	25
16 mm²				
• Rated current 80 A				
1-phase 16x	0.095	Z-GV-16/1P-1TE/16	271074	50
2-phases 8x	0.187	Z-GV-16/1P+N-2TE/16	271075	20
3-phases 2x	0.140	Z-GV-16/3P-3TE/8	271073	40
3-phases 5x	0.357	Z-GV-16/3P-3TE/16	271076	20
4-phases 4x	0.444	Z-GV-16/3P+N-4TE/16	271078	15
1 m Busbar block (Fork) Z-GV				
for MCB, RCBO, RCCB				
• Delivered without end caps				
10 mm²				
• Rated current 63 A				
1-phase	0.408	Z-GV-10/1P-1TE	270339	50
3-phases	0.739	Z-GV-10/3P-3TE	271060	20
3-phases	0.739	Z-GV-10/3P-4TE	271080	20
End cap 1-phase		Z-V-AK/1P	104905	10 / 600
End cap 2+3-phases		Z-AK-10/2+3P	271069	10 / 600
16 mm²				
• Rated current 80 A				
1-phase	0.470	Z-GV-16/1P-1TE	271061	50
1-phase+aux. switch	0.470	Z-GV-16/1P+HS	271062	50
2-phases	0.657	Z-GV-16/1P+N-2TE	271063	20
3-phases	1.042	Z-GV-16/3P-3TE	271064	20
3-phases+aux. switch	0.998	Z-GV-16/3P+HS	271065	20
4-phases	1.465	Z-GV-16/3P+N-4TE	271066	15
4-phases	1.522	Z-GV-16/3P+3N-6TE	263142	15
4-phases	1.050	Z-GV-16/PKPX/4PHAS	116882	10
End cap 1-phase		Z-V-AK/1P	104905	10 / 600
End cap 2+3-phases		Z-AK-16/2+3P	271070	10 / 600
End cap 4-phases		Z-AK-16/4P	271071	10 / 600
End cap 4-phases		Z-V-AK/4P	264931	10 / 600

SG05705

Description	Type Designation	Article No.	Units per package
Accessories			
Busbar Tag Shrouds ZV-BS-G			
	ZV-BS-G	104903	10 / 600

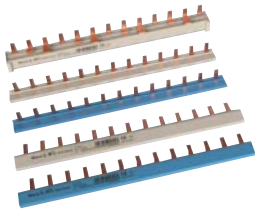
Description of the Busbar Block (Fork) Z-GV

Devices to busbar	Pcs. of the devices	End caps	Type
1-phase			
	x57 x57 x16	Z-V-AK/1P 	Z-GV-10/1P-1TE Z-GV-16/1P-1TE Z-GV-16/1P-1TE/16
2-phases			
	x28 x8	Z-AK-16/2+3P 	Z-GV-16/1P+N-2TE Z-GV-16/1P+N-2TE/16
3-phases			
	x19 x19 x2 x5	Z-AK-10/2+3P Z-AK-16/2+3P 	Z-GV-10/3P-3TE Z-GV-16/3P-3TE Z-GV-16/3P-3TE/8 Z-GV-16/3P-3TE/16
4-phases			
	x27	Z-AK-16/4P 	Z-GV-16/3P+3N-6TE
	x14 x4	Z-AK-16/4P 	Z-GV-16/3P+N-4TE Z-GV-16/3P+N-4TE/16
For 2-pole Combined RCD/MCB Device, 3-phases			
	x18 x6	Z-AK-10/2+3P 	Z-GV-10/3P-4TE Z-GV-10/3P-4TE/17
For 2-pole Combined RCD/MCB Device, 4-phases			
	x18	Z-V-AK/4P 	Z-GV-16/PKPX/4PHAS
1-phase + Auxiliary Switch			
	x38	Z-V-AK/1P 	Z-GV-16/1P+HS
3-phases + Auxiliary Switch			
	x16	Z-AK-16/2+3P 	Z-GV-16/3P+HS



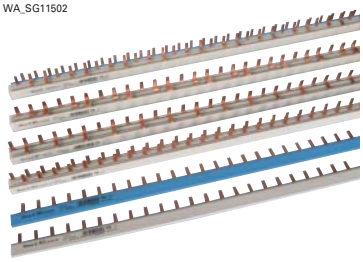
Description	Cu-factor	Type Designation	Article No.	Units per package
1 m **Busbar block (Pin) Z-SV...-SD**				
for Protected Earth Socket Z-SD230				
• Delivered with end caps				
10 mm²				
• Rated current 50 A				
2-phases	0.588	Z-SV-10/1P+N-SD	269526	10
End cap		Z-V-AK/2+3P	264930	10 / 600

WA_SG11302



Description	Cu-factor	Type Designation	Article No.	Units per package
Busbar block 13MU (Pin) Z-SV-10/				
for PLN. (1MU)				
• Delivered with end caps				
10 mm²				
• Rated current 50 A				
1-phase straight grey	0.055	Z-SV-10/1P-1TE/13	264916	10
1-phase straight blue	0.055	Z-SV-10/N-1TE/13	264917	10
1-phase crosswise grey	0.055	Z-SV-10/1P-F/13	264918	10
1-phase crosswise blue	0.055	Z-SV-10/N-F/13	264919	10
2-phases	0.126	Z-SV-10/2P-2TE/13	264922	10
3-phases	0.203	Z-SV-10/3P-3TE/13	264924	10
4-phases	0.258	Z-SV-10/3P+N-4TE/12	264926	10
4-phases (for PLN.)	0.258	Z-SV-10/3P+3N-3TE/13	264927	10

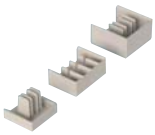
WA_SG11502



1 m **Busbar block (Pin) Z-SV-16/**				
for PLN. (1MU)				
• Delivered without end caps				
16 mm²				
• Rated current 63 A				
1-phase straight grey	0.385	Z-SV-16/1P-1TE	264912	25
1-phase straight blue	0.385	Z-SV-16/N-1TE	264913	25
1-phase crosswise grey	0.385	Z-SV-16/1P-1TE/F	269523	25
1-phase crosswise blue	0.385	Z-SV-16/N-1TE/F	269524	25
2-phases	0.941	Z-SV-16/2P-2TE	264923	10
3-phases (for PLN.)	1.326	Z-SV-16/2P+2N-2TE	264914	7
3-phases	1.422	Z-SV-16/3P-3TE	264925	10
4-phases	2.177	Z-SV-16/3P+N-4TE	264928	7
4-phases (for PLN.)	1.807	Z-SV-16/3P+3N-3TE	264915	7

Description	Type Designation	Article No.	Units per package
Accessories			
End Caps, Z-V-AK/			
2+3-phases	Z-V-AK/2+3P	264930	10 / 600
4-phases	Z-V-AK/4P	264931	10 / 600

WA_SG10602



Extension Terminal 6 - 25 mm², Z-EK/25

• for busbar type Z-SV

wa_sg02512

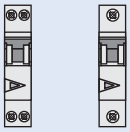
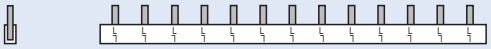
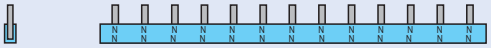
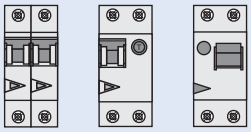
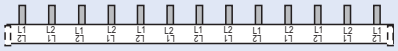
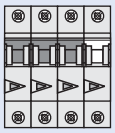
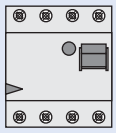
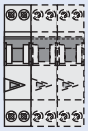
long, straight	Z-EK/25	264935	10 / 600
short, straight	Z-EK/25/K	269525	10 / 600
long, crosswise	Z-EK/25/QL	264937	10 / 600
short, crosswise	Z-EK/25/Q	264936	10 / 600

Busbar Tag Shrouds ZV-BS-G

SG05705

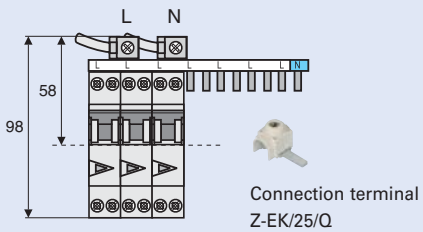
	ZV-BS-G	104903	10 / 600

Description of the Busbar Block (Pin) Z-SV

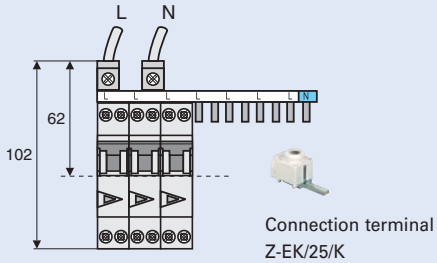
Devices to busbar	Pcs. of the devices	End caps	Type
1-phase + 2-phases			
	x13 x56		Z-SV-10/1P-F/13 Z-SV-16/1P-1TE/F
	x13 x56		Z-SV-10/N-F/13 Z-SV-16/N-1TE/F
	x13 x56		Z-SV-10/1P-1TE/13 Z-SV-16/1P-1TE
	x13 x56		Z-SV-10/N-1TE/13 Z-SV-16/N-1TE
2-phases			
	x6 x28	Z-V-AK/2+3P 	Z-SV-10/2P-2TE/13 Z-SV-16/2P-2TE
3-phases			
	x56	Z-V-AK/2+3P 	Z-SV-16/2P+2N-2TE
	x4 x19	Z-V-AK/2+3P 	Z-SV-10/3P-3TE/13 Z-SV-16/3P-3TE
4-phases			
 	x3 x14	Z-V-AK/4P 	Z-SV-10/3P+N-4TE/12 Z-SV-16/3P+N-4TE
	x13 x56	Z-V-AK/2+3P 	Z-SV-10/3P+3N-3TE/13 Z-SV-16/3P+3N-3TE

Example

Z-SV-10/1P-F/13, Z-SV-16/1P-1TE/F
Z-SV-10/N-F/13, Z-SV-16/N-1TE/F

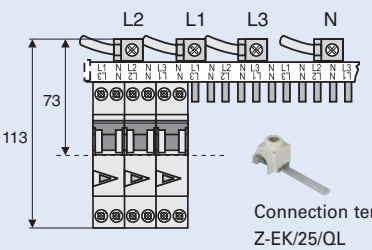


Connection terminal
Z-EK/25/Q

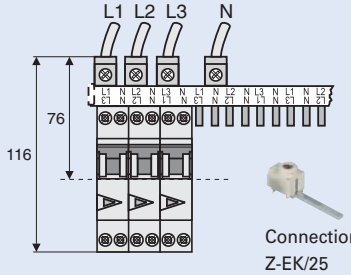


Connection terminal
Z-EK/25/K

Z-SV-.. 2-phasig bis 4-phasig



Connection terminal
Z-EK/25/QL



Connection terminal
Z-EK/25

Wa_sg02902

Euro-Vario-Busbar (Fork) EVG

for MCB, RCBO, RCCB

- No end caps necessary
- Do not cut!

10 mm²

- Rated current 63 A

Phases	MU	Cu-factor	Type Designation	Article No.	Units per package
1-phase	2	0.015	EVG-1PHAS/2MODUL	215646	40 / 800
1-phase	6	0.039	EVG-1PHAS/6MODUL	215638	40 / 800
1-phase	12	0.075	EVG-1PHAS/12MODUL	215637	40 / 400
2-phases	4	0.051	EVG-2PHAS/4MODUL	268220	20 / 400
2-phases	6	0.079	EVG-2PHAS/6MODUL	215642	20 / 400
2-phases	12	0.150	EVG-2PHAS/12MODUL	215641	20 / 200
3-phases	6	0.086	EVG-3PHAS/6MODUL	215640	20 / 400
3-phases	9	0.128	EVG-3PHAS/9MODUL	215645	20 / 200
3-phases	12	0.168	EVG-3PHAS/12MODUL	215639	20 / 200
3-phases	16	0.230	EVG-3PHAS/16MODUL	285381	20
3-phases	20	0.310	EVG-3PHAS/20MODUL	285383	20 / 180
4-phases	16	0.320	EVG-3P+3N/16MODUL	105215	20
4-phases	18	0.350	EVG-3P+3N/18MODUL	274161	20
4-phases	8	0.219	EVG-4PHAS/8MODUL	215644	10 / 100
4-phases	12	0.324	EVG-4PHAS/12MODUL	215643	10 / 100

for 2-pole Combined RCD/MCB Device with a width of 3MU

1-phase	2-5	0.045	EVG-1PHAS/N/2-5MODUL/FILS	285384	40 / 800

for combination RCD/MCBs with RCD 4-pole

3-phases	4+5	0.138	EVG-3PHAS/N/5MODUL/LS	215659	20 / 200
3-phases	4+8	0.188	EVG-3PHAS/N/8MODUL/LS	215660	20 / 200

Wa_sg01602

for applications with Auxiliary Switch

1-phase	2.5	0.025	EVG-1PHAS/2MODUL/HI	215655	40 / 200
1-phase	13	0.096	EVG-1PHAS/9MODUL/HI	215656	40
2-phases	4.5	0.053	EVG-2PHAS/4MODUL/HI	219573	20 / 400
2-phases	12	0.160	EVG-2PHAS/10MODUL/HI	215657	20
3-phases	6.5	0.100	EVG-3PHAS/6MODUL/HI	216411	20 / 200
3-phases	13.5	0.200	EVG-3PHAS/12MODUL/HI	215658	20

WA_SG02902

16 mm²

- Rated current 80 A

1-phase	2	0.023	EVG-16/1PHAS/2MODUL	291464	40 / 800
1-phase	6	0.059	EVG-16/1PHAS/6MODUL	291465	40 / 800
1-phase	12	0.113	EVG-16/1PHAS/12MODUL	291466	40 / 400
2-phases	4	0.080	EVG-16/2PHAS/4MODUL	291467	20 / 400
2-phases	6	0.120	EVG-16/2PHAS/6MODUL	291468	20 / 400
2-phases	12	0.225	EVG-16/2PHAS/12MODUL	291469	20 / 200
3-phases	6	0.112	EVG-16/3PHAS/6MODUL	291470	20 / 400
3-phases	9	0.163	EVG-16/3PHAS/9MODUL	291471	20 / 200
3-phases	12	0.218	EVG-16/3PHAS/12MODUL	291472	20 / 200
3-phases	16	0.300	EVG-16/3PHAS/16MODUL	291473	20 / 80
3-phases	20	0.363	EVG-16/3PHAS/20MODUL	291474	10 / 100
4-phases	8	0.200	EVG-16/4PHAS/8MODUL	291475	10 / 100
4-phases	12	0.284	EVG-16/4PHAS/12MODUL	291476	10 / 100

for 2-pole Combined RCD/MCB Device with a width of 3MU

4-phases	18	0.260	EVG-16/4PHAS/L-N-X/6PC	116880	10
4-phases	24	0.360	EVG-16/4PHAS/L-N-X/8PC	116881	10

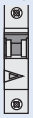
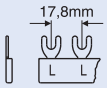
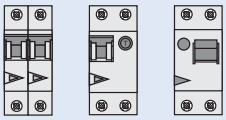
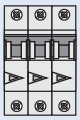
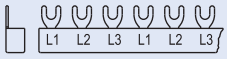
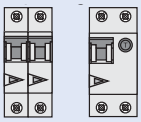
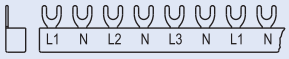
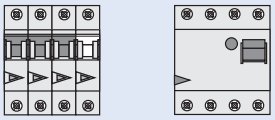
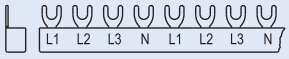
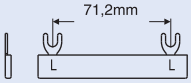
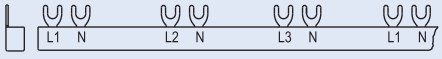
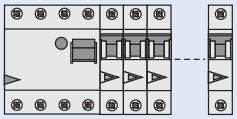
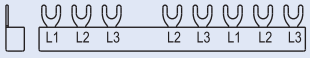
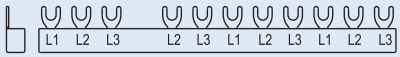
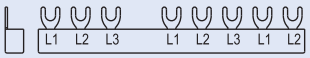
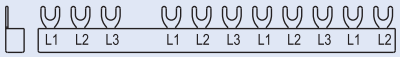
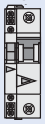
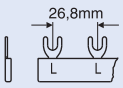
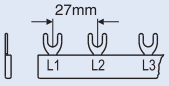
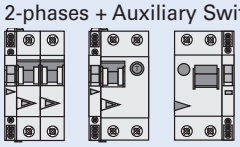
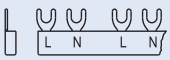
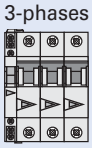
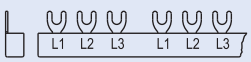
for combination RCD/MCBs with RCD 4-pole

3-phases	4+5	0.179	EVG-16/3PHAS/N/5MODUL/LS	291477	20 / 200
3-phases	4+8	0.244	EVG-16/3PHAS/N/8MODUL/LS	291478	20 / 200

WA_SG01602

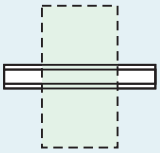
Phases	MU	Cu-factor	Type Designation	Article No.	Units per package
for applications with Auxiliary Switch					
1-phase	2.5	0.038	EVG-16/1PHAS/2MODUL/HI	291479	40 / 800
1-phase	8.5	0.105	EVG-16/1PHAS/6MODUL/HI	291480	40 / 400
1-phase	13	0.162	EVG-16/1PHAS/9MODUL/HI	291481	40 / 160
2-phases	4.5	0.080	EVG-16/2PHAS/4MODUL/HI	291482	20 / 400
2-phases	7	0.120	EVG-16/2PHAS/6MODUL/HI	291483	20 / 200
2-phases	12	0.200	EVG-16/2PHAS/10MODUL/HI	291484	20 / 200
3-phases	6.5	0.130	EVG-16/3PHAS/6MODUL/HI	291485	20 / 200
3-phases	13.5	0.260	EVG-16/3PHAS/12MODUL/HI	291486	20 / 80
3x1-phase	8.5	0.231	EVG-16/3x1PHAS/6MODUL/HI	291487	20 / 200
3x1-phase	11.5	0.300	EVG-16/3x1PHAS/8MODUL/HI	291488	20 / 200
3x1-phase	13	0.344	EVG-16/3x1PHAS/9MODUL/HI	291489	20 / 80

Description of the Euro-Vario-Busbar (Fork) EVG

Devices to busbar	Pieces of the devices	Type
1-phase		
	x2 x6 x12 	EVG-../1PHAS/2MODUL EVG-../1PHAS/6MODUL EVG-../1PHAS/12MODUL
2-phases		
	x2 x3 x6 	EVG-../2PHAS/4MODUL EVG-../2PHAS/6MODUL EVG-../2PHAS/12MODUL
3-phases		
	x2 x3 x4 x5 x6 	EVG-../3PHAS/6MODUL EVG-../3PHAS/9MODUL EVG-../3PHAS/12MODUL EVG-../3PHAS/16MODUL EVG-../3PHAS/20MODUL
4-phases		
	x8 x9 	EVG-3P+3N/16MODUL EVG-3P+3N/18MODUL
	x2 x3 	EVG-../4PHAS/8MODUL EVG-../4PHAS/12MODUL
For 2-pole Combined RCD/MCB Device, 1-phase		
	x2 	EVG-1PHAS/2-5MODUL/FILS
For 2-pole Combined RCD/MCB Device, 4-phases		
	x6 x8 	EVG-16/4PHAS/L-N-X/6PC EVG-16/4PHAS/L-N-X/8PC
For combination RCD/MCBs with RCD 4-pole, 3-phases		
		EVG-3PHAS/N/5MODUL/LS
		EVG-3PHAS/N/8MODUL/LS
		EVG-16/3PHAS/N/5MODUL/LS
		EVG-16/3PHAS/N/8MODUL/LS
1-phase + Auxiliary Switch		
	x2 x6 x9 	EVG-../1PHAS/2MODUL/HI EVG-16/1PHAS/6MODUL/HI EVG-../1PHAS/9MODUL/HI
	x6 x8 x9 	EVG-16/3x1PHAS/6MODUL/HI EVG-16/3x1PHAS/8MODUL/HI EVG-16/3x1PHAS/9MODUL/HI
2-phases + Auxiliary Switch		
	x2 x3 x5 	EVG-../2PHAS/4MODUL/HI EVG-16/2PHAS/6MODUL/HI EVG-../2PHAS/10MODUL/HI
3-phases + Auxiliary Switch		
	x2 x4 	EVG-../3PHAS/6MODUL/HI EVG-../3PHAS/12MODUL/HI

Fuse Devices

Mounting Application



DIN-rail

Design

C Cylindrical Switch-Disconnectors

Fuse-Disconnector (empty)

- For cylindrical fuse-links
- The visual tripping indicator indicates the tripped fuse-link
- Lead-sealable

SG00612

SG36412

Poles	Size	Type Designation	Article No.	Units per package
For industry Z-SH.				
without visual tripping indicator				
1	10x38	Z-SH/1	263876	12 / 120
1+N	10x38	Z-SH/1N	263877	12 / 120
2	10x38	Z-SH/2	263878	6 / 60
3	10x38	Z-SH/3	263879	4 / 40
3+N	10x38	Z-SH/3N	263880	4 / 40
with visual tripping indicator				
1	10x38	Z-SHL/1	263883	12 / 120
1+N	10x38	Z-SHL/1N	263884	12 / 120
2	10x38	Z-SHL/2	263885	6 / 60
3	10x38	Z-SHL/3	263886	4 / 40
3+N	10x38	Z-SHL/3N	263887	4 / 40

Fuse-Switch-Disconnector (empty) C10-SLS, VLC

- The visual tripping indicator indicates the tripped fuse-link
- Rated operational voltage 690 VAC
- For cylindrical fuse-links with operating classes gG (gL), aM
- Lead-sealable
- Supply side from top or bottom

SG27212

Number of Poles / Size		Type Designation	Article No.	Units per package
Size 10x38 C10-SLS, Rated operational current 32 A				
without Visual Tripping Indicator				
1	10x38	C10-SLS/32/1	112220	12 / 108
1+N	10x38	C10-SLS/32/1N	112221	12 / 108
2	10x38	C10-SLS/32/2	112222	6 / 54
3	10x38	C10-SLS/32/3	112223	4 / 36
3+N	10x38	C10-SLS/32/3N	112224	4 / 36
with Visual Tripping Indicator				
1	10x38	C10-SLS/32/1-L	112225	12 / 108
1+N	10x38	C10-SLS/32/1N-L	112226	12 / 108
2	10x38	C10-SLS/32/2-L	112227	6 / 54
3	10x38	C10-SLS/32/3-L	112228	4 / 36
3+N	10x38	C10-SLS/32/3N-L	112229	4 / 36

SG29112

Size 14x51 VLC14, Rated operational current 50 A				
without Visual Tripping Indicator				
1	14x51	VLC14-1P	285361	12 / 96
1+N	14x51	VLC14-1P+N	285362	6 / 48
2	14x51	VLC14-2P	285363	6 / 48
3	14x51	VLC14-3P	285364	4 / 32
3+N	14x51	VLC14-3P+N	285365	3 / 24
with Visual Tripping Indicator				
1	14x51	VLC14-1P/L	285371	12 / 96
2	14x51	VLC14-2P/L	285373	6 / 48
3	14x51	VLC14-3P/L	285374	4 / 32

SG43612

Size 22x58 VLC22, Rated operational current 100 A				
without Visual Tripping Indicator				
1	22x58	VLC22-1P	285366	3 / 105
1+N	22x58	VLC22-1P+N	285367	2 / 48
2	22x58	VLC22-2P	285368	2 / 48
3	22x58	VLC22-3P	285369	1 / 35
3+N	22x58	VLC22-3P+N	285370	1 / 24
with Visual Tripping Indicator				
1	22x58	VLC22-1P/L	285376	3 / 105
2	22x58	VLC22-2P/L	285378	2 / 48
3	22x58	VLC22-3P/L	285379	1 / 35

Accessories for C10-SLS, VLC14, VLC22

Fuse-links Z-C10/SE...
Z-C14/SE...
Z-C22/SE...
see chapter Accessories Fuse Devices

SG01010

SG20507

SG20407

Size / Rated current / Rated voltage			Type Designation	Article No.	Units per package
Fuse-Links Z-C. /SE Operating Class gG (gL)					
10x38	1 A	500 V AC	Z-C10/SE-1A/GG	112156	10 / 500
10x38	2 A	500 V AC	Z-C10/SE-2A/GG	112157	10 / 500
10x38	4 A	500 V AC	Z-C10/SE-4A/GG	112158	10 / 500
10x38	6 A	500 V AC	Z-C10/SE-6A/GG	112159	10 / 500
10x38	8 A	500 V AC	Z-C10/SE-8A/GG	112160	10 / 500
10x38	10 A	500 V AC	Z-C10/SE-10A/GG	112161	10 / 500
10x38	12 A	500 V AC	Z-C10/SE-12A/GG	112162	10 / 500
10x38	16 A	500 V AC	Z-C10/SE-16A/GG	112163	10 / 500
10x38	20 A	500 V AC	Z-C10/SE-20A/GG	112164	10 / 500
10x38	25 A	500 V AC	Z-C10/SE-25A/GG	112165	10 / 500
10x38	32 A	400 V AC	Z-C10/SE-32A/GG	112166	10 / 500
14x51	2 A	690 V AC	Z-C14/SE-2A/GG	112167	10 / 200
14x51	4 A	690 V AC	Z-C14/SE-4A/GG	112168	10 / 200
14x51	6 A	690 V AC	Z-C14/SE-6A/GG	112169	10 / 200
14x51	8 A	690 V AC	Z-C14/SE-8A/GG	112170	10 / 200
14x51	10 A	690 V AC	Z-C14/SE-10A/GG	112171	10 / 200
14x51	12 A	690 V AC	Z-C14/SE-12A/GG	112172	10 / 200
14x51	16 A	690 V AC	Z-C14/SE-16A/GG	112173	10 / 200
14x51	20 A	690 V AC	Z-C14/SE-20A/GG	112174	10 / 200
14x51	25 A	690 V AC	Z-C14/SE-25A/GG	112175	10 / 200
14x51	32 A	690 V AC	Z-C14/SE-32A/GG	112176	10 / 200
14x51	40 A	500 V AC	Z-C14/SE-40A/GG	112177	10 / 200
14x51	50 A	500 V AC	Z-C14/SE-50A/GG	112178	10 / 200
22x58	16 A	690 V AC	Z-C22/SE-16A/GG	112179	10 / 480
22x58	20 A	690 V AC	Z-C22/SE-20A/GG	112180	10 / 480
22x58	25 A	690 V AC	Z-C22/SE-25A/GG	112181	10 / 480
22x58	32 A	690 V AC	Z-C22/SE-32A/GG	112182	10 / 480
22x58	40 A	690 V AC	Z-C22/SE-40A/GG	112183	10 / 480
22x58	50 A	500 V AC	Z-C22/SE-50A/GG	112184	10 / 480
22x58	63 A	500 V AC	Z-C22/SE-63A/GG	112185	10 / 480
22x58	80 A	500 V AC	Z-C22/SE-80A/GG	112186	10 / 480
22x58	100 A	500 V AC	Z-C22/SE-100A/GG	112187	10 / 480

Measuring Instruments

wa_sg05811

wa_sg04911

Measuring Instruments

Power Meter EME

wa_sg05311

EME1P125

System	Rated Current	Type Designation	Article No.	Units per package
1N	32 A	EME1P32	167397	1
1N	32 A, MID cert.	EME1P32MID	167398	1
1N	40 A	EME1P40	167399	1
1N	40 A, MID cert.	EME1P40MID	167400	1
1N	80 A	EME1P80	167401	1
1N	80 A, MID cert.	EME1P80MID	167402	1
1N	125 A	EME1P125	167403	1
1N	125 A, MID cert.	EME1P125MID	167404	1
3N	80 A	EME3P80	167413	1
3N	80 A, MID cert.	EME3P80MID	167414	1
3N	5 A, CT	EME3PCT	167417	1
3N	5 A, CT MID cert.	EME3PCTMID	167418	1
3N	125 A	EME3P125	167415	1
3N	125 A, MID cert.	EME3P125MID	167416	1

Accessories Current Transformer

- Z-MG/WAK: maximum cable diameter 21 mm
- Z-MG/WAS: maximum busbar cross section 30 x 10 mm, 40 x 10 mm or 50 x 12 mm, maximum cable diameter 23 mm / 30 mm - according to type, see dimension diagramms

Communication modules

wa_sg00312

EMECMODB

Designation	Type Designation	Article No.	Units per package
Communication module	EMECLAN	167419	1
Communication module MBUS	EMECMBUS	167420	1
Communication module with MODBUS	EMECMODB	167421	1

Basic Devices

System	Rated Current	Type Designation	Article No.	Units per package
3N	5 A, CT S0	EME3PCTB	167405	1
3N	5 A, CT S0 MID cert.	EME3PCTBMID	167406	1
3N	63 A, S0	EME3P63B	167407	1
3N	63 A, S0 MID cert.	EME3P63BMID	167408	1
3N	63 A, MODBUS	EME3P63BMODBUS	167409	1
3N	63 A, S0 MODBUS MID cert.	EME3P63BMODBUSMID	167410	1
3N	80 A, S0 MID cert.	EME3P80BMID	167411	1
3N	80 A, S0 MODBUS MID cert.	EME3P80BMODBUSMID	167412	1

Measuring Instruments

Function/Measuring Range	Type Designation	Article No.	Units per package

Digital Ammeter and Voltmeter EM

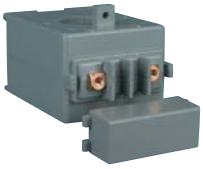
wa_sg00212

Description	Type Designation	Article No.	Units per package
Ammeter	EMA20	167423	1
Voltmeter	EMV600	167422	1

Accessories Current Transformer

- Z-MG/WAK: maximum cable diameter 21 mm
- Z-MG/WAS: maximum busbar cross section 30 x 10 mm, 40 x 10 mm or 50 x 12 mm, maximum cable diameter 23 mm / 30 mm - according to type, see dimension diagramms

SG8797



Function/Ratio/Measuring Range	Type Designation	Article No.	Units per package
Current transf. f. cable / 40/5	Z-MG/WAK-40	101619	1
Current transf. f. cable / 50/5	Z-MG/WAK-50	101620	1
Current transf. f. cable / 60/5	Z-MG/WAK-60	101621	1
Current transf. f. cable / 80/5	Z-MG/WAK-80	101622	1
Current transf. f. busbar / 100/5	Z-MG/WAS-100	101623	1
Current transf. f. busbar / 150/5	Z-MG/WAS-150	101625	1
Current transf. f. busbar / 200/5	Z-MG/WAS-200	101626	1
Current transf. f. busbar / 250/5	Z-MG/WAS-250	101627	1
Current transf. f. busbar / 300/5	Z-MG/WAS-300	101628	1
Current transf. f. busbar / 400/5	Z-MG/WAS-400	101629	1
Current transf. f. busbar / 500/5	Z-MG/WAS-500	101630	1
Current transf. f. busbar / 600/5	Z-MG/WAS-600	101631	1
Current transf. f. busbar / 800/5	Z-MG/WAS-800	101632	1
Current transf. f. busbar / 1000/5	Z-MG/WAS-1000	101624	1

Operating Hours Counter ASOHC230

wa_sg04411

Readout	Rated Voltage	Type Designation	Article No.	Units per package
5+2stellig	230V 50Hz	ASOHC230	167424	1

Pulse Counter ASPC230

wa_sg05011

Readout	Rated Voltage	Type Designation	Article No.	Units per package
7digit	230V 50Hz	ASPC230	167425	1

Other Accessories

SG29312

VT4900

Other Accessories

Protective Earth Socket Z-SD230

SG29312

Model	Type Designation	Article No.	Units per package
Standard	Z-SD230	266875	10 / 50
Child protection device a. earth pin	Z-SD230-BS	266876	10 / 50
Busbar block			
Busbar block	Z-SV-10/1P+N-SD	269526	10
End cap	Z-V-AK/2+3P	264930	10 / 600

Neutral Conductor Lead-Through Terminal, Feed Terminal Z-D

SG59511

Rated Current (A) / Model	Type Designation	Article No.	Units per package
63	Z-D63	248267	12 / 120
63 / with test socket	Z-D63/P	248268	12 / 120
100	Z-D80	248269	12 / 120

Front Plate Tripping Device Z-MFPA

SG58911

	Type Designation	Article No.	Units per package
	Z-MFPA	248302	6 / 60

Compact Enclosure KLV-TC

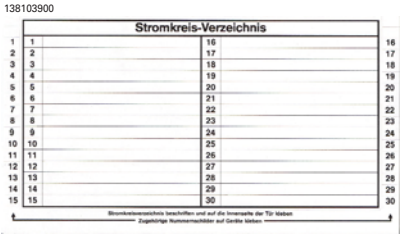
VT4900

Module units (1MU=17,5mm)	Type Designation	Article No.	Units per package
1+1	KLV-TC-2	276240	1
3+1	KLV-TC-4	276241	1
6+2	KLV-TC-8	276242	1
3+1 with Terminal Block	KLV-TC-4-TB	276243	1
6+2 with Terminal Block 1	KLV-TC-8-TB1	276244	1
6+2 with Terminal Block 2	KLV-TC-8-TB2	276245	1
Terminal Support with Terminal Block	KLV-TC-TB-4/4	276246	1
Terminal Support with Terminal Block 1	KLV-TC-TBC-4/4	276247	1
Terminal Support with Terminal Block 2	KLV-TC-TBC-4/4+4	276248	1

Circuit Description GR

- Self-adhesive table for synoptic description of circuits, to be attached inside or on a distribution box.
- Pre-printed individual adhesive labels for device designation included

138103900



Number of Circuits	Dimensions	Type Designation	Article No.	Units per package
30	210x120mm	GR-2	138103900	1
90	210x300mm	GR-3	138104100	1

Plastic Box Z-BOX

- empty, can be snapped onto DIN rail
- for spare fuse links, small spare parts

SG81411

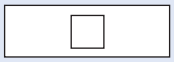
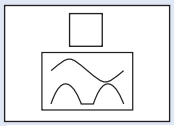
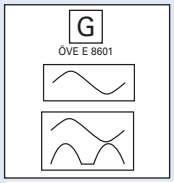
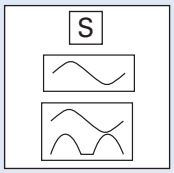
Colour / Dimensions		Type Designation	Article No.	Units per package
blue	45x54x75mm	Z-BOX/BLA	286062	12/120

Notes

Technical Data

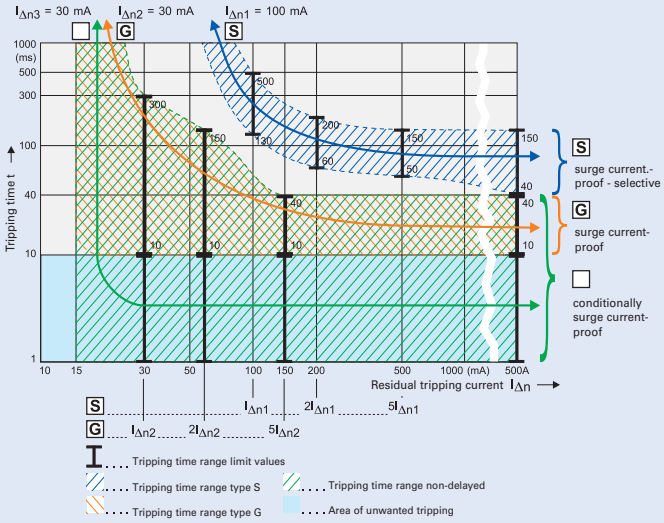
Residual Current Devices - General Data

Short description of the most important RCCB types:

Symbol	Description
	Eaton standard. Suitable for outdoor installation (distribution boxes for outdoor installation and building sites) up to -25° C.
	Conditionally surge-current proof (>250 A, 8/20 µs) for general application.
	RCCB sensitive to pulsating DC for application where residual pulsating DC may occur. Non-selective, instantaneous. Protects only against special forms of residual pulsating DC which have not been smoothed.
	RCCB of type G (min 10 ms time delay) surge current-proof up to 3 kA. For system components where protection against unwanted tripping is compulsory to avoid personal injury and damage to property (§ 12.1.6 of ÖVE/ÖNORM E 8001-1). Also for systems involving long lines and high line capacity. Some 4-pole versions are sensitive to pulsating DC.
	RCCB of type S (selective, min 40 ms time delay) surge current-proof up to 5 kA. Mainly used as main switch according to ÖVE/ÖNORM E 8001-1 § 12.1.5, as well as in combination with surge arresters.This is the only RCCB suitable for series connection with other types if the rated tripping current of the downstream RCCB does not exceed one third of the rated tripping current of the device of type S. Some 4-pole versions are sensitive to pulsating DC.

Tripping Characteristics (IEC/EN 61008)

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



§ 6.1.1 of ÖVE/ÖNORM E 8001-1/A1 deals with **additional protection** and provides essentially the following:
In circuits with **sockets up to 16 A** with fault current/residual current protection by protective earthing, protective multiple earthing or residual current devices (RCCBs), additional residual current protection devices with a rated tripping current of **0.03 A** must be installed. **This means when using RCCBs for fault current/residual current protection two RCCBs must be connected in series.**

Testing:
RCCBs with tripping time delay (Types -G and -S) may be function tested with conventional testing equipment which must be set according to the instructions for operation of the testing device. Due to reasons inherent in the measuring process, the tripping time determined in this way may be longer than expected in accordance with the specifications of the manufacturer of the measuring instrument. However, the device is ok if the result of measurement is within the time range specified by the manufacturer of the measuring instrument.

Residual Current Devices mRCM

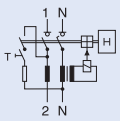
- Residual current devices (RCCB)
- Shape compatible with and suitable for standard busbar connection to other devices
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Universal tripping signal switch, also suitable for MCB, RCBO, ... can be mounted subsequently
- Auxiliary switch can be mounted subsequently
- Contact position indicator red - green
- Delayed types suitable for being used with standard fluorescent tubes with or without electronical ballast (30mA-RCCB: 30 units per phase conductor, 100mA-RCCB: 90 units per phase conductor)
  Notes: Depending of the fluorescent lamp ballast manufacturer partly more possible. Symmetrical allocation of the fluorescent lamp ballasts on all phases favourably. Shifting references of the fluorescent lamp ballast manufacturer consider.
- The device functions irrespective of the position of installation
- Tripping is line voltage-independent. Consequently, the RCCB is suitable for "fault current/residual current protection" and "additional protection" within the the meaning of the applicable installation rules
- Mains connection at either side
- The 4-pole device can also be used for 3-pole connection.
  For this purpose use terminals 1-2, 3-4, and 5-6 (+ cable link).
- The 4-pole device can also be used for 2-pole connection.
  For this purpose use terminals 5-6 and N-N.
- The test key "T" must be pressed every month. The system operator must be be informed of this obligation and his responsibility in a way that can be proven (self-adhesive RCCB-label enclosed)
- Pressing the test key "T" serves the only purpose of function testing the residual current device (RCCB). This test does not make earthing resistance measurement (R_E), or proper checking of the earth conductor condition redundant, which must be performed separately.
- **Type -A**: Protects against special forms of residual pulsating DC which have have not been smoothed
- **Type -G**: High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE/ÖNORM E 8001-1 § 12.1.6).
- **Type -G/A:** Additionally protects against special forms of residual pulsating DC which have not been smoothed.
- **Type -S**: Selective residual current device sensitive to AC, type -S. Compulsory for systems with surge arresters downstream of the RCCB (ÖVE/ÖNORM E 8001-1 § 12.1.5).
- **Type -S/A:** Additionally protects against special forms of residual pulsating pulsating DC which have not been smoothed.

Accessories:

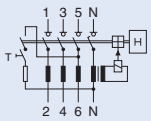
Auxiliary switch for subsequent installation to the left	Z-HK	248432
Tripping signal contact for subsequent installation to the right	Z-NHK	248434
Compact enclosure	KLV-TC-2	276240
	KLV-TC-4	276241
Sealing cover set	Z-RC/AK-2TE	285385
	Z-RC/AK-4TE	101062
Switching interlock	IS/SPE-1TE	101911

Connection diagrams

2-pole



4-pole



Technical Data

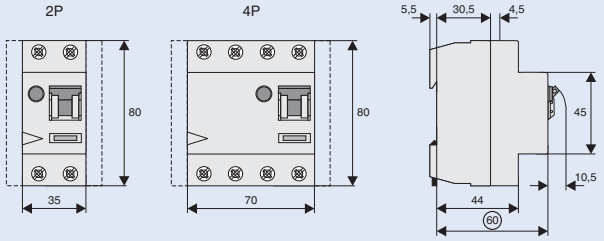
Electrical

Design according to	IEC/EN 61008 Type G acc. to ÖVE E 8601
Current test marks as printed onto the device	
Tripping	instantaneous
Type G	10 ms delay
Type S	40 ms delay - with selective disconnecting function
Rated voltage U_n	230/400 V, 50 Hz
Rated tripping current $I_{\Delta n}$	10, 30, 100, 300, 500 mA
Sensitivity	AC and pulsating DC
Rated insulation voltage U_i	440 V
Rated impulse withstand voltage U_{imp}	4 kV
Rated short circuit strength I_{nc}	10 kA
Maximum back-up fuse	Short circuit
I_n = 16-63A	63 A gG/gL
I_n = 80A	80 A gG/gL
I_n = 100A	100 A gG/gL
Rated breaking capacity I_m or Rated fault breaking capacity $I_{\Delta m}$	
I_n = 16-40A	500 A
I_n = 63A	630 A
I_n = 80A	800 A
I_n = 100A	1,000 A
Voltage range of test button 2-pole	184 - 250 V~
4-pole	184 - 440 V~
Endurance	
electrical comp.	≥ 4,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles

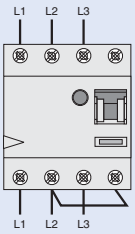
Mechanical

Frame size	45 mm
Device height	80 mm
Device width (4MU)	35 mm (2MU), 70 mm
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Deg. of prot. in moisture-proof encl.	IP54
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1.5 - 35 mm^2 single wire 2 x 16 mm^2 multi wire
Busbar thickness	0.8 - 2 mm
Tripping temperature	-25°C to +40°C
Resistance to climatic conditions	acc. to IEC/EN 61008

Dimensions (mm)



RCD mRCM in a Three-Phase AC Network without Neutral Conductor



The N-terminal must be connected by a cable link with the phase L2 (or L1), so that the test loop is supplied with current and the RCD is tested correctly.

Influence of the ambient temperature to the maximum continuous current (A)

	16A		25A		40A		63A		80A		100A	
Ambient temperature	***2p***	***4p***	***2p***	***4p***	***2p***	***4p***	***2p***	***4p***	***2p***	***4p***	***2p***	***4p***
40°	16	16	25	25	40	40	63	63	80	80	100	100
45°	14	14	21	22	37	37	59	59	76	76	95	95
50°	11	11	18	19	33	34	55	55	72	72	90	90
55°	9	9	14	16	30	31	50	50	68	68	85	85
60°	– *)	–	–	–	26	27	45	45	64	64	80	80

Annotation: It has to be ensured that the values in the table are not exceeded and the back-up fuse/thermal protection works properly

*) not applicable

Add-on Residual Current Protection Unit PBSM

- Add-on residual current unit
- Line voltage-independent tripping
- By combining this device with a top-quality miniature circuit breaker type mMC a top-quality RCBO unit (combined RCD/MCB device) is formed.
- Rated current 40 and 63 A
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the mMC.-miniature circuit breakers which can be connected
- Comrehensive range of accessories suitable for subsequent installation mMC.
- **Type -A**: Protect against special forms of residual pulsating DC which have not been smoothed.
- **Type -G**: High reliability against unwanted tripping. Compulsory for any circuit where personal injury or damage to property may occur in case of unwanted tripping (ÖVE-EN1, Part1, §12.14).
- **Type -S**: Selective residual current device, either sensitive to AC, type -S, or sensitive to pulsating DC, type -S/A, for protection against special forms of residual pulsating DC which have not been smoothed. Compulsory for systems with surge arresters downstream of the RCD (ÖVE-EN1, Part 1, §12.15).

Accessories:

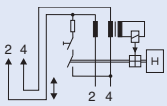
Cover cap for draw-out connection bar	included
Slotted one-way cheese head screw	included

Accessories (on mMC.):

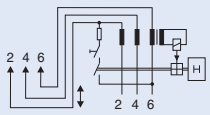
Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal contact for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291
Additional terminal 35mm^2	Z-HA-EK/35	263960
Switching interlock	IS/SPE-1TE	101911

Connection diagramms

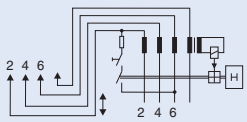
2-pole



3-pole



4-pole

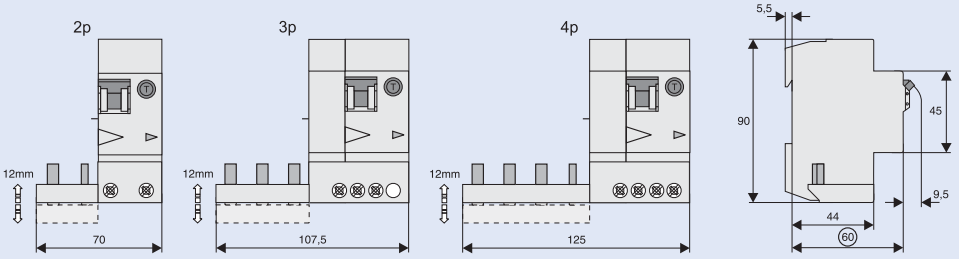


Technical Data

Electrical	
Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Tripping	instantaneous 250A (8/20µs), surge current-proof
Type G	10 ms delay 3kA (8/20µs), surge current-proof
Type S	40 ms delay 6kA - with selective disconnecting function
Rated voltage U_n	230/400 V AC
Operational voltage range	196 - 440 V
Rated frequency	50 Hz
Use at 16⅔ Hz	Recesses time between the single switchings increases to 88 s, I_n max. 63 A
Use at 400 Hz	I_n max. 40 A
Rated current I_n	≤ 40 A, ≤ 63 A
Rated tripping current $I_{\Delta n}$	30, 100, 300, 500, 1000 mA
Rated non-tripping current $I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity	AC and pulsating DC
Service short circuit breaking capacity I_{cs}	same as connected PLS. (7.5 kA)
Rated breaking capacity I_{cn}	same as connected PLS. (10 kA)
Rated fault breaking capacity $I_{\Delta m}$	6 kA (U_n = 230V) 3 kA (U_n = 400V)

Mechanical	
Frame-size	45 mm
Device height	90 mm
Device width	70 mm (2p), 107.5 mm (3p), 125 mm (4p)
Mounting	fix mounted onto PLS.
Degree of protection installed device	IP40
Fastening screw	M 2.5 (slotted one-way cheese head screw;
Screw head breaking torque	> 0.6 Nm
Upper and lower terminals	lift terminals
Terminal screws	M 5 (combined Philips/standard head screws according to DIN7962-Z2, Pozidrive)
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	
Rigid conductors	1 x (1 - 25) mm^2
Flexible conductors (with wire end sleeve)	1 x (0.75 - 16) mm^2
Busbar thickness	0.8 - 2 mm
Permitted ambient temperature range	-25°C to +40°C
Resistance to climatic conditions	acc. to IEC/EN 60068-2 (25..55°C/90..95% relative humidity)

Dimensions (mm)



Add-on Residual Current Protection Unit PBHT

- By combination with miniature circuit breaker mMCT => RCBO-Unit (MCCB)
- Add-on residual current unit (screw connection) for 80 or 125 A (2-pole and 4-pole)
- High flexibility and ease of installation thanks to variable wiring (400 mm flexible connection wires 2p = 2 units, 4p = 4 units included in the set)
- Free selection of main power supply
- Auxiliary switch 1 NO included as standard in all mMCT versions
- Permits combinations with a variety of characteristics thanks to the different rated currents and characteristics of the miniature circuit breakers mMCT which can be connected
- For trade and industry applications
- For subsequent mounting onto 2, 3, 3+N and 4-pole-miniature circuit breakers mMCT
- Toggle (serves as switch position- and tripping indicator)
- The screw connection to the mMCT-device can be unscrewed at any time. Consequently, in case of modifications of the systems to be protected, the installation can be adapted to new requirements at any time.

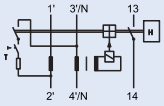
Accessories:

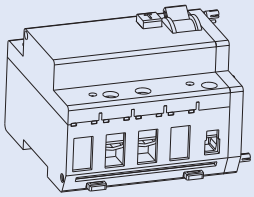
Flexible connection wires (connection to mMCT) are included in the standard set:

2-pole 80A	2 x 16mm² (400mm each)
4-pole 80A	4 x 16mm² (400mm each)
2-pole 125A	2 x 35mm² (400mm each)
4-pole 125A	4 x 35mm² (400mm each)

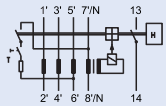
Connection diagrams

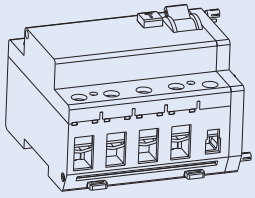
2-pole





4-pole





Technical Data

Electrical

Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Current flow paths	
Rated voltage U_e	230/400 V AC
Operational voltage range	196-440 V
Rated frequency	50 Hz
Rated current I_n	80 A, 125 A
Rated tripping current $I_{\Delta n}$	30, 300, 500, 1000 mA
Rated non-tripping current $I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity	AC and pulsating DC
Tripping characteristic	instantaneous 250A (8/20µs), surge current-proof;
Type S	40 ms delay 6kA (8/20µs) with selective disconnecting function, surge current-proof
Rated service short circuit breaking capacity I_{cn}	same as connected mMCT
Rated ultimate circuit breaking capacity I_{cu}	same as connected mMCT
Rated fault short circuit breaking capacity $I_{\Delta/n}$	= I_{cu}
Rated peak withstand voltage U_{imp}	4 kV (1.2/50µs)
Endurance mechanical comp.	
PBHT-80	>10000
PBHT-125	>8000
Endurance electrical comp.	
PBHT-80	>1500
PBHT-125	>1000

Auxiliary Contact

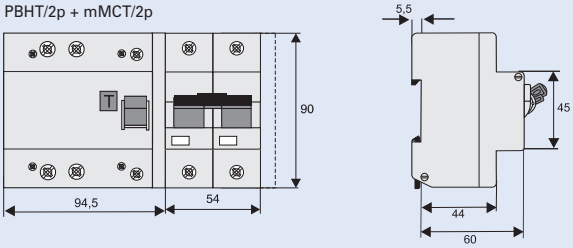
Utilisation category AC15	
Rated voltage U_e	250 V AC
Rated operational current I_e	16 A AC

Mechanical

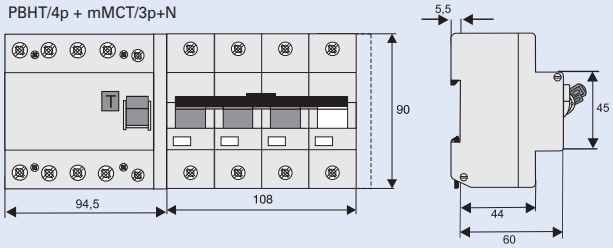
Frame size	45 mm
Device height	90 mm
Device width	95 mm (5.5MU)
Depth of central body	60 mm
Mounting	screwed onto mMCT 2-, 3-, 4-pole; PBHT-ASA
Upper and lower terminals	lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	
Main conductor	2.5 - 50 mm²
Auxiliary switch	1 - 25 mm²
Degree of protection, built-in	IP40
Permissible ambient temperature range	-25°C to +40°C
Resistance to climatic conditions	25-55°C/90-95% relative humidity acc. to IEC 60068-2

Dimensions (mm)

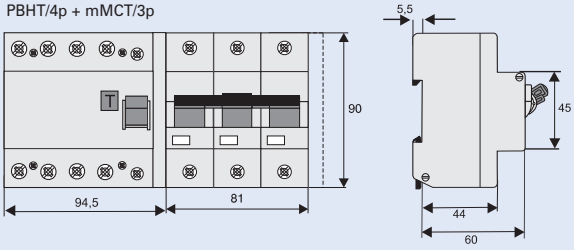
PBHT/2p + mMCT/2p



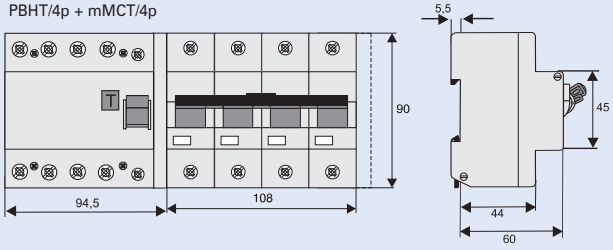
PBHT/4p + mMCT/3p+N



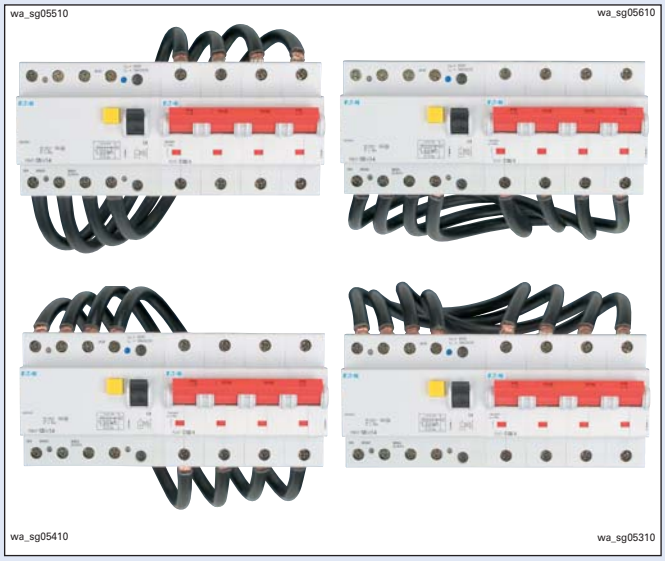
PBHT/4p + mMCT/3p



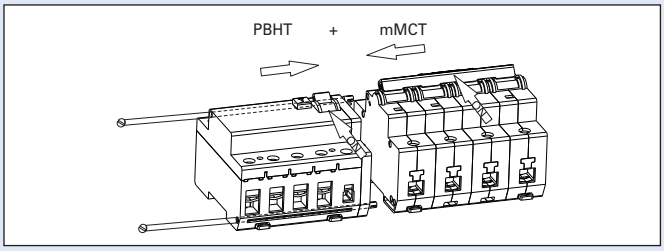
PBHT/4p + mMCT/4p



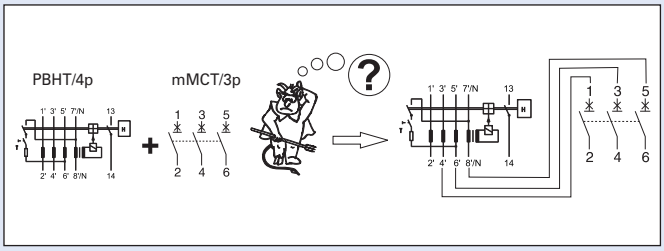
Wiring options



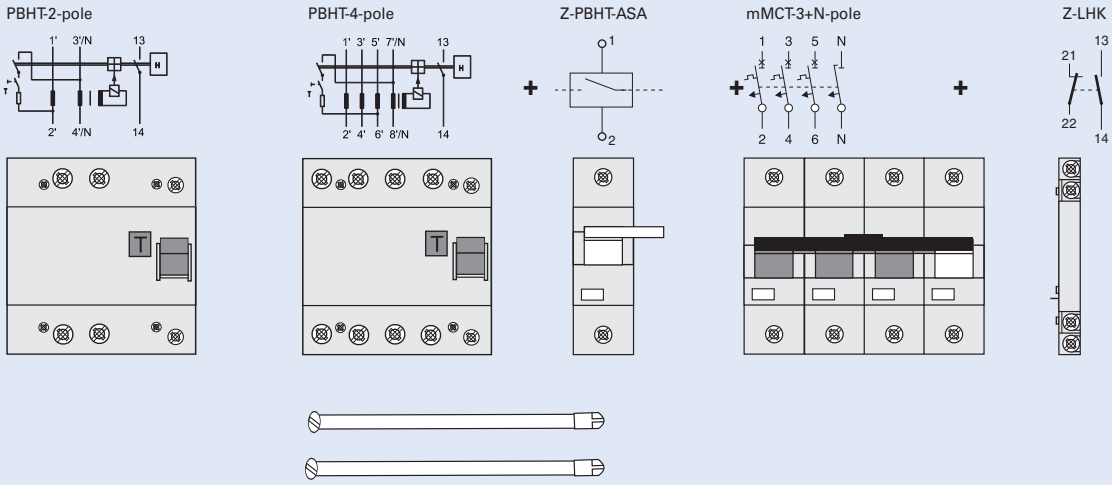
Mounting PBHT + mMCT



Connection PBHT/4p + mMCT/3p



Mounting arrangement residual current protection unit - shunt trip release - miniature circuit breaker - auxiliary contact

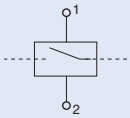


Accessories for PBHT

Shunt Trip Release Z-BHASA

- Can be mounted subsequently
- Contact position indicator red - green
- Marking labels can be fitted
- Wide operational voltage range
- Sufficient power of extra low voltage source must be ensured
  PBHT-ASA/24: min. 90 VA
- Screws for mounting included PBHT => BHASA => mMCT

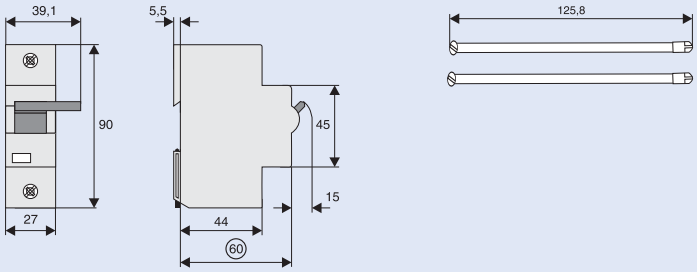
Connection diagram



Technical Data

	Z-BHASA/24	Z-BHASA/230
Electrical		
Minimum pulse duration	15 ms	10 ms
Internal resistance	2 Ω	130 Ω
Duty	100%	100%
Tripping time	< 20 ms	< 20 ms
Peak withstand voltage (1.2/50µs)	2 kV	2 kV
Endurance	>4,000 operating cycles	>4,000 operating cycles
AC voltage range:		
Responding limit	8 V	70 V
Operational voltage range	12-60 V	110-415 V
Maximum current consumption during switch-on	1.4-7 A	3.4 A (at 230V)
Current flow time at max. current consumption	4.0 ms	4.5 ms
DC voltage range:		
Responding limit	11 V	90 V
Operational voltage range	12-60 V	110-230 V
Maximum current consumption during switch-on	1.7 A typ.	1.7 A typ.
Current flow time at max. current consumption	2 ms	4 ms
Mechanical		
Frame size	45 mm	45 mm
Device height	90 mm	90 mm
Device width	27 mm	27 mm
Mounting	quick fastening on DIN rail IEC/EN 60715	
Degree of protection, built-in	IP40	IP40
Upper and lower terminal screws	lift terminals	lift terminals
Terminal capacity	2.5-30 mm^2	2.5-30 mm^2
Fastening torque of terminal screws	4 Nm	4 Nm

Dimensions (mm)



Combined RCD/MCB Devices mRBM, 1+N-pole

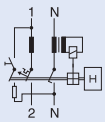
- Combined RCD/MCB device
- Line voltage-independent tripping
- Compatible with standard busbar
- Twin-purpose terminal (lift/open-mouthed) above and below
- Busbar positioning optionally above or below
- Free terminal space despite installed busbar
- Guide for secure terminal connection
- Switching toggle (MCB component) in colour designating the rated current
- Contact position indicator red - green
- Comprehensive range of accessories suitable for subsequent installation
- **Type -A**: Protects against special forms of residual pulsating DC which have have not been smoothed
- **Typ -G:** 10 ms time delay in order to avoid unwanted tripping (e.g. during thunderstorms).
  Compulsory in Austria for any circuit where personal injury or damage to property may occur in case of unwanted tripping (§12.1.6 ÖVE/ÖNORM E 8001-1).

Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal switch for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Tripping module	Z-KAM	248294
Terminal cover cap	KLV-TC-2	276240
Additional terminal 35mm^2	Z-HA-EK/35	263960
Switching interlock	IS/SPE-1TE	101911

Connection diagram

1+N-pole



Technical Data

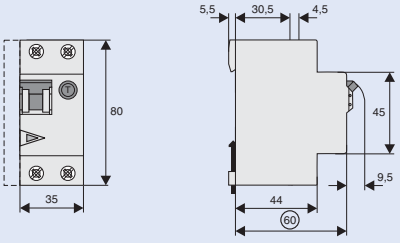
Electrical

Design according to	IEC/EN 61009
Current test marks as printed onto the device	
Tripping	
line voltage-independent	instantaneous 250A (8/20µs) surge current-proof;
Type G	10 ms delay 3kA (8/20µs) surge current-proof
Rated voltage U_e	230 V; 50 Hz
Operational voltage range	196-253 V
Rated tripping current $I_{\Delta n}$	10, 30, 100, 300 mA
Rated non-tripping current $I_{\Delta no}$	0.5 $I_{\Delta n}$
Sensitivity	AC and pulsating DC
Selectivity class	3
Rated breaking capacity	10 kA
Rated current	2 - 40 A
Rated peak withstand voltage U_{imp}	4 kV (1.2/50µs)
Characteristic	B, C
Maximum back-up fuse (short circuit)	100 A gL (>10 kA)
Endurance electrical comp.	≥ 4,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles

Mechanical

Frame size	45 mm
Device height	80 mm
Device width	35 mm (2MU)
Mounting	3-position DIN rail clip, permits removal from existing busbar system
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1 - 25 mm^2
Busbar thickness	0.8 - 2 mm
Degree of protection switch	IP20
Degree of protection, built-in	IP40
Tripping temperature	-25°C to +40°C
Resistance to climatic conditions	acc. to IEC/EN 61009

Dimensions (mm)

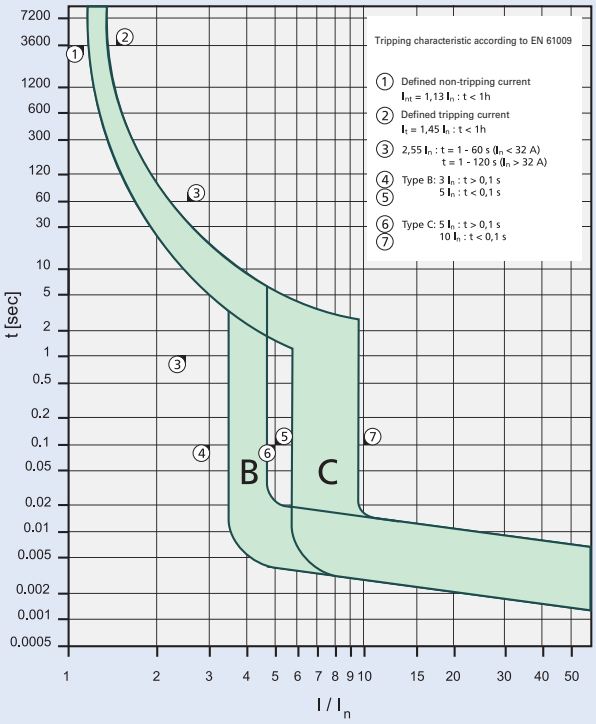


Load Capacity mRBM-../1N/

Effect of ambient temperature (MCB component)

	Ambient temperature **T [°C]**								
I_n [A]	**-25**	**-20**	**-10**	**0**	**10**	**20**	**30**	**35**	**40**
2	2.5	2.4	2.3	2.2	2.2	2.1	2.0	2.0	1.9
4	4.9	4.8	4.7	4.5	4.3	4.2	4.0	3.9	3.9
5	6.2	6.0	5.8	5.6	5.4	5.2	5.0	4.9	4.8
6	7.4	7.2	7.0	6.7	6.5	6.3	6.0	5.9	5.8
8	9.9	9.6	9.3	9.0	8.7	8.4	8.0	7.9	7.7
10	12	12	12	11	11	10	10	9.9	9.7
12	15	14	14	13	13	13	12	12	12
13	16	16	15	15	14	14	13	13	13
15	19	18	17	17	16	16	15	15	15
16	20	19	19	18	17	17	16	16	15
20	25	24	23	22	22	21	20	20	19
25	31	30	29	28	27	26	25	25	24
32	40	38	37	36	35	33	32	32	31
40	49	48	47	45	43	42	40	39	39

Tripping Characteristic mRBM-../1N/, Characteristics B a. C



Short Circuit Selectivity mRBM-../1N/ towards DII-DIV fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices mRBM../1N/ 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***)*

mRBM	**DII-DIV gL/gG**								
I_n [A]	**10**	**16**	**20**	**25**	**35**	**50**	**63**	**80**	**100**
2	<0.5[1]	<0.5[1]	2.2	8.5	10.0[2]	10.0[2]	10.0[2]	10.0[2]	10.0[2]
4	<0.5[1]	<0.5[1]	0.7	1.2	3.7	10.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	0.7	1.0	2.9	6.9	10.0[2]	10.0[2]	10.0[2]
8		<0.5[1]	0.6	1.0	2.4	5.1	10.0[2]	10.0[2]	10.0[2]
10			0.6	0.9	1.9	3.3	7.0	10.0[2]	10.0[2]
13			0.5	0.7	1.6	2.8	5.7	9.0	10.0[2]
16				0.7	1.4	2.4	4.4	7.0	10.0[2]
20					1.3	2.2	4.0	6.3	10.0[2]
25					1.3	2.1	3.8	5.8	10.0[2]
32						2.0	3.5	5.2	9.5
40							3.1	4.5	8.1

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

mRBM	**DII-DIV gL/gG**								
I_n [A]	**10**	**16**	**20**	**25**	**35**	**50**	**63**	**80**	**100**
2	<0.5[1]	<0.5[1]	1.7	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	1.3	4.2	8.5	10.0[2]	10.0[2]	10.0[2]
5	<0.5[1]	<0.5[1]	0.6	1.1	3.6	7.0	10.0[2]	10.0[2]	10.0[2]
6		<0.5[1]	0.6	1.0	2.9	5.8	10.0[2]	10.0[2]	10.0[2]
8		<0.5[1]	<0.5	0.9	2.5	4.8	10.0[2]	10.0[2]	10.0[2]
10			<0.5	0.7	1.5	2.6	5.3	9.0	10.0[2]
13					1.4	2.3	4.6	7.6	10.0[2]
16					1.2	1.8	3.4	5.5	10.0[2]
20					1.2	1.7	3.1	5.0	10.0[2]
25						1.6	2.9	4.6	10.0[2]
32							2.3	3.4	7.7
40								2.9	6.2

[1] Selectivity limit current I_s under 0.5 kA

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

Darker areas: no selectivity

Short Circuit Selectivity mRBM-../1N/ towards D01-D03 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices mRBM../1N/ 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***)*

mRBM	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
2	<0.5[1)]	0.7	1.6	3.3	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
4	<0.5[1)]	<0.5[1)]	0.6	0.9	2.9	10.0	10.0[2)]	10.0[2)]	10.0[2)]
6		<0.5[1)]	0.5	0.8	2.4	8.2	10.0[2)]	10.0[2)]	10.0[2)]
8			0.6	0.8	2.0	6.0	10.0[2)]	10.0[2)]	10.0[2)]
10			0.5	0.8	1.6	3.7	6.0	10.0[2)]	10.0[2)]
13			0.6	0.7	1.4	3.0	4.7	9.0	10.0[2)]
16				0.6	1.2	2.6	3.9	7.0	10.0[2)]
20					1.2	2.5	3.6	6.2	10.0[2)]
25					1.2	2.3	3.3	5.7	10.0[2)]
32						2.3	3.1	5.1	10.0[2)]
40							2.8	4.5	9.5

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

mRBM	D01-D03 gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
2	<0.5[1)]	0.5	0.5	2.4	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
4	<0.5[1)]	<0.5[1)]	<0.5[1)]	0.9	3.4	9.5	10.0[2)]	10.0[2)]	10.0[2)]
5	<0.5[1)]	<0.5[1)]	<0.5[1)]	0.9	2.9	8.0	10.0[2)]	10.0[2)]	10.0[2)]
6		<0.5[1)]	<0.5[1)]	0.8	2.3	6.5	10.0[2)]	10.0[2)]	10.0[2)]
8			<0.5	0.7	2.1	5.5	9.5	10.0[2)]	10.0[2)]
10			<0.5	0.6	1.3	2.9	4.5	8.9	10.0[2)]
13					1.2	2.5	3.9	7.6	10.0[2)]
16					1.0	2.1	3.0	5.5	10.0[2)]
20					1.0	2.0	2.7	5.0	10.0[2)]
25						1.9	2.6	4.5	10.0[2)]
32							2.1	3.4	10.0[2)]
40								3.0	8.7

Short Circuit Selectivity mRBM-../1N/ towards NH-00 fuse link

In case of short circuit, there is selectivity between the combined RCD/MCB devices mRBM../1N/ 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***)*

mRBM	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5[1)]	1.1	3.6	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)]
4	<0.5[1)]	0.5	0.9	1.6	2.8	4.4	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
6	<0.5[1)]	0.5	0.8	1.4	2.2	3.3	7.0	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
8	<0.5[1)]	<0.5[1)]	0.7	1.0	1.9	2.8	5.3	7.8	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
10		<0.5[1)]	0.7	0.9	1.5	2.1	3.4	4.3	7.3	10.0[2)]	10.0[2)]	10.0[2)]
13		<0.5[1)]	0.6	0.8	1.4	1.8	2.8	3.6	5.7	10.0[2)]	10.0[2)]	10.0[2)]
16			0.6	0.7	1.2	1.5	2.4	3.0	4.5	10.0[2)]	10.0[2)]	10.0[2)]
20				0.7	1.1	1.5	2.2	2.8	4.2	9.2	10.0[2)]	10.0[2)]
25				0.7	1.1	1.4	2.1	2.6	4.0	8.2	10.0[2)]	10.0[2)]
32					1.0	1.4	2.0	2.5	3.7	7.1	10.0[2)]	10.0[2)]
40							2.3	3.4	6.2	8.8	10.0[2)]	

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

mRBM	NH-00 gL/gG											
I_n [A]	16	20	25	32	35	40	50	63	80	100	125	160
2	<0.5[1)]	0.6	2.6	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)]
4	<0.5[1)]	<0.5[1)]	0.9	1.8	3.2	4.8	8.7	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
5	<0.5[1)]	<0.5[1)]	0.8	1.6	2.7	4.1	7.2	9.7	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
6	<0.5[1)]	<0.5[1)]	0.7	1.3	2.2	3.3	5.9	8.0	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
8	<0.5[1)]	<0.5[1)]	0.6	1.1	1.9	2.8	5.0	6.7	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
10		0.5	0.8	1.2	1.7	2.7	3.4	5.5	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
13				1.1	1.5	2.3	2.9	4.7	10.0[2)]	10.0[2)]	10.0[2)]	10.0[2)]
16				1.0	1.3	1.8	2.3	3.7	8.7	10.0[2)]	10.0[2)]	10.0[2)]
20				0.9	1.1	1.7	2.2	3.4	8.0	10.0[2)]	10.0[2)]	10.0[2)]
25						1.6	2.1	3.2	7.2	10.0[2)]	10.0[2)]	10.0[2)]
32							1.7	2.6	5.3	9.0	10.0[2)]	
40								2.4	4.5	7.5	10.0	

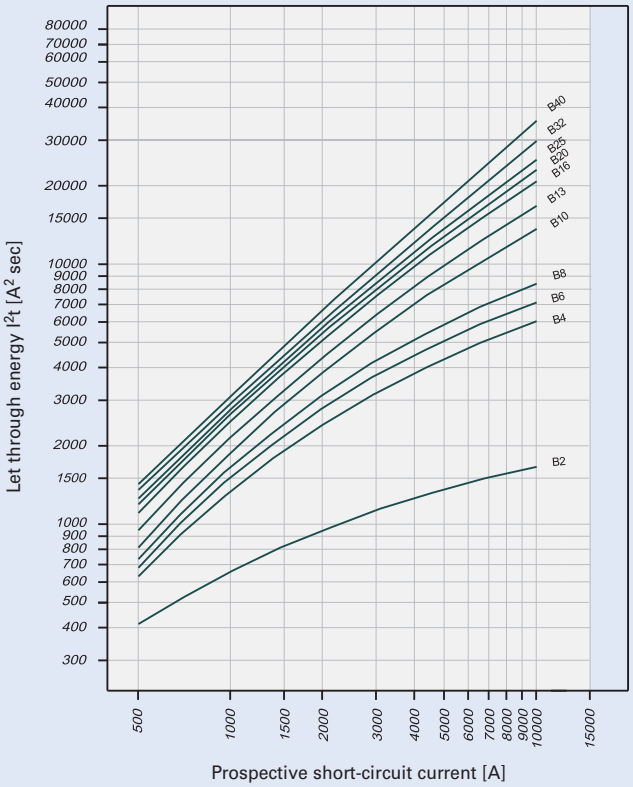
[1)] Selectivity limit current I_s under 0.5 kA

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

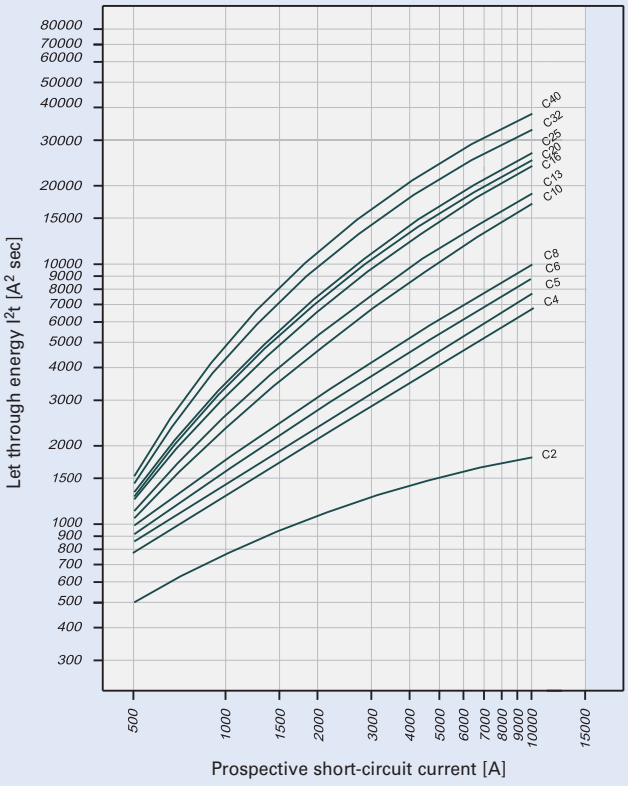
Darker areas: no selectivity

Let-through Energy mRBM-../1N/

Let-through energy mRBM, characteristic B, 1+N-pole



Let-through energy mRBM, characteristic C, 1+N-pole



Electronic Combined RCD/MCB Devices eRBM-ME, 1+N-pole, 1 Module Unit

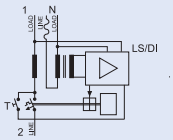
- Electronic residual current device / miniature circuit breaker combination in only 1MU
- Tripping line voltage dependent
- Contact position indicator red - green
- Can be sealed with leads in the on and off position
- Colour coded switching toggle (designating the rated current)
- Permanently connected neutral conductor (950 mm long, black)
- Special application in British-Standard-Distibution Boxes
- Can be connected to standard busbar (at the lower side)
- Comprehensive range of accessories suitable for subsequent installation

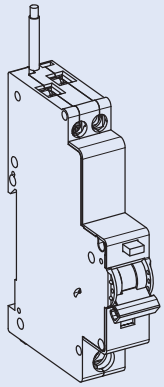
Accessories:

Auxiliary switch for subsequent installation	Z-AHK	248433
Tripping signal switch for subsequent installation	Z-NHK	248434
Shunt trip release	Z-ASA/..	248286, 248287
Tripping module	Z-KAM	248294

Connection diagram

1+N-pole



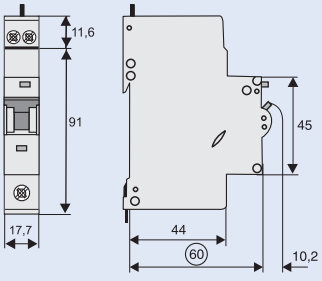


Technical Data

Electrical	
Design according to	IEC 61009
Current test marks as printed onto the device	
Number of poles	1+N-pole Pole switched, N led through (solid neutral)
Rated voltage U_n	240 VAC
Rated frequency	50/60 Hz
Rated current I_n	6 - 45 A
Rated tripping current $I_{\Delta n}$	10, 30, 100, 300 mA
Sensitivity	AC
Tripping Characteristic RCD component:	
Tripping line voltage-dependent	instantaneous
Peak withstand current	250A (8/20µs)
Rated non-tripping current $I_{\Delta no}$	0.5 $I_{\Delta n}$
Voltage range for protective function	184 - 264 V~
Tripping Characteristic MCB component	
Conventional non-tripping current	1.13 I_n
Conventional tripping current	1.45 I_n
Reference temperature	30°C
Characteristic	C
Rated breaking capacity	10 kA
Selectivity class	3
Maximum back-up fuse > 6 kA	100 A gL
Endurance electrical comp.	≥ 4,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles

Mechanical	
Frame size	45 mm
Device height	102.6 mm
Device width	17.7 mm (1MU)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Upper terminals	lift terminals
Lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1 - 25 mm^2
Busbar thickness below	0.8 - 2 mm
Degree of protection, built-in	IP40
Perm. ambient temperature range	-25°C to +40°C
Resistance to climatic conditions	25-55°C/90-95% relative humidity acc. to IEC 60068-2

Dimensions (mm)



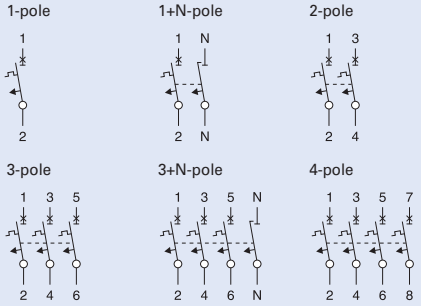
Miniature Circuit Breakers mMC.

- 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
Tripping signal contact for subsequent installation	ZP-NHK	248437
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 35mm^2	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

Connection diagrams

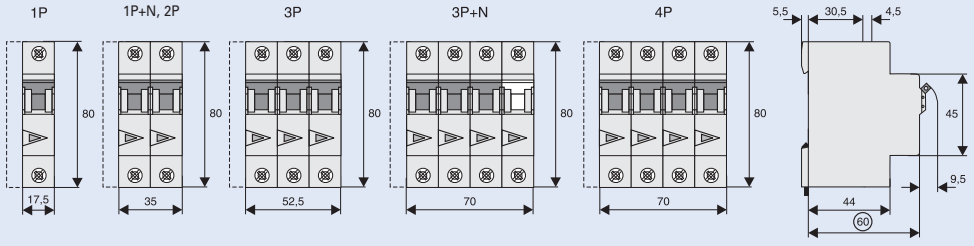


Technical Data

Electrical	
Design according to	IEC/EN 60898-1
Current test marks as printed onto the device	
Rated voltage	AC: 230/400V DC: 48V (per pole)
Rated frequency	50/60 Hz
Rated breaking capacity according to IEC/EN 60898-1	
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 (1.2/50µs)
Endurance electrical comp.	≥ 4,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles
Line voltage connection	optional (above/below)

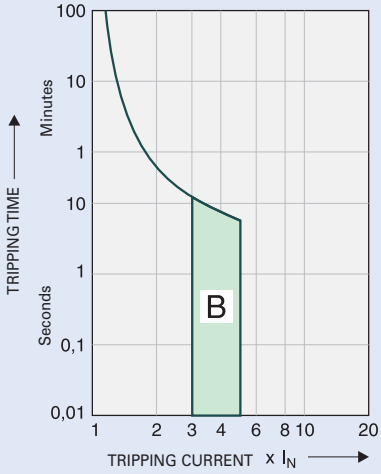
Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm per pole (1MU) 26.3 mm: device 1P+N (1.5MU)
Mounting	quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection	IP20
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1-25 mm^2
Terminal fastening torque	2-2.4 Nm
Busbar thickness	0.8 - 2 mm
Mounting	independent of position

Dimensions (mm)

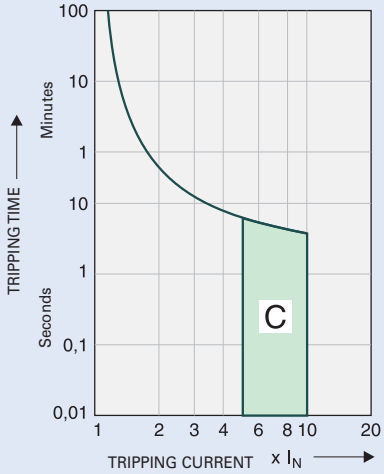


Tripping Characteristics (IEC/EN 60898-1)

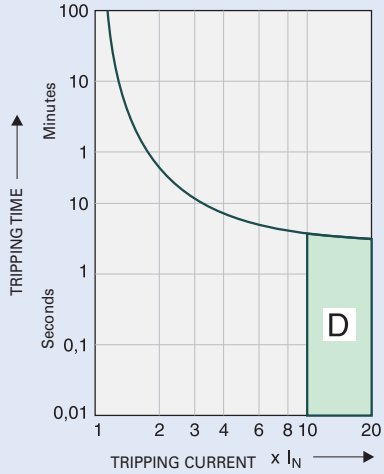
Tripping characteristic B



Tripping characteristic C



Tripping characteristic D



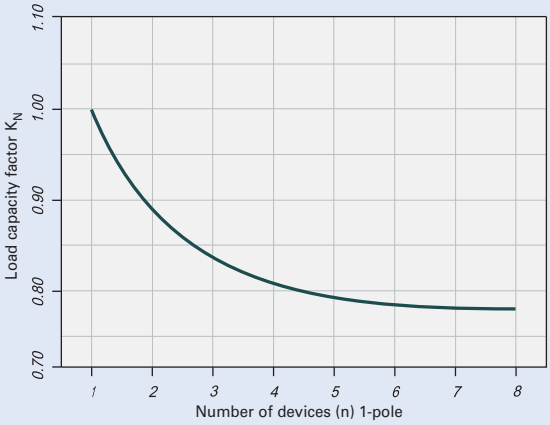
Quick-acting (B), slow (C), very slow (D)

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



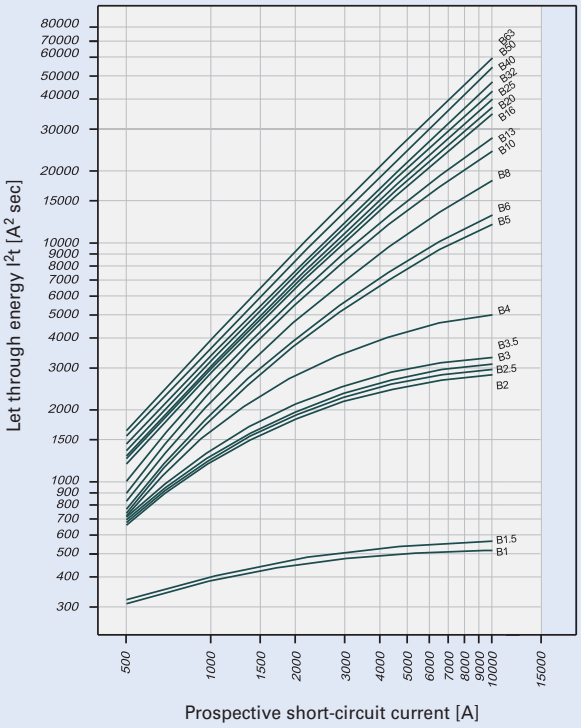
Effect of Power Frequency

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

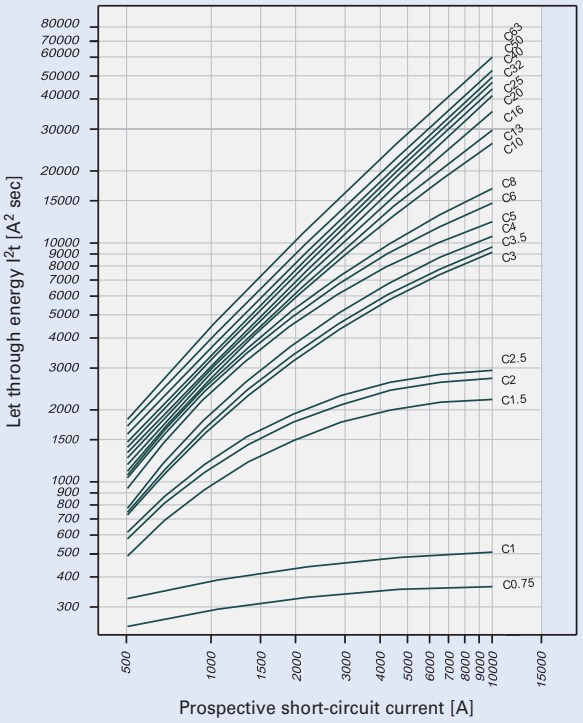
	Power frequency f [Hz]						
	$16^2/_3$	50	60	100	200	300	400
$I_{MA}(f)/I_{MA}(50Hz)$ [%]	91	100	101	106	115	134	141

Let-through Energy mMCM

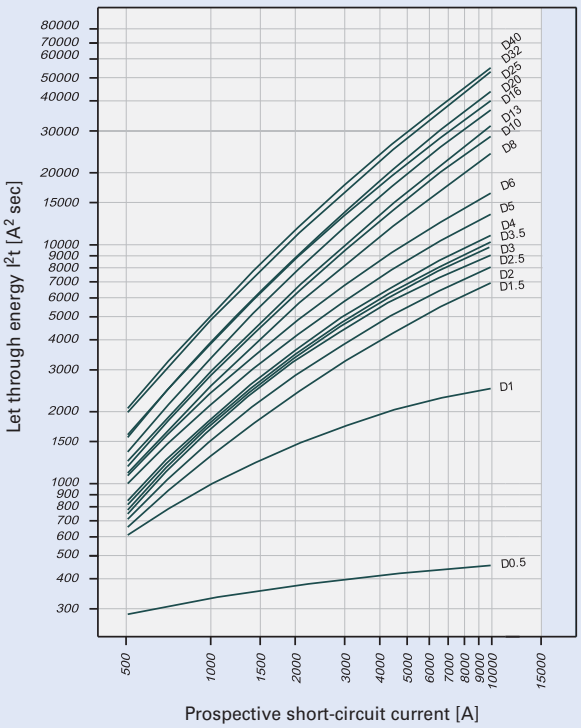
Let-through energy mMCM, characteristic B, 1-pole



Let-through energy mMCM, characteristic C, 1-pole



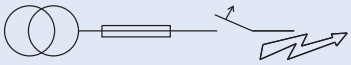
Let-through energy mMCM, characteristic D, 1-pole



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***)*

MCB	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***)*

MCB	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***)*

MCB	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

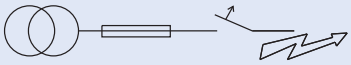
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

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***)*

MCB	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***)*

MCB	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***)*

MCB	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

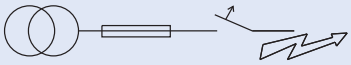
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

no selectivity

Short Circuit Selectivity mMCM towards NH-00 Fuses

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***)*

MCB	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***)*

MCB	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***)*

MCB	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

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 links **CH10x38 gG, CH14x51 gG, CH22x58 gG***)*

MCB	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

no selectivity

*Short circuit selectivity **characteristic C** towards fuse links **CH10x38 gG, CH14x51 gG, CH22x58 gG***)*

MCB	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

no selectivity

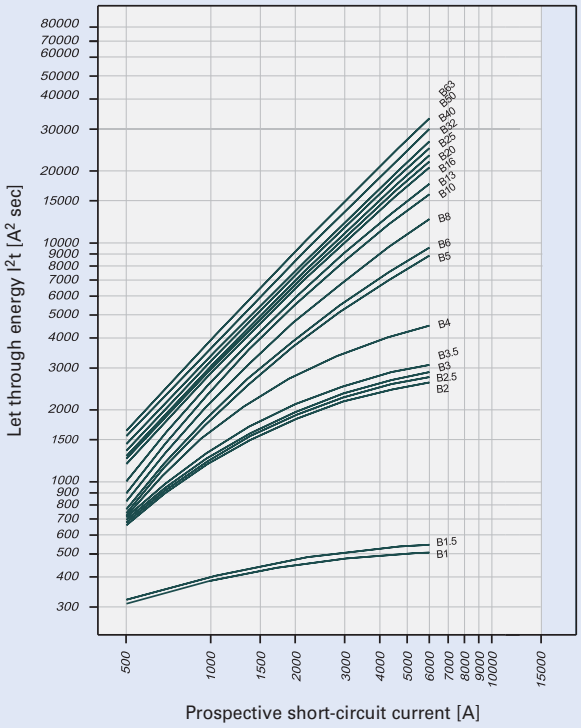
*Short circuit selectivity **characteristic D** towards fuse links **CH10x38 gG, CH14x51 gG, CH22x58 gG***)*

MCB	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

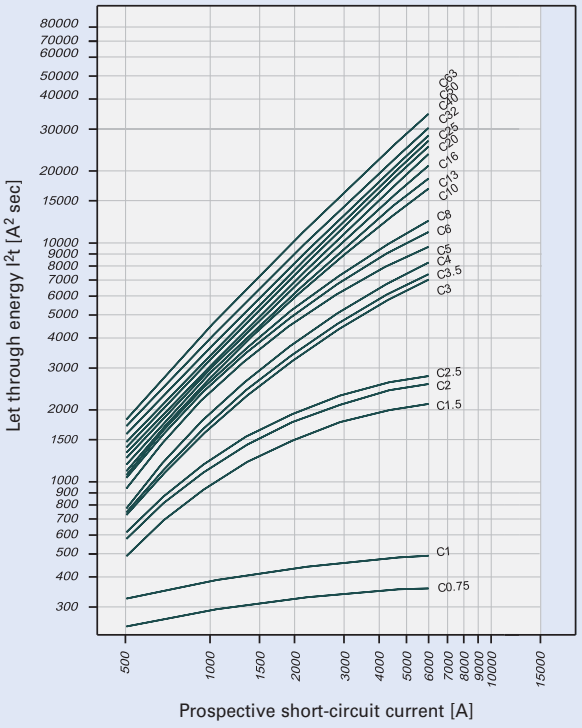
no selectivity

Let-through Energy mMC6

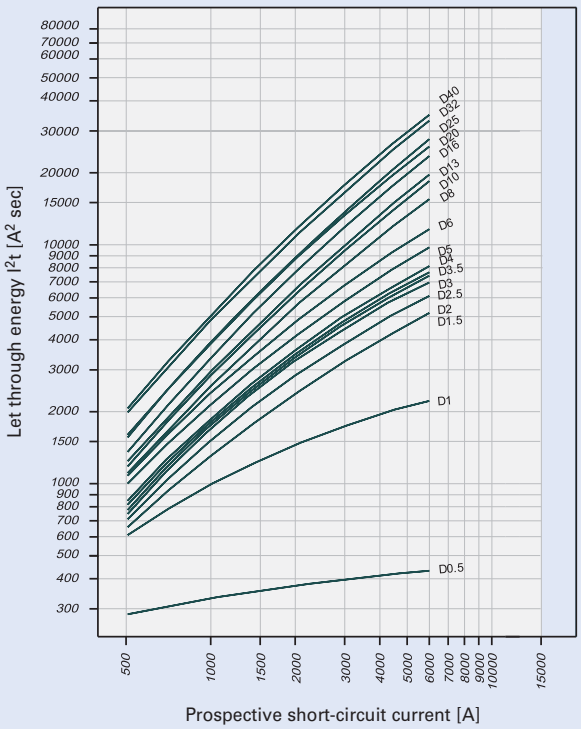
Let-through energy mMC6, characteristic B, 1-pole



Let-through energy mMC6, characteristic C, 1-pole



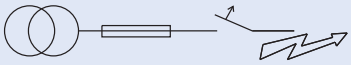
Let-through energy mMC6, characteristic D, 1-pole



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***)*

MCB	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]	6.0[2]
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***)*

MCB	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***)*

MCB	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

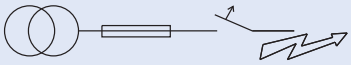
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

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***)*

MCB	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***)*

MCB	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***)*

MCB	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

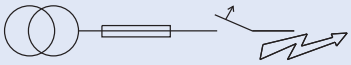
[2] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

no selectivity

Short Circuit Selectivity mMC6 towards NH-00 Fuses

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***)*

MCB	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***)*

MCB	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***)*

MCB	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]

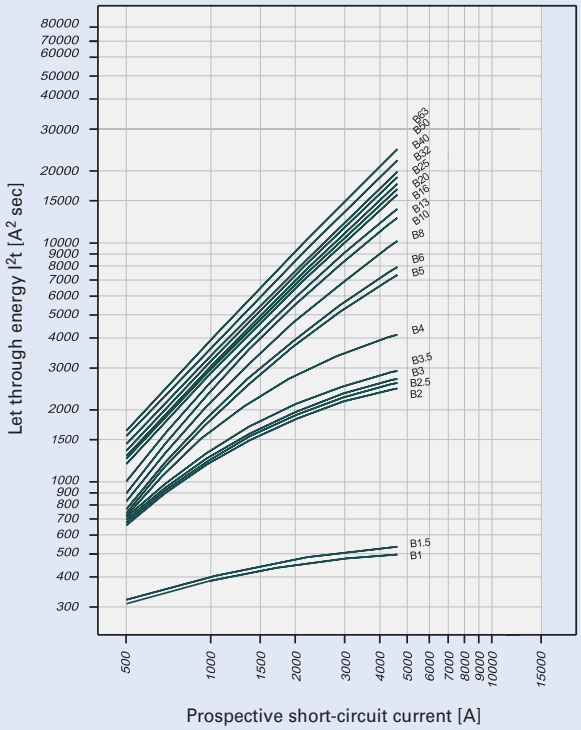
[1] Selectivity limit current I_s under 0.5 kA

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

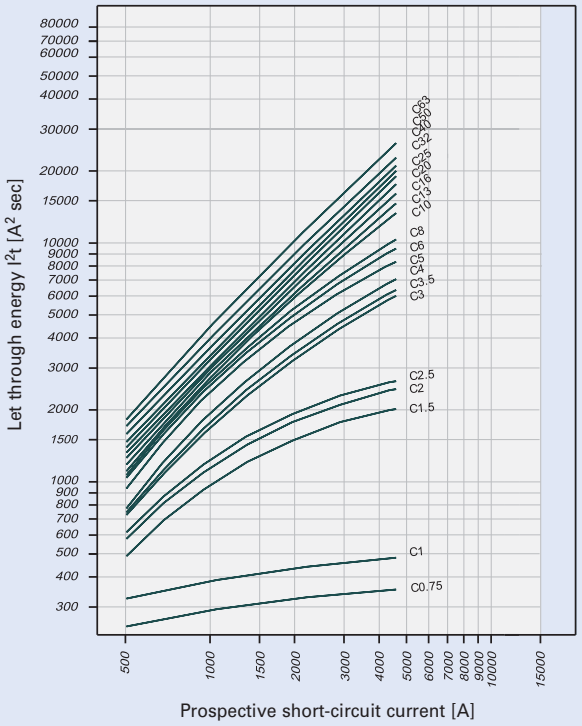
no selectivity

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

[1] Selectivity limit current I_s under 0.5 kA

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

no selectivity

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

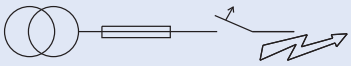
MCB	DII-DIV gL/gG								
I_n [A]	10	16	20	25	35	50	63	80	100
1.0	<0.5[1]	1.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
1.5	<0.5[1]	1.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.0	<0.5[1]	<0.5[1]	0.8	1.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
2.5	<0.5[1]	<0.5[1]	0.8	1.5	4.5[2]	4.5[2]	4.5[2]	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***)*

MCB	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									

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



[1] Selectivity limit current I_s under 0.5 kA

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

no selectivity

Short Circuit Selectivity mMC4 towards D01-D03 fuse link

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

MCB	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***)*

MCB	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

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

MCB	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***)*

MCB	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]	

Miniature Circuit Breakers PLN6, PLN4

- High selectivity between MCB and back-up fuse due to low let-through energy
- Busbar positioning optionally above or below
- Compatible with standard busbar
- Switching toggle in colour designating the rated current
- Meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for safety electrical isolation
- 1-pole breaking capacity $I_{cn\,1}$ = 3 kA

Accessories:

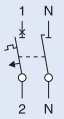
Auxiliary switch		
for subsequent installation	Z-AHK	248433
Tripping signal contact		
for subsequent installation	ZP-NHK	248437
Shunt trip release	ZP-ASA/..	248438, 248439
Undervoltage release	Z-USA/..	248288-248291

Busbar:

see capter busbar systems

Connection diagram

1+N-pole

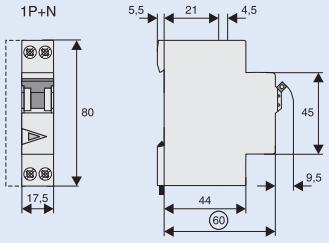


Technical Data

Electrical	
Design according to	IEC/EN 60898-1
Current test marks as printed onto the device	
Rated voltage	230 VAC
Rated frequency	50/60 Hz
Rated breaking capacity	
PLN6	6 kA
PLN4	4.5 kA
Characteristic	B, C
Back-up fuse	
>6 kA	max. 100 A gL/gG
>4.5 kA	max. 80 A gL/gG
Selectivity class	3
Endurance	≥ 8.000 operating cycles

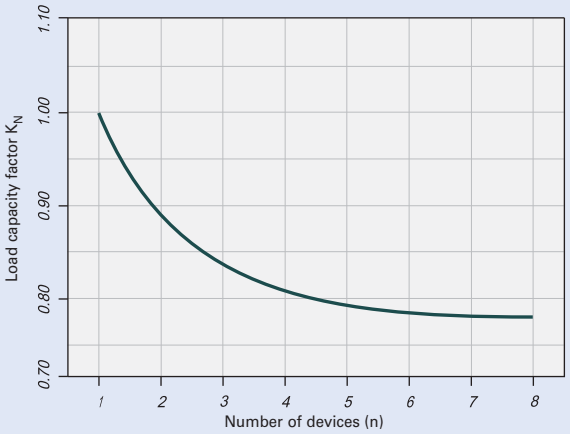
Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17,5 mm (1MU for 1+N)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection	IP20
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1 - 16 mm^2

Dimensions (mm)

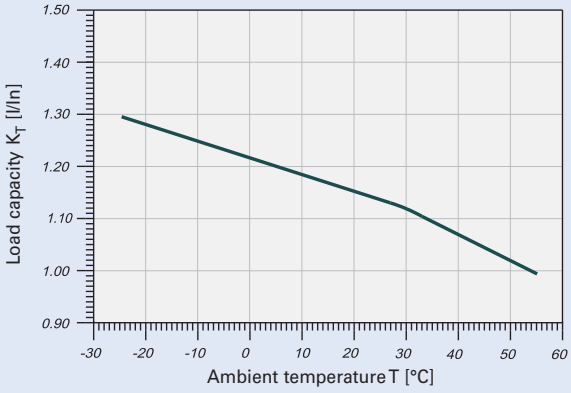


Load capacity PLN6

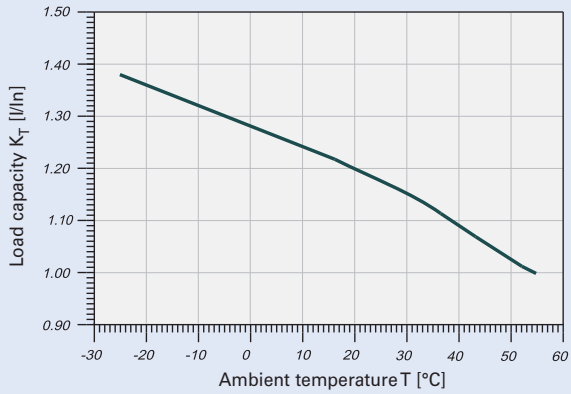
Load capacity in case of MCB block installation



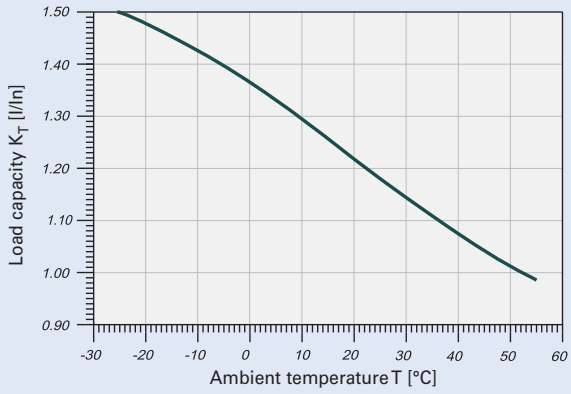
Current carrying capacity at ambient temperature (I_n = 2-13 A)



Current carrying capacity at ambient temperature (I_n = 16-25 A)



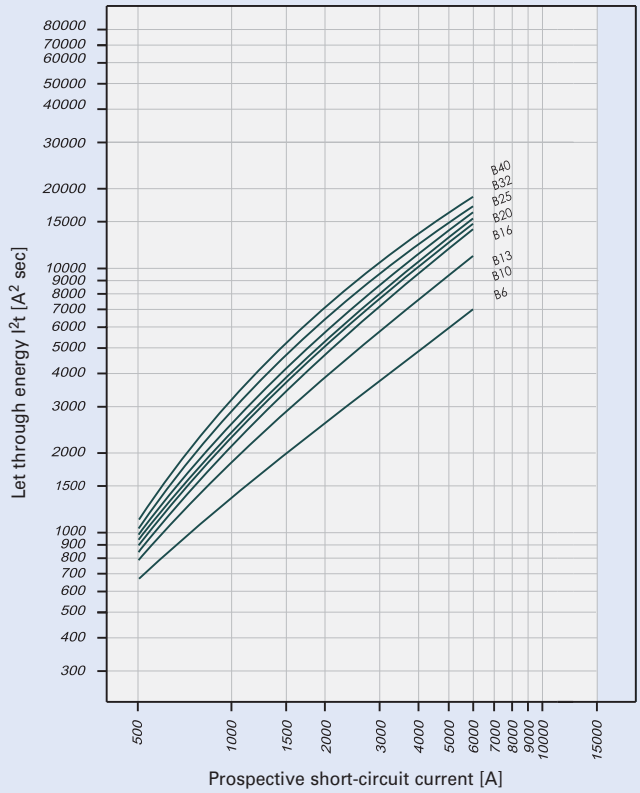
Current carrying capacity at ambient temperature (I_n = 32, 40 A)



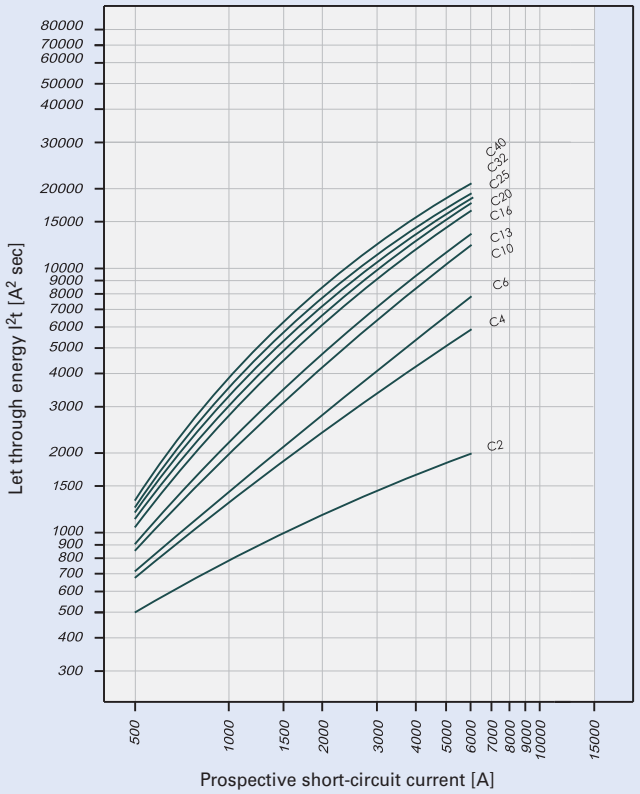
Permitted permanent load at ambient temperature T (°C) with n devices: $I_{DL} = I_n K_T(T) K_N(N)$.

Let-through energy PLN6

Maximum let-through energy PLN6, characteristic B



Maximum let-through energy PLN6, characteristic C



Detemined according to EN 60898-1.

Short Circuit Selectivity PLN6

In case of short circuit, there is selectivity between the miniature circuit breakers PLN6-.../B,C 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 **PLN6-B/C** towards fuse link **DII-DIV***)*

	DII-DIV gL/gG						
	20	**25**	**35**	**50**	**63**	**80**	**100**
PLN6-B6/1N	0.7	1.2	2.9	4.5	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-B10/1N	0.6	0.9	1.9	3.1	5.7	6.0[2)]	6.0[2)]
PLN6-B13/1N	0.5	0.7	1.5	2.5	4.5	6.0[2)]	6.0[2)]
PLN6-B16/1N	0.5	0.7	1.4	2.3	4.3	6.0[2)]	6.0[2)]
PLN6-B20/1N	0.5	0.7	1.4	2.2	4.0	6.0[2)]	6.0[2)]
PLN6-B25/1N	0.5	0.6	1.3	2.0	3.8	5.8	6.0[2)]
PLN6-B32/1N	0.5	0.6	1.2	1.8	3.4	5.5	6.0[2)]
PLN6-B40/1N	<0.5[1)]	0.6	1.1	1.7	3.1	5.0	6.0[2)]
PLN6-C2/1N	1.5	3.8	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C4/1N	0.7	1.2	3.3	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C6/1N	0.7	1.1	2.6	4.5	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C10/1N	0.5	0.8	1.7	2.8	5.2	6.0[2)]	6.0[2)]
PLN6-C13/1N	0.5	0.7	1.5	2.5	4.5	6.0[2)]	6.0[2)]
PLN6-C16/1N	0.5	0.6	1.2	2.0	3.6	5.6	6.0[2)]
PLN6-C20/1N	0.5	0.6	1.2	1.8	3.3	5.1	6.0[2)]
PLN6-C25/1N	<0.5[1)]	0.6	1.1	1.7	3.0	4.8	6.0[2)]
PLN6-C32/1N	<0.5[1)]	0.6	1.0	1.6	2.8	4.5	6.0[2)]
PLN6-C40/1N	<0.5[1)]	0.6	1.0	1.5	2.6	4.0	6.0[2)]

*Short circuit selectivity **PLN6-B/C** towards fuse link **D01-D03***)*

	D01-D03 gL/gG						
	20	**25**	**35**	**50**	**63**	**80**	**100**
PLN6-B6/1N	0.6	0.9	2.5	5.5	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-B10/1N	0.5	0.8	1.6	3.4	5.0	6.0[2)]	6.0[2)]
PLN6-B13/1N	0.5	0.7	1.3	2.7	4.0	6.0[2)]	6.0[2)]
PLN6-B16/1N	0.5	0.6	1.3	2.5	3.8	6.0[2)]	6.0[2)]
PLN6-B20/1N	<0.5[1)]	0.6	1.3	2.4	3.6	6.0[2)]	6.0[2)]
PLN6-B25/1N	<0.5[1)]	0.6	1.2	2.3	3.3	5.8	6.0[2)]
PLN6-B32/1N	<0.5[1)]	0.6	1.1	2.1	3.0	5.5	6.0[2)]
PLN6-B40/1N	<0.5[1)]	0.6	1.0	2.0	2.8	4.9	6.0[2)]
PLN6-C2/1N	1.1	2.0	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C4/1N	0.6	0.9	2.7	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C6/1N	0.6	0.9	2.3	5.0	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C10/1N	0.5	0.7	1.5	3.0	4.5	6.0[2)]	6.0[2)]
PLN6-C13/1N	0.5	0.7	1.3	2.7	4.0	6.0[2)]	6.0[2)]
PLN6-C16/1N	<0.5[1)]	0.6	1.1	2.2	3.1	5.5	6.0[2)]
PLN6-C20/1N	<0.5[1)]	0.6	1.1	2.1	2.9	5.2	6.0[2)]
PLN6-C25/1N	<0.5[1)]	0.5	1.0	2.0	2.7	4.8	6.0[2)]
PLN6-C32/1N	<0.5[1)]	0.5	1.0	1.9	2.6	4.5	6.0[2)]
PLN6-C40/1N	<0.5[1)]	0.5	0.9	1.7	2.3	4.0	6.0[2)]

*Short circuit selectivity **PLN6-B/C** towards fuse link **NH-00***)*

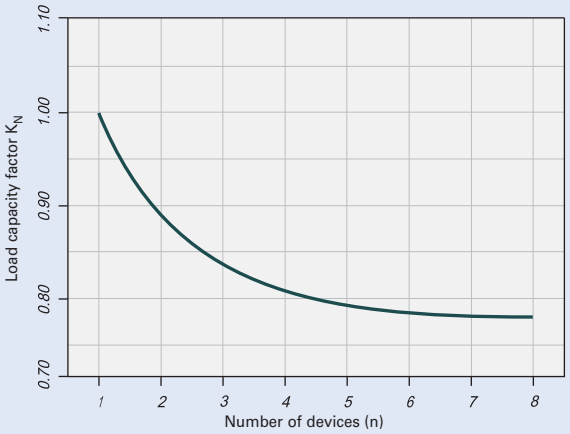
	NH-00 gL/gG								
	20	**25**	**32**	**35**	**40**	**50**	**63**	**80**	**100**
PLN6-B6/1N	0.5	0.9	1.5	2.3	3.2	4.9	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-B10/1N	<0.5[1)]	0.7	1.2	1.5	2.0	3.1	3.9	5.9	6.0[2)]
PLN6-B13/1N	<0.5[1)]	0.6	1.0	1.3	1.7	2.5	3.1	4.6	6.0[2)]
PLN6-B16/1N	<0.5[1)]	0.6	1.0	1.3	1.6	2.4	2.9	4.5	6.0[2)]
PLN6-B20/1N	<0.5[1)]	0.5	0.9	1.3	1.5	2.3	2.8	4.3	6.0[2)]
PLN6-B25/1N	<0.5[1)]	0.5	0.9	1.1	1.4	2.1	2.6	4.0	6.0[2)]
PLN6-B32/1N	<0.5[1)]	0.5	0.8	1.0	1.3	1.9	2.4	3.6	6.0[2)]
PLN6-B40/1N	<0.5[1)]	0.5	0.8	0.9	1.1	1.7	2.2	3.3	6.0[2)]
PLN6-C2/1N	0.7	2.1	6.0	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C4/1N	0.5	0.9	1.6	2.6	3.7	6.0	6.0[2)]	6.0[2)]	6.0[2)]
PLN6-C6/1N	0.5	0.8	1.4	2.1	2.9	4.5	5.7	6.0[2)]	6.0[2)]
PLN6-C10/1N	<0.5[1)]	0.6	1.0	1.4	1.9	2.8	3.5	5.2	6.0[2)]
PLN6-C13/1N	<0.5[1)]	0.6	0.9	1.3	1.7	2.5	3.1	4.7	6.0[2)]
PLN6-C16/1N	<0.5[1)]	0.5	0.7	1.0	1.3	2.0	2.5	3.8	6.0[2)]
PLN6-C20/1N	<0.5[1)]	0.5	0.7	0.9	1.2	1.8	2.3	3.5	6.0[2)]
PLN6-C25/1N	<0.5[1)]	0.5	0.7	0.9	1.1	1.6	2.1	3.3	6.0[2)]
PLN6-C32/1N	<0.5[1)]	<0.5[1)]	0.6	0.8	1.1	1.5	2.0	3.1	6.0[2)]
PLN6-C40/1N	<0.5[1)]	<0.5[1)]	0.6	0.8	1.0	1.4	1.9	2.9	6.0[2)]

[1)] Selectivity limit current I_s under 0.5 kA

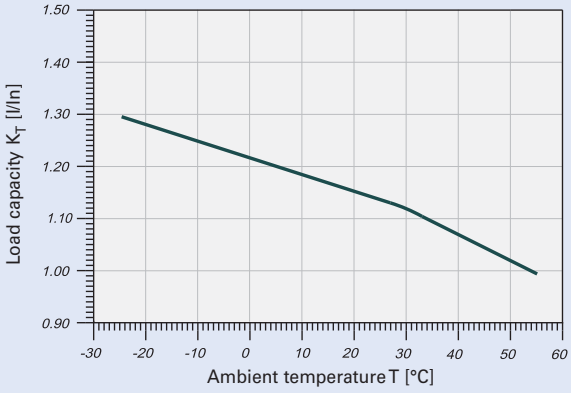
[2)] Selectivity limit current I_s = rated breaking capacity I_{cn} of the MCB

Load capacity PLN4

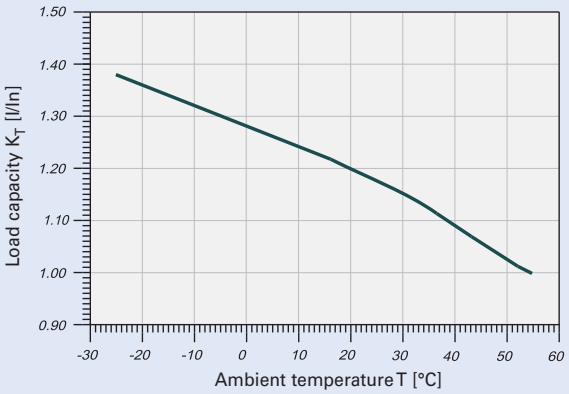
Load capacity in case of MCB block installation



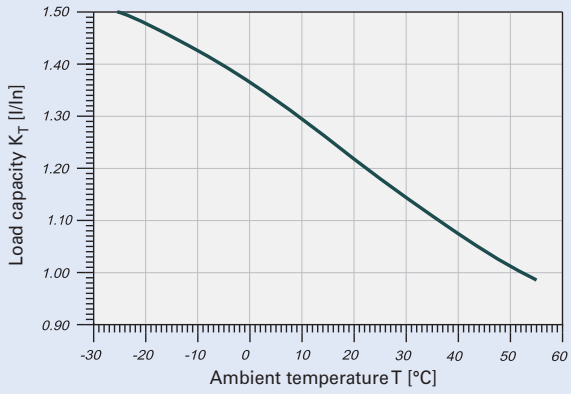
Current carrying capacity at ambient temperature (I_n = 2-13 A)



Current carrying capacity at ambient temperature (I_n = 16-25 A)



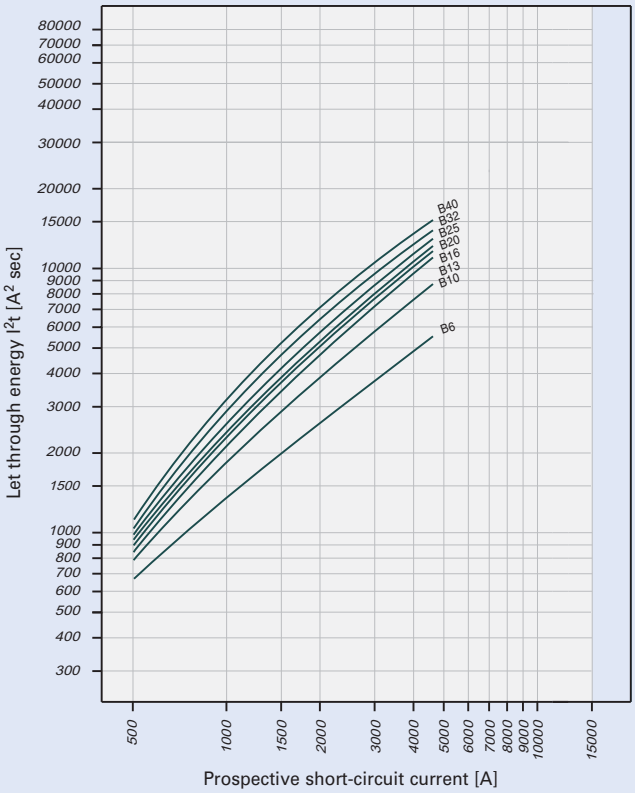
Current carrying capacity at ambient temperature (I_n = 32, 40 A)



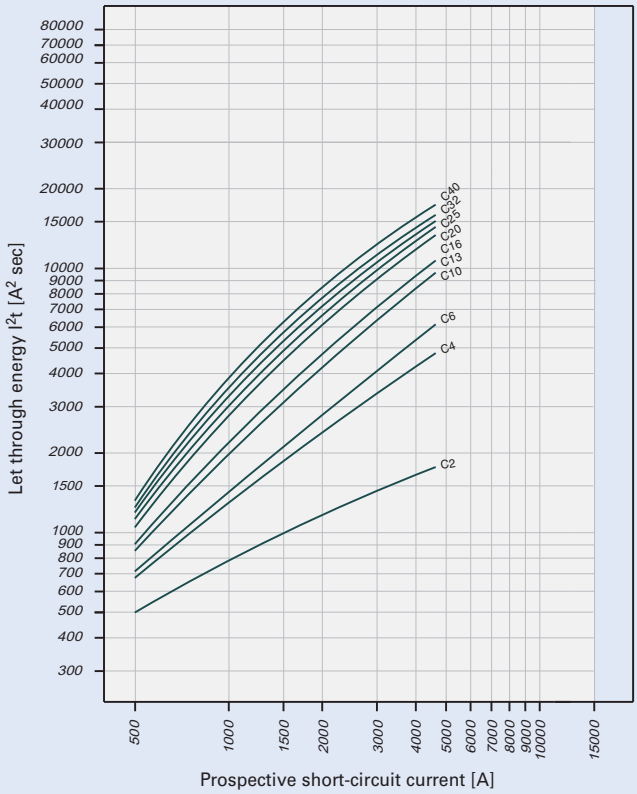
Permitted permanent load at ambient temperature T (°C) with n devices: $I_{DL} = I_n K_T(T) K_N(N)$.

Let-through energy PLN4

Maximum let-through energy PLN4, characteristic B



Maximum let-through energy PLN4, characteristic C



Detemined according to EN 60898-1.

Short Circuit Selectivity PLN4

In case of short circuit, there is selectivity between the miniature circuit breakers PLN4-.../B,C 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 **PLN4-B/C** towards fuse link **DII-DIV***)*

	DII-DIV gL/gG						
	20	25	35	50	63	80	100
PLN4-B6/1N	0.7	1.2	2.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-B10/1N	0.6	0.9	1.9	3.1	4.5[2]	4.5[2]	4.5[2]
PLN4-B13/1N	0.5	0.7	1.5	2.5	4.5[2]	4.5[2]	4.5[2]
PLN4-B16/1N	0.5	0.7	1.4	2.3	4.3	4.5[2]	4.5[2]
PLN4-B20/1N	0.5	0.7	1.4	2.2	4.0	4.5[2]	4.5[2]
PLN4-B25/1N	0.5	0.6	1.3	2.0	3.8	4.5[2]	4.5[2]
PLN4-B32/1N	0.5	0.6	1.2	1.8	3.4	4.5[2]	4.5[2]
PLN4-B40/1N	<0.5[1]	0.6	1.1	1.7	3.1	4.5[2]	4.5[2]
PLN4-C2/1N	1.5	3.8	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C4/1N	0.7	1.2	3.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C6/1N	0.7	1.1	2.6	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C10/1N	0.5	0.8	1.7	2.8	4.5[2]	4.5[2]	4.5[2]
PLN4-C13/1N	0.5	0.7	1.5	2.5	4.5[2]	4.5[2]	4.5[2]
PLN4-C16/1N	0.5	0.6	1.2	2.0	3.6	4.5[2]	4.5[2]
PLN4-C20/1N	0.5	0.6	1.2	1.8	3.3	4.5[2]	4.5[2]
PLN4-C25/1N	<0.5[1]	0.6	1.1	1.7	3.0	4.5[2]	4.5[2]
PLN4-C32/1N	<0.5[1]	0.6	1.0	1.6	2.8	4.5[2]	4.5[2]
PLN4-C40/1N	<0.5[1]	0.6	1.0	1.5	2.6	4.0	4.5[2]

*Short circuit selectivity **PLN4-B/C** towards fuse link **D01-D03***)*

	D01-D03 gL/gG						
	20	25	35	50	63	80	100
PLN4-B6/1N	0.6	0.9	2.5	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-B10/1N	0.5	0.8	1.6	3.4	4.5[2]	4.5[2]	4.5[2]
PLN4-B13/1N	0.5	0.7	1.3	2.7	4.0	4.5[2]	4.5[2]
PLN4-B16/1N	0.5	0.6	1.3	2.5	3.8	4.5[2]	4.5[2]
PLN4-B20/1N	<0.5[1]	0.6	1.3	2.4	3.6	4.5[2]	4.5[2]
PLN4-B25/1N	<0.5[1]	0.6	1.2	2.3	3.3	4.5[2]	4.5[2]
PLN4-B32/1N	<0.5[1]	0.6	1.1	2.1	3.0	4.5[2]	4.5[2]
PLN4-B40/1N	<0.5[1]	0.6	1.0	2.0	2.8	4.5[2]	4.5[2]
PLN4-C2/1N	1.1	2.0	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C4/1N	0.6	0.9	2.7	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C6/1N	0.6	0.9	2.3	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C10/1N	0.5	0.7	1.5	3.0	4.5[2]	4.5[2]	4.5[2]
PLN4-C13/1N	0.5	0.7	1.3	2.7	4.0	4.5[2]	4.5[2]
PLN4-C16/1N	<0.5[1]	0.6	1.1	2.2	3.1	4.5[2]	4.5[2]
PLN4-C20/1N	<0.5[1]	0.6	1.1	2.1	2.9	4.5[2]	4.5[2]
PLN4-C25/1N	<0.5[1]	0.5	1.0	2.0	2.7	4.5[2]	4.5[2]
PLN4-C32/1N	<0.5[1]	0.5	1.0	1.9	2.6	4.5[2]	4.5[2]
PLN4-C40/1N	<0.5[1]	0.5	0.9	1.7	2.3	4.0	4.5[2]

*Short circuit selectivity **PLN6-B/C** towards fuse link **NH-00***)*

	NH-00 gL/gG								
	20	25	32	35	40	50	63	80	100
PLN4-B6/1N	0.5	0.9	1.5	2.3	3.2	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-B10/1N	<0.5[1]	0.7	1.2	1.5	2.0	3.1	3.9	4.5[2]	4.5[2]
PLN4-B13/1N	<0.5[1]	0.6	1.0	1.3	1.7	2.5	3.1	4.5[2]	4.5[2]
PLN4-B16/1N	<0.5[1]	0.6	1.0	1.3	1.6	2.4	2.9	4.5[2]	4.5[2]
PLN4-B20/1N	<0.5[1]	0.5	0.9	1.3	1.5	2.3	2.8	4.3	4.5[2]
PLN4-B25/1N	<0.5[1]	0.5	0.9	1.1	1.4	2.1	2.6	4.0	4.5[2]
PLN4-B32/1N	<0.5[1]	0.5	0.8	1.0	1.3	1.9	2.4	3.6	4.5[2]
PLN4-B40/1N	<0.5[1]	0.5	0.8	0.9	1.1	1.7	2.2	3.3	4.5[2]
PLN4-C2/1N	0.7	2.1	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C4/1N	0.5	0.9	1.6	2.6	3.7	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C6/1N	0.5	0.8	1.4	2.1	2.9	4.5[2]	4.5[2]	4.5[2]	4.5[2]
PLN4-C10/1N	<0.5[1]	0.6	1.0	1.4	1.9	2.8	3.5	4.5[2]	4.5[2]
PLN4-C13/1N	<0.5[1]	0.6	0.9	1.3	1.7	2.5	3.1	4.5[2]	4.5[2]
PLN4-C16/1N	<0.5[1]	0.5	0.7	1.0	1.3	2.0	2.5	3.8	4.5[2]
PLN4-C20/1N	<0.5[1]	0.5	0.7	0.9	1.2	1.8	2.3	3.5	4.5[2]
PLN4-C25/1N	<0.5[1]	0.5	0.7	0.9	1.1	1.6	2.1	3.3	4.5[2]
PLN4-C32/1N	<0.5[1]	<0.5[1]	0.6	0.8	1.1	1.5	2.0	3.1	4.5[2]
PLN4-C40/1N	<0.5[1]	<0.5[1]	0.6	0.8	1.0	1.4	1.9	2.9	4.5[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

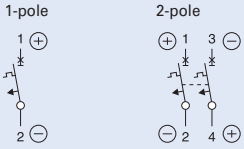
Miniature Circuit Breakers mMCMDC for direct current application

- 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
- Rated breaking capacity 10 kA according to IEC/EN 60947-2
- Rated voltage 250 V (per pole), τ = 4 ms
- Take into account polarity!

Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
Tripping signal contact for subsequent installation	ZP-NHK	248437
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 35mm²	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

Connection diagrams

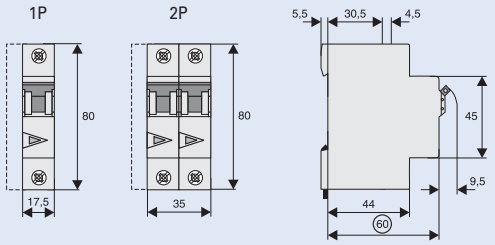


Technical Data

Electrical	
Design according to	IEC/EN 60947-2
Current test marks as printed onto the device	
Rated voltage	
DC	1-2 A: 220 V (per pole) 3-50 A: 250 V (per pole)
Rated frequency	50/60 Hz
Rated breaking capacity according to IEC/EN 60947-2	10 kA
Characteristic	C
Back-up fuse	max. 100 A gL
Selectivity class	3
Rated peak withstand voltage U_{imp}	4 kV (1.2/50µs)
Endurance electrical comp.	≥ 4,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles
Line voltage connection	optional (above/below)

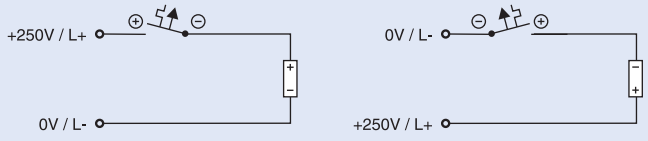
Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm per pole (1MU)
Mounting	quick fastening with 3 lock-in positions on DIN rail IEC/EN 60715
Degree of protection	IP20
Upper and lower terminals	open mouthed/lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1-25 mm²
Terminal fastening torque	2-2.4 Nm
Busbar thickness	0.8 - 2 mm
Mounting	independent of position

Dimensions (mm)

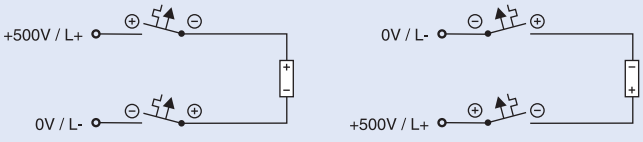


Connection examples

Connection example at 250V=, 1-pole

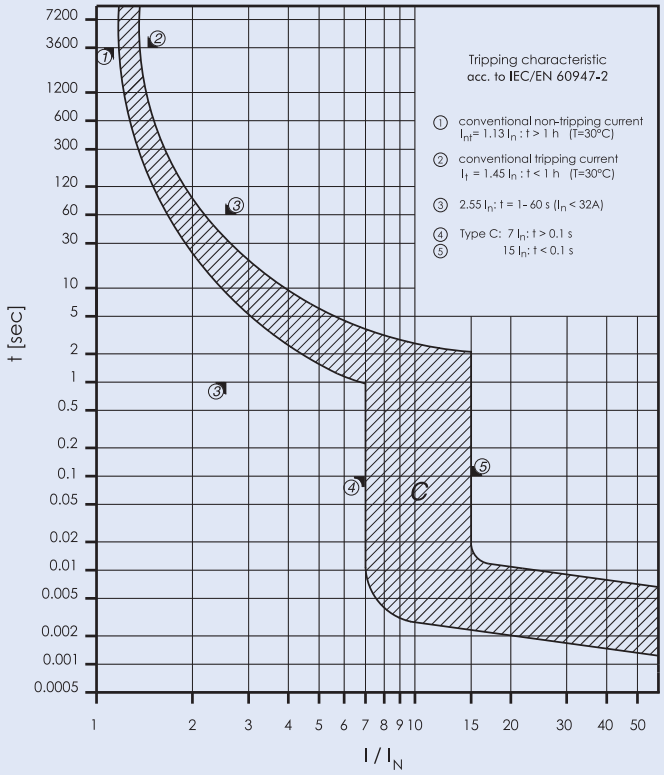


Connection example at 500V=, 2-pole



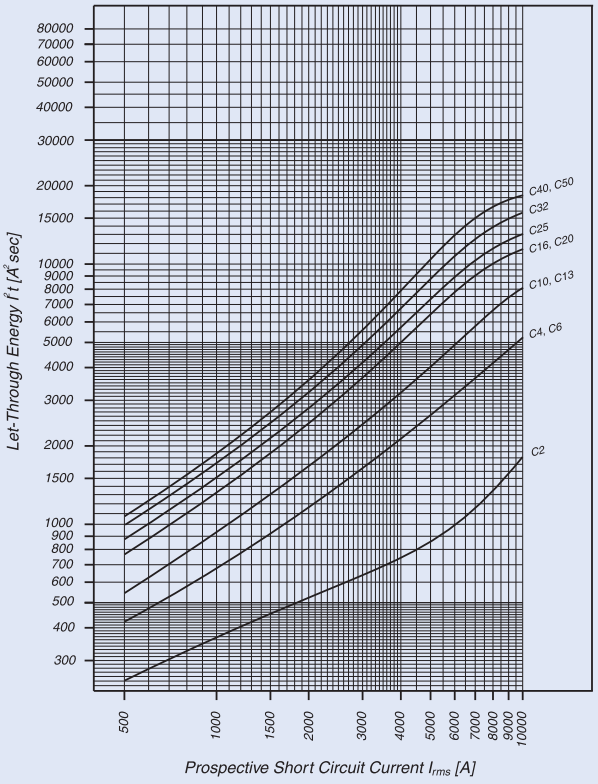
Tripping characteristic mMCMDC

Type C



Let-through Energy mMCMDC

Type C, 250 V d.c., τ = 5 ms (acc. to IEC/EN 60947-2)



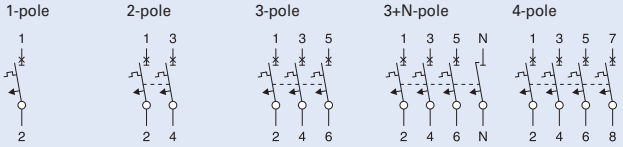
Miniature Circuit Breakers mMCT

- Independent switching contacts
- With isolator function, meets the requirements of insulation co-ordination, distance between contacts ≥ 4 mm, for secure isolation

Accessories:

Auxiliary switch for		
subsequent installation (0.5 MU)	Z-LHK	248440
Shunt trip release for		
subsequent installation (1.5 MU)	Z-LHASA/230	248442
	Z-LHASA/24	248441
Anti-tamper device	LH-SPL	850000870

Connection diagrams



Technical Data

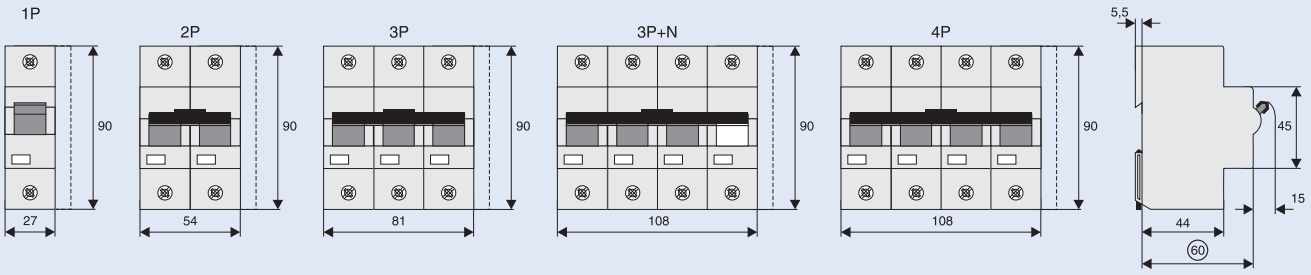
Electrical

Design according to	EN 60947-2
Current test marks as printed onto the device	
Rated voltage	
AC	240/415V
DC	60V (per pole)
Ultimate short circuit breaking capacity	acc. to IEC/EN 60947-2
Characteristics B,C	I_n = 20-63 A 25 kA
	I_n = 80-100 A 20 kA
	I_n = 125 A 15 kA
Characteristic D	I_n = 20-63 A 25 kA
	I_n = 80 A 20 kA
	I_n = 100 A 15 kA
Characteristic	in accordance with characteristics B, C, D
Back-up fuse	max. 200 A gL
Rated insulation voltage	440 V
Peak withstand voltage U_{imp}	4 kV
Selectivity class	in acc. with class 3
Endurance	≥ 20,000 operations

Mechanical

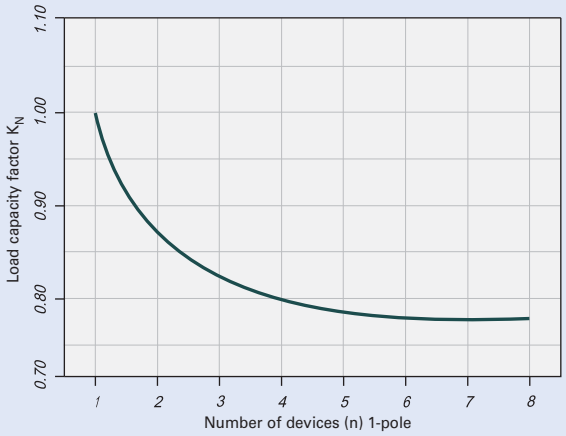
Frame size	45 mm
Device height	90 mm
Device width	27 mm (1.5MU) per pole
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	2.5-50 mm²

Dimensions (mm)

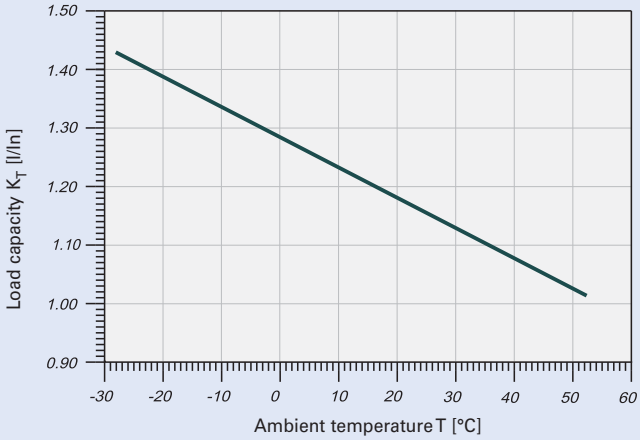


Load Capacity

Load capacity in case of block installation



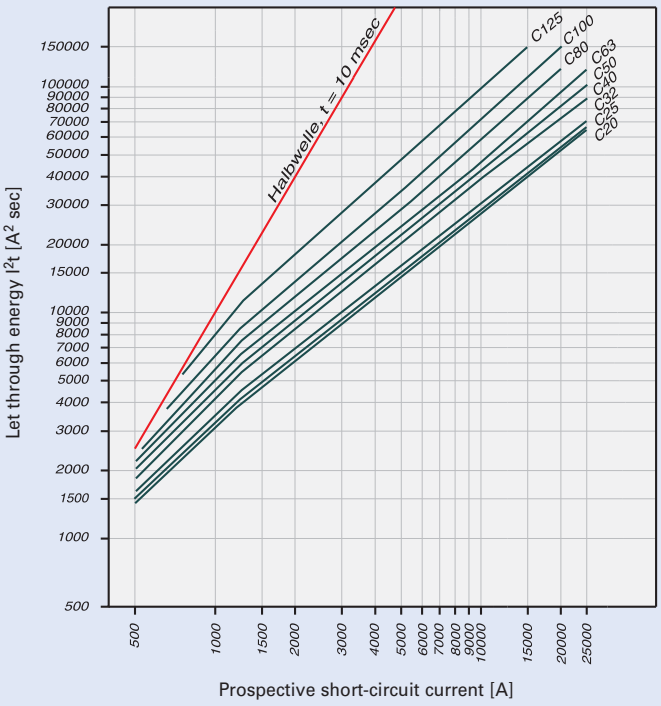
Effect of ambient temperature



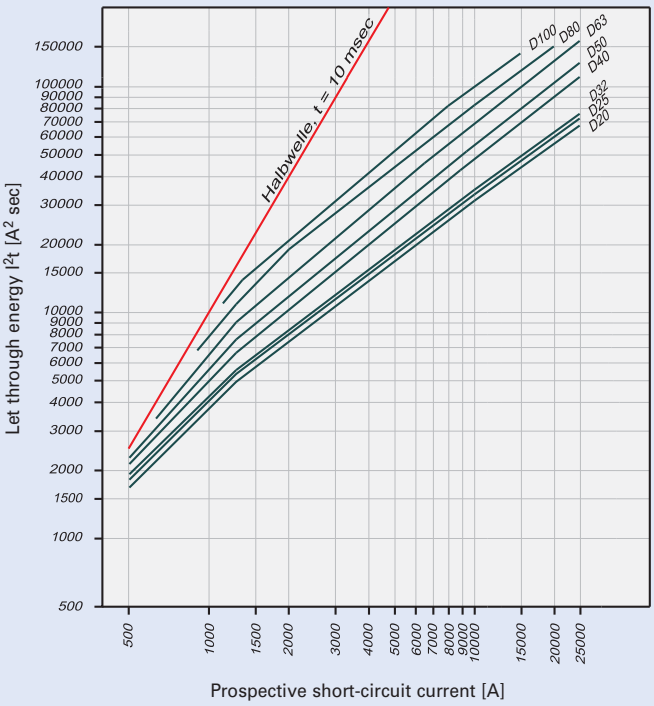
Permitted permanent load at ambient temperature T [°C] with n devices: $I_{DL} = I_n K_T(T) K_N(N)$.

Let-through Energy

Maximum let-through energy mMCT, characteristic C, 1-pole



Maximum let-through energy mMCT, characteristic D, 1-pole



Determined according to EN 60898-1.

Short Circuit Selectivity

- Short circuit selectivity (in kA) between mMCT and upstream fuse D0 or NH, operating class gL/gG
- 1,4 . . selectivity up to 1.4 kA; . . . no selectivity

Selectivity towards back-up fuses D01, D02, D03

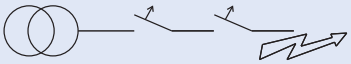
Rated current I_n **mMCT** in A		Rated current of the back-up fuse in A					
		25	**35**	**50**	**63**	**80**	**100**
C-Characteristic	**20**	0,5	1,0	2,0	2,9	3,9	7,6
	25		1,0	1,9	2,8	3,8	7,3
	32		1,0	1,8	2,7	3,6	7,0
	40			1,6	2,2	3,0	5,6
	50				2,1	2,8	5,2
	63					2,7	4,8
	80						4,3
	100						
	125						
D-Characteristic	**20**	0,5	0,9	1,7	2,5	3,4	6,7
	25		0,9	1,6	2,3	3,2	6,2
	32		0,9	1,5	2,3	3,0	6,0
	40			1,4	2,0	2,6	4,7
	50				1,8	2,3	4,3
	63					2,1	3,7
	80						3,1
	100						

Selectivity towards back-up fuses NH Gr. 00

Rated current I_n **mMCT** in A		Rated current of the back-up fuse in A								
		25	**35**	**40**	**50**	**63**	**80**	**100**	**125**	**160**	**200**
C-Characteristic	**20**	0,5	1,0	1,3	1,9	2,7	3,7	6,7	17,0	25,0	25,0
	25		0,9	1,3	1,8	2,6	3,5	6,5	17,0	25,0	25,0
	32		0,9	1,2	1,7	2,4	3,3	6,0	15,0	23,0	25,0
	40				1,4	2,1	2,9	4,8	12,0	18,0	25,0
	50					1,9	2,7	4,5	11,0	17,0	25,0
	63							4,2	10,0	15,0	25,0
	80							3,8	8,5	12,0	25,0
	100								7,0	10,0	25,0
	125									7,5	25,0
D-Characteristic	**20**	<0,5	0,8	1,1	1,5	2,3	3,1	5,6	16,0	25,0	25,0
	25		0,7	1,0	1,4	2,1	3,0	5,3	14,0	23,0	25,0
	32		0,7	1,0	1,3	2,1	2,9	5,0	13,0	22,0	25,0
	40				1,1	1,8	2,5	4,2	10,0	15,0	25,0
	50					1,6	2,3	3,8	8,5	13,0	22,0
	63						2,1	3,2	7,0	10,5	18,0
	80							2,8	5,5	8,4	15,0
	100								4,8	7,5	12,5

Short Circuit Selectivity mMCT towards NZM 1

In case of short circuit, there is selectivity between the miniature circuit breakers mMCT and the upstream NZM 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). Overload and short-circuit release unit NZM at max. value.
*) basically in accordance with EN 60898-1 D.5.2.b



*Short circuit selectivity **characteristic C** towards **NZM***)*

mMCT	NZM...1-A gL/gG					
I_n [A]	40	50	63	80	100	125
20	0.3	0.4	0.5	0.75	0.9	1.25
25	0.3	0.4	0.5	0.7	0.9	1.2
32		0.4	0.5	0.7	0.85	1.2
40			0.5	0.6	0.85	1.1
50				0.6	0.85	1.1
63					0.8	1
80						1
100						
125						

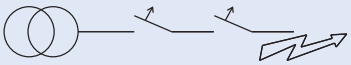
*Short circuit selectivity **characteristic D** towards **NZM***)*

mMCT	NZM...1-A gL/gG					
I_n [A]	40	50	63	80	100	125
50						
63						
80						
100						

no selectivity

Short Circuit Selectivity mMCT towards NZM 2

In case of short circuit, there is selectivity between the miniature circuit breakers mMCT and the upstream NZM 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). Overload and short-circuit release unit NZM at max. value.
*) basically in accordance with EN 60898-1 D.5.2.b



*Short circuit selectivity **characteristic C** towards **NZM***)*

mMCT	NZM...2-A gL/gG								
I_n [A]	40	50	63	80	100	125	160	200	250
20	0.3	0.4	0.5	0.75	0.9	1.25	1.8	2.5	3.5
25	0.3	0.4	0.5	0.7	0.9	1.2	1.7	2.4	3.3
32		0.4	0.5	0.7	0.85	1.2	1.65	2.3	3.2
40			0.5	0.6	0.85	1.1	1.5	2.1	2.9
50				0.6	0.85	1.1	1.5	2	2.8
63					0.8	1	1.4	1.8	2.5
80						1	1.4	1.8	2.4
100							1.3	1.7	2.3
125								1.6	2.1

*Short circuit selectivity **characteristic D** towards **NZM***)*

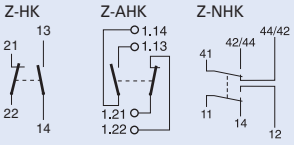
mMCT	NZM...2-A gL/gG								
I_n [A]	40	50	63	80	100	125	160	200	250
50							1	1.4	2.6
63							1	1.3	2.3
80									2.1
100									

no selectivity

Auxiliary Switch Z-HK, Z-AHK; Tripping Signal Switch Z-NHK

- Design according to IEC/EN 60947-5-1, IEC/EN 62019
- Can be mounted subsequently (screws)
- The specified minimum voltages are per contact
  Take into account particularly in case of series connection!
- **Z-AHK, Z-NHK:** Contact function with relative movement (self-cleaning contacts)
- Contact material and design particularly suitable for extra low voltage
- **Z-NHK:** The function of one of the two change-over contacts can be switched from “auxiliary switch” to “tripping signal switch”
- Tripping signal contact transmits message of electric tripping, not mechanical switch-off
- Test key for contact function “electrical tripping”

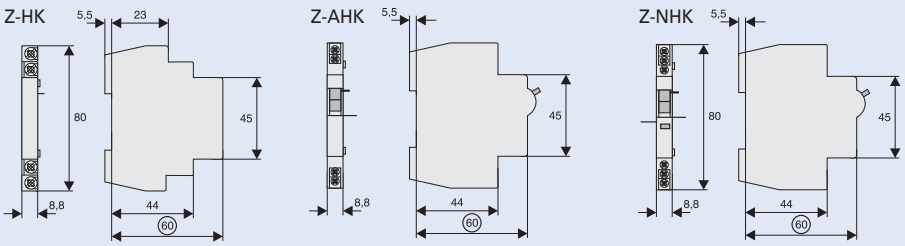
Connection diagrams



Technical Data

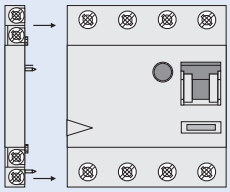
	Z-HK	Z-AHK	Z-NHK
Electrical			
Can be mounted from the left onto	RCCB	MCB, RCBO, RCCB	MCB, RCBO
Can be mounted from the right onto	–	–	RCCB
Contact function	1NO + 1NC	1NO + 1NC	2CO
Rated voltage	250 V	250 V	250 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Rated current	8 A	4 A	4 A
Rated thermal current I_{th}	8 A	4 A	4 A
Utilisation category AC13			
Rated operational current I_e	6A/250V AC	3A/250V AC	3A/250V AC
	2A/440V AC	–	–
Utilisation category AC15			
Rated operational current I_e	–	2A/250V AC	2A/250V AC
Utilisation category DC12			
Rated operational current I_e	–	0.5A/110V DC	0.5A/110V DC
Utilisation category DC13			
Rated operational current I_e	0.5A/230V DC	–	–
	2A/110V DC	–	–
	4A/60V DC	–	–
Rated insulation voltage U_i	250 V AC	250 V AC	250 V AC
Minimum operational voltage per contact U_{min}	24 V AC/DC	5 V DC	5 V DC
Minimum operational current I_{min}	50 mA AC/DC	10 mA DC	10 mA DC
Rated peak withstand voltage U_{imp} (1.2/50µ)	2.5 kV	2.5 kV	2.5 kV
Conditional short circuit current I_k			
with back-up fuse 6A or PLSM-B4-HS	–	1 kA	1 kA
Max. back-up fuse, overload and short circuit	8 A gL / CLS6-4/../B-HS	6 A gL / CLS6-4/../B-HS	6 A gL / CLS6-4/../B-HS
Mechanical			
Tripping indicator “electrical tripping”	–	–	blue/white
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	8.8 mm (0.5MU)	8.8 mm (0.5MU)	8.8 mm (0.5MU)
Mounting	onto switching dev.	onto switching dev.	onto switching dev.
Degree of protection, built-in	IP40	IP40	IP40
Terminal protection	finger and hand touch safe according to BGV A3, ÖVE-EN 6		
Terminals	lift terminals	lift terminals	lift terminals
Terminal capacity	0.5-2.5 mm²	0.5-2.5 mm²	0.5-2.5 mm²
Terminal screws	M3 (Pozidrive Z0)	M3 (Pozidrive Z0)	M3 (Pozidrive Z0)
Fastening torque of terminal screws	max. 0.8-1.0 Nm	max. 0.8-1.0 Nm	max. 0.8-1.0 Nm

Dimensions (mm)



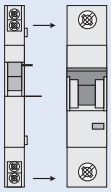
Accessories for Protective Devices

Example: Z-HK+RCCB



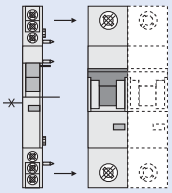
1NO+1NC 24V 50mA min.

Example: Z-AHK+MCB



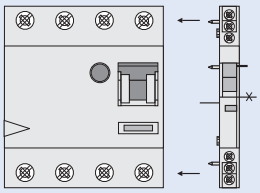
1NO+1NC 5V 10mA min.

Example: Z-NHK+MCB



2CO 5V 10mA min.

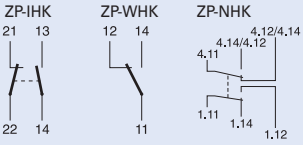
RCCB+Z-NHK



Auxiliary Switch ZP-IHK, ZP-WHK; Tripping Signal Switch ZP-NHK

- Design according to IEC/EN 62019
- No screws required. Can be **snapped onto** MCB and RCBO subsequently
- **ZP-IHK, ZP-WHK:** can be snapped on additionally 1 time onto itself
- The specified minimum voltages are per contact. Take into account particularly in case of series connection!
- Contact material and design particularly suitable for extra low voltage. Contact function with relative movement (self-cleaning contacts)e)
- **ZP-NHK:** The function of one of the two change-over contacts can be switched from “auxiliary switch” to "tripping signal switch"
- Tripping signal contact transmits message of electric tripping, not mechanical switch-off
- Test key for contact function “electrical tripping”

Connection diagrams



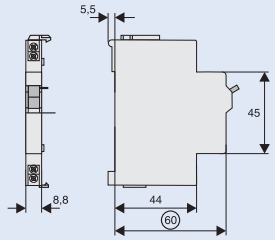
- **ZP-NHK:** The “Service button” is used to check whether or not the auxiliary switch is correctly wired in the tripping-signal-switch position. Activating the “service button” will mechanically simulate an electrical switch-off, so the mechanism for the electrical switch-off will disengage and can be checked. The main switchgear (MCB, combined MCB/RCD or RCD ...) connected to the ZP-NHK auxiliary switch does not need to trip as well during an inspection through the service button.

Technical Data

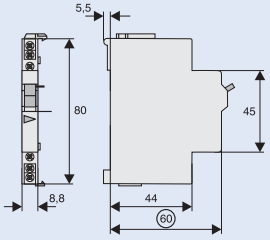
	ZP-IHK	ZP-WHK	ZP-NHK
Electrical			
Can be mounted from the left onto	MCB, RCBO	MCB, RCBO	MCB, RCBO
Accessories:	ZP-ASA	ZP-ASA	ZP-ASA
Contact function	1NO + 1NC	1CO	2CO
Rated voltage	250 V	250 V	250 V
Frequency	50/60 Hz	50/60 Hz	50/60 Hz
Rated current	6 A	6 A	4 A
Rated thermal current I_{th}	6 A	6 A	4 A
Utilisation category AC13			
Rated operational current I_e	3A/250V AC	3A/250V AC	3A/250V AC
Utilisation category AC15			
Rated operational current I_e	2A/250V AC	2A/250V AC	2A/250V AC
Utilisation category DC12			
Rated operational current I_e	0.5A/110V DC	0.5A/110V DC	0.5A/110V DC
Rated insulation voltage U_i	250 V AC	250 V AC	250 V AC
Minimum operational voltage per contact U_{min}	5 V DC	5 V DC	5 V DC
Minimum operational current I_{min}	10 mA DC	10 mA DC	10 mA DC
Rated peak withstand voltage U_{imp} (1.2/50µ)	2.5 kV	2.5 kV	2.5 kV
Conditional short circuit current I_k			
with back-up fuse 6A or PLSM-B4-HS	1 kA	1 kA	1 kA
Max. back-up fuse, overload and short circuit	6 A gL / PLSM-B4-HS	6 A gL / PLSM-B4-HS	6 A gL / PLSM-B4-HS
Mechanical			
Tripping indicator “electrical tripping”	–	–	blue/white
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	8.8 mm (0.5MU)	8.8 mm (0.5MU)	8.8 mm (0.5MU)
Degree of protection, built-in	IP40	IP40	IP40
Terminal protection	finger and hand touch safe according to BGV A3, ÖVE-EN 6		
Terminals	lift terminals	lift terminals	lift terminals
Terminal capacity	0.5-2.5 mm²	0.5-2.5 mm²	0.5-2.5 mm²
Terminal screws	M4 (Pozidrive Z2)	M4 (Pozidrive Z2)	M3 (Pozidrive Z0)
Fastening torque of terminal screws	max. 1.2 Nm	max. 1.2 Nm	max. 0.8-1.0 Nm

Dimensions (mm)

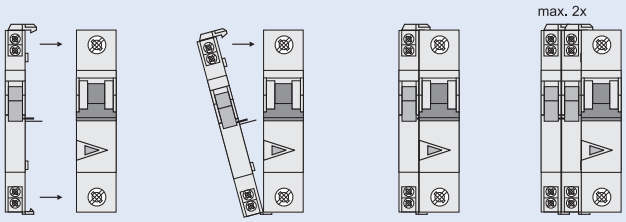
ZP-IHK, ZP-WHK



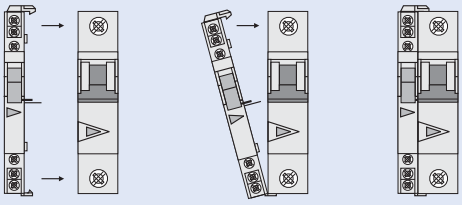
ZP-NHK



Example: ZP-IHK (ZP-WHK) + MCB



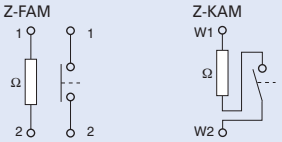
Example: ZP-NHK + MCB



RCCB Tripping Module Z-FAM, Z-KAM

- For remote switch-off of RCCBs, standard and electronic combined RCD/MCB devices
- Remote switch-off by one or several parallel potential-free contacts, e.g. pushbutton max. rated current 3 A at 250 V, take into account maximum pushbutton voltage
- Remote tripping test by means of remote testing module Z-FW
- Can be mounted subsequently, to be wired according to connection diagram with the respective terminals of the RCCB
- Tripping module for RCCB 0.5A upon enquiry
- No undesired voltage rise in the consumer system during remote switch-off thanks to integrated breaker contact K1-K2

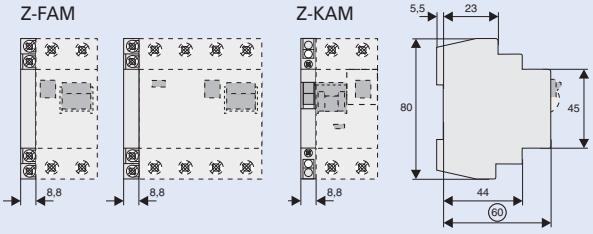
Connection diagram



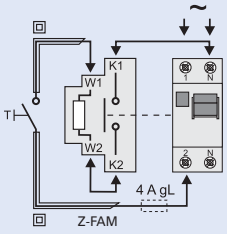
Technical Data

	Z-FAM	Z-KAM
Electrical		
Tripping module for	RCCB	RCBO, RCCB
Rated voltage	230(400) V AC	230(400) V AC
Frequency	50-60 Hz	50-60 Hz
Rated tripping current $I_{\Delta n}$	0.01 - 0.3 A	0.01 - 0.3 A
Function	1NO	1NO
Mechanical		
Frame size	45 mm	45 mm
Device height	80 mm	80 mm
Device width	8.8 mm (0.5MU)	8.8 mm (0.5MU)
Degree of protection, built-in	IP40	IP40
Terminal capacity	1 - 2x2.5 mm^2	1 - 2x2.5 mm^2
Terminal protection	finger and hand touch safe, according to BGV A3, ÖVE-EN 6	

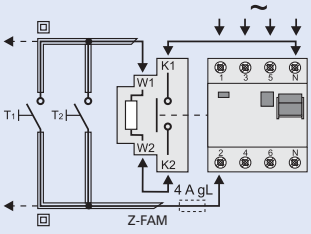
Dimensions (mm)



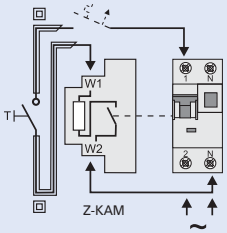
Connection examples Lay lines to the switching devices with double insulation **and** overload protection, e.g. 4A gL



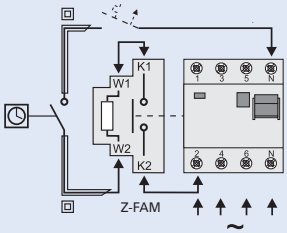
Connection diagram:
RCCB-2p, RCCB feed above



Connection diagram:
RCCB-4p, RCCB feed above



Connection diagram:
RCBO-2p, RCBO feed below

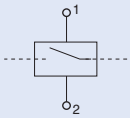


Connection diagram:
RCCB-4p, RCCB feed below

Shunt Trip Release ZP-ASA

- Remote release for subsequent mounting onto MCB, RCBO
- Module width 1MU
- Additional installation of standard auxiliary switch is possible
- Position indicator red - green
- For snap-on mounting

Connection diagram

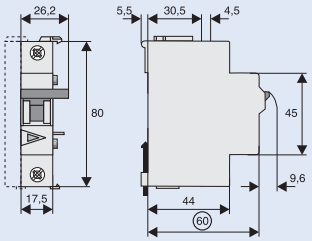


Technical Data

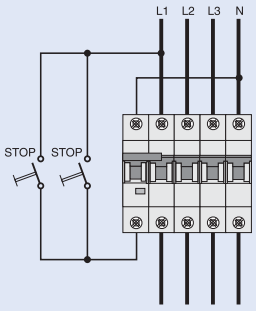
	ZP-ASA24	ZP-ASA230
Electrical		
Can be mounted onto RCDs, combined RCD/MCBs:	MCB, RCBO	MCB, RCBO
Operational voltage range	12-110V AC 12-60V DC	110-415V AC 110-220V DC
Frequency	50/60 Hz	50/60 Hz
Possible standard auxiliary switch	ZP-NHK	ZP-NHK
Mechanical		
Frame size	45 mm	45 mm
Device height	80 mm	80 mm
Device width	17.5 mm (1MU)	17.5 mm (1MU)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715	
Degree of protection, built-in	IP40	IP40
Terminal protection	finger and hand touch safe according to BGV A3, ÖVE-EN 6	
Terminals	open mouthed/lift + guide	open mouthed/lift + guide
Terminal capacity	1-25 mm^2	1-25 mm^2

Dimensions (mm)

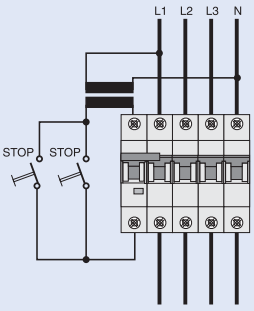
ZP-ASA



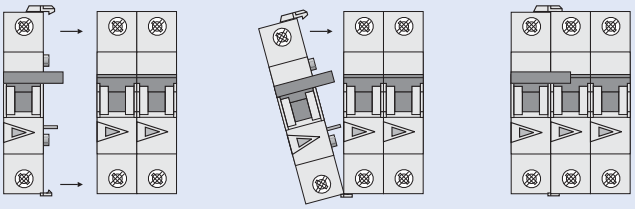
Connection Example 230 V



Connection Example 24 V



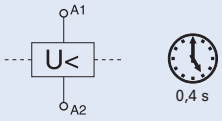
Example: ZP-ASA + MCB



Undervoltage Release Z-USA, Z-USD

- Tripping:
  Instantaneous Z-USA
  Delayed Z-USD, typ. 0,4 s
- Voltage control indicator blue/white
- Service key for zero voltage switch-on for testing purposes
- Can be used with MCB

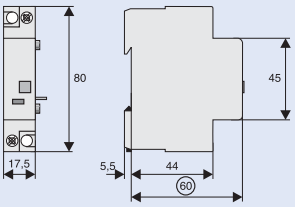
Connection diagram



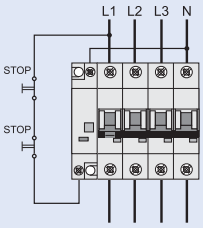
Technical Data

	Z-US./115	Z-US./230	Z-US./400
Electrical			
Rated voltage U_n	115 V AC	230 V AC	400 V AC
Frequency	50-60 Hz	50-60 Hz	50-60 Hz
Making threshold	80% of U_n	80% of U_n	80% of U_n
Tripping threshold	50% of U_n	50% of U_n	50% of U_n
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	17.5 mm (1MU)	17.5 mm (1MU)	17.5 mm (1MU)
Mounting	quick fastening on DIN rail IEC/EN 60715		
Degree of protection, built-in	IP40	IP40	IP40
Terminals	open mouthed/lift	open mouthed/lift	open mouthed/lift
Terminal capacity	1 - 2x2.5 mm^2	1 - 2x2.5 mm^2	1 - 2x2.5 mm^2
Terminal protection	finger and hand touch safe, according to BGV A3, ÖVE-EN 6		

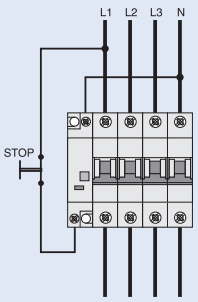
Dimensions (mm)



Connection Example Release



Connection Example



Connection example
Z-USA/230 + MCB

Switching interlocks IS/SPE-1TE, Z-IS/SPE-1TE

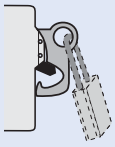
- Without lock

Type IS/SPE-1TE:

- for Isolators, RCDs, combined RCD/MCBs, ...

Type Z-IS/SPE-1TE:

- for MCBs and Circuit Breaker ZP-A



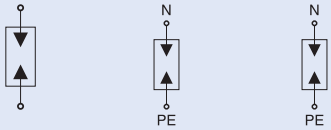
SPD Class T1 (formerly B), SPI

- Field of application: For the protection of low voltage distribution systems against direct lightning stroke into the overhead power supply line or external lightning protection system (IEC 62305).
- Application according to IEC 60364-5-53 Clause 534
- Test class I in accordance with IEC 61643-1
- SPD-type T1 in accordance with EN 61643-1
- Capsuled version: during the discharge process, the device does not issue any hot ionised gases. Therefore, there is no need for keeping a safety distance to flammable materials.

Practical Hint

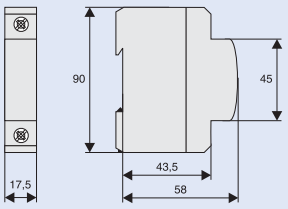
Installation of lightning current arresters upstream of the meter is subject to co-ordination with the relevant power supply company.
Installation of an r.m.s.ective protection cascade (SPD classes B, C, D) requires co-ordinated application of the respective protective devices. This is ensured by a defined line length between protective devices. When using lightning current arresters of type SPI in connection with surge arresters SPC with a maximum continuous operating voltage Uc of 460 V AC, no specific line length or decoupling coils are required.

Technical Data

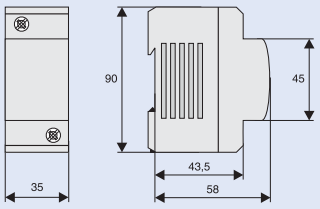
	SPI-35/440	SPI-50/NPE	SPI-100/NPE
Electrical			
Design	capsuled	capsuled	capsuled
Responding time t_r	< 100 ns	< 100 ns	< 100 ns
Voltage protection level U_p	1.5 kV	1.5 kV	1.5 kV
Maximum continuous operating voltage U_C	440 VAC	260 VAC	260 VA
Temporary overvoltage test value U_T (200 ms)	–	1200 VAC	1200 VAC
(5 s)	$U_T = U_C$	–	–
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz
Discharge current (8/20) µs I_{max}/I_n	35 kA	50 kA	100 kA
Impulse current I_{imp} (10/350) µs			
Peak current	35 kA	50 kA	100 kA
Charge Q	17.5 As	25 As	50 As
Specific energy	305 kJ/Ω	625 kJ/Ω	2500 kJ/Ω
Insulation resistance R_{ISO}	>10 MΩ	>10 MΩ	>10 MΩ
Follow current interrupt rating I_{fi}	$3kA_{r.m.s}$/260V	$500A_{r.m.s}$/260V	$100A_{r.m.s}$/260V
	$1.5kA_{r.m.s}$/440V	–	–
Short-circuit current strength at max. back-up fuse	$25kA_{r.m.s}$	–	–
Maximum back-up fuse	125 AgL	–	–
Connection diagram			
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	90 mm	90 mm	90 mm
Device width	17.5 mm	17.5 mm	35 mm
Weight	174 g	178 g	320 g
Upper and lower lift terminal capacity			
rigid	0.5 - 35 mm^2	0.5 - 35 mm^2	10 - 50 mm^2
flexible	0.5 - 25 mm^2	0.5 - 25 mm^2	16 - 35 mm^2
Tightening torque of terminal screws	4 - 4.5 Nm	4 - 4.5 Nm	6 - 8 Nm
Mounting	quick fastening on DIN rail IEC/EN 60715		
Degree of protection acc. to IEC 60529 (installed)	IP20 (IP40)		
Accessories: busbars	Z-GV-U/		
Permitted relative air humidity	< 95%		
Permitted ambient temperature	-40°C to +85°C		

Dimensions (mm)

SPI-35/440, SPI-50/NPE

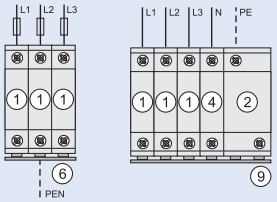


SPI-100/NPE



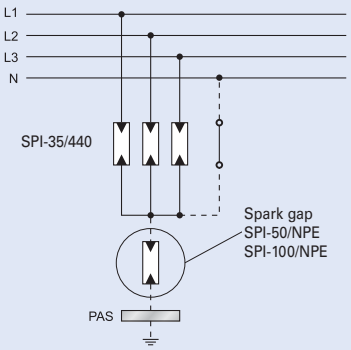
Lightning current arrester Sets, Lightning protection classes I, II, III, IV

SPI-35/440/3 SPI-3+1



① . . .SPI-35/440
② . . .SPI-100/NPE
④ . . .SPB-D-125
⑥. . . .Z-GV-U/3
⑨ . . .Z-GV-U/6

Application Example

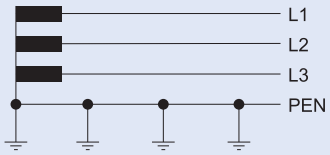
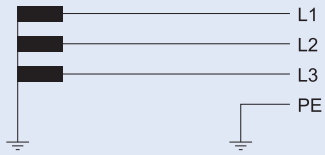
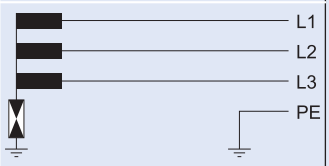
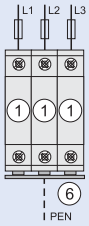
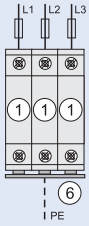
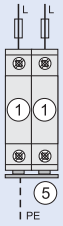


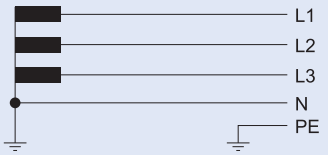
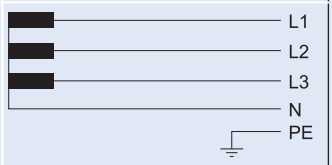
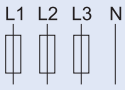
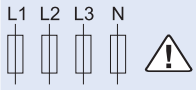
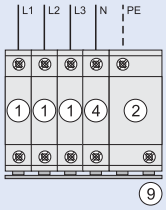
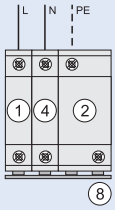
Attention!
SPI-.../NPE should be used only as a N-PE spark gap in a e.g. TT-system (connection type 2 according to IEC 60364-5-534 Clause 534)

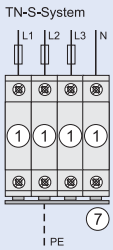
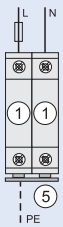
SPI-50/NPE: for protection class III, IV according to IEC 62305
SPI-100/NPE: for protection class I, II, III, IV according to IEC 62305

Busbar Connection Examples according to IEC 60364-5-53 Clause 534

SPD Class B SPI B

TN-C-System	TT-System 3 x 230 VAC	IT-System 3 x 230 VAC
3 x 240/415 V AC 3 x 230/400 V AC 3 x 220/380 V AC			
SPI-35/440/3		SPI-35/440/3	
			
4 wires	2 wires	4 wires	3 wires

TN-S-System	TT-System	IT-System 3 x 230/400 VAC
3 x 240/415 V AC 3 x 230/400 V AC 3 x 220/380 V AC			
			
SPI-3+1			
			
CT2		CT2	
5 wires		3 wires	

TN-S-System	
	
CT1	CT1
5 wires	3 wires

Lightning current arrester

① . . .SPI-35/440

② . . .SPI-100/NPE for protection class I, II, III, IV
SPI-50/NPE for protection class III, IV

Lead-through terminal

④ . . .SPB-D-125

Busbar

⑤ . . .Z-GV-U/2

⑥ . . .Z-GV-U/3

⑦ . . .Z-GV-U/4

⑧ . . .Z-GV-U/4 at SPI-100/NPE
Z-GV-U/3 at SPI-50/NPE

⑨ . . .Z-GV-U/6 (Z-GV-U/5 at SPI-50/NPE)

CT1 . .Connection type 1
CT2 . .Connection type 2

Lightning current arrester - surge arrester Sets, Lightning protection classes I, II, III, IV

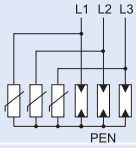
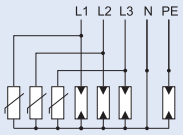
SPD Class T1&T2 (formerly B+C), SP-B+C

- Field of application: For the protection of low voltage distribution systems against direct lightning stroke into the overhead power supply line or external lightning protection system (IEC 62305) and against indirect lightning stroke and switching operations.
- Application according to IEC 60364-5-53 Clause 534
- Test class I and II in accordance with IEC 61643-1
- SPD-type T1 and T2 in accordance with EN 61643-11
- Capsuled version: during the discharge process, the device does not issue any hot ionised gases. Therefore, there is no need for keeping a safety distance to flammable materials.

Practical Hint

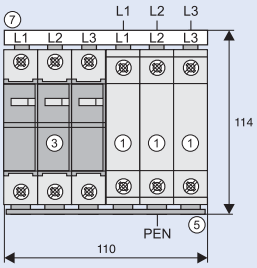
Installation of lightning current arresters upstream of the meter is subject to co-ordination with the relevant power supply company.
Installation of an r.m.s.ective protection cascade (SPD classes B, C, D) requires co-ordinated application of the respective protective devices. This is ensured by a defined line length between protective devices. When using lightning current arresters of type SPI in connection with surge arresters SPC with a maximum continuous operating voltage Uc of 460 V AC, no specific line length or decoupling coils are required.

Technical Data

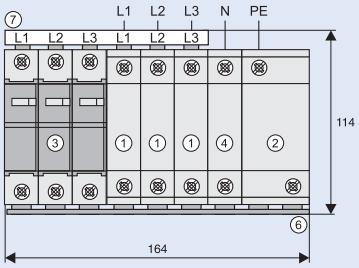
		SP-B+C/3	SP-B+C/3+1
Electrical			
Design		capsuled	capsuled
Responding time t_r		< 25 ns	< 25 ns
Voltage protection level U_p		1.5 kV	1.5 kV
Maximum continuous operating voltage U_C	L-(PE)N / N-PE	440 VAC / –	440 VAC / 260 VAC
Temporary overvoltage test value U_T	L-(PE)N	$U_T = U_c$	$U_T = U_c$
	N-PE	–	1200 VAC (200 ms)
Rated frequency		50/60 Hz	50/60 Hz
Discharge current (8/20) µs I_{max}/I_n		3x35 kA	100 kA
Impulse current I_{imp} (10/350) µs			
Peak current		100 kA	100 kA
Charge Q		50 As	50 As
Specific energy		2500 kJ/Ω	2500 kJ/Ω
Follow current interrupt rating I_{fi}	L-(PE)N / N-PE		
at 260 V		$3kA_{rms}$ / –	$3kA_{rms}$ / $100A_{rms}$
at 440 V		$1{,}5kA_{rms}$ / –	$1{,}5kA_{rms}$ / –
Short-circuit current strength at max. back-up fuse		$25kA_{rms}$	$25kA_{rms}$
Maximum back-up fuse		125 AgL	125 AgL
Connection diagram			
Mechanical			
Frame size		45 mm	45 mm
Device height		90 mm	90 mm
Device width		110 mm	164 mm
Weight		1100 g	1420 g
Upper and lower lift terminal capacity			
rigid	L, N, PEN / PE	0.5 - 35 mm^2	0.5 - 35 mm^2 / 10 - 50 mm^2
flexible	L, N, PEN / PE	0.5 - 25 mm^2	0.5 - 25 mm^2 / 16 - 35 mm^2
Tightening torque of terminal screws		4 - 4.5 Nm	4 - 4.5 Nm / 6 - 8 Nm
Mounting		quick fastening on DIN rail IEC/EN 60715	
Degree of protection acc. to IEC 60529 (installed)		IP20 (IP40)	
Accessories: busbars		Z-GV-U/	
Permitted relative air humidity		< 95%	
Permitted ambient temperature		-40°C to +70°C	

Dimensions (mm)

TN-C-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



TT-, TN-S-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



Lightning current arrester - surge arrester

① . . .SPI-35/440
② . . .SPI-100/NPE for protection class I, II, III, IV
③ . . .SPC-S-20/460/3

Lead-through terminal

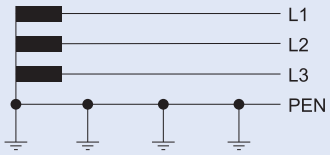
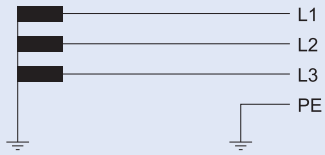
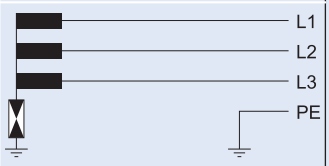
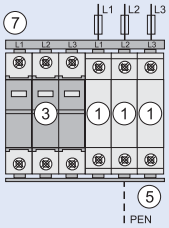
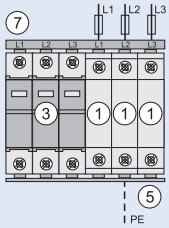
④ . . .SPB-D-125

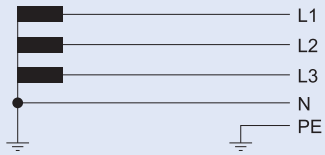
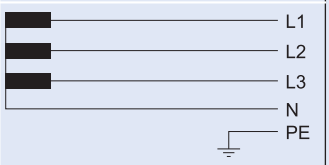
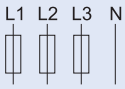
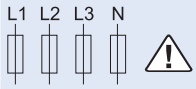
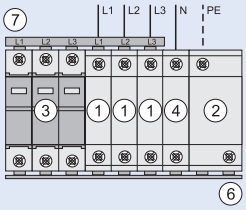
Busbar

⑤ . . .Z-GV-U/6
⑥ . . .Z-GV-U/9
⑦ . . .Z-GV-16/3P-3TE/6

Busbar Connection Examples according to IEC 60364-5-53 Clause 534

SPD Class B+C SPI B SPC C

TN-C-System	TT-System 3 x 230 VAC	IT-System 3 x 230 VAC
3 x 240/415 V AC 3 x 230/400 V AC 3 x 220/380 V AC			
SP-B+C/3	SP-B+C/3	
		
4 wires	4 wires	

TN-S-System	TT-System	IT-System 3 x 230/400 VAC
3 x 240/415 V AC 3 x 230/400 V AC 3 x 220/380 V AC			
		
SP-B+C/3+1		
		
CT2		
5 wires		

Lightning current arrester

① . . .SPI-35/440

② . . .SPI-100/NPE for protection class I, II, III, IV
SPI-50/NPE for protection class III, IV

③ . . .SPCT2-460/3

Lead-through terminal

④ . . .SPB-D-125

Busbar

⑤ . . .Z-GV-U/6

⑥ . . .Z-GV-U/9

⑦ . . .Z-GV-16/3P-3TE/6

CT2 . .Connection type 2

Application Examples according to IEC 60364-5-53 Clause 534

Lightning current arrester

① . . .SPI-35/440
⑥ . . .SPI-100/NPE
③ . . .SPI-50/NPE

Surge arrester

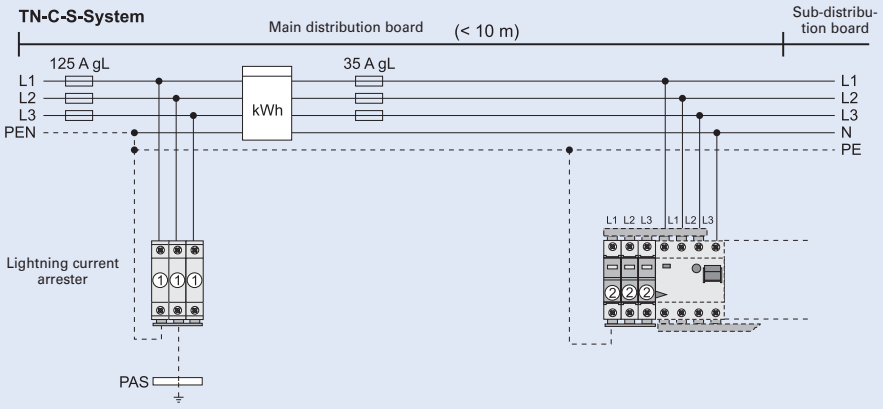
② . . .SPCT2-460/3

Lead-through terminal

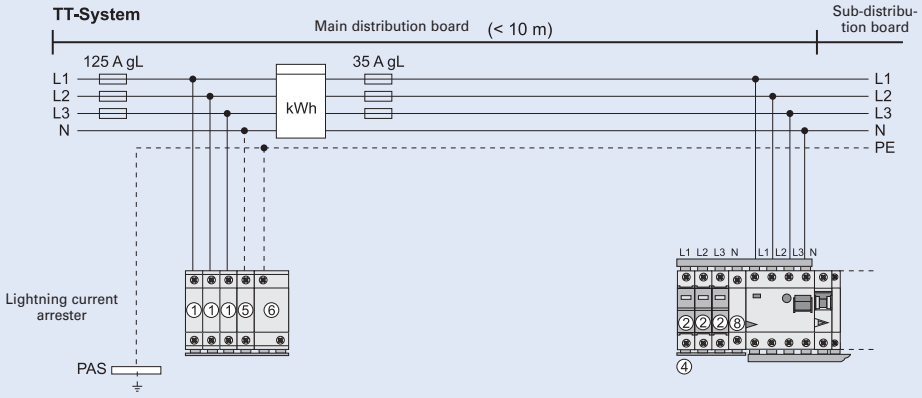
⑤ . . .SPB-D-125
⑧ . . .ASLTT-63

Busbar

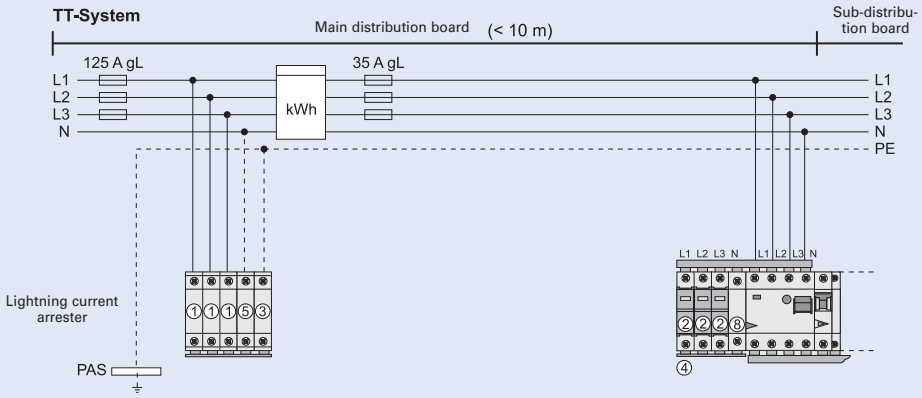
④ . . .ZV-KSBI-4TE



Protection Class I, II, III, IV



Protection Class III, IV

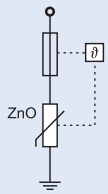


SPD Class T1&T2 (formerly B+C), SPBT12

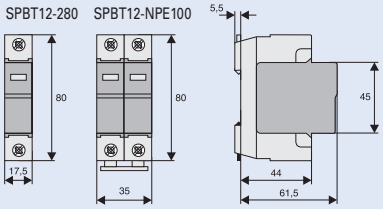
- Field of application
  For the protection of low voltage distribution systems against transient overvoltage caused by direct and indirect lightning stroke and switching operations.
- Application according to IEC 60364-5-53 Clause 534
- Test class I, II in accordance with IEC 61643-1
- SPD-type T1, T2 in accordance with EN 61643-11
- Lightning protection classes III and IV in accordance with IEC 62305
- Busbars ZV-KSBI are available for all customary applications

Block Diagram

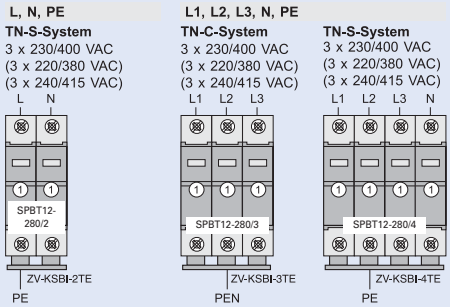
Technical Data

	SPBT12-280...	SPBT12-NPE100
Electrical	per pole	
Responding time (rate of voltage rise 5 kV/µs)	< 25 ns	< 100 ns
Voltage protection level U_p	< 1.5kV	< 1.5kV
Voltage protection level at 5 kA (8/20) µs	950 V	–
Maximum continuous operating voltage U_C	280 VAC	255 VAC
Temporary overvoltage test value U_T	370 VAC (5 s)	1200 VAC (200 ms)
Rated frequency	50/60 Hz	50/60 Hz
Open circuit voltage U_{oc}	10 kV	20 kV
Nominal discharge current (8/20) µs I_n	25 kA	100 kA
Maximum discharge current I_{max}	50 kA	100 kA
Imulse current I_{imp} (10/350) µs		
Peak current	12.5 kA	100 kA
Charge Q	6.25 As	50 As
Specific energy	39.1 kJ/Ω	2500 kJ/Ω
Follow current interrupt rating I_{fi}	–	100 $A_{r.m.s}$
Maximum back-up fuse	160 AgL/gG	–
Maximum short-circuit current	50 $kA_{r.m.s}$	–
Connection diagram		
Mechanical		
Frame size	45 mm	45 mm
Device height	80 mm	80 mm
Device width	17.5 mm	35 mm
Weight	121 g	250 g
Permitted ambient temperature	-40°C to +70°C	-40°C to +70°C
Degree of protection (built-in)	IP40	IP40
Upper and lower lift terminal capacity	4 - 25 mm^2	4 - 35 mm^2
Upper and lower open mouthed terminals for busbar thickness up to	1.5 mm	1.5 mm
Tightening torque of terminal screws	2.4 - 3 Nm	2.4 - 3 Nm
Quick fastening on DIN rail according to	IEC/EN 60715	IEC/EN 60715
Accessories: busbars 16 mm^2	Type ZV-KSBI ...	Type ZV-KSBI ...

Dimensions (mm)



Lightning current arrester - surge arrester Sets, Lightning protection classes III, IV



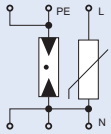
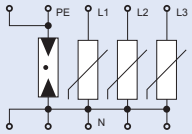
① . . .SPBT12-280

SPD Class T1&T2 (formerly B+C), SPBT12-280

- Field of application
  For the protection of low voltage distribution systems against transient overvoltage caused by direct and indirect lightning stroke and switching operations.
- Application according to IEC 60364-5-53 Clause 534
- Test class I, II in accordance with IEC 61643-1
- SPD-type T1, T2 in accordance with EN 61643-11
- Lightning protection classes III and IV in accordance with IEC 62305
- Busbars ZV-KSBI are available for all customary applications

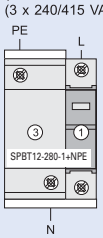
Block Diagram

Technical Data

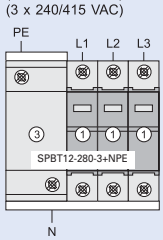
		SPBT12-280-1+NPE	SPBT12-280-3+NPE
Electrical		per pole	
Responding time (rate of voltage rise 5 kV/µs)	L-N / N-PE	< 25 ns / < 100 ns	< 25 ns / < 100 ns
Voltage protection level U_p	L-N / L-PE / N-PE	< 1.5kV	< 1.5kV
Maximum continuous operating voltage U_C	L-N / N-PE	280 VAC / 255 VAC	280 VAC / 255 VAC
Temporary overvoltage test value U_T (5 s)	L-N / L-PE	348 VAC / 370 VAC	348 VAC / 370 VAC
(200 ms)	N-PE	1200 VAC	1200 VAC
Rated frequency		50/60 Hz	50/60 Hz
Open circuit voltage U_{oc}		10 kV	20 kV
Nominal discharge current (8/20) µs I_n	L-N / N-PE	25 kA / 100 kA	3x25 kA / 100 kA
Maximum discharge current I_{max}	L-N / N-PE	50 kA / 100 kA	3x50 kA / 100 kA
Imulse current I_{imp} (10/350) µs			
Peak current	L-N / N-PE	12.5 kA / 100 kA	3x12.5 kA / 100 kA
Charge Q		50 As	50 As
Specific energy		2500 kJ/Ω	2500 kJ/Ω
Follow current interrupt rating I_{fi}	N-PE	100 $A_{r.m.s}$	100 $A_{r.m.s}$
Maximum back-up fuse		160 AgL/gG	160 AgL/gG
Maximum short-circuit current		50 $kA_{r.m.s}$	50 $kA_{r.m.s}$
Connection diagram			
Mechanical			
Frame size		45 mm	45 mm
Device height		80 mm	80 mm
Device width		52.5 mm	87.5 mm
Weight		375 g	626 g
Permitted ambient temperature		-40°C to +70°C	-40°C to +70°C
Degree of protection (built-in)		IP40	IP40
Upper and lower lift terminal capacity	L, N	4 - 25 mm^2	4 - 25 mm^2
	N, PE	4 - 35 mm^2	4 - 35 mm^2
Upper and lower open mouthed terminals for busbar thickness up to		1.5 mm	1.5 mm
Tightening torque of terminal screws		2.4 - 3 Nm	2.4 - 3 Nm
Quick fastening on DIN rail according to		IEC/EN 60715	IEC/EN 60715
Accessories: busbars 16 mm^2		Type ZV-KSBI ...	Type ZV-KSBI ...

Lightning current arrester - surge arrester Sets, Lightning protection classes III, IV

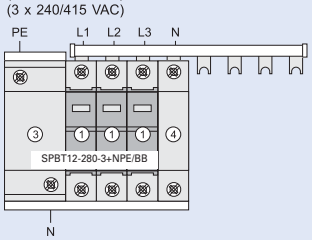
L, N, PE
TN-S-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



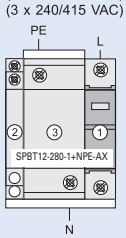
L1, L2, L3, N, PE
TN-S/TT-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



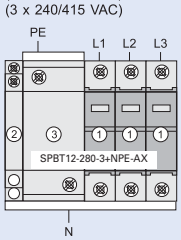
TN-S/TT-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



L, N, PE
TN-S-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



L1, L2, L3, N, PE
TN-S/TT-System
3 x 230/400 VAC
(3 x 220/380 VAC)
(3 x 240/415 VAC)



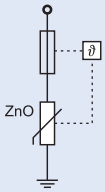
① . . .SPBT12-280
② . . .ASAUXSC-SPM
③ . . .SPI-100/NPE
④ . . .ASLTT-63

SPD Class T2 (formerly C), SPCT2

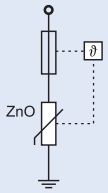
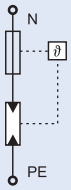
- Field of application:
  For the protection of low voltage distribution systems against transient overvoltage caused by indirect lightning stroke and switching operations.
- Test class II according to IEC 61643-1+A1
- SPD-type T2 according to EN 61643-11
- Auxiliary switch SPC-S-HK for remote message transmission can be mounted onto the device
- Suitable for busbar connection to all Xtra Combinations switchgear
- Busbars ZV-KSBI are available for all customary applications

Symbol

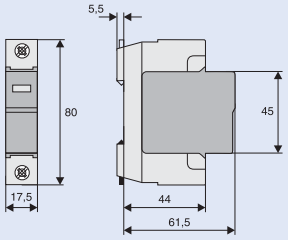
Technical Data

Inserts	SPCT2-075	SPCT2-130	SPCT2-175	SPCT2-280	SPCT2-335	SPCT2-385	SPCT2-460
Electrical							
Mechanical coding	x	x	x	x	x	x	x
Responding time (rate of voltage rise 5 kV/µs)	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns	< 25 ns
Voltage protection level at nominal discharge current / U_{oc}	< 550 V	< 800 V	< 1.0 kV	< 1.4 kV	< 1.6 kV	< 1.8 kV	< 2.2 kV
Voltage protection level at 5 kA (8/20) µs	400 V	550 V	700 V	1000 V	1200 V	1350 V	1700 V
Maximum continuous operating voltage U_c	75 VAC	130 VAC	175 VAC	280 VAC	335 VAC	385 VAC	460 VAC
Temporary overvoltage test value U_T (5 s)	= U_C	= U_C	= U_C	350 VAC	415 VAC	415 VAC	580 VAC
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz	50/60 Hz
Open circuit voltage U_{oc}	–	–	–	10 kV	5 kV	–	–
Nominal discharge current (8/20) µs I_n	15 kA	20 kA	15 kA	20 kA	20 kA	20 kA	20 kA
Charge Q at I_n	0.43 As	0.57 As	0.57 As	0.57 As	0.57 As	0.57 As	0.57 As
Specific energy at I_n	3.2 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω
Maximum discharge current I_{max}	30 kA	40 kA	40 kA	40 kA	40 kA	40 kA	40 kA
Follow current interrupt rating I_{fi}	–	–	–	–	–	–	–
Permissible back-up fuse Maximum short-circuit current	≤ 125 AgL 50 $kA_{r.m.s.}$		PLHT-C100 20 $kA_{r.m.s.}$				
Connection diagram							
Mechanical							
Frame size	45 mm						
Device height	80 mm						
Device width							
1-pole	17.5 mm (1MU)						
1+1-pole	35 mm (2MU)						
2-pole	35 mm (2MU)						
3-pole	52.5 mm (3MU)						
3+1-pole	70 mm (4MU)						
4-pole	70 mm (4MU)						
Mechanical coding							
1-pole	x						
1+1-pole	yx						
2-pole	xx						
3-pole	xxx						
3+1-pole	yxxx						
4-pole	xxxx						
Weight Base 1P, 1+1P, 2P, 3P, 3+1P, 4P	53/120/120/180/240/240 g						
Weight Complete Devices 1P, 1+1P, 2P, 3P, 3+1P, 4P	110/201/220/330/412/440 g						
Permitted ambient temperature	-40°C to +70°C						
Degree of protection (built-in)	IP40						
Upper and lower lift terminal capacity	4 - 25 mm^2						
Upper and lower open mouthed terminals for busbar thickness up to	1.5 mm						
Tightening torque of terminal screws	2.4 - 3 Nm						
Quick fastening on DIN rail according to	IEC/EN 60715						
Accessories: busbars 16 mm^2	Type ZV-KSBI ...						

Technical Data

Inserts	SPCT2-580	SPCT2-NPE60
Electrical		
Mechanical coding	x	y
Responding time (rate of voltage rise 5 kV/µs)	< 25 ns	< 100 ns
Voltage protection level at nominal discharge current / U_{oc}	< 2.6 kV	< 1.0 kV
Voltage protection level at 5 kA (8/20) µs	2000 V	–
Maximum continuous operating voltage U_c	580 VAC	260 VAC
Temporary overvoltage test value U_T	= U_C (5 s)	1200 VAC (200 ms)
Rated frequency	50/60 Hz	50/60 Hz
Nominal discharge current (8/20) µs I_n	20 kA	20 kA
Charge Q at I_n	0.57 As	0.57 As
Specific energy at I_n	5.7 kJ/Ω	5.7 kJ/Ω
Maximum discharge current I_{max}	40 kA	60 kA
Follow current interrupt rating I_{fi}	–	100 $A_{r.m.s}$
Permissible back-up fuse	≤ 125 AgL	PLHT-C100	–
Maximum short-circuit current	50 $kA_{r.m.s.}$	20 $kA_{r.m.s.}$	–
Connection diagram		
Mechanical		
Frame size	45 mm	
Device height	80 mm	
Device width		
1-pole	17.5 mm (1MU)	
1+1-pole	35 mm (2MU)	
2-pole	35 mm (2MU)	
3-pole	52.5 mm (3MU)	
3+1-pole	70 mm (4MU)	
4-pole	70 mm (4MU)	
Mechanical coding		
1-pole	x	
1+1-pole	yx	
2-pole	xx	
3-pole	xxx	
3+1-pole	yxxx	
4-pole	xxxx	
Weight Base 1P, 1+1P, 2P, 3P, 3+1P, 4P	53/120/120/180/240/240 g	
Weight Complete Devices 1P, 1+1P, 2P, 3P, 3+1P, 4P	110/201/220/330/412/440 g	
Permitted ambient temperature	-40°C to +70°C	
Degree of protection (built-in)	IP40	
Upper and lower lift terminal capacity	4 - 25 mm^2	
Upper and lower open mouthed terminals for busbar thickness up to	1.5 mm	
Tightening torque of terminal screws	2.4 - 3 Nm	
Quick fastening on DIN rail according to	IEC/EN 60715	
Accessories: busbars 16 mm^2	Type ZV-KSBI ...	

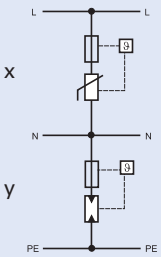
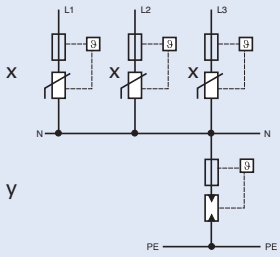
Dimensions (mm)



SPD Class T2 (formerly C), SPCT2-1+NPE, SPCT2-3+NPE

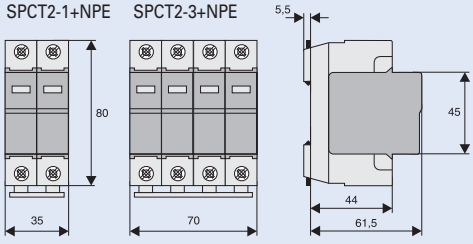
- Field of application:
  For the protection of low voltage distribution systems against transient overvoltage caused by indirect lightning stroke and switching operations.
- Test class II according to IEC 61643-1+A1
- SPD-type T2 according to EN 61643-11
- Auxiliary switch SPC-S-HK for remote message transmission can be mounted onto the device
- Suitable for busbar connection to all Xtra Combinations switchgear
- Type **SPC-S-3+1**:
  consists of 1 base SPC-S-S4-3+1,
  1 insert SPC-S-N/PE and 3 inserts SPC-S-20/335
- Type **SPC-S-1+1**:
  consists of 1 base SPC-S-S2-1+1,
  1 insert SPC-S-N/PE and 1 insert SPC-S-20/335

Technical Data

		SPCT2-1+NPE	SPCT2-3+NPE
Electrical			
Mechanical coding		yx	yxxx
Responding time (rate of voltage rise 5 kV/µs)	L-N/N-PE/L-PE	< 25ns/< 100ns/< 100ns	< 25ns/< 100ns/< 100ns
Maximum continuous operating voltage U_C	L-N/N-PE	335VAC/260VAC	280VAC/260VAC
Temporary overvoltage test value U_T (5 s)	L-N	415 VAC	350 VAC
(200 ms)	N-PE	1200 VAC	1200 VAC
Rated frequency		50/60 Hz	50/60 Hz
Nominal discharge current I_n	L-N/N-PE/L-PE	20 kA (8/20)µs	20 kA (8/20)µs
Voltage protection level U_p at I_n	L-N/N-PE/L-PE	≤1600V/≤1000V/≤1650V	≤1000V/≤1000V/≤1300V
Maximum discharge current I_{max}	L-N/N-PE/L-PE	40 kA (8/20)µs	40 kA (8/20)µs
Follow current interrupt rating I_{fi}	N-PE	100 $A_{r.m.s.}$	100 $A_{r.m.s.}$
Permissible back-up fuse Maximum short-circuit current		≤ 125 AgL 50 $kA_{r.m.s.}$	PLHT-C100 20 $kA_{r.m.s.}$
Connection diagram			
Mechanical			
Mechanical coding of base		yx	yxxx
Frame size		45 mm	45 mm
Device height		80 mm	80 mm
Device width		35 mm	70 mm
Weight		201 g	412 g
Upper and lower lift terminal capacity		1 - 25 mm^2	1 - 25 mm^2
Open-mouthed terminals at both sides for busbar thickness up to		1.5 mm	1.5 mm
Tightening torque of terminal screws		2.4 - 3 Nm	2.4 - 3 Nm
Permitted ambient temperature		-40°C to +70°C	-40°C to +70°C
Mounting		quick fastening on DIN rail IEC/EN 60715	
Degree of protection (built-in)		IP40	IP40

Dimensions (mm)

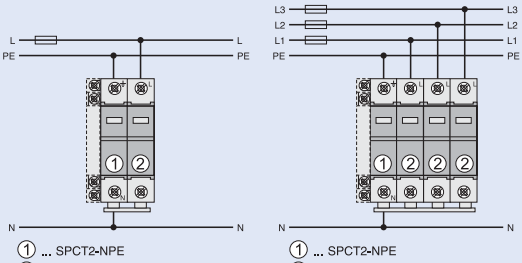
SPCT2-1+NPE SPCT2-3+NPE



Application Examples

SPCT2-1+NPE
TN-, TT-System
3 x 230/400 VAC
3 x 240/415 VAC

SPCT2-3+NPE
TN-S-, TT-System
3 x 230/400 VAC
3 x 240/415 VAC

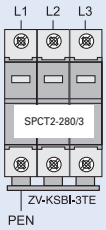


① ... SPCT2-NPE
② ... SPCT2-335

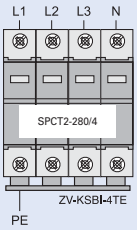
① ... SPCT2-NPE
② ... SPCT2-280

Application Examples SPCT2 according to IEC 60364-5-53 Clause 534

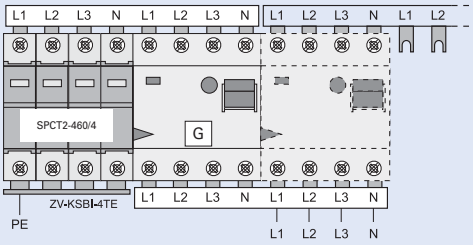
TN-C-System
3 x 240/415 VAC
3 x 230/400 VAC
3 x 220/380 VAC



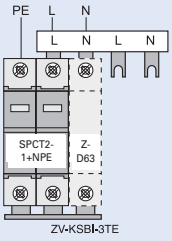
TN-S-System
3 x 240/415 VAC
3 x 230/400 VAC
3 x 220/380 VAC



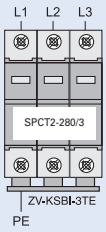
TT-System
3 x 230/400 VAC
3 x 220/380 VAC



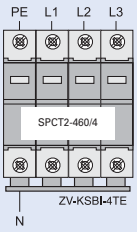
TN-S-/TT-System
3 x 240/415 VAC
3 x 230/400 VAC
3 x 220/380 VAC



IT-System
3 x 230 VAC
3 x 220 VAC



IT-System
3 x 230/400 VAC
3 x 220/380 VAC



Surge arrester Sets

SPD Class C, SPCT2

Surge Arrester Set SPCT2-335-3+NPE/BB

- The 3+1 circuit offers a universal solution for surge protection in low voltage distribution systems
- Suitable for TT- and TN-S systems according to IEC 60364-5-53 Clause 534
- Remote message transmission is possibly by mounting auxiliary switch ASAUXSC-SPM
- Busbar connected, minimum installation work required

Content

SPCT2-335-3+NPE/BB

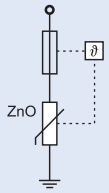
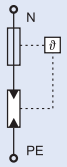
- 1 unit	SPCT2-335-3+NPE	surge arrester
- 1 unit	ASLTT-63	lead-through terminal
- busbar included		

SPD Class T2 (formerly C), SPET2

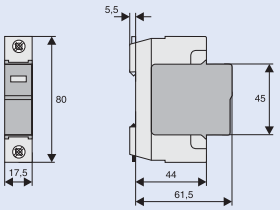
- Field of application
  For the protection of low voltage distribution systems against transient overvoltage caused by indirect lightning stroke and switching operations.
- Test class II according to IEC 61643-1+A1
- SPD-type T2 according to EN 61643-11
- Busbars ZV-KSBI are available for all customary applications
- Suitable for busbar connection to all Xtra Combinations switchgear

Block Diagram

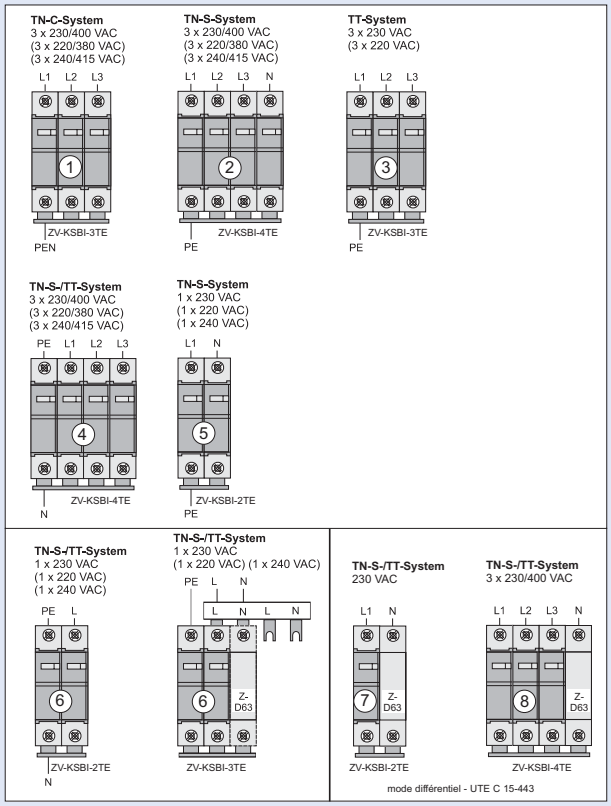
Technical Data

	SPET2-280	-335	-NPE60
Electrical			
Responding time (rate of voltage rise 5 kV/µs)	< 25 ns	< 25 ns	< 100 ns
Voltage protection level at nominal discharge current	< 1.2kV	< 1.3kV	< 1.0 kV
Voltage protection level at 5 kA (8/20) µs	1000 V	1200 V	-
Maximum continuous operating voltage U_C	280 VAC	335 VAC	260 VAC
Temporary overvoltage test value U_T (5 s)	335 VAC	400 VAC	1200 VAC
Rated frequency	50/60 Hz	50/60 Hz	50/60 Hz
Nominal discharge current (8/20) µs I_n	10 kA	10 kA	20 kA
Charge Q at I_n	0.57 As	0.57 As	0.57 As
Specific energy at I_n	5.7 kJ/Ω	5.7 kJ/Ω	5.7 kJ/Ω
Maximum discharge current I_{max}	20 kA	20 kA	60 kA
Follow current interrupt rating I_{fi}	-	-	100 A_{eff}
Permissible back-up fuse Maximum short-circuit current	≤ 100 AgL 50 kA_{eff}	≤ C63 10 kA_{eff}	
Connection diagram			
Mechanical			
Frame size	45 mm		
Device height	80 mm		
Device width	17.5 mm		
Weight	87 g		
Permitted ambient temperature	-40°C to +70°C		
Degree of protection (built-in)	IP40		
Upper and lower lift terminal capacity	4 - 25 mm^2		
Upper and lower open mouthed terminals for busbar thickness up to	1.5 mm		
Tightening torque of terminal screws	2 - 2.5 Nm		
Quick fastening on DIN rail according to	IEC/EN 60715		
Accessories: busbars 16 mm^2	Type ZV-KSBI ...		

Dimensions (mm)



Application Examples SPET2 according to IEC 60364-5-53 Clause 534



		①	②	③	④	
	IEC 60364-5-534 IEC 60364-5-53 Clause 534	SPET2-280/3	SPET2-280/4	---	SPET2-335/3+NPE	
A	ÖVE ÖNORM E8001-1	SPET2-335/3	SPET2-335/4	---	SPET2-335/3+NPE	
D	VDE V 0100-534	SPET2-280/3	SPET2-280/4	---	SPET2-335/3+NPE	
N		SPET2-280/3	SPET2-280/4	SPET2-280/3	---	

		⑤	⑥	⑦	⑧	
	IEC 60364-5-534 IEC 60364-5-53 Clause 534	SPET2-280/2	SPET2-335/1+NPE	---	---	
A	ÖVE ÖNORM E8001-1	SPET2-335/2	SPET2-335/1+NPE	---	---	
D	VDE V 0100-534	SPET2-280/2	SPET2-335/1+NPE	---	---	
F	UTE C 20-443	---	---	SPET2-280/1	SPET2-280/3	

Lead-Through Terminal for Surge Protective Devices, Class B, SPB-D-125

- The lead-through terminal permits orderly wiring of SPDs of class B. It serves as lead-through terminal in circuits requiring vertical connections from the upper to the lower SPD connection level.

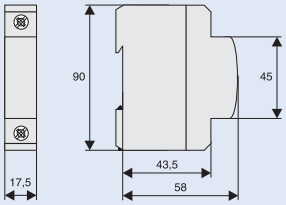
Connection diagram

Technical Data

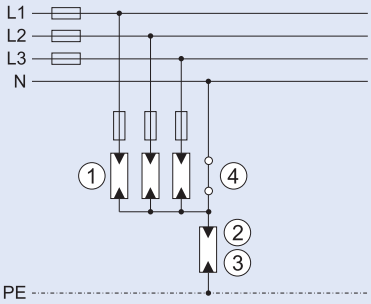
Electrical	
Design basically in accordance with	IEC 61643-1: 1998-02, DIN VDE 0675 Part 6: 1989-11, IEC 61024-1: 1990-03, IEC 60947-7-1: 1989-10, DIN VDE 0110-1: 1997-04
Rated voltage U_C	500 V AC/DC
Rated current I_N	125 A / 30°C
Impulse current (10/350) µs	
Peak current	100 kA
Charge Q	50 As
Specific energy	2,5 MJ/Ω
Overvoltage category	III

Mechanical	
Frame size	45 mm
Device height	90 mm
Device width	17.5 mm
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift and open-mouthed terminals
Terminal capacity	
rigid	0.5 - 35 mm²
flexible	0.5 - 25 mm²
Tightening torque of terminal screws	4-4.5 Nm
Permitted relative air humidity	< 95%
Pollution degree	2
Resistance to climatic conditions	F / DIN 40040
Creepage a. clearance distances acc. to	IEC 60664-1, DIN VDE 0110-1:1997-04
Temperature range	-40 to +85°C

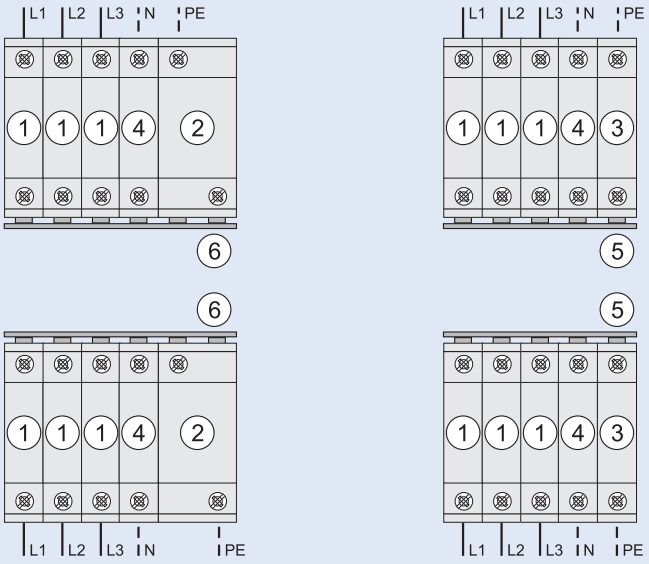
Dimensions (mm)



Connection type 2 according to IEC 60364-5-53 Clause 534



TT-System, TN-S-System , IT- System with Neutral



Lightning current arrester

① . . . SPI-35/440
② . . . SPI-100/NPE
③ . . . SPI-50/NPE

Lead-through terminal

④ . . . SPB-D-125

Busbar

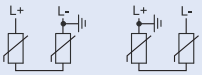
⑤ . . . Z-GV-U/5
⑥ . . . Z-GV-U/6

SPD-type T2 (Class C), Plug-in Surge Arresters SPPT2PA-...-2PE

- Field of application:
  For the protection of photovoltaic systems against transient overvoltage caused by indirect lightning stroke and switching operations.
- Test class II according to IEC 61643-1
- SPD-type T2 according to EN 61643-11
- Types SPPT2PA-...-AX for remote message transmission of defective inserts

Connection diagrams

SPPT2PA-...-2PE



Technical Data

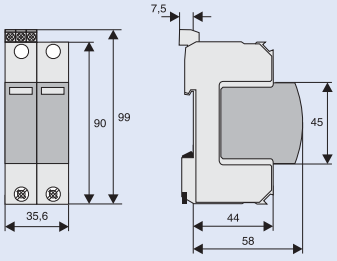
	SPPT2PA-600-2PE	SPPT2PA-1000-2PE(-AX)
Electrical		
Responding time	≤ 25 ns	≤ 25 ns
Maximum continuous operating voltage U_C	600 V DC	1000 V DC
Rated frequency	DC	DC
Nominal discharge current I_n	15 kA (8/20) µs	15 kA (8/20) µs
Voltage protection level U_p	≤ 3 kV	≤ 5 kV
Residual voltage at 5 kA (8/20) µs	≤ 2.5 kV	≤ 4 kV
Maximum discharge current I_{max}	30 kA (8/20) µs	30 kA (8/20) µs
Permissible back-up fuse	–	–
Maximum short-circuit current I_{sc}	80 A	80 A
Residual current I_{PE}	≤ 20 µA	≤ 20 µA
Mechanical		
Frame size	45 mm	45 mm
Device height	90 mm	90 mm (99 mm)
Device width	35.6 mm	35.6 mm
Weight	247 g	247 g (249 g)
Upper and lower lift terminal capacity fine- / solid strand	4-25/4-35 mm²/AWG11-2	4-25/4-35 mm²/AWG11-2
Tightening torque of terminal screws	4.5 Nm	4.5 Nm
Permitted ambient temperature	-40°C up to +80°C	-40°C up to +80°C
Mounting	quick fastening on DIN rail IEC/EN 60715	
Degree of protection	IP20	IP20
Polution degree	2	2

Auxiliary switch

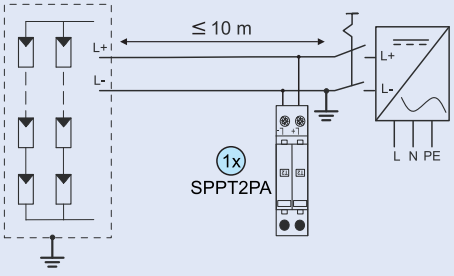
Electrical	
Rated insulation voltage	250 V
Rated frequency	50/60 Hz
Switching contact	1 CO
Minimum voltage per contact	5 V AC/DC
Rated operational current	1.5 A / 250 V AC 1.5 A / 30 V DC
Min. admissible power	5 mA / 5 V

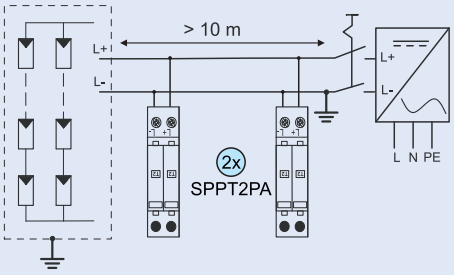
Mechanical	
Terminal capacity fine- / solid strand	1.5/1.5 mm²/AWG28-16
Tightening torque of terminal screws	0.25 Nm

Dimensions (mm)



Application hints according to EN 50539-12



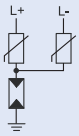


SPD-type T2 (Class C), Plug-in Surge Arresters SPPT2PA-...-2+1PE

- Field of application:
  For the protection of photovoltaic systems against transient overvoltage caused by indirect lightning stroke and switching operations.
- Test class II according to IEC 61643-1
- SPD-type T2 according to EN 61643-11
- Galvanic seperation in unearthed systems by means of a spark gap
- Types SPPT2PA-...-AX for remote message transmission of defective inserts

Connection diagrams

SPPT2PA-...-2+1PE



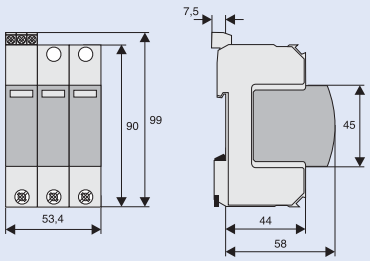
Technical Data

		SPPT2PA-600-2+1PE	SPPT2PA-1000-2+1PE(-AX)
Electrical			
Responding time	L+ -> L- / L -> PE	≤ 25 ns / ≤ 100 ns	≤ 25 ns / ≤ 100 ns
Maximum continuous operating voltage U_C		600 V DC	1000 V DC
Rated frequency		DC	DC
Nominal discharge current I_n		15 kA (8/20) µs	15 kA (8/20) µs
Voltage protection level U_p	L+ -> L- / L -> PE	≤ 3 kV / ≤ 3 kV	≤ 5 kV / ≤ 3 kV
Residual voltage at 5 kA (8/20) µs	L+ -> L- / L -> PE	≤ 2.5 kV / ≤ 2 kV	≤ 4 kV / ≤ 2 kV
Maximum discharge current I_{max}		30 kA (8/20) µs	30 kA (8/20) µs
Permissible back-up fuse		–	–
Maximum short-circuit current I_{sc}		80 A	80 A
Residual current I_{PE}		≤ 20 µA	≤ 20 µA
Mechanical			
Frame size		45 mm	45 mm
Device height		90 mm	90 mm (99 mm)
Device width		53.4 mm	53.4 mm
Weight		318 g	318 g (323 g)
Upper and lower lift terminal capacity fine- / solid strand		4-25/4-35 mm²/AWG11-2	4-25/4-35 mm²/AWG11-2
Tightening torque of terminal screws		4.5 Nm	4.5 Nm
Permitted ambient temperature		-40°C up to +80°C	-40°C up to +80°C
Mounting		quick fastening on DIN rail IEC/EN 60715	
Degree of protection		IP20	IP20
Polution degree		2	2

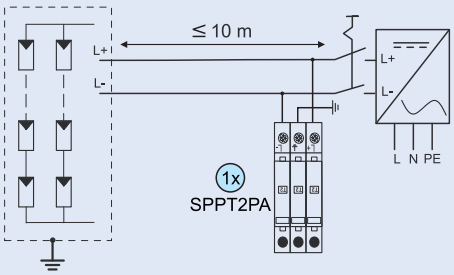
Auxiliary switch

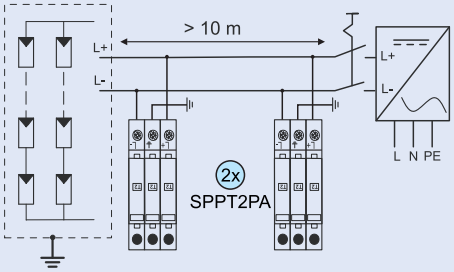
Electrical		Mechanical	
Rated insulation voltage	250 V	Terminal capacity fine- / solid strand	1.5/1.5 mm²/AWG28-16
Rated frequency	50/60 Hz	Tightening torque of terminal screws	0.25 Nm
Switching contact	1 CO		
Minimum voltage per contact	5 V AC/DC		
Rated operational current	1.5 A / 250 V AC 1.5 A / 30 V DC		
Min. admissible power	5 mA / 5 V		

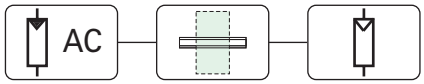
Dimensions (mm)



Application hints according to EN 50539-12







Auxiliary Switch for Surge Arresters ASAUXSC-SPM

- Field of application:
  For mounting onto surge protective devices for external defect message transmission
- Design basically in accordance with IEC 60947-5-1
- Can be mounted subsequently
- Suitable with SPBT12, SPCT2, SPET2, SPDT3

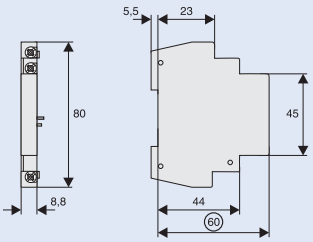
Connection diagram

Technical Data

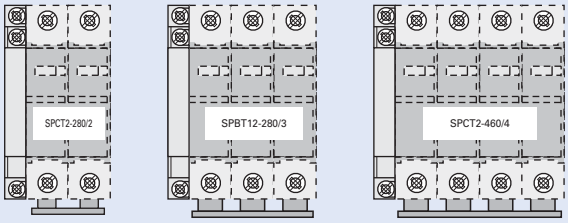
Electrical	
Rated insulation voltage	250 V
Rated frequency	50/60 Hz
Switching contact	1 CO
Minimum voltage per contact	24 VAC
Rated operational current AC12	2A/250VAC
Maximum back-up fuse	2 A gL
Overvoltage category	IV
Pollution degree	2

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	8.8 mm
Weight	41 g
Mounting	screw-mounting
Degree of protection, built-in	IP40
Finger and hand touch safe acc. to	BGV A3, ÖVE-EN 6
Upper and lower terminals	lift terminals
Terminal capacity	2 x 2.5 mm^2
Tightening torque of terminal screws	0.8 - 1 Nm

Dimensions (mm)



Application Examples



Lead-Through Terminal for Surge Protective Devices, SPD-type 2 (Class C), ASLTT-63

- The lead-through terminal permits orderly wiring of SPDs types 2 (class C). It serves as lead-through terminal in circuits requiring vertical connections from the upper to the lower SPD connection level.
- 1-pole
- Suitable for standard busbar connection to EATON switchgear

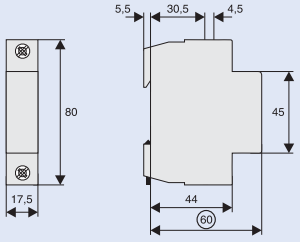
Connection diagram

Technical Data

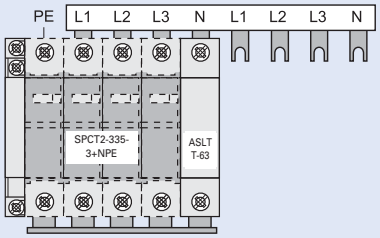
Electrical	
Rated voltage	690V AC/DC
Rated current	63 A
Rated frequency	50/60 Hz

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Finger and hand touch safe acc. to	BGV A3, ÖVE-EN 6
Upper and lower terminals	lift and open-mouthed terminals
Terminal capacity	1 - 25 mm^2
Busbar thickness	0.8 - 2 mm
Tightening torque of terminal screws	2.4 - 3 Nm

Dimensions (mm)



Application Example / Connection type 2 acc. to IEC 60364-5-53 Clause 534



Busbars Z-GV-U/

- Busbars Z-GV-U/ permit to implement customary SPD combinations
- Suitable for SPI-..., SPB-D-125
- The rated cross-section of Z-GV-U/ is 16 mm^2
- The busbars must be cut to length in some cases

Technical Data

Electrical		Mechanical	
Rated voltage	230/400 V, 50/60 Hz	Busbar cross section	16 mm^2 Cu
Rated current	63 A		

Models

Busbars ZV-KSBI

- Busbars ZV-KSBI permit to implement customary SPD combinations
- Suitable for SPB-..., SPC-..., Z-D63
- The rated cross-section of ZV-KSBI is 16 mm^2
- The busbars must be cut to length in some cases

Technical Data

Electrical		Mechanical	
Rated voltage	230/400 V, 50/60 Hz	Busbar cross section	16 mm^2 Cu
Rated current	63 A		

Models

Marking Label SPI-BZS-L/N/PE

- Can be affixed to SPI-..., SPB-D-125
- Size 7 x 17mm
- Colour: white

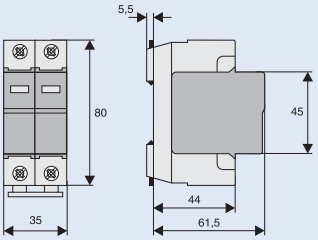
SPD Class T3 (formerly D) SPDT3

- Field of application:
  For fine protection of user equipment against transient overvoltage
- For mounting on DIN rails in distribution boxes for electrical installation
- No decoupling from upstream surge protection in the low voltage distribution system required
- Test class III according to IEC 61643-1+A1
- SPD-type T3 according to EN 61643-11
- Suitable for high back-up fuse 63 A gL / C 63
- Auxiliary switch SPC-S-HK for remote message transmission can be mounted onto the device

Technical Data

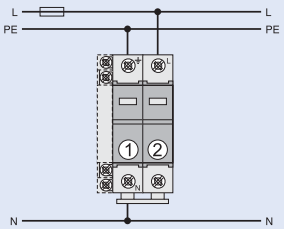
		SPDT3-335-1+NPE		SPDT3-280/2
Electrical				
Mechanical coding		yx		xx
Responding time (rate of voltage rise 5 kV/µs)	L-N/N-PE/L-PE	< 25ns/< 100ns/< 100ns	L1-L2(N)/L2(N)-PE/L1-PE	< 25ns
Maximum continuous operating voltage U_C	L-N/N-PE	335VAC/260VAC	L1-L2(N)/L2(N)-PE	280VAC
Temporary overvoltage test value U_T (5 s)	L-N/L-PE	350VAC/416VAC	L-N/L-PE	350VAC/416VAC
(200 ms)	N-PE	1200VAC	N-PE	1200VAC
Rated frequency		50/60 Hz		50/60 Hz
Open circuit voltage U_{OC}	L-N/N-PE/L-PE	6kV	L1-L2(N)/L2(N)-PE/L1-PE	6kV
Voltage protection level Up at U_{OC}	L-N/N-PE/L-PE	≤ 900V/≤ 1500V/≤ 900V	L1-L2(N)/L2(N)-PE	≤ 900V
Nominal discharge current I_n	L-N/N-PE/L-PE	2,5kA (8/20)µs	L1-L2(N)/L2(N)-PE	5kA (8/20)µs
Voltage protection level U_p at I_n	L-N/N-PE/L-PE	≤ 1000V/≤ 1500V/≤ 1000V	L1-L2(N)/L2(N)-PE	≤ 950V
Maximum discharge current I_{max}	L-N/N-PE/L-PE	10kA (8/20)µs	L1-L2(N)/L2(N)-PE/L1-PE	10kA (8/20)µs
Follow current interrupt rating I_{fi}	N-PE	100 $A_{r.m.s.}$		–
Permissible back-up fuse		≤ 125 AgL		≤ C63
Maximum short-circuit current		50 $kA_{r.m.s.}$		10 $kA_{r.m.s.}$
Connection diagram		x y		x x
Mechanical				
Mechanical coding of base		yx		xx
Frame size		45 mm		45 mm
Device height		80 mm		80 mm
Device width		35 mm		35 mm
Weight		220 g		220 g
Upper and lower lift terminal capacity		1 - 25 mm^2		1 - 25 mm^2
Open-mouthed terminals at both sides for busbar thickness up to		1.5 mm		1.5 mm
Tightening torque of terminal screws		2.4 - 3 Nm		2.4 - 3 Nm
Permitted ambient temperature		-40°C to +70°C		-40°C to +70°C
Mounting		quick fastening on DIN rail IEC/EN 60715		
Degree of protection (built-in)		IP40		IP40

Dimensions (mm)



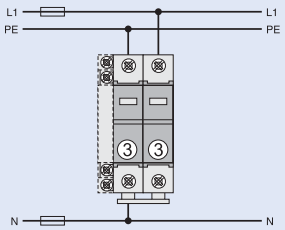
Application Examples

SPDT3-335-1+NPE
TN-, TT-System
3 x 230/400 VAC
3 x 240/415 VAC



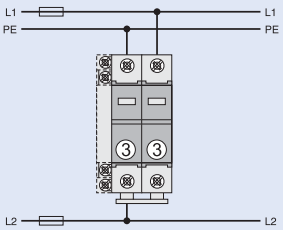
① ... SPCT2-NPE60
② ... SPDT3-335

SPDT3-280/2
IT-System
3 x 230/400 VAC



③ ... SPDT3-280/2

SPDT3-280/2
IT-, TT-System
3 x 133/230 VAC

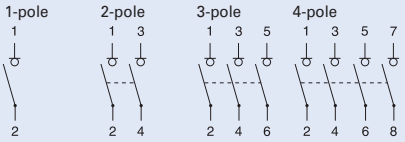


③ ... SPDT3-280/2

Main Load Disconnector Switch (Isolator) IS

- Load circuit breaker with isolating function
- Design according to IEC/EN 60947-3
- Highly wear resistant contacts
- Quick make, black toggle
- Terminal capacity 50 mm^2
- Compatible busbars with switchgear series Xpole by use of the mouth terminal in combination with standard fork busbar

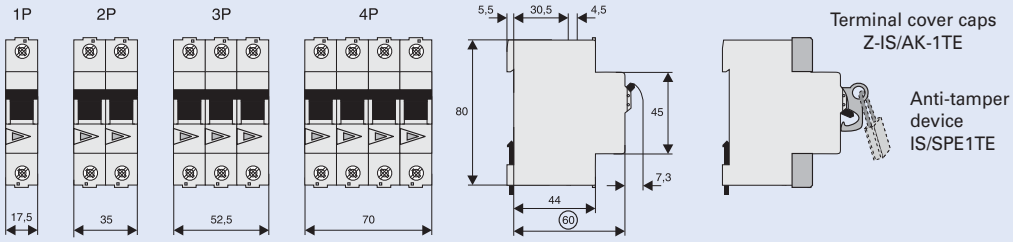
Connection diagram



Technical Data

	IS-16	IS-20	IS-25	IS-32	IS-40	IS-63	IS-80	IS-100	IS-125
Electrical									
Design according to	IEC/EN 60947-3								
Rated voltage	240/415V								
Frequency	50/60 Hz								
Rated insulation voltage U_i	690 V~								
Rated peak withstand voltage U_{imp}	6 kV								
Pollution degree	3								
Rated short-time withstand current I_{cw}	2 kA								
Rated short-circuit making capacity I_{cm}	2.8 kA								
Rated current									
240/415V, AC23A	16 A	20 A	25 A	32 A	40 A	63 A	80 A	100 A	125 A
Number of poles	1-, 2-, 3-, 4-pole								
Maximum back-up fuse	125 A gG								
Short circuit strength - with back-up fuse acc. to the applicable rules									
IEC/EN 60947-3	12.5 kA	12.5 kA	12.5 kA	12.5 kA	12.5 kA	12.5 kA	12.5 kA	10 kA	10 kA
Endurance									
electrical comp. op. cycles	≥ 3,000	≥ 3,000	≥ 3,000	≥ 3,000	≥ 3,000	≥ 3,000	≥ 3,000	≥ 3,000	≥ 2,000
mechanical comp. op. cycles	≥ 16,000	≥ 16,000	≥ 16,000	≥ 16,000	≥ 16,000	≥ 16,000	≥ 16,000	≥ 16,000	≥ 14,000
Mechanical									
Frame size	45 mm								
Device height	80 mm								
Device width	17.5mm/pole								
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715								
Degree of protection, built-in	IP40								
Terminal protection	finger and hand touch safe according to BGV A3								
Terminals	Twin-purpose terminals								
Terminal capacity	2.5 - 50 mm^2								
Busbar thickness	0.8-1.0 mm								
Fastening torque of terminal screws	2.5 - 5 Nm								
Function	irrespective of the position of installation								

Dimensions (mm)



Switching interlock IS/SPE-1TE

- Without lock
- Also suitable for PFIM, CFI6, PKNM, CKN6

Terminal Cover Caps Z-IS/AK-1TE

- Can be sealed with leads
- Modular design, width 1 MU

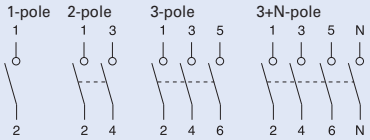
Circuit Breaker ZP-A

- Design according to IEC/EN 60947-1, -3
- Number of poles: 1, 2, 3, 3N
- Rated current: 40 A, 63 A
- Accessories for switchgear also for ZP-A usable!

Accessories:

Auxiliary switch for subsequent installation	ZP-IHK	286052
	ZP-WHK	286053
Tripping signal contact for subsequent installation	ZP-NHK	248437
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 35mm^2	Z-HA-EK/35	263960
Switching interlock	Z-IS/SPE-1TE	274418

Connection diagrams

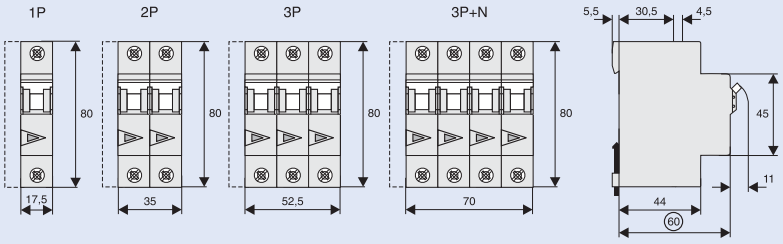


Technical Data

Electrical	
Rated operational voltage U_e	230/400 V AC
Rated frequency	50 Hz
Rated insulation voltage U_i	440 VAC
Rated peak withstand voltage U_{imp}	4 kV (1.2/50µ)
Conventional thermal current I_{th}	
ZP-A40	40 A
ZP-A63	63 A
Utilisation category AC22A	
Rated operational current I_e	
ZP-A40	40 A AC
ZP-A63	63 A AC
Utilisation category AC23A	
Rated operational current I_e	16 A AC
Short circuit strength	
with back-up fuse 40 A gG	3 kA (U = 240V, cos φ = 0.87)
Endurance	
electrical comp.	≥ 8,000 operating cycles
mechanical comp.	≥ 20,000 operating cycles

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5mm/pole
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals + guide for secure terminal
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	1.5-25 mm^2
Terminal screws	M5 (Pozidrive) Z2
Tightening torque of terminal screws	max. 2.4 Nm

Dimensions (mm)



Practical Hint

e.g. 16(2)A ....

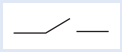
Ratings for resistive/inductive consumers

.....

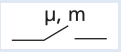
Ratings for incandescent lamp load (AC 5b IEC 60947-4)

ÖVE-SN45, § 305

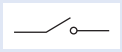
Practical Hint



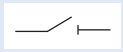
Switching contact in general



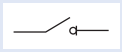
Switch with reduced air gap



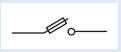
Power circuit breaker



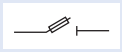
Disconnector



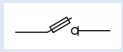
Load disconnector switch



Fuse power circuit breaker



Fuse disconnector



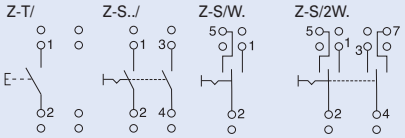
Fuse switch disconnector

ÖVE-SN45, § 207, IEC 60947-3

Pushbutton Z-T; Control Switch Z-S/..; Changeover Switch Z-S/.W

- Design according to IEC 60669, VDE 0632
- Types Z-S/WM and /2WM with central position (0-position)
- Types Z-S/WTN and -2WTN with TAG-0-NACHT (DAY-0-NIGHT) printed onto the device

Connection diagrams

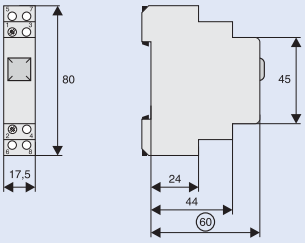


Technical Data

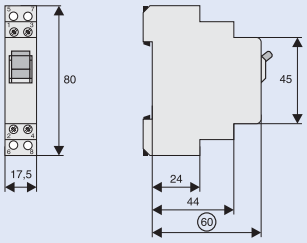
	Z-T/	Z-S../	Z-S/.W
Electrical			
Rated voltage	230/400V AC	230/400V AC	230/400V AC
Frequency	50 HZ	50 HZ	50 HZ
Rated current	16A/230V~	16A/230V~	16A/230V~
Switching capacity	–	1.25 x I_n; 1.1 x U_n	1.25 x I_n; 1.1 x U_n
Short circuit strength	10 kA	10 kA	10 kA
Mechanical			
Switching toggle	–	black	black
Pushbutton colour	green - NO black - NO/NC	–	–
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	17.5 mm (1MU)	17.5 mm (1MU)	17.5 mm (1MU)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715		
Degree of protection, built-in	IP40	IP40	IP40
Upper and lower terminals	lift terminals	lift terminals	lift terminals
Terminal capacity	1-10 mm^2	1-10 mm^2	1-10 mm^2
Terminal protection	finger and hand touch safe, according to BGV A3, ÖVE-EN 6		
Resistance to climatic conditions	acc. to IEC/EN 60068	acc. to IEC/EN 60068	acc. to IEC/EN 60068

Dimensions (mm)

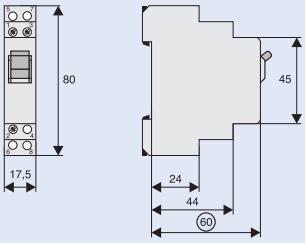
Z-T/



Z-S../



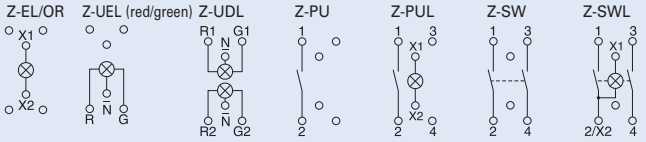
Z-S/.W



Switches Z-SW.; Signal Lamps Z-.EL, Z-.DL., Z-BEL; Pushbutton Units Z-PU.

- Design according to IEC/EN 60669, VDE 0632
- Low power loss
- Long service life
- Twin lamp with separate connections
- Colour red/green, can be selected by alternative wiring
- Flash option by usage of different terminals only, changeover option, no additional relay necessary (Z-BEL)
- Terminals with guide for secure terminal connection
- Identical terminal screws for coil and contacts

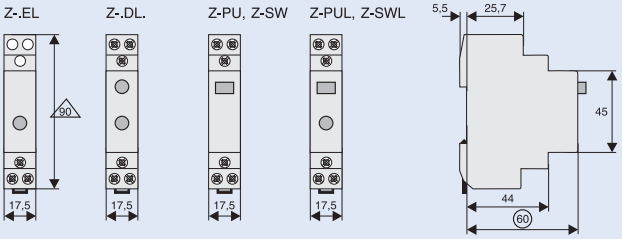
Connection diagrams



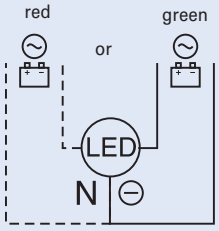
Technical Data

	Z-.EL, Z-.DLD, Z-BEL	Z-PU, Z-PUL	Z-SW, Z-SWL
Electrical			
Rated voltage	–	250 V AC	250 V AC
Frequency	–	50 HZ	50 HZ
Rated current	–	16 A	16 A
LED			
Rated voltage	230 V AC/DC 24 V AC/DC	230 V AC/DC 24 V AC/DC	230 V AC/DC 24 V AC/DC
Range of operational voltage	(50 V) 110-240 V AC/DC (5 V) 12-24 V AC/DC	(50 V) 110-240 V AC/DC (5 V) 12-24 V AC/DC	(50 V) 110-240 V AC/DC (5 V) 12-24 V AC/DC
Luminosity	15 mcd	15 mcd	15 mcd
Power loss	2W per LED	2W	2W
Switching contact	–	16A/250V~	16A/250V~
Contact function	–	1NO, 2NO, 1NO+1NC, 2NC	1NO, 2NO, 1NO+1NC
Flashing frequenzy	typ. 2 cy (Z-BEL)	–	–
Maximum back-up fuse, short circuit	–	20 A gG	20 A gG
Mechanical			
LED colour	red, green, red + green, white + white, red/green, orange, blue, white	orange	orange
Push-button colour	–	green - NO-contact red - NC-contact black - NO/NC-contact	black
Frame size	45 mm	45 mm	45 mm
Device height	90 mm	90 mm	90 mm
Device width	17.5 mm (1TE)	17.5 mm (1TE)	17.5 mm (1TE)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715		
Degree of protection installed device	IP40	IP40	IP40
Upper and lower terminals	lift terminals with guides for secure connection		
Terminal capacity	1-10 mm^2	1-10 mm^2	1-10 mm^2
Terminal protection	finger and hand touch safe according to BGV A3, ÖVE-EN6		
Resistance to climatic conditions	acc. to IEC/EN 60068	acc. to IEC/EN 60068	acc. to IEC/EN 60068

Dimensions (mm)



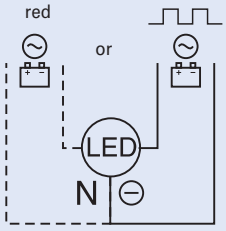
Connection example for LED red/green



L(+) ≡ L(+) –> same potential
N(–) = neutral conductor

Changing of colour by connecting either R- or G-connector terminal.

Connection example for flashing function



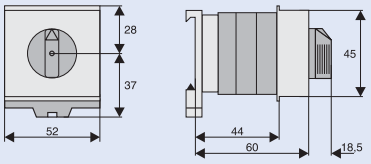
L(+) ≡ L(+) –> same potential
N(–) = neutral conductor

Changing of function by connecting either X2- or X3-connector terminal.

Rotary Switch Z-DS

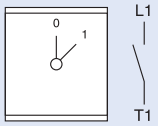
- Rotary switches of series Z-DS are of a modular design:
  The switch proper consists of the engaging work and the switching package. The switching cams (for which it is also called cam switch) are driven by a stable, torsion-proof aluminium shaft. The switching package consists of one or several switching cells with one or two independent contacts. Connections of adjoining switch terminals (necessary in case of voltmeter changeover switch Z-DSV) are contained in the pressed switch component. Consequently, there is no obstacle when connecting the connection lines.
- Application:
  Suitable for virtually any application, e.g. motor switch, garage doors, fans, shutters, heating system control, lighting fixtures, instrument switches, different control purposes, etc.

Dimensions (mm)

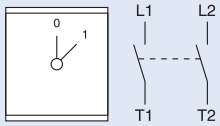


Connection diagrams

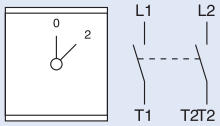
Z-DSA1-01



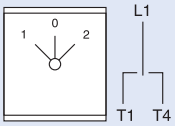
Z-DSA2-01



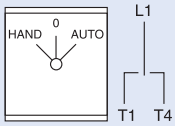
Z-DSA2-01-SL



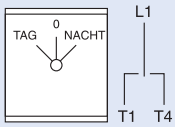
Z-DSU1-102



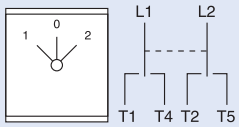
Z-DSU1-H0A



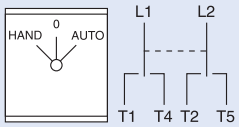
Z-DSU1-T0N



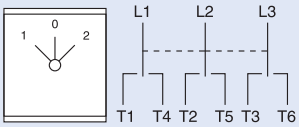
Z-DSU2-102



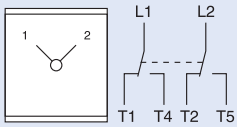
Z-DSU2-H0A



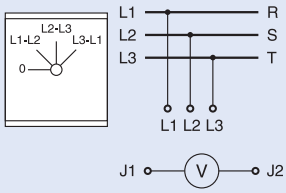
Z-DSU3-102



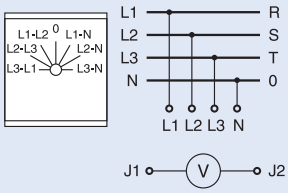
Z-DSU2-12



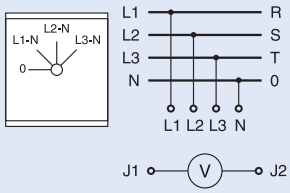
Z-DSV-LL



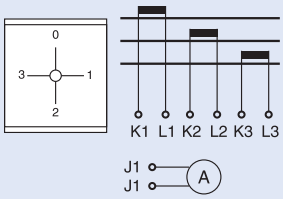
Z-DSV-LLLN



Z-DSV-LN



Z-DSAM1-0123



Technical Data

Data acc. to IEC 60947-3, IEC 60947-5-1, VDE 0660, EN 60947-3, SEV			
Nominal thermal current I_{th} open		A	20
Nominal thermal current I_{thg} hermetically enclosed		A	20
Nominal operational voltage Ue		V	690
U_{imp} = 6 kV			
Disconnector conditions acc. to ÖVE, IEC met up to		V	440
Circuit breaking capacity I_v			
	3 x 220-440V	A	160
	3 x 500 V	A	100
	3 x 660-690V	A	80
Utilisation category AC21A, AC21B			
Switching resistive loads			
including low overloads			
Nominal operational current I_n		A	20
Utilisation category AC23A, AC23B			
Switching motors and other			
highly inductive loads			
Nominal operational current I_n	400V	A	16
Nominal power	220-240V	kW	4
3-phase, 3-pole	380-440V	kW	7.5
	500V	kW	7.5
	660-690V	kW	7.5
Star-delta starting switch			
for squirrel cage motors			
Nominal power			
3-phase, 3-pole	220-240V	kW	3.7
	380-415V	kW	7.5
Utilisation category AC3			
Switching of 3-phase AC motors			
Nominal operational current I_n	400V	A	12
Nominal power	220-240V	kW	3
3-phase, 3-pole	380-440V	kW	5.5
	500V	kW	5.5
	660-690V	kW	5.5

Utilisation category AC15			
Switching of electromagnetic drives,			
contactors, valves, pull-type electromagnets			
Nominal operational current I_n	up to 240V	A	6
	380-440V	A	4
2-pole disconnection	500V	A	5
Utilisation category DC21A, DC21B			
Switching of resistive loads			
Time constant L/R ≤ 1 ms			
Nominal operational current I_n			
1-pole	30V	A	20
	60V	A	4
	110V	A	0.6
	220V	A	0.3
	440V	A	–
Utilisation category DC3 - DC5			
Switching of shunt motors			
and series motors			
Time constant L/R ≤ 15 ms			
Nominal operational current I_n			
1-pole	30V	A	8
	60V	A	1
	110V	A	0.3
Terminal capacity			
one or several wires		mm^2	1 - 2,5
fine wires		mm^2	0.75 - 2.5
fine wires with wire end sleeve		mm^2	0.75 - 1.5
terminal screw			M3.5
number of conductors per terminal			2
Switching of capacitive load			
maximum making capacity			
	up to 500V	A	140
Degree of protection			
from behind			IP20

Short circuit protection				**Short-time load capacity**			
max. fuse	gL (gG)	A	20	Load duration	3s	A	100
Rated short-time withstand current				(values applicable to already	10s	A	60
(1 second current)	3000	A	250	closed contacts only)	30s	A	35
Conditional rated short circuit current		$kA_{r.m.s.}$	10		60s	A	25

Rotary Switch Z-DS for Lighting Systems

				Z-DS...	
Utilisation category AC1		Rated operational current 60°C	IeAC1	A	20
Utilisation category AC5a		Rated operational power	cosφ 0,5	kW	1,1
	220-240V~	cosφ 0,9	kW	0,4	
		DUO	kW	3	
Utilisation category AC5b		Rated operational power		kW	1,4
	220-240V~				

Incandescent Lamps

	Power	Current	Z-DS...
Utilisation category AC5b		W	A
Incandescent lamps AC5B	60	0,27	22
	100	0,45	13
	200	0,91	7
	300	1,36	4
	500	2,27	3
	1000	4,5	1
			max. number of lamps per current path at 230V, 50 Hz

Fluorescent Tubes, Mercury Arc Lamps

Utilisation category AC5a		Power	Current	Capacitor	Z-DS...
Lamp Types		W	A	µF	
	Fluorescent tubes without compensation or with series compensation	11	0,16	-	60
		18	0,37	2,7	25
		24	0,35	2,5	25
		36	0,43	3,4	20
		58	0,67	5,3	14
		65	0,67	5,3	13
		85	0,8	-	11
	Fluorescent tubes lead-lag circuit	11	0,07	-	2 x 100
		18	0,11	-	2 x 50
		24	0,14	-	2 x 40
		36	0,22	-	2 x 30
		58	0,35	-	2 x 20
		65	0,35	-	2 x 15
		85	0,47	-	2 x 10
	Fluorescent tubes with parallel comp.	11	0,16	2,0	30
		18	0,37	2,0	20
		24	0,35	3,0	15
		36	0,43	4,5	10
		58	0,67	7,0	6
		65	0,67	7,0	5
		85	0,8	8,0	4
	Fluorescent tubes with electronic ballast	18	0,09	-	40
		36	0,16	-	20
		58	0,25	-	15
		2 x 18	0,17	-	2 x 20
		2 x 36	0,32	-	2 x 10
		2 x 58	0,49	-	2 x 7
	Mercury arc lamps, high pressure without compensation e.g.: HQL, HPL	50	0,61	-	16
		80	0,8	-	12
		125	1,15	-	8
		250	2,15	-	4
		400	3,25	-	3
		700	5,4	-	1
		1000	7,5	-	1
	Mercury arc lamps, high pressure with compensation e.g.: HQL, HPL	50	0,28	7	7
		80	0,41	8	5
		125	0,65	10	3
		250	1,22	18	2
		400	1,95	25	1
		700	3,45	45	1
		1000	4,8	60	-
					max. number of lamps per current path at 230V, 50 Hz

Metal Halide Lamps

	Power	Current	Capacitor	Z-DS...
Lamp Types	W	A	µF	
Metal halide lamps without compensation e.g.. HQI, HPI	35	0,53	-	22
	70	1	-	12
	150	1,8	-	6
	250	3	-	4
	400	3,5	-	3
	1000	9,5	-	1
	2000	16,5	-	-
Metal halide lamps with compensation e.g.. HQI, HPI	35	0,25	6	8
	70	0,45	12	4
	150	0,75	20	2
	250	1,5	33	1
	400	2,1	35	1
	1000	5,8	95	-
	2000	11,5	148	-
Transformers for low-voltage halogen lamps	20	-	-	40
	50	-	-	20
	75	-	-	13
	100	-	-	10
	150	-	-	7
	200	-	-	5
	300	-	-	3
				max. number of lamps per current path at 230V, 50 Hz

Sodium Vapour Lamps

	Power	Current	Capacitor	Z-DS...
	W	A	µF	
Sodium vapour lamps low-pressure without compensation	35	1,5	-	7
	55	1,5	-	7
	90	2,4	-	4
	135	3,5	-	3
	150	3,3	-	3
	180	3,3	-	3
	200	3,3	-	3
Sodium vapour lamps low-pressure with compensation	35	0,31	20	3
	55	0,42	20	2
	90	0,63	30	1
	135	0,94	45	1
	150	1	40	1
	180	1,16	40	1
	200	1,32	25	1
Sodium vapour lamps high-pressure without compensation	150	1,8	-	5
	250	3	-	4
	330	3,7	-	3
	400	4,7	-	2
	1000	10,3	-	1
Sodium vapour lamps high pressure with compensation	150	0,83	20	2
	250	1,5	33	2
	330	2	40	1
	400	2,4	48	1
	1000	6,3	106	-
				max. number of lamps per current path at 230V, 50 Hz

Relay for low-level signals RELLVA, REHLVA, REMLVA

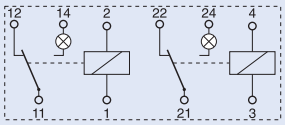
The electronic relay is a universal switching device designed especially for transmitting small or low-level signals of electronic control systems.

The **RELLVA** has been designed to switch low-level signals. The relay can be energized through analogue control signals of a roller-shutter or heating control, for example. The switching contact allows to switch a binary signal for digital inputs, for example of a programmable controller, of a control relay (e.g. EASY control relay) or of a Z-CC Communication Centre.
The **REHLVA** in turn can switch higher loads of up to 5A 250V AC1. It can be energized through a binary signal of a digital output, for example. The switching contact can switch electrical consumers of up to
5A 250V AC1, but it can also be used for energizing contactors, for example.
The **REMLVA** is a combination of the relays mentioned above. One relay is equipped with the switching contact for low-level signals, the other one with the switching contact for higher loads up to 5A 250V AC1.

The multi-functional coil, which can be energized in a range from 24V to 250V AC and DC, covers a wide variety of applications. In addition, all types have two relays for separate energizing in one enclosure of 1 MU width.

- Electronic switching relay
- Universal control voltage range from 24 to 250V AC/DC with a minimum of power consumption
- Switching of very small signals from 10mV / 1µA
- Switching of higher loads of up to 5A 250VAC AC1
- 2 relays for separate energizing in one enclosure of 1 MU width
- 1 change-over contact for each relay with switch position indication by LED
- No switching noise, hum-free
- Railway service qualification tested

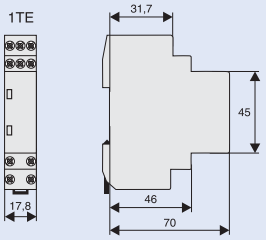
Connection diagram



Technical Data

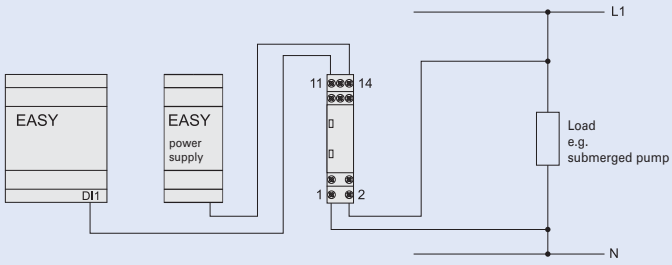
Electrical	
Standard according	IEC/EN 61810
Number of poles	2x1
EMC-Environment	EN 61000-4-2, 61000-4-4, 61000-4-5, 61810-5
Control circuit	
Rated voltage U_s	24-250V AC/DC
Rated frequency	0-50Hz
Operating range	0.90-1.1 x Us
Minimum command duration	0.1s
Operating noise	non
Rated peak withstand voltage U_{imp}	4kV (1.2/50µs)
Duty	100%
Trip coil power	
switching on	0.1/24V; 1/250V VA/W
holding	0.1/24V; 1/250V VA/W
Load Circuit, Main Contacts	
Change over	2 (to be energized seperately)
Rated operational voltage Ue / Rated operational current Ie	
RELLVA	30V DC / 2A 220V DC / 0,3A
REHLVA	250V AC / 5A 30V DC / 5A 300V DC / 0,25A
REMLVA	
Switching contact 11/12/14	30V DC / 2A 220V DC / 0,3A
Switching contact 21/22/24	250V AC / 5A 30V DC / 5A 300V DC / 0,25A
Minimum operational voltage Umin / Minimum operational current Imin	
RELLVA	10mV / 10µA
REHLVA	100mV / 10mA
REMLVA	
Switching contact 11/12/14	10mV / 10µA
Switching contact 21/22/24	100mV / 10mA
Rated insulation voltage U_i	500V DC
Rated peak withstand voltage U_{imp}	1.5kV between open contacts; 2.5kV between contacts and coil
Mechanical	
Frame size	45 mm
Device height	70 mm
Device width	17.8 mm (1 MU)
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection installed device	IP20
Mounting position	as required
Shock resistance	max. 750m/s^2
Terminal capacity	1x 2.5 mm^2 flexible 1x 4 mm^2 rigid 2x 1.5 mm^2 rigid
Temperature range	-40 to +85°C

Dimensions (mm)

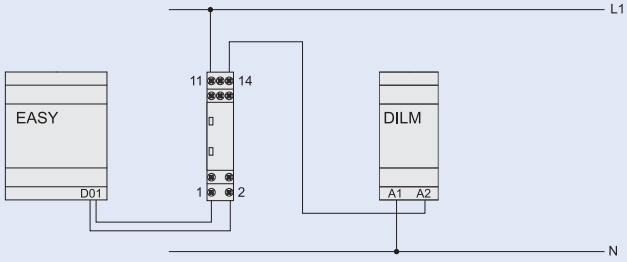


Examples

RELLVA



REHLVA



Installation Relays Z-R, Z-TN

Installation relays Z-R are suitable for switching 1-phase or 3-phase consumers up to 20 A. These devices for universal use in building installations and systems permit implementation of the following applications and control functions:

- Switching lighting systems and electrical heating systems
- Switching ventilation and air conditioning systems, fans
- Switching heat pumps
- Switching electrically controlled roller doors/gates, and blinds
- Switching incandescent lamps and gas discharge lamps

The installation relays of series Z-R./ meet the requirements of standards EN/IEC 60947 and EN/IEC 1095.

EN/IEC 1095 deals with "Electromechanical contactors for household and similar purposes." Compliance with this standard means meeting very high demands in terms of safety for humans and property.
EN/IEC 947 deals with "Electromagnetic contactors in electrical system manufacturing".

Security:

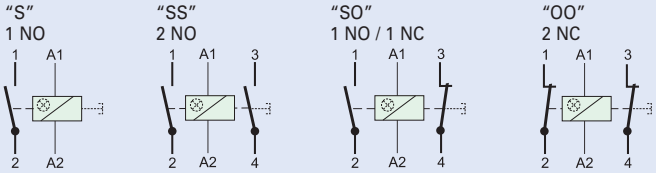
- Manual operation for testing purposes
- Switching contacts with safe disconnection AC1 according to EN 60947-4-1 (Z-R, Z-RK)
- Optional optical operating status display by means of LED
- Switching position indicated on the front side by manual operating key
- All terminals - coil and contacts - equipped with guide for secure terminal connection. Misplacement of wires impossible.
- Main contacts can be connected to standard pin busbar
- Made of hardly flammable materials and plastics free from chlorine and halogens
- Finger and hand touch safe according to VBG4

Advantages:

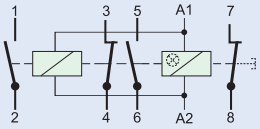
- Available in three versions (Z-R, Z-RK, Z-RE)
- Low switching noise, no humming
- Easy to connect thanks to large terminals supplied open
- Simple snap-on fastening on 35 mm DIN rail
- High degree of flexibility thanks to a variety of contact configurations
- Easy access for coil feed connection
- Version with mechanical pre-selection of functions ON/AUTO/OFF (Z-TN)
  ON/permanently ON: Contact permanently ON until a control pulse is switched on and OFF again. Then, the relay reverts to the AUT position.
  AUT/AUTOMATIC: Standard relay function by control voltage at the coil.
  OFF/permanently OFF: Contacts permanently OFF, independently of the control voltage at the coil.
- Type Z-TN available only in AC, other coil voltages than 24V and 230V on request

Connection diagrams

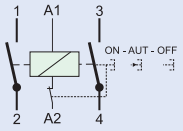
1MU Z-R



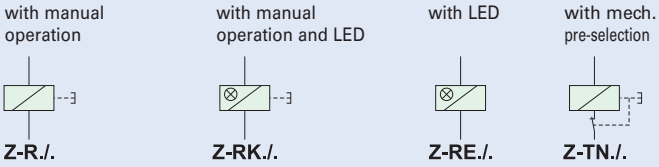
2MU Z-R



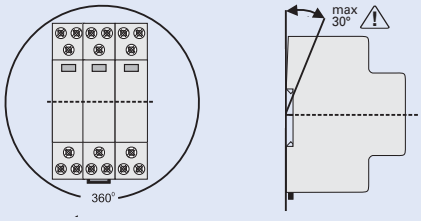
1MU Z-TN (with mechanical pre-selection)



Versions

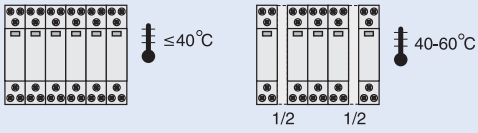


Permitted installation positions



Packing density at full contact load

Z-R./
Spacers recommended! (Z-DST)



Technical Data

Electrical	
Design according to	IEC/EN 60947
Rated voltage	250 V, 240/415 V AC
Rated current	20 A, 250 V AC
Rated current AC1 I_e	20 A AC1 (Z-R, Z-RK)
Rated operational power P_e	4.6 kW 415 V
Number of poles	1 to 4
Main contacts	
NO/NC	1, 2 (1MU) 3, 4 (2MU)
EMR compatibility	B
Control Circuit	
Rated control feed voltage U_s	8, 12, 24, 48, 110, 230, 240 V AC 8, 12, 24, 110 V DC
Rated frequency	50 Hz
Operating range	0.85-1.1 x U_s
Maximum power of coils	
pick-up	10-13 VA, 6-8 W
retaining	3,4-4,0 VA, 2,0-2,4 W
Minimum command duration	> 50 ms
Operating noise	no humming
Rated peak withstand voltage U_{imp}	2 kV (1.2/50 µs)
Duty	100%

Load Circuit	
Rated operational voltage U_e	1p, 2p: 250VAC; 3p, 4p: 240/415VAC
Minimum operational voltage U_{min}	24 V AC/DC (U_s 8-110 V)
Rated insulation voltage U_i	500 V
Rated peak withstand voltage U_{imp}	4 kV (1.2/50 µs)
Conventional thermal current I_{th}	20 A AC
Rated operational current I_e	20 A AC
Rated constant current I_u	20 A AC
Rated current DC	
24 V	I_e 16 A
48 V	I_e 12,5 A
230 V	I_e 1 A
Conditional rated short circuit current I_q	10 kA (with 20 A gL/gG)
Duration of bouncing	< 10 ms (typ. < 5 ms)

Technical Data (continued)

UTILISATION CATEGORIES 1MU, 2MU (except3S, 4S)

AC-1 *)	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	20 A AC
Rated operational power AC-1	4000 W (cos φ = 0.8), 5000 VA
AC-3	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
AC-5a	
Rated operational voltageU_e	250 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
AC-5b	
Rated operational voltage U_e	230 V AC
Rated operational current I_e	8,8 A AC
Rated operational power AC-5b	2024 W
AC-7a (according to EN 61095)	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	20 A AC
Rated operational power AC-7a	4000 W (cos φ = 0.8), 5000 VA

UTILISATION CATEGORIES 2MU (3S, 4S)

AC-1 *)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	20 A AC
Rated operational power AC-1	4000 W (cos φ = 0.8), 5000 VA
AC-3	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
AC-5a	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
AC-5b	
Rated operational voltage U_e	230/400 V AC
Rated operational current I_e	8,8 A AC
Rated operational power AC-5b	2024 W
AC-7a (according to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	20 A AC
Rated operational power AC-7a	4000 W (cos φ = 0.8), 5000 VA
AC-7b (according to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-7b	1125 W (cos φ = 0.8), 2500 VA

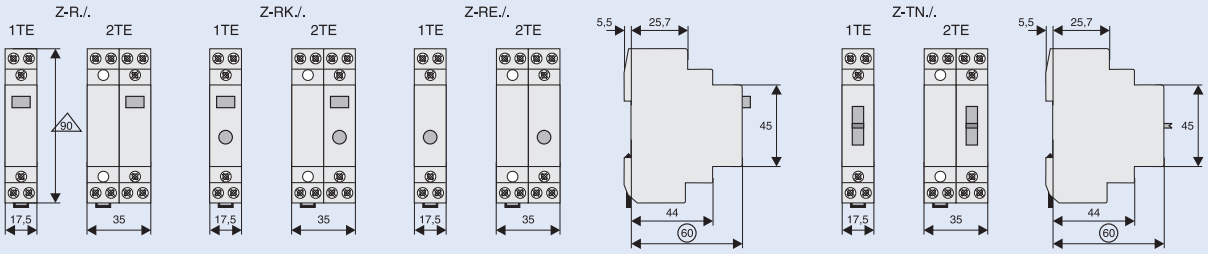
Endurance	electrical comp.	≥ 40x10^3 operating cycles
	mechanical comp.	≥ 1x10^6 operating cycles

Mechanical

Frame size	45 mm
Device height	90 mm
Device width	17.5 mm (1MU)
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection installed device	IP20
Position of device in use	works in any position, however not hanging
Upper and lower terminals	lift terminals (captive)
Terminal capacity	
Contact and coil	0,5 - 10 mm^2 one- or more wire 0,5 - 6 mm^2 fine-wire with wire end sleeve
Temperature range	-20°C to +45°C
Total contact gap	> 5mm / independent contacts
Contact material	does not contain cadmium

*) suitable for insulation, tested on AC-1

Dimensions (mm)



		Power	Current	Capacitor	Z-R
Lamp Types		W	A	µF	max. number of lamps per current path at 230V, 50 Hz
	Incandescent lamps	60	0,27		33
	Low-voltage halogen lamps (12 or 24 V) with transformer / electronic transformer	20 50 75 100 150 200 300	0,09 0,22 0,33 0,43 0,65 0,87 1,3		55 22 14 11 7 5 3
	Fluorescent tubes without compensation or with series comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	1,3 2,7 2,5 3,4 5,3 5,3 5,3	62 27 27 24 15 14 12
	Fluorescent tubes lead-lag circuit	11 18 24 36 58 65 85	0,07 0,11 0,14 0,22 0,35 0,35 0,47	- - - - - - -	2 x 71 2 x 45 2 x 35 2 x 22 2 x 14 2 x 14 2 x 10
	Fluorescent tubes with parallel comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	3,0 4,0 4,0 4,0 7,0 7,0 8,0	34 26 26 26 14 14 13
	Fluorescent tubes with electronic ballast	18 36 58 2 x 18 2 x 36 2 x 58	0,09 0,16 0,25 0,17 0,32 0,49	- - - - - -	32 16 12 2 x 16 2 x 8 2 x 6

Installation Contactors Z-SCH, CMUC

These Installtion Contactors are design to cover all applications in residential and commercial sites as for as example:

- Switching of lighting systems
- Switching of electrical heating systems
- Switching of ventilation systems
- Switching of air conditioning systems and fans
- Switching of heat pumps
- Switching of roller doors/gates and blinds
- etc. etc.

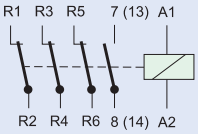
Advantages and Safety:

- Front-side switch position indicator
- Compact frame
- Large terminals
- Low switching noise
- No humming
- High contact force for high switching capacity
- Simple snap-on fastening of 35mm DIN rail
- Finger and hand touch safe according to VGB 4
- Hardly flammable materials and chlorine-free and halogen-free plastics are used
- Z-SCH
  Innovative AC magnet system
- CMUC
  Innovative AC/DC magnet system

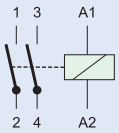
These products meets the requirement of the standards IEC/EN 60947-4-1 and IEC/EN 61095

Connection diagrams

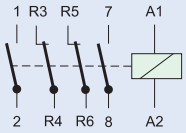
"13"
1 NO / 3 NC



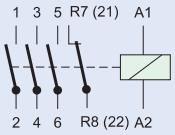
"20"
2 NO



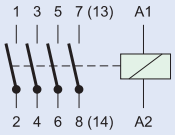
"22"
2 NO / 2 NC



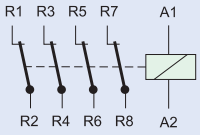
"31"
3 NO / 1 NC



"40"
4 NO

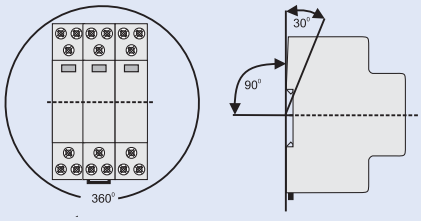


"04"
4 NC



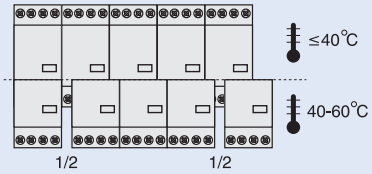
Z-SC
1 NO / 1 NC

Permitted Installation Positions



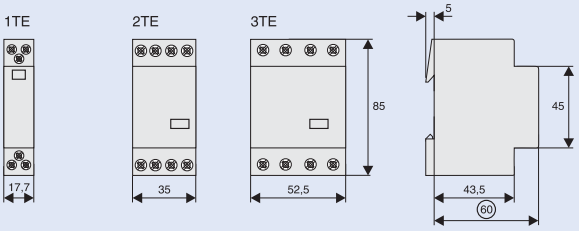
Packing Density at full contact load

Z-SCH / CMUC
Spacers recommended!

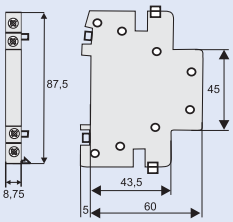


Dimensions (mm)

Z-SCH.../1/25 Z-SCH.../25 CMUC.../25 Z-SCH.../40, .../63



Z-SC



Technical Data of Installation Contactors Z-SCH, CMUC

Values according to IEC 61095, EN 61095, VDE 0660, IEC 60947-4-1, EN 60947-4-1, VDE			Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Utilisation category AC1 (e.g. heating system)						
Rated operational current I_n (=I_{th}) open	at 60°C	A	25	40	63	-
Service life of switching element		S x 10^6	0,1	0,1	0,1	-
Rated operational power AC1						
	220 - 240 V	kW	9,5	16	25	-
	380 - 415 V	kW	17	27,5	43	-
Lowest switching power		V/mA	24/100	24/100	24/100	17/5
Utilisation category AC3 (Switching of 3-phase AC motors)						
Rated operational current I_n		A	9	27	30	-
Service life of switching element		S x 10^6	0,15	0,15	0,15	-
Rated power of 3-phase AC motors 50-60 Hz	220 V	kW	2,2	7,5	8	-
	230-240V	kW	2,5	8	8,5	-
	380-415V	kW	4	12,5	15	-
Utilisation category DC1 (Switching of resistive loads, L/R ≤ 15ms) values for make contacts						
1-pole	24V DC	A	25	40	63	-
	48V DC	A	22	25	26	-
	60V DC	A	18	19	21	-
	110V DC	A	5	7	8	-
	220V DC	A	0,5	0,7	0,7	-
2-pole in series	24V DC	A	25	40	63	-
	48V DC	A	25	40	44	-
	60V DC	A	25	33	36	-
	110V DC	A	16	17	18	-
	220V DC	A	4	5	6	-
3-pole in series	24V DC	A	25	40	63	-
	48V DC	A	25	40	63	-
	60V DC	A	25	40	61	-
	110V DC	A	25	31	34	-
	220V DC	A	10	15	16	-
4-pole in series	24V DC	A	25	40	63	-
	48V DC	A	25	40	63	-
	60V DC	A	25	40	63	-
	110V DC	A	25	40	63	-
	220V DC	A	15	20	21	-
Utilisation category DC3 and DC5 (Switching of inductive load, L/R ≤ 15ms) values for make contacts						
1-pole	24V DC	A	15	23	25	-
	48V DC	A	5	10	10	-
	60V DC	A	4	5	5	-
	110V DC	A	1	1,5	1,5	-
	220V DC	A	0,1	0,3	0,3	-
2-pole in series	24V DC	A	25	40	45	-
	48V DC	A	17	23	25	-
	60V DC	A	13	15	15	-
	110V DC	A	5	5	5	-
	220V DC	A	0,5	1	1	-
3-pole in series	24V DC	A	25	40	63	-
	48V DC	A	25	40	45	-
	60V DC	A	25	30	30	-
	110V DC	A	15	15	15	-
	220V DC	A	3	4	4	-
4-pole in series	24V DC	A	25	40	63	-
	48V DC	A	25	40	63	-
	60V DC	A	25	40	63	-
	110V DC	A	25	40	45	-
	220V DC	A	8	10	10	-
Main Switching Elements (U_{imp} = 4 kV						
Rated insulation voltage U_i		V AC	440	440	440	440
Rated operational voltage U_e		V AC	440	440	440	440
Permissible switching frequency z	AC1, AC3	1/h	300	600	600	600
Mechanical endurance		S x 10^6	1	1	1	1
Auxiliary Switching Elements (U_{imp} = 4 kV)						
Rated insulation voltage U_i		V AC	440	440	440	440
Nominal thermal current = I_{th}	40°C	A	25	40	63	10
	60°C	A	25	40	63	6
Utilisation category AC15 (Controlling of electromagnetic load)						
Rated operational current I_e	220-240V	A	-	-	-	3
	380-415V	A	-	-	-	2
	440V	A	-	-	-	1,6
Utilisation category DC13 (Controlling of electromagnetic load at DC)						
Rated operational current I_e per pole	24-60V	A	-	-	-	2
	110V	A	-	-	-	0,4
	220V	A	-	-	-	0,1

			Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Trip **Coil** Power						
~ Z-SCH	Switching on	VA	14 - 18	33 - 45	33 - 45	-
	Holding	VA	4,4 - 8,4	7	7	-
		W	1,6 - 3,2	2,6	2,6	-
~ = CMUC		W	3-4			
Operating range of trip coils						
multiple of U_e (-40°C to +40°C)						
~ Z-SCH	Coil voltage 50 Hz	V	220 - 240	220 - 240	220 - 240	-
	60 Hz	V	230 - 264	230 - 264	230 - 264	-
~ = CMUC	Coil voltage 50/60 Hz	V	24, 220-240			
	DC	V	24, 220			
Pv Power loss per current path		W	2	3	7	0,5
Pvges. Power loss	1-pole	W	5,2	5,6	5,6	-
per device	2-pole	W	7,2	8,6	16,6	-
at nominal current load	3-pole	W	9,2	11,6	23,6	-
	4-pole	W	11,2	14,6	30,6	-
Switching noise (on and off)						
Typical mean values		dB	80	78	78	-
Terminal capacity						
Main conductor	one or several wires	mm^2	1,5 - 10	2,5 - 25	2,5 - 25	0,5 - 2,5
	fine wires	mm^2	1,5 - 6	2,5 - 16	2,5 - 16	0,5 - 2,5
	fine wires with wire end sleeve	mm^2	1,5 - 6	2,5 - 16	2,5 - 16	0,5 - 1,5
	number of conductors per terminal		1	1	1	2
Coil	one or several wires	mm^2	0,75 - 2,5	0,75 - 2,5	0,75 - 2,5	-
	fine wires	mm^2	0,5 - 2,5	0,5 - 2,5	0,5 - 2,5	-
	fine wires with wire end sleeve	mm^2	0,5 - 1,5	0,5 - 1,5	0,5 - 1,5	-
	number of conductors per terminal		1	1	1	-
Weight		kg/unit	0,22	0,36	0,36	0,026
Short circuit protection (main circuit)						
Maximum nominal current of fuse						
Co-ordination type (1)	gL (gG)	A	35	63	80	-
Short circuit protection (auxiliary circuit)						
Maximum nominal current of fuses						
Short-circuit current 1kA, without fusing						
of contacts	gL (gG)	A	-	-	-	10
Switching times at control voltage U_s ±10%						
	Make delay	ms	9 - 15	11 - 15	11 - 15	-
	Break delay	ms	4 - 8	6 - 13	6 - 13	-
	Arc duration	ms	10 - 15	10 - 15	10 - 15	-

Installation Contactors Z-SCH for Lighting Systems

The decisive factors are the type, connection and current consumption of lamps during switch-on and in permanent operation. Only 90 % of the continuous current of switching devices should be used in view of higher current consumption as a result of increases of voltage. The maximum number of lamps per phase that can be operated by a switching device is dependent on the nominal current and making current of lamps on the one hand, and on the continuous current and making capacity of the switching devices on the other. Thus, e.g. in lead-lag circuits, the continuous current of contactors can be used, while this is not possible in fluorescent tubes with separate compensation.

				Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Utilisation category AC1	Rated operational current		IeAC1	A	25 (60°C)	40 (60°C)	63 (60°C) -
	Making capacity	Root mean square $I_{r.m.s.}$		A	200	360	480 -
		Peak value I_{Spitze}		A	280	510	680 -
Utilisation category AC5a	Rated operational power (250 V)		cosφ 0,45	kW	1,3	3,4	5,5 -
	220-240V~	cosφ 0,90		kW	1,2	3,1	5,1 -
		DUO		kW	3,7	6,3	10 -
Utilisation category AC5b	Rated operational power			kW	3	5,7	8 -
	240V~						

Incandescent Lamps

The incandescent lamp filament has a very low ohmic resistance when it is cold. Therefore, when switching on, there is a high peak current (up to 20x I_n).
When switching off, only the nominal current is switched off.

	Power	Current	Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Utilisation category AC5b	W	A	max. number of lamps per current path at 230V, 50 Hz			
Incandescent lamps AC5B 	60 100 200 300 500 1000	0,27 0,45 0,91 1,36 2,27 4,5	50 30 15 10 6 3	92 55 27 19 11 6	129 77 38 26 16 8	- - - - - -
Low voltage halogen lamps (12 ur 24V) with transformer (with electronic transformer)	20 50 75 100 150 200 300	0,09 0,22 0,33 0,43 0,65 0,87 1,30	52 24 16 12 9 6 4	110 50 35 27 19 14 9	174 80 54 43 29 23 14	- - - - - - -

Fluorescent Tubes, Mercury Arc Lamps

High- and low pressure discharge lamps with mercury vapour, with or without fluorescent-coated glass body are perfectly identical in their electrical behaviour.
In order to limit the operational current and pre-conduction current, and to achieve the initial peak voltage, reactance coils are used as ballast.
Capacitors are used for compensation of the resulting reactive current, which are either connected in series with the coil (lead-lag circuit) or parallel to the mains (separate compensation, very rarely used now). The high making current in case of separate compensation (max. 30 x nominal current of the capacitor) which goes down quickly is usually attenuated considerably by the feed line.

Utilisation category AC5a		
	Fluorescent lamps without comp. or with series comp.	$I = I_{eAC1} \times 0,5$
	Lead-lag circuit (2x..)	$I = I_{eAC1} \times 0,35$
	Fluorescent tubes parallelkomp.	$I = I_{Spitze} / 100$ (take into account compensation capacitor)
I / I_{Lampe} = number of connectable lamps per current path	Fluorescent tubes with electronic ballast	$I = I_{Spitze} / 50$
	Mercury arc lamps,HD without compensation	$I = I_{eAC1} \times 0,5$
	Mercury arc lamps,HD with compensation	$I = I_{Spitze} / 100$ (take into account compensation capacitor)

Utilisation category AC5a		Power	Current	Capacitor	Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Lamp Types		W	A	µF	max. number of lamps per current path at 230V, 50 Hz			
	Fluorescent lamps without compensation or with series compensation	11	0,16	1,3	75	210	310	-
		18	0,37	2,7	34	90	140	-
		24	0,35	2,5	34	90	140	-
		36	0,43	3,4	30	70	140	-
		58	0,67	5,3	20	45	70	-
		65	0,67	5,3	19	40	65	-
		85	0,8	5,3	16	35	60	-
	Fluorescent tubes lead-lag circuit	11	0,07	-	2 x 110	2 x 220	2 x 250	-
		18	0,11	-	2 x 55	2 x 130	2 x 200	-
		24	0,14	-	2 x 44	2 x 110	2 x 160	-
		36	0,22	-	2 x 33	2 x 70	2 x 100	-
		58	0,35	-	2 x 22	2 x 46	2 x 70	-
		65	0,35	-	2 x 16	2 x 40	2 x 60	-
		85	0,47	-	2 x 11	2 x 30	2 x 40	-
	Fluorescent tubes with parallel comp.	11	0,16	3,0	43	67	107	-
		18	0,37	4,0	32	50	80	-
		24	0,35	4,0	32	50	80	-
		36	0,43	4,0	32	50	80	-
		58	0,67	7,0	18	36	46	-
		65	0,67	7,0	18	36	46	-
		85	0,8	8,0	16	33	44	-
	Fluorescent tubes with electronic ballast	18	0,09	-	40	100	150	-
		36	0,16	-	20	50	75	-
		58	0,25	-	15	30	55	-
		80	0,4	-	10	20	30	-
		2 x 18	0,17	-	2 x 20	2 x 50	2 x 60	-
		2 x 36	0,32	-	2 x 10	2 x 25	2 x 30	-
		2 x 58	0,49	-	2 x 7	2 x 15	2 x 20	-
	Mercury arc lamps, high pressure without compensation e.g.: HQL, HPL	50	0,61	-	21	38	55	-
		80	0,8	-	16	28	40	-
		125	1,15	-	11	20	28	-
		250	2,15	-	6	11	15	-
		400	3,25	-	4	7	10	-
		700	5,4	-	2	4	6	-
		1000	7,5	-	1	3	4	-
	Mercury arc lamps, high pressure with parallel comp. e.g.: HQL, HPL	50	0,28	7	18	36	50	-
		80	0,41	8	16	31	44	-
		125	0,65	10	13	25	35	-
		250	1,22	18	7	14	19	-
		400	1,95	25	5	10	14	-
		700	3,45	45	3	6	8	-
		1000	4,8	60	2	4	6	-

Metal Halide Lamps

Metal halide lamps are a version of high-pressure mercury arc lamps with higher luminous efficiency and fidelity of colour (metalloids [halogens] added to the mercury fill up the Hg-spectrum with its many gaps). Ballast and ignition devices are necessary. Starting time 3 ... 5 minutes at 1.4 - 2 x I. After switching on, it is not possible to light the lamp again immediately (lamp extinguishes after a power cut-off of only 1/2 period). Therefore, in many cases in important facilities ionisation of part of the lamps is maintained by switching over to 415 V, 500 Hz (e.g. to an emergency power supply). In this case, the lamp lights immediately after the mains voltage is on again. Otherwise, this would take several minutes. When using suitable ignition devices, the lamps can be lit again immediately.

I / I_{Lampe} = number of connectable lamps per current path	Metal halide lamps (HQI) without compensation	$I = I_{eAC1} \times 0,5$
	Metal halide lamps (HQI) with compensation	$I = I_{Spitze} / 100$ (take into account compensation capacitor)
	Transformer for low voltage halogen lamps	$I = I_{Spitze} / 50$

	Power	Current	Capacitor	Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
Lamp Types	W	A	µF	max. number of lamps per current path at 230V, 50 Hz			
Metal halide lamps without compensation e.g.. HQI, HPI	35	0,53	-	28	57	-	-
	70	1	-	15	30	-	-
	150	1,8	-	8	17	-	-
	250	3	-	5	10	-	-
	400	3,5	-	4	8	-	-
	1000	9,5	-	1	3	-	-
	2000	16,5	-	-	2	-	-
400V per Pol	2000	10,5	-	-	2	-	-
	3500	18	-	-	1	-	-
Metal halide lamps with electronic ballast (50-125xIn) HQI	20	0,1	i	9	18	20	-
	35	0,2	i	6	11	13	-
	70	0,36	i	5	12	12	-
	150	0,7	i	4	10	10	-
Metal halide lamps with compensation, with parallel comp.	35	0,25	6	21	42	58	-
	70	0,45	12	11	21	29	-
	150	0,75	20	4	13	18	-
e.g.. HQI, HPI	250	1,5	33	4	9	11	-
	400	2,1	35	1	9	10	-
	1000	5,8	95	-	3	4	-
	2000	11,5	148	-	2	2	-
400V per Pol	2000	6,6	58	-	3	4	-
	3500	11,6	100	-	2	3	-
Transformers for low-voltage halogen lamps	20	-	-	52	110	174	-
	50	-	-	24	50	80	-
	75	-	-	16	35	54	-
	100	-	-	12	27	43	-
	150	-	-	9	19	29	-
	200	-	-	5	14	23	-
	300	-	-	4	9	14	-

Sodium Vapour Lamps

For 200 W, 1200 mm high-pressure lamps and low-pressure lamps, reactance coils are used as ballast. For smaller lamps, stray field transformers can be used as ballast. Take into account, the long starting period.

Low pressure lamps:

Without compens.: Making curr. 1 x XI_e, cosφ 0,3; starting time 5 .. 10min
Decisive for selection of device: 60% continuous current
$I = I_{eAC1} \times 0,6$

With compensation: Making curr.: 20 x XI_e, cosφ 0,45; starting time 5 .. 10min (at 1,6 x I_n), $I = I_{Spitze}/200$

High pressure lamps:

Without compens.: Making curr. 1,4 x XI_e, cosφ 0,5; starting time 5 .. 10min
Decisive for selection of device: 60% continuous current
$I = I_{eAC1} \times 0,6$

With compensation: Making curr.: 20 x XI_e, cosφ 0,95; starting time 5 .. 10min (at 1,6 x I_n)

	Power	Current	Capacitor	Z-SCH/25/.. CMUC.../25/	Z-SCH/40/..	Z-SCH/63/..	Z-SC
	W	A	µF	max. number of lamps per current path at 230V, 50 Hz			
Sodium vapour lamps	35	1,5	-	9	22	30	-
low-pressure	55	1,5	-	9	22	30	-
without compensation	90	2,4	-	6	13	19	-
	135	3,3	-	4	10	14	-
	150	3,3	-	4	10	14	-
	180	3,3	-	4	10	14	-
	200	3,3	-	4	10	14	-
Sodium vapour lamps	35	0,31	20	6	15	18	-
low-pressure	55	0,42	20	4	15	18	-
with compensation,	90	0,63	30	4	10	12	-
with parallel comp.	135	0,94	45	3	7	8	-
	150	1	40	3	8	9	-
	180	1,16	40	3	8	9	-
	200	1,32	30	-	10	12	-
Sodium vapour lamps	150	1,8	-	8	15	22	-
high-pressure	250	3	-	5	10	13	-
without compensation	330	3,7	-	4	8	10	-
	400	4,7	-	3	6	8	-
	1000	10,3	-	1	3	4	-
Sodium vapour lamps	150	0,83	20	7	20	25	-
high pressure	250	1,5	33	4	12	15	-
with compensation,	330	2	40	3	10	13	-
with parallel comp.	400	2,4	48	2	8	12	-
	1000	6,3	106	1	4	6	-
Sodium vapour lamps	20	0,1	i	9	18	20	-
high pressure	35	0,2	i	6	11	13	-
with electronic ballast	70	0,36	i	5	12	12	-
(50-125xln) HQI	150	0,7	i	4	10	10	-

Utilisation Categories of Contactors

Type of current	Utilisation category	Typical Applications I = Making current, I_c = Breaking current, I_e = Rated operational current, U = Voltage, U_e = Rated operational voltage, U_r = Recovery voltage	Verification of electrical service life							Verification of switching capacity						
			Switching on				Switching off			Switching on				Switching off		
			I_e A	$\frac{I}{I_e}$	$\frac{U}{U_e}$	cosφ	$\frac{I_c}{Ie}$	$\frac{U_r}{Ue}$	cosφ	I_e A	$\frac{I}{I_e}$	$\frac{U}{U_e}$	cosφ	$\frac{I_c}{I_e}$	$\frac{U_r}{U_e}$	cosφ
AC	AC-1	Non-inductive or slightly inductive load Resistance furnaces	all values	1	1	0,95	1	1	0,95	all values	1,5	1,05	0,8	1,5	1,05	0,8
	AC-2	Slip ring motors: starting, switching off	all values	2,5	1	0,65	2,5	1	0,65	all values	4	1,05	0,65	4	1,05	0,8
	AC-3	Squirrel cage motors: starting, switching off (running motors[4])	$I_e \leq 17$	6	1	0,65	1	0,17	0,65	$I_e \leq 100$	10	1,05	0,45	8	1,05	0,45
			$I_e > 17$	6	1	0,35	1	0,17	0,35	$I_e > 100$	8	1,05	0,35	6	1,05	0,35
	AC-4	Squirrel cage motors: starting, plugging reversing, inching	$I_e \leq 17$	6	1	0,65	6	1	0,65	$I_e \leq 100$	12	1,05	0,45	10	1,05	0,45
			$I_e > 17$	6	1	0,35	6	1	0,35	$I_e > 100$	10	1,05	0,35	8	1,05	0,35
	AC-5	Switching of electric discharge lamp controls									3,0	1,05	0,45	3,0	1,05	0,45
	AC-5b	Switching of incandescent lamps									1,5[2]	1,05	[2]	1,05[2]	1,05	[2]
	AC-6a[3]	Switching of transformers														
	AC-6b[3]	Switching of capacitor banks														
	AC-7a	Slightly inductive loads in household appliances and similar applications	according to manufacturer specifications								1,5	1,05	0,8	1,5	1,05	0,8
	AC-7b	Motor loads for household appliances									8,0	1,05	[1]	8,0	1,05	[1]
	AC-8a	Switching of hermetically enclosed refrigerant compressor motors with manual reset of overload releases[5]									6,0	1,05	[1]	6,0	1,05	[1]
	AC-8b	Switching of hermetically enclosed refrigerant compressor motors with automatic reset of overload releases[5]									6,0	1,05	[1]	6,0	1,05	[1]
DC	DC-1	Non-inductive or slightly inductive load, Resistance furnaces	all values	1	1	1	1	1	1	all values	1,5	1,05	1	1,5	1,05	1
	DC-3	Shunt motors: starting, plugging, reversing, inching, dynamic braking	all values	2,5	1	2	2,5	1	2	all values	4	1,05	2,5	4	1,05	2,5
	DC-5	Series motors: starting, plugging, reversing, inching, dynamic braking	all values	2,	1	7,5	2,5	1	7,5	all values	4	1,05	2,5	4	1,05	2,5
	DC-6	Switching of incandescent lamps									1,5[2]	1,05	[2]	1,5[2]	1,05	[2]
according to IEC 947-4-1, EN 60 947 VDE 0660 Part 102																

[1] cosφ = 0,45 for $I_e \leq 100$ A; cosφ = 0,35 for $I_e \leq 100$ A.
[2] The tests must be carried out with an incandescent lamp load connected.
[3] In this case, the test data must be derived from the test values for AC-3 or AC-4 according to a special table.
[4] Devices for utilisation category AC-3 may be used for occasional inching or plugging during a limited period, such as for setting up a machine. However, during this limited period of time, the number of operations must not exceed five per minute or ten in a ten minute period.
[5] Hermetically enclosed refrigerant compressor motor means a combination of a compressor and a motor both of which are housed in the same enclosure with no external shaft or shaft seals, the motor running in the refrigerant.

Utilisation Categories of Auxiliary Switches

Type of current	Utilisation category	Typical Applications I = Making current, I_c = Breaking current, I_e = Rated operational current, U = Voltage, U_e = Rated operational voltage, U_r = Recovery voltage, $t_{0,95}$ = the time in ms until 95% of the stationary current has been reached, P = U_e x I_e = Rated power in Watts	Normal conditions of use						Divergent conditions of use					
			Switching on			Switching off			Switching on				Switching off	
			$\frac{I}{I_e}$	$\frac{U}{U_e}$	cosφ	$\frac{I}{Ie}$	$\frac{U}{Ue}$	cosφ	$\frac{I}{I_e}$	$\frac{U}{U_e}$	cosφ	$\frac{I}{I_e}$	$\frac{U}{U_e}$	cosφ
AC	AC-12	Control of resistive and solid state loads in optocoupler input circuits	1	1	0,9	1	1	0,9	-	-	-	-	-	-
	AC-13	Control of solid state loads with transformerisolation	2	1	0,65	1	1	0,65	10	1,1	0,65	1,1	1,1	0,65
	AC-14	Control of small electromagnetic loads (max. 72 VA)	6	1	0,3	1	1	0,3	6	1,1	0,7	6	1,1	0,7
	AC-15	Control of electromagnetic loads (above 72 VA)	10	1	0,3	1	1	0,3	10	1,1	0,3	10	1,1	0,3
			$\frac{I}{I_e}$	$\frac{U}{U_e}$	$t_{0,95}$	$\frac{I}{Ie}$	$\frac{U}{Ue}$	$t_{0,95}$	$\frac{I}{I_e}$	$\frac{U}{U_e}$	$t_{0,95}$	$\frac{I}{I_e}$	$\frac{U}{U_e}$	$t_{0,95}$
DC	DC-12	Control of resistive and solid state loads in optocoupler input circuits	1	1	1 ms	1	1	1 ms	-	-	-	-	-	-
	DC-13	Control of electromagnets	1	1	6xP[1]	1	1	6xP[1]	1,1	1,1	6xP[1]	1,1	1,1	6xP[1]
	DC-14	Control of electromagnetic loads with economy resistors in the circuit	10	1	15 ms	1	1	15 ms	10	1,1	15 ms	10	1,1	15 ms
according to IEC 947-4-1, EN 60 947 VDE 0660 Part 102														

[1] The value „6xP" is the result of an empirical relationship which is found to represent most direct current magnetic loads up to an upper limit of P = 50W with 6 [ms]/[W] = 200 [ms]. Loads with a rated power above 50 W are composed of small loads located parallel to each other. Therefore, 300 ms is an upper limit independent of the power rating.

Impulse Relay Z-S.

- Impulse relays according to EN/IEC 60669 for switching electrical consumers in impulse operation.
- Shape and terminal compatible with the installation relay range
- Manual operation for testing purposes is possible
- Separately switchable LED (Z-SB../SS) for signalling purposes
- Glow lamps of illuminated pushbuttons connected parallel produce reactive currents which may be compensated by a capacitor block in order to prevent excessive heating of coils in case of high numbers of glow lamps.
- Glow lamps parallel to control keys according to table
- Main contacts can be connected to standard pin busbar

Security:

- Optional optical operating status display by means of LED
- Switching position indicated on the front side by manual operating key
- All terminals - coil and contacts - equipped with guide for secure terminal connection. Misplacement of wires impossible.
- Made of hardly flammable materials and plastics free from chlorine and halogens.
- Finger and hand touch safe according to VBG4

Advantages:

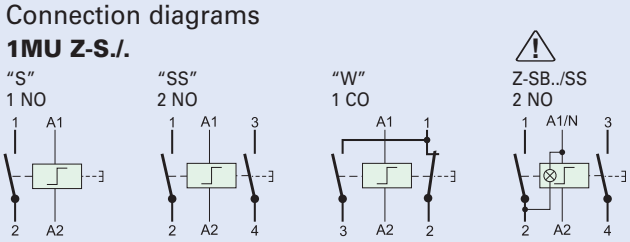
- Available in two versions (Z-S., Z-SB.)
- Low switching noise and no humming
- Easy to connect thanks to large terminals which are supplied open
- Simple snap-on fastening on 35 mm DIN rail
- High degree of flexibility thanks to a variety of contact configurations
- Easy access for coil connection

Accessories:

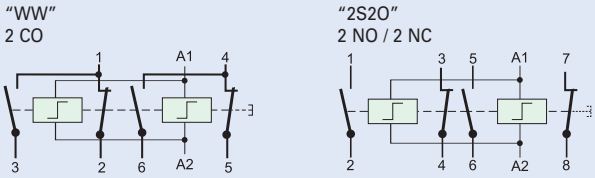
Capacitor block	Z-S/KO	270588

Connection diagrams

1MU Z-S./.



2MU Z-S./.



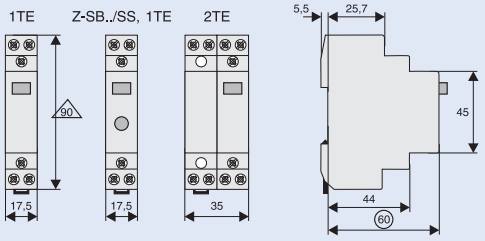
Technical Data

Electrical		
Rated current (IEC/EN 60669-2-2)		
250 V AC		16 A
Number of poles		1 to 4
Main contacts		
NO/NC		1 and 2 (1MU); 3 and 4 (2MU)
CO		1 (1MU); 2 (2MU)
Control Circuit		
Rated control feed voltage U_s		8, 12, 24, 48, 230 V AC 8, 12, 24, 110 V DC
Alternative control voltages, frequencies, and contact arrangements upon enquiry		
Rated frequency		50 Hz
Operating range		0.9-1.1 x U_s
Pickup power of coils		12 VA / 7 W typ.
Max. number of parallel pushbutton units		unlimited
Max. number of parallel illuminated pushbutton units 230 V 0.6 mA typ.		
without compensation		8 units (1MU), 15 units (2MU)
with compensation 1 x Z-SC/KO (Z-S/KO)		23 units (1MU), –
with compensation 2 x Z-SC/KO (Z-S/KO)		46 units (1MU), 43 units (2MU)
Minimum command duration		> 200 ms
Operating noise		no humming
Rated peak withstand voltage U_{imp}		2 kV (1.2/50 µs)
Duty max.		1h, 100% with spacer
Load Circuit		
Rated operational voltage U_n		1p, 2p: 250VAC; 3p, 4p: 240/415VAC
Minimum operational voltage U_{min}		24 V AC/DC (U_s 8-110 V)
Rated insulation voltage U_i		500 V
Rated peak withstand voltage U_{imp}		4 kV (1.2/50 µs)
Conventional thermal current I_{th}		16 A AC
Rated operational current I_e		16 A AC
Rated constant current I_u		16 A AC
Rated current DC		
24 V		I_e 16 A
48 V		I_e 12.5 A
230 V		I_e 1 A
Conditional rated short circuit current I_q		10 kA (with 20 A gL/gG)
Duration of bouncing		< 10 ms (typ. < 5 ms)
Endurance	electrical comp.	≥ 40x10^3 operating cycles
	mechanical comp.	≥ 1x10^6 operating cycles

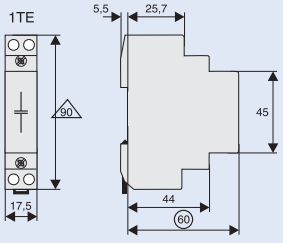
Mechanical	
Frame size	45 mm
Device height	90 mm
Device width	17.5 mm per MU
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection installed device	IP20
Position of device in use	works in any position
Upper and lower terminals	lift terminals (captive)
Terminal capacity	
Contact and coil	0.5 - 10 mm^2 one- or more wire 0.5 - 6 mm^2 fine-wire with wire end sleeve
Temperature range	-20°C to +45°C
Total contact gap	> 5mm / independent contacts
Contact material	does not contain cadmium

Accessories	
Capacitor block	1.5 µF, 240 V AC

Dimensions (mm)



Z-S/KO



Utilization Categories (acc. to IEC/EN 60947-4-1)

UTILIZATION CATEGORIES
1MU (1NO, 2NO, 1NO+1NC, 1CO), 2MU (2NO+2NC, 2CO, 3NO+1NC)

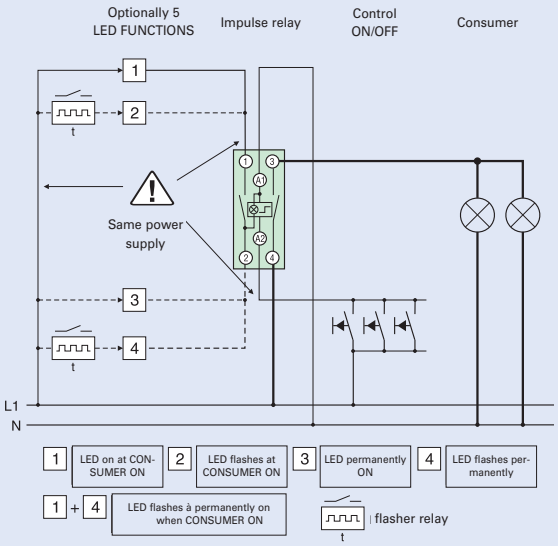
AC-1	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-1	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-1)	24 A AC
AC-3	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
Make-/break-current I_c (AC-3)	80 A AC
AC-5a	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
Make-/break-current I_c (AC-5a)	30 A AC
AC-5b	
Rated operational voltage U_e	230 V AC
Rated operational current I_e	8.8 A AC
Rated operational power AC-5b	2024 W
Make-/break-current I_c (AC-5b)	13.2 A AC
AC-7a (acc. to EN 61095)	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-7a	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-7a)	24 A AC

UTILIZATION CATEGORIES
2MU (3NO, 4NO)

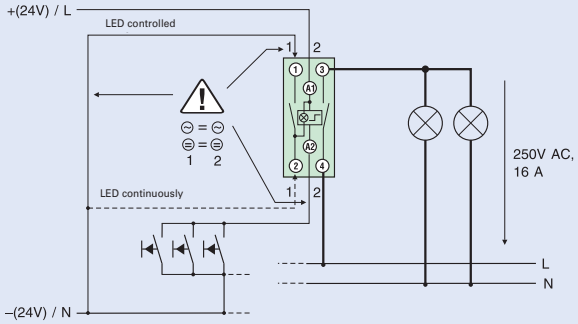
AC-1	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-1	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-1)	24 A AC
AC-3	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
Make-/break-current I_c (AC-3)	80 A AC / 64 A AC
AC-5a	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
Make-/break-current I_c (AC-5a)	30 A AC
AC-5b	
Rated operational voltage U_e	230/400 V AC
Rated operational current I_e	8.8 A AC
Rated operational power AC-5b	2024 W
Make-/break-current I_c (AC-5b)	13.2 A AC
AC-7a (acc. to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-7a	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-7a)	24 A AC
AC-7b (acc. to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-7b	1125 W (cos φ = 0.8), 2500 VA
Make-/break-current I_c (AC-7b)	30 A AC

		Power	Current	Capacitor	Z-S
Lamp Types		W	A	µF	max. number of lamps per current path at 230V, 50 Hz
	Incandescent lamps	60	0,27		33
	Low-voltage halogen lamps (12 or 24 V) with transformer / electronic transformer	20 50 75 100 150 200 300	0,09 0,22 0,33 0,43 0,65 0,87 1,3		55 22 14 11 7 5 3
	Fluorescent tubes without compensation or with series comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	1,3 2,7 2,5 3,4 5,3 5,3 5,3	62 27 27 24 15 14 12
	Fluorescent tubes lead-lag circuit	11 18 24 36 58 65 85	0,07 0,11 0,14 0,22 0,35 0,35 0,47	- - - - - - -	2 x 71 2 x 45 2 x 35 2 x 22 2 x 14 2 x 14 2 x 10
	Fluorescent tubes with parallel comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	3,0 4,0 4,0 4,0 7,0 7,0 8,0	34 26 26 26 14 14 13
	Fluorescent tubes with electronic ballast	18 36 58 2 x 18 2 x 36 2 x 58	0,09 0,16 0,25 0,17 0,32 0,49	- - - - - -	32 16 12 2 x 16 2 x 8 2 x 6

Impulse Relay with Switchable LED



Applakation at 24 V AC and DC



Impulse Relay Z-SC with Central Control

- Impulse relay according to EN/IEC 60669 for switching electrical consumers in impulse operation.
- Local and central control, capable of switching 2-stage groups
- Shape and terminal compatible with the installation relay range
- Manual operation for testing purposes is possible
- Glow lamps of illuminated pushbuttons connected parallel produce reactive currents which may be compensated by a capacitor block in order to prevent excessive heating of coils in case of high numbers of glow lamps.
- Glow lamps parallel to control keys according to table
- Main contacts can be connected to standard busbar

Security:

- Switching position indicated on the front side by manual operating key
- All terminals - coil and contacts - equipped with guide for secure terminal connection. Misplacement of wires impossible.
- Made of hardly flammable materials and plastics free from chlorine and halogens.
- Finger and hand touch safe according to VBG4.

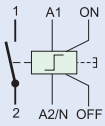
Advantages:

- Low switching noise and no humming
- Easy to connect thanks to large terminals which are supplied open
- Simple snap-on fastening on 35 mm DIN rail
- High degree of flexibility thanks to a variety of contact configurations
- Easy access for coil connection

Connection diagrams

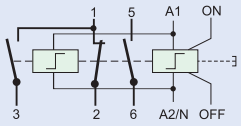
1MU Z-SC./S

"S"
1 NO



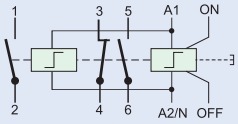
2MU Z-SC./.

"1S1W"
1 NO / 1 CO

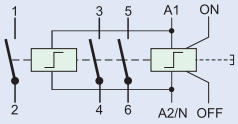


2MU Z-SC./.

"2S1O"
2 NO / 1 NC



"3S"
3 NO



- Permanent command, control by long pulse (1MU) and timer is possible

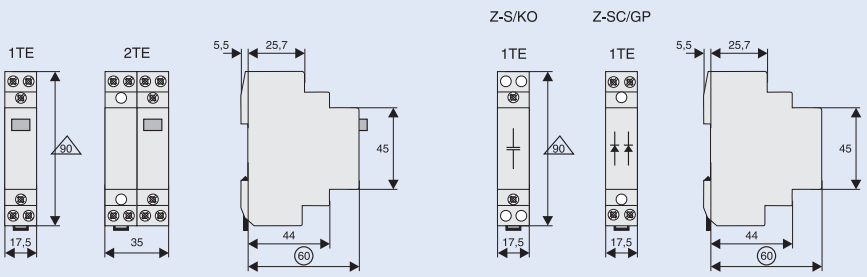
Technical Data

Electrical		
Rated current (IEC/EN 60669-2-2)		
250 V AC		16 A
Number of poles		1 to 3
Main contacts		
NO		1 (1MU), 3 (2MU)
NO + NC		2+1 (2MU)
CO + NO		1 (2MU)
Control Circuit		
Rated control feed voltage U_s		12, 24, 110, 230, 240 V AC
Alternative control voltages, frequencies, and contact arrangements upon enquiry		
Rated frequency		50 Hz; 50-60 Hz 240 V
Operating range		0.9-1.1 x U_s
Maximum power of coils, pick-up		U_s = 24V: 25VA (15W) U_s = 230V: 32VA (19W)
Max. number of parallel pushbutton units		unlimited
Max. number of parallel illuminated pushbutton units 230 V 0.6 mA typ.		
without compensation		4 units (1MU, 2MU)
with compensation 1 x Z-SC/KO (Z-S/KO)		19 units (1MU), 9 units (2MU)
with compensation 2 x Z-SC/KO (Z-S/KO)		30 units (1MU), 18 units (2MU)
Minimum command duration		> 200 ms
Operating noise		no humming
Rated peak withstand voltage U_{imp}		2 kV (1.2/50 µs)
Duty		100% (1MU) see above ⚠ <100% (2MU), 1 h max. with spacer
Load Circuit		
Rated operational voltage U_n		1p, 2p: 250VAC; 3p, 4p: 240/415VAC
Minimum operational voltage U_{min}		24 V AC/DC (U_s 8-110 V)
Rated insulation voltage U_i		500 V
Rated peak withstand voltage U_{imp}		4 kV (1.2/50 µs)
Conventional thermal current I_{th}		16 A AC
Rated operational current I_e		16 A AC
Rated constant current I_u		16 A AC
Rated current DC		
24 V		I_e 16 A
48 V		I_e 12.5 A
230 V		I_e 1 A
Conditional rated short circuit current I_q		10 kA (with 20 A gL/gG)
Duration of bouncing		< 10 ms (typ. < 5 ms)
Endurance	electrical comp.	≥ 40x10^3 operating cycles
	mechanical comp.	≥ 1x10^6 operating cycles

Mechanical	
Frame size	45 mm
Device height	90 mm
Device width	17.5 mm (1MU)
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection installed device	IP20
Position of device in use	works in any position
Upper and lower terminals	lift terminals (captive)
Terminal capacity	
Contact and coil	0.5 - 10 mm^2 one- or more wire 0.5 - 6 mm^2 fine-wire with wire end sleeve
Temperature range	-20°C to +45°C
Total contact gap	> 5mm / independent contacts
Contact material	does not contain cadmium

Accessories	
Capacitor block	1.5 µF, 240 V AC
Group block	240 V AC

Dimensions (mm)



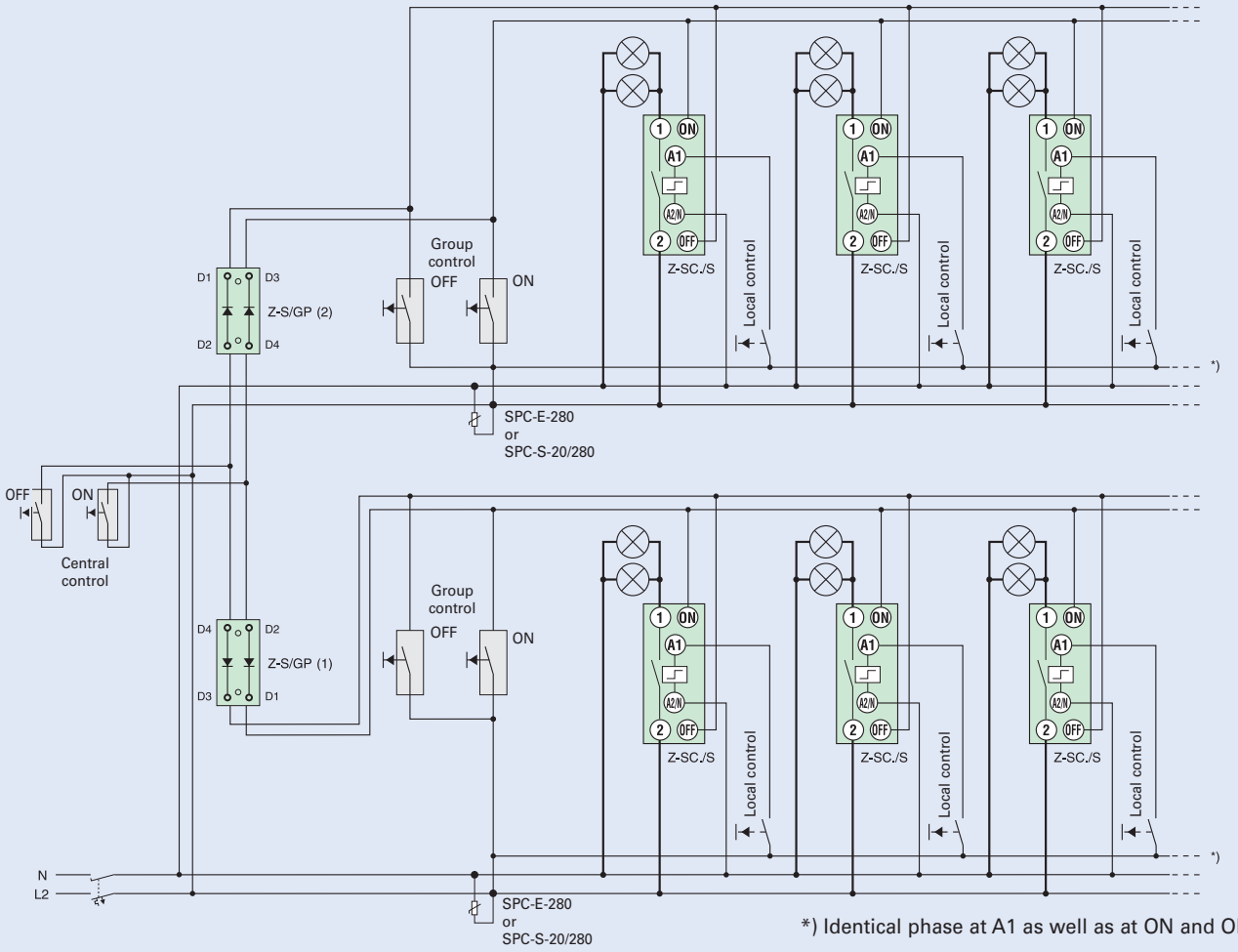
Utilization Categories (acc. to IEC/EN 60947-4-1)

UTILIZATION CATEGORIES 1MU (1NO, 2NO, 1NO+1NC, 1CO), 2MU (2NO+2NC, 2CO, 3NO+1NC)	
AC-1	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-1	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-1)	24 A AC
AC-3	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
Make-/break-current I_c (AC-3)	80 A AC
AC-5a	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
Make-/break-current I_c (AC-5a)	30 A AC
AC-5b	
Rated operational voltage U_e	230 V AC
Rated operational current I_e	8.8 A AC
Rated operational power AC-5b	2024 W
Make-/break-current I_c (AC-5b)	13.2 A AC
AC-7a (acc. to EN 61095)	
Rated operational voltage U_e	250 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-7a	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-7a)	24 A AC

UTILIZATION CATEGORIES 2MU (3NO, 4NO)	
AC-1	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-1	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-1)	24 A AC
AC-3	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	8 A AC
Rated operational power AC-3	900 W (cos φ = 0.45), 2000 VA
Make-/break-current I_c (AC-3)	80 A AC / 64 A AC
AC-5a	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-5a	1125 W (cos φ = 0.45), 2500 VA
Make-/break-current I_c (AC-5a)	30 A AC
AC-5b	
Rated operational voltage U_e	230/400 V AC
Rated operational current I_e	8.8 A AC
Rated operational power AC-5b	2024 W
Make-/break-current I_c (AC-5b)	13.2 A AC
AC-7a (acc. to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	16 A AC
Rated operational power AC-7a	3200 W (cos φ = 0.8), 4000 VA
Make-/break-current I_c (AC-7a)	24 A AC
AC-7b (acc. to EN 61095)	
Rated operational voltage U_e	240/415 V AC
Rated operational current I_e	10 A AC
Rated operational power AC-7b	1125 W (cos φ = 0.8), 2500 VA
Make-/break-current I_c (AC-7b)	30 A AC

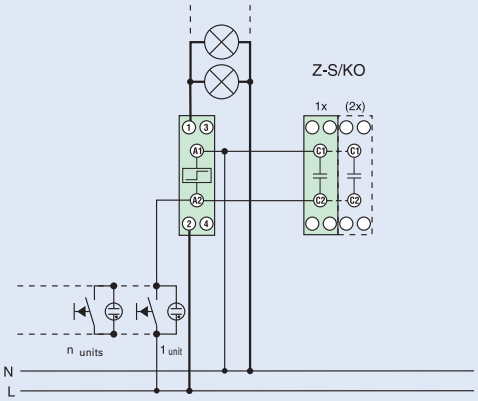
		Power	Current	Capacitor	Z-SC
Lamp Types		W	A	µF	max. number of lamps per current path at 230V, 50 Hz
	Incandescent lamps	60	0,27		33
	Low-voltage halogen lamps (12 or 24 V) with transformer / electronic transformer	20 50 75 100 150 200 300	0,09 0,22 0,33 0,43 0,65 0,87 1,3		55 22 14 11 7 5 3
	Fluorescent tubes without compensation or with series comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	1,3 2,7 2,5 3,4 5,3 5,3 5,3	62 27 27 24 15 14 12
	Fluorescent tubes lead-lag circuit	11 18 24 36 58 65 85	0,07 0,11 0,14 0,22 0,35 0,35 0,47	- - - - - - -	2 x 71 2 x 45 2 x 35 2 x 22 2 x 14 2 x 14 2 x 10
	Fluorescent tubes with parallel comp.	11 18 24 36 58 65 85	0,16 0,37 0,35 0,43 0,67 0,67 0,8	3,0 4,0 4,0 4,0 7,0 7,0 8,0	34 26 26 26 14 14 13
	Fluorescent tubes with electronic ballast	18 36 58 2 x 18 2 x 36 2 x 58	0,09 0,16 0,25 0,17 0,32 0,49	- - - - - -	32 16 12 2 x 16 2 x 8 2 x 6

Block Diagram for Central, Group, and Local Control



*) Identical phase at A1 as well as at ON and OFF

Compensation by Means of Capacitor Block

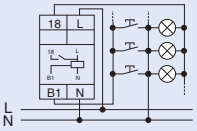


Staircase Switch with switch-off warning and stop function TLE, TLK

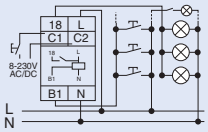
- Automatic electronic staircase switch
- Switch-off warning can be switched off (type TLK)
- Subsequent switching is possible, programmable long-time function
- Power saving function, low switching noise
- Automatic 3-/4 wire circuit recognition
- Zero voltage safety thanks to memory function (type TLK)
- Central control function (type TLK)
- External voltage control input (type TLK)

Connection diagrams

e.g. 3 wire circuit TLE



e.g. 4 wire circuit with attic lighting TLK



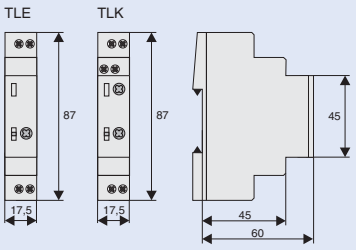
Technical Data

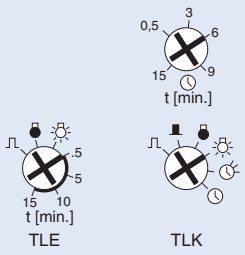
Electrical	
Feed voltage	230 VAC
Rated voltage tolarance	-15%, +10%
Power consumption	6 VA (0.8 W)
Rated frequency	48-63 Hz
Duty	100%
Reset time	500 ms
Adjustment range	0,5 - 15 min.
Overvoltage category	III (in acc. with IEC 60664-1)
Rated surge voltage	4 kV
Output	
Contact	1 NO (Terminals L-18)
Rated voltage	250 VAC
Constant current	16 A
Switch on peak current (20 ms)	80 A
Switching capacity AC	4000 VA / AC1, 384 W / DC
Maximum current	30 A / < 3s
Switching voltage	250 V AC1 / 24 V DC
Minimum switching capacity DC	500 mW
Output indication	yellow LED ( )
Mechanical endurance	30 x 10^6 switching operations
Electrical endurance (AC1)	10 x 10^5 switching op. 16A/250V

Control input B1	
Connection (carrying voltage)	Pushbutton T-N (3 wire circuit) Pushbutton T-L (4 wire circuit)
Glow lamps parallel to control keys	max. 100 mA
Overload protection	electronic
Control input C1-C2 (Type TLK)	8-230 V AC/DC

Mechanical	
Frame size	45 mm
Device height	87 mm
Device width	17.5 mm (1MU)
Installation	quick fastening on DIN rail IEC/EN 60715
Protection class / Polution degree	IP20 / 2
Type of connection	lift terminal acc. to VBG 4 (PZ1 required)
Terminal capacity	1x 0.5-4 mm^2 2x 0.5-2,5 mm^2
Tightening torque	max. 1 Nm
Temperature range	-25°C to +55°C
Operation position	any

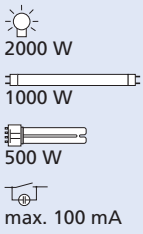
Dimensions (mm)





Modes

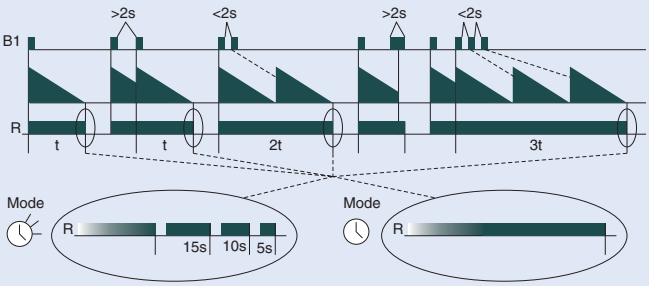
- Automatic timing
- Automatic timing with switch-off warning
- Permanent light
- Off
- Impulse relay
- Impulse relay, zero-voltage proof



Functional Description

Automatic timing :

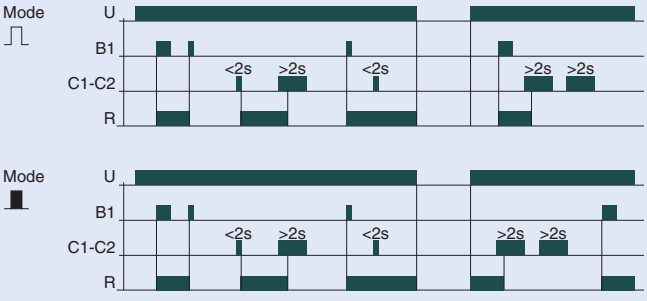
After pushing the button the output relay closes (terminals L-18) and the set time starts to run. If the button is pushed again before the time t has lapsed the time re-starts from zero (subsequent switching function in accordance with EN 60669-2-3). Repeated quick pressing of the pushbutton ("pumping") leads to the addition of 2, 3 or more time intervals up to 60 min. Pushing the button once for a long time (> 2 s) stops the running lighting period, and the relay switches off (power saving function). In the function, the device generates short pulses (flickering) as a switch-of warning (according to DIN 18015-2),
15 s, 10 s, and 5 s prior to switching off.



The additional control input permits activating the staircase switch e.g. from an intercom system by means of a voltage from 8 to 230 V AC/DC in the modes and . This input channel permits starting the lighting time, as well as subsequent switching. Switching off (power saving function) and programming of longer lighting periods ("pumping") is not possible via this input channel.

Impulse mode :

In the impulse mode each push of the button makes the output relay switch over. In the function the output relay is always open after the feed voltage has been applied. In the function the relay immediately picks up when the feed voltage is applied provided that it was closed prior to the power failure. By applying a short voltage pulse (< 2 s) to the additional control input C1-C2 the relay R is switched on (central ON).
A longer voltage pulse (> 2 s) causes the relay R to switch off (central OFF).



Time Lag Relays ZR

Functions

- **ZRER/W**
  - E ON delay
  - R OFF delay
- **ZRMF1/W, ZRMF2/WW**
  - E ON delay
  - R OFF delay
  - Ws Single shot leading edge with control input
  - Wa Single shot trailing edge with control input
  - Es ON delay with control input
  - Wu Single shot leading edge voltage controlled
  - Bp Flasher pause first
- **ZRTAK/W**
  - Ip Asymmetric flasher pause first
  - Ii Asymmetric flasher pulse first

Indicators:

ZRER/W, ZRMF1/W, ZRMF2/WW

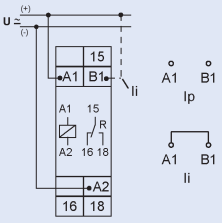
Green LED U/t ON:	indication of supply voltage
Green LED U/t flashes:	indication of time period
Yellow LED R ON/OFF:	indication of output relay

ZRTAK/W

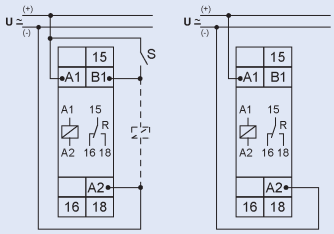
Green LED U/t ON:	indication of supply voltage
Green LED U/t slow flashing:	indication of time period t1
Green LED U/t fast flashing:	indication of time period t2
Yellow LED R ON/OFF:	indication of output relay

Connection diagram

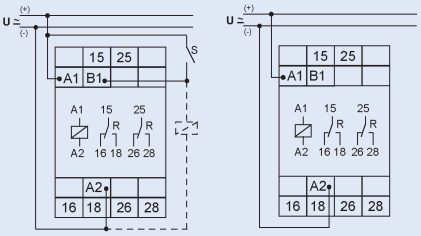
Type ZRTAK/W



Type ZRER/W, ZRMF1/W



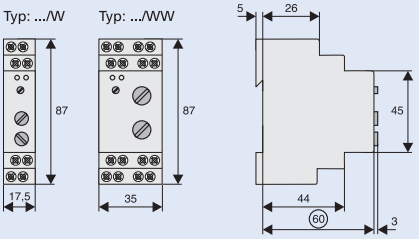
Type ZRMF2/WW



Time Ranges

Absolute time range	Setting range	
1s	50ms	1s
10s	500ms	10s
1min	3s	1min
10min	30s	10min
1h	3min	1h
10h	30min	10h
100h	5h	100h

Dimensions (mm)



Technical Data

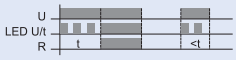
Electrical	
Design according to	EN 60669
Basic accuracy	±1% (of scale end value)
Setting accuracy	<5% (of scale end value)
Repeating accuracy:	<0.5% or ±5ms
Effect of voltage	–
Effect of temperature	≤0.01% / °C
Input circuit:	
Feed voltage	
Terminals A1-A2	24V to 240V AC/DC, 24V/-15% to 240V/+10%
Nominal frequency	48 to 63Hz
Nominal consumption	
Type: .../W	4VA (1.5W)
Type: .../WW	6VA (2W)
Duty	100%
Operational again after	100ms
Residual ripple in case of DC	10%
Release voltage	>30% of min. feed voltage
Output circuit:	potential-free CO
Switching capacity	2000 VA (8A / 250V AC)
Fuse protection	8A quick-acting
Mechanical endurance	20 x 10^6 operating cycles
Electrical endurance	
at a resistive load of 1000 VA	2 x 10^5 operating cycles
Switching frequency	
at a resistive load of 100 VA	max. 60/min,
at a resistive load of 1000 VA (in acc. with IEC 60947-5-1)	max. 6/min
Rated surge voltage	4kV
Overvoltage category	III (in acc. with IEC 60664-1)

Control contact:	
Input carrying potential	Terminals A1-B1
loadable	yes
Maximum line length	10m
Minimum control pulse length	
DC	50ms
AC	100ms
Trigger level (sensitivity)	automatic adaption to supply voltage

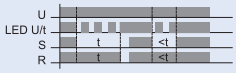
Mechanical	
Frame size	45 mm
Device height	87 mm
Device width	17.5 (/W) and 35 (/WW) mm
Degree of protection, built-in	IP40
Position of installation	optional
Upper and lower terminals	Bow terminal
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Terminal capacity	
1 x 0,5-2,5 mm^2	with/without multicore cable end
1 x 4 mm^2	without multicore cable end
2 x 0,5-1,5 mm^2	with/without multicore cable end
2 x 2,5 mm^2	flexible without multicore cable end
Tightening torque of terminal screws	max. 1 Nm
Permitted relative humidity in acc. with IEC 60721-3-3 Class 3K3	15% to 85%
Ambient temperature in acc. with IEC 60068-1	-25 to +55°C
Storage and transport temperature	-25 to +70°C
Pollution degree	2
when built in	3

Description of Functions

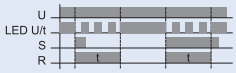
- **ON delay (E)**
  When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated) This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the expiry of the interval t, the interval already expired is erased and is restarted when the supply voltage is next applied.



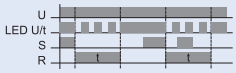
- **OFF delay (R)**
  The supply voltage U must be constantly applied to the device (green LED U/t illuminated) When the control contact S is closed, the output relay R switches into on-position (yellow LED illuminated). If the control contact is opened, the set interval t begins (green LED flashes) After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated) If the control contact is closed again before the interval t has expired, the interval already expired is erased and is restarted.



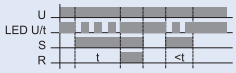
- **Single shot leading edge with control input (Ws)**
  The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the output relay R switches into on-position (green LED U/t illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



- **Single shot trailing edge with control input (Wa)**
  The supply voltage U must be constantly applied to the device (green LED U/t illuminated). Closing the control contact S has no influence on the condition of the output R. When the control contact is opened, the output relay switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated), the output relay switches into off-position (yellow LED not illuminated). During the interval, the control contact can be operated any number of times. A further cycle can only be started when the cycle run has been completed.



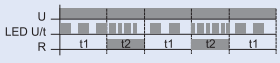
- **ON delay with control input (Es)**
  The supply voltage U must be constantly applied to the device (green LED U/t illuminated). When the control contact S is closed, the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay R switches into on-position (yellow LED illuminated). This status remains until the control contact is opened again If the control contact is opened before the interval t has expired , the interval already expired is erased and is restarted with the next cycle.



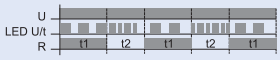
- **Single shot leading edge voltage controlled (Wu)**
  When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins (green LED U/t flashes). After the interval t has expired (green LED U/t illuminated) the output relay switches into off-position (yellow LED not illuminated). This status remains until the supply voltage is interrupted. If the supply voltage is interrupted before the interval t has expired. The output relay switches into off-position The interval already is erased and is restarted when the supply voltage is next applied.

- **Flasher pause first (Bp)**
  When the supply voltage U is applied, the set interval t begins (green LED U/t flashes). After the interval t has expired, the output relay R switches into on-position (yellow LED illuminated) and the set interval t begins again. After the interval t has expired. the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at a ratio of 1:1 until the supply voltage is interrupted.

- **Asymmetric flasher pause first (Ip)**
  When the supply voltage U is applied, the set interval t1 begins (green LED U/t flashes slowly) After the interval t1 has expired. the output relay R switches into on-position (yellow LED illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into off-position (yellow LED not illuminated). The output relay is triggered at the ratio of t1:t2 until the supply voltage is interrupted.



- **Asymmetric flasher pulse first (Ii)**
  When the supply voltage U is applied, the output relay R switches into on-position (yellow LED illuminated) and the set interval t1 begins (green LED U/t flashes slowly). After the interval t1 has expired, the output relay switches into off-position (yellow LED not illuminated) and the set interval t2 begins (green LED U/t flashes fast). After the interval t2 has expired, the output relay switches into on-position (yellow LED illuminated). The output relay is triggered at the ratio of t1:t2 until the supply voltage is interrupted.

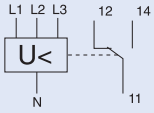


Undervoltage Relay REUVM

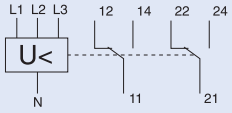
- When the connection to the three phases and neutral conductor is made the relay is energized in case there is no fault and the green Power LED lights. If the monitored nominal volltage U_N drops under the switching voltage U_S , in one, two or all three phases the relay reverts to its de-energized position.
- Optical indication
  Power...green LED
  Fault in phases L1, L2, L3...red LED is flashing
  Loss of Neutral conductor N...green Power LED is flashing
- Single-phase operation: bridge L1-L2-L3

Connection diagrams

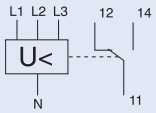
REUVM



REUVM2



Single-phase application

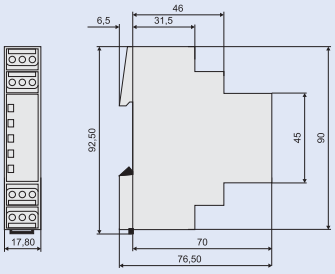


Technical Data

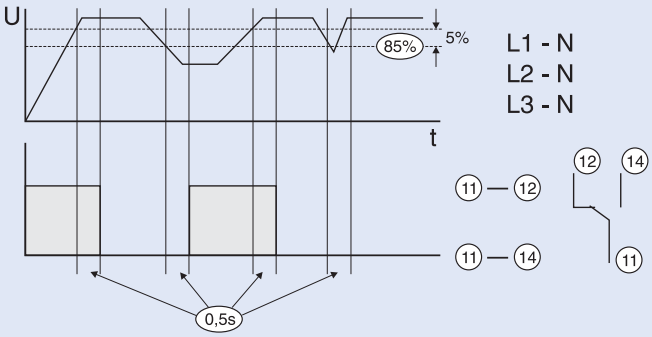
Electrical	
Rated operational voltage U_N	230/400 V AC
Rated frequency	50-60 Hz
Switching voltage U_S	U_N x 0.85 fix
Power consumption	< 1 VA
Switching time delay	approx. 500 ms
Switching contact	1 CO, 2 CO (potential-free)
Rated operational voltage / current	250 VAC / 5A cos φ = 1 30 VDC / 5A 300 VDC / 0,25A
Min. rated operational voltage	100 mV AC/DC
Min. rated operational current	10 mA AC/DC
Rated impulse withstand voltage	4 kV
Duty cycle	100%
Overvoltage category	III
Dielectric strength	
Coil – contact circuit	4 $kV_{r.m.s}$
Open circuit contact	1 $kV_{r.m.s}$

Mechanical	
Frame size	45 mm
Device height	90 mm
Device width	17.8 mm
Weight	65 g, 73 g
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal capacity	
rigid	1x4 mm^2, 2x1.5 mm^2
flexible	1x2.5 mm^2
Tightening torque	
of terminal screws	0.5-0.7 Nm
Resistance to climatic conditions	F / DIN 40040
Perm. ambient temperature range	-25 to +60°C
Flame class	V0, glow wire 960°C
Pollution degree	2
Comparative tracking index	CTI 600

Dimensions (mm)

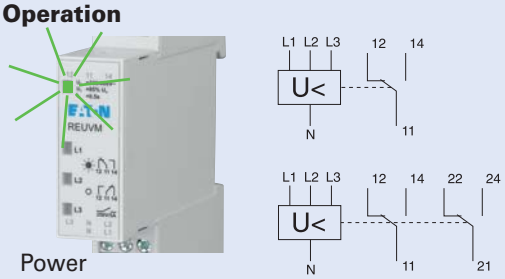


Functional diagram



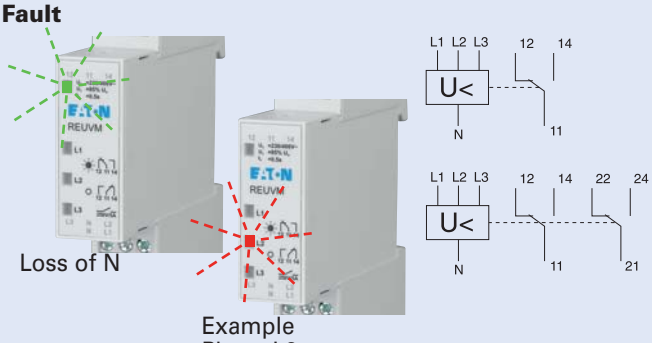
Optical indication and contact position

Operation



Power

Fault



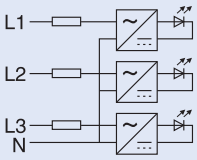
Loss of N

Example
Phase L2

Voltage Indication UVA

- When the connection to the three phases and neutral conductor is made, the green Power LED lights. If only two phases are connected, eg. L1 and L3, only these green LED`s lights, even at loss of Neutral conductor N.
- For use as voltage return indication in manual operated Mains-Emergency-system operation
- Large operational voltage range 85-690 V AC/DC

Connection diagram

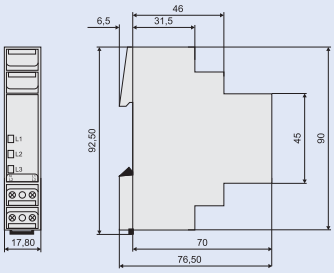


Technical Data

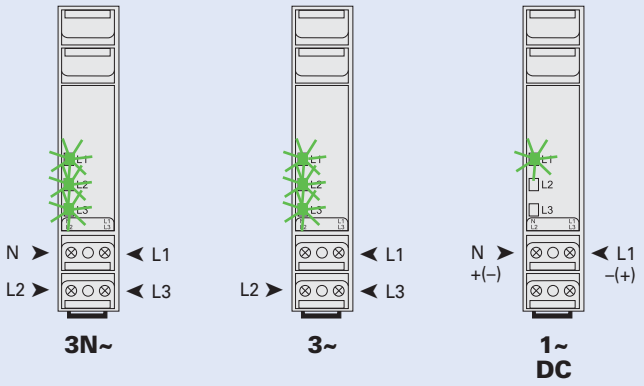
Electrical	
Rated operational voltage U_N	230/400 V AC
Rated frequency	50-60 Hz
Rated operational voltage	85-690 V AC/DC
Power consumption	< 3x 23 mW
Max. permissible back-up fuse	16A gG (gL)
Duty cycle	100%
Rated impulse withstand voltage	6 kV
Overvoltage category	IV

Mechanical	
Frame size	45 mm
Device height	90 mm
Device width	17.8 mm
Weight	42 g
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal capacity	
rigid	1x4 mm^2, 2x1.5 mm^2
flexible	1x2.5 mm^2
Tightening torque of terminal screws	0.5 Nm
Resistance to climatic conditions	F / DIN 40040
Perm. ambient temperature range	-30 to +60°C
Flame class	V0, glow wire 960°C
Pollution degree	2
Comparative tracking index	CTI 600

Dimensions (mm)



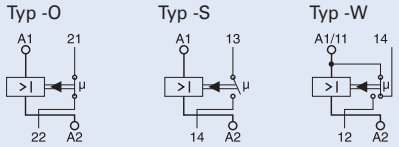
Application and optical indication



Priority-(Current) Relay Z-LAR/

- For simple priority connection of important consumers
- For fast current increase
- Expensive peak loads are avoided efficiently (staggered heating)
- Integrated auxiliary switch, 1 NC or 1 NO or 1 CO contact
- NC and NO contact are potential free

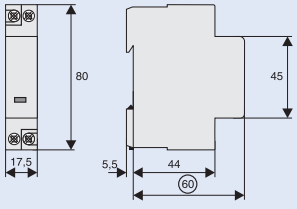
Connection diagram



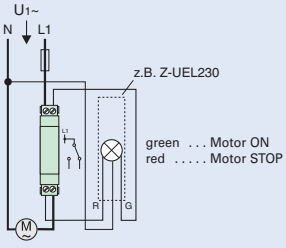
Technical Data

	Z-LAR/8	Z-LAR/16	Z-LAR/32
Electrical			
Nominal thermal current I_{th}	8 A	16 A	32 A
Rated voltage U	250V AC	250V AC	250V AC
Responding current I_{AN}	≥ 3 A	≥ 10 A	≥ 15 A
Release current I_A	≤ 1.8 A	≤ 4.2 A	≤ 7.4 A
Max. electrical switching frequency	3600/h	3600/h	3600/h
Rated insulation voltage U_i	440 V	440 V	440 V
Power loss at I_{th}			
Effective power	3.4 W	1.95 W	3.17 W
Apparent power	7.7 VA	4.66 VA	7.36 VA
Rated peak withstand voltage U_{imp}	4 kV	4 kV	4 kV
Back-up fuse line protection	max. 10 A	max. 16 A	max. 32 A
Switching contact:			
Function NC, NO, CO			
Back-up fuse	max. 1 A gL	max. 1 A gL	max. 1 A gL
Contact gap *)	< 3 mm (μ)	< 3 mm (μ)	< 3 mm (μ)
Switching capacity	1A/250V~	1A/250V~	1A/250V~
Minimum switching capacity	300 mW	300 mW	300 mW
Minimum operational voltage	12 V	12 V	12 V
Electrical endurance	100.000 operating cycles		
*) Do not use as the only means of isolating a device from the line voltage			
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	17.5 mm (1MU)	17.5 mm (1MU)	17.5 mm (1MU)
Mounting	quick fastening on DIN rail IEC/EN 60715		
Degree of protection, built-in	IP40	IP40	IP40
Upper and lower terminals	lift terminals	lift terminals	lift terminals
Terminal protection	finger and hand touch safe, according to BGV A3, ÖVE-EN 6		
Terminal capacity			
Main circuit	2 x 10 mm^2	2 x 10 mm^2	2 x 10 mm^2
Auxiliary circuit	2 x 2.5 mm^2	2 x 2.5 mm^2	2 x 2.5 mm^2
Fastening torque of terminal screws			
Main circuit	max. 2.4 Nm	max. 2.4 Nm	max. 2.4 Nm
Auxiliary circuit	max. 1 Nm	max. 1 Nm	max. 1 Nm

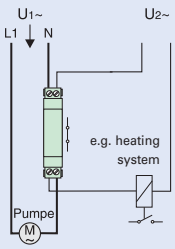
Dimensions (mm)



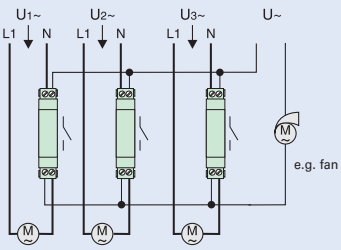
Connection Example - Operating Status



Connection Example - Priority for Pump



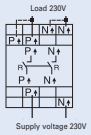
Connection Example - "OR" Circuit, Extraction System



Bioswitch FFS/16

- Line voltage LED
- AUTOMATIC ON/OFF switch
- All-pole disconnection
- 2 contacts NO
- Not suitable for consumers with electronic control

Connection diagram

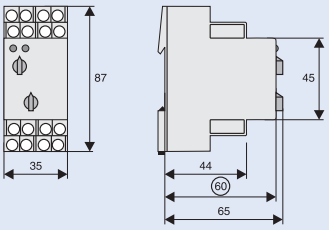


Technical Data

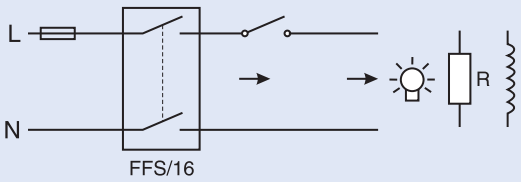
Electrical	
Rated voltage	230 V AC
Tolerance	-15% to +10%
Rated frequency	48 - 63 Hz
Rated consumption	11 VA (1.6 W)
Duration of operation	100%
Detecting voltage	200 - 250 mV DC
Current consumption	32 mA
Making current	5 - 200 mA
Breaking current	fix, approx. 70% of making current
Drop-out voltage	> 10% of the rated voltage
Tripping delay	fixed, approx. 6 s
Rise time	fixed, approx. 0.5 s
Base accuracy	±10% (of max. scale value)
Green LED ON:	indication of supply voltage
Yellow LED ON:	indication of relay output
Output circuit	2 potentialfree contacts NO
Switching capacity	4000 VA (16 A / 250 V AC)
Back-up fuse	16 A fast acting
Mechanical life	30 x 10^6 operations
Electrical life	2 x 10^5 operations at 1000 VA resistive load
Switching frequency	max. 60/min. at 100 VA resistive load max. 6/min. at 1000 VA resistive load (according to IEC 664-1)
Rated insulating voltage	250 V AC (according to IEC 664-1)
Rated surge voltage	4 kV, overvoltage cat. III (according to IEC 664-1)

Mechanical	
Frame size	45 mm
Device height	87 mm
Device width	35 mm
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40
Installation	in any position
Terminal protection	finger and hand touch safe, BGV A3, ÖVE-EN 6
Torque	max. 1 Nm
Terminal capacity	1 x 0.5-4 mm^2 2 x 0.5-2.5 mm^2
Ambient temperature	-25°C to +55°C
Storage temperature	-25°C to +70°C
Transport temperature	-25°C to +70°C
Relative humidity	15% to 85% (acc. to IEC 721-3-3 class 3K3)
Degree of pollution	2, if built-in 3 (acc. to IEC 664-1)

Dimensions (mm)



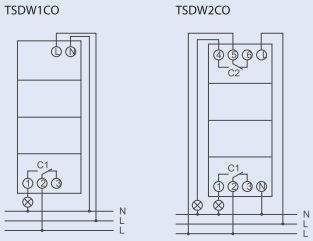
Connection Example



Digital Time Switches with a Weekly Program, for DIN Rail, TSDW1CO, TSDW2CO

- Spring terminals
- Text-based user guidance on the display
- 56 memory cells
- Interface for memory card (PC programming)
- 10 years power backup (lithium battery)
- Zero-cross switching for a relay-saving way of switching and for high lamp loads
- ON-OFF switching times
- Pre-selected switching
- Permanent ON/OFF switching
- Integrated counter for operating hours
- Vacation program
- Display background lighting (can be switched off)
- PIN coding
- Automatic spring forward/fall back at daylight-saving start and end dates
- For type TSDW1CO: 1 channel
- For type TSDW2CO: 2 channels

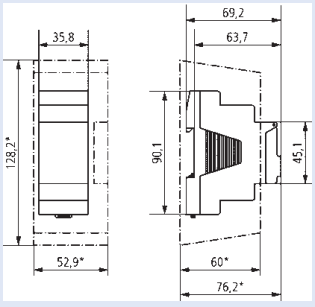
Connection examples



Technical Data

	TSDW1CO	TSDW2CO
Electrical		
Operating voltage	230–240 V AC	230–240 V AC
Frequency	50–60 Hz	50–60 Hz
Power backup	10 years	10 years
Switching capacity at 250 V AC, cos φ = 1	16 A	16 A
Switching capacity at 250 V AC, cos φ = 0.6	10 A	10 A
Incandescent/halogen lamp load	2600 W	2600 W
Min. switching capacity	approx. 10 mA	approx. 10 mA
Shortest switching time	1 min	
Accuracy	≤ ± 0.5 s/day (quartz)	≤ ± 0,5 s/day (quartz)
Stand-by power	0.8 W	0.8 W
Mechanical		
Frame size	45 mm	45 mm
Installation width	36 mm	36 mm
Mounting	DIN rail	DIN rail
Degree of protection	IP20	IP20
Protection class	II acc. to EN 60 730-1	II according to EN 60 730-1
Ambient temperature	-30 °C ... +55 °C	-30 °C ... +55 °C
Certification mark	V	V

Dimensions (mm)

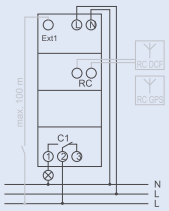


Digital Time Switch with a Weekly Program TSDW1CODG

- Spring terminals
- Text-based operator guidance on the display
- 84 memory cells
- Interface for memory card (PC programming)
- 10 years power backup (lithium battery)
- Zero-cross switching for a relay-saving way of switching and for high lamp loads
- ON/OFF switching times
- Pulse program
- Cyclical program
- Pre-selected switching
- Permanent ON/OFF switching
- Expiry timer
- Integrated counter for operating hours
- Vacation program
- 2 random programs
- Display background lighting (can be switched off)
- PIN coding
- Automatic spring forward/fall back at daylight-saving start and end dates
- Time synchronization is possible by connecting an external aerial, e. g. a TSADCF or TSAGPSKIT aerial set
- 1 Channel
- External input

Connection example

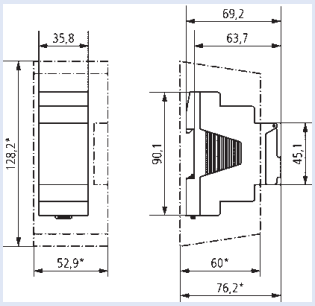
TSDW1CODG



Technical Data

	TSDW1CODG
Electrical	
Operating voltage	230–240 V AC
Frequency	50–60 Hz
Power backup	10 years
Switching capacity at 250 V AC, cos φ = 1	16 A
Switching capacity at 250 V AC, cos φ = 0.6	10 A
Incandescent/halogen lamp load	2600 W
Min. switching capacity	approx. 10 mA
Shortest switching time	1 s
Accuracy	≤ ± 0.5 s/day (quartz) or DCF77/GPS
Stand-by power	1.4 W
Mechanical	
Frame size	45 mm
Installation width	36 mm
Mounting	DIN rail
Degree of protection	IP20
Protection class	II according to EN 60 730-1
Ambient temperature	-30 °C ... +55 °C
Certification mark	V

Dimensions (mm)

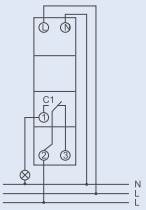


Digital Time Switch with a Weekly Program TSDW1COMIN

- 1 Channel
- Screw-type terminals
- Text-based operator guidance on the display
- 28 memory cells
- 3 years power backup (exchangeable lithium battery)
- ON-OFF switching times
- Pre-selected switching
- Permanent ON/OFF switching
- PIN coding
- Automatic spring forward/fall back at daylight-saving start and end dates

Connection example

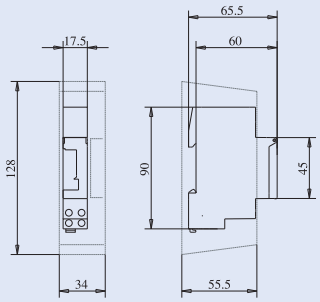
TSDW1COMIN



Technical Data

	TSDW1COMIN
Electrical	
Operating voltage	230 V AC
Frequency	50–60 Hz
Power backup	3 years
Switching capacity at 250 V AC, cos φ = 1	16 A
Switching capacity at 250 V AC, cos φ = 0.6	6 A
Incandescent/halogen lamp load	1000 W
Shortest switching time	1 min
Accuracy	≤ ± 1 s/day (quartz)
Stand-by power	0.4 W
Mechanical	
Frame size	45 mm
Installation width	17.5 mm
Mounting	DIN rail
Degree of protection	IP20
Protection class	II according to EN 60 730-1
Ambient temperature	–10 °C ... +55 °C
Certification mark	V

Dimensions (mm)

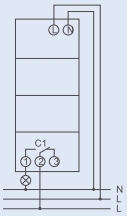


Astro Time Switch with a Weekly Program TSDW1COA

- Astronomical switching function (automatic calculation of sunrise and sunset times for the entire year)
- Spring terminals
- Text-based operator guidance on the display
- Interface for memory card (PC programming)
- 10 years power backup (lithium battery)
- Zero-cross switching for a relay-saving way of switching and for high lamp loads
- Calculated astronomical switching times
- Programmable ON/OFF switching times
- Pre-selected switching
- Permanent ON/OFF switching
- Integrated counter for operating hours
- Vacation program
- Display background lighting (can be switched off)
- PIN coding
- Automatic spring forward/fall back at daylight-saving start and end dates
- 1 Channel
- 54 Memory cells

Connection example

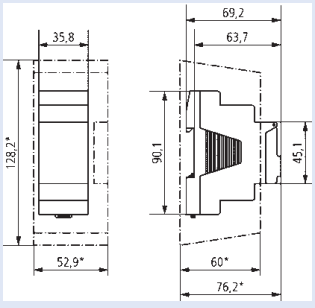
TSDW1COA



Technical Data

	TSDW1COA
Electrical	
Operating voltage	230–240 V AC
Frequency	50–60 Hz
Power backup	10 years
Switching capacity at 250 V AC, cos φ = 1	16 A
Switching capacity at 250 V AC, cos φ = 0.6	10 A
Incandescent/halogen lamp load	2600 W
Min. switching capacity	approx. 10 mA
Shortest switching time	1 min
Accuracy	≤ ± 0.5 s/day (quartz)
Stand-by power	0.8 W
Mechanical	
Frame size	45 mm
Installation width	36 mm
Mounting	DIN rail
Degree of protection	IP20
Protection class	II according to EN 60 730-1
Ambient temperature	-30 °C ... +55 °C
Certification mark	V

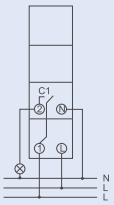
Dimensions (mm)



Analog Time Switches TSQD1NO, TSSD1NO

- 1 MU
- 1 Channel
- Screw-type terminals
- Manual switch with 3 positions: Permanent ON/AUTO/Permanent OFF
- Switching status indication
- For type TSQD1NO: with power backup (exchangeable NiMH cell)
  - quartz-controlled
- For type TSSD1NO: Daily program
  - Without power backup
  - 96 switching segments
  - Mains-synchronized
  - Shortest switching time: 15 minutes

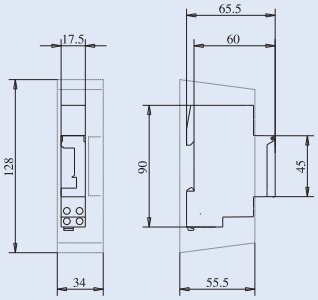
Connection example



Technical Data

	TSQD1NO	TSSD1NO
Electrical		
Operating voltage	230–240 V AC	230 V AC
Frequency	50–60 Hz	50 Hz
Program	Daily program	Daily program
Power backup	3 days	–
Switching capacity at 250 V AC, cos φ = 1	16 A	16 A
Switching capacity at 250 V AC, cos φ = 0.6	4 A	4 A
Shortest switching time	15 min	15 min
Programmable	Every 15 min	Every 15 min
Accuracy	≤ ± 1 s/day (quartz)	Mains-synchronized
Stand-by power	0.5 W	0.9 W
Mechanical		
Frame size	45 mm	45 mm
Installation width	17.5 mm	17.5 mm
Mounting	DIN rail	DIN rail
Degree of protection	IP20	IP20
Protection class	II acc. to EN 60 730-1	II according to EN 60 730-1
Ambient temperature	–10 °C ... +55 °C	–25 °C ... +50 °C
Certification mark	V	V

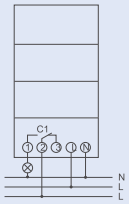
Dimensions (mm)



Analog Time Switches TSQD1CO, TSSD1CO, TSQW1CO

- 3 MUs
- 1 Channel
- Spring terminals
- Pre-selected switching
- Manual switch with 3 positions: Permanent ON/AUTO/Permanent OFF
- Switching position indication
- Type TSQD1CO:
  - With power backup (NiMH cell)
  - Quartz-controlled
  - Clock-hands for time indication and 12h/24h recognition
  - Easy correction of spring forward/fall back at daylight-saving start and end
- Type TSQW1CO:
  - Weekly program
  - 84 Switching segments
  - Shortest switching time: 2 hours
- Type TSSD1CO:
  - Daily program
  - Without power backup
  - 96 Switching segments
  - Shortest switching time: 15 minutes
  - Clock-hands for time indication and 12h/24h recognition
  - Easy correction of spring forward/fall back at daylight-saving start and end

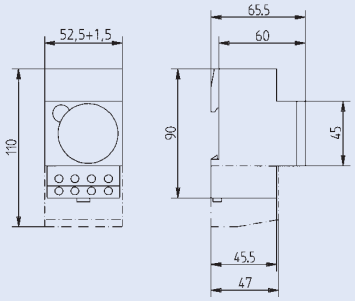
Connection example



Technical Data

	TSQD1CO	TSSD1CO	TSQW1CO
Electrical			
Operating voltage	110–230 V AC	110–230 V AC	110–230 V AC
Frequency	50–60 Hz	50 Hz	50–60 Hz
Program	Daily program	Daily program	Weekly program
Power backup	200 hours, approx. 100 hours with 110 V	–	200 hours, approx. 100 hours with 110 V
Switching capacity at 250 V AC, cos φ = 1	16 A	16 A	16 A
Switching capacity at 250 V AC, cos φ = 0.6	4 A	4 A	4 A
Shortest switching time	15 min	15 min	2 h
Programmable	Every 15 min	Every 15 min	Every 2 h
Accuracy	≤ ± 1 s/day (quartz)	Mains-synchronized	≤ ± 1 s/day (quartz)
Stand-by power	0.5 W	0.9 W	0.5 W
Mechanical			
Frame size	45 mm	45 mm	
Installation width	52.5 mm	52.5 mm	52.5 mm
Mounting	DIN rail	DIN rail	DIN rail
Degree of protection	IP20	IP20	IP20
Protection class	II acc. to EN 60 730-1	II acc. to EN 60 730-1	II according to EN 60 730-1
Ambient temperature	–20 °C ... +55 °C	–20 °C ... +55 °C	–20 °C ... +55 °C
Certification mark	V	V	V

Dimensions (mm)

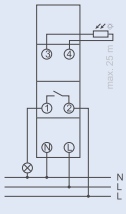


Analog Twilight Switches, for DIN Rail, SRSD1NO, SRSD1COW

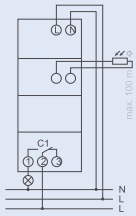
- Analog twilight switch
- External surface or flush-mounted light sensor is incl. in the scope of delivery
- Indication of the channel and switching status
- Brightness level can be continuously adjusted
- Type SRSD1NO: fixed switch-on and switch-off delay
- Type SRSD1COW: Variable switch-on and switch-off delay
  - Spring terminals
  - Expanded brightness range and variable delay time
  - Five adjustable brightness ranges for easy setting of the lux value
  - Zero-cross switching
  - Permanent OFF and permanent ON function can be set at the potentiometer
  - Test function

Switching diagrams

SRSD1NO



SRSD1COW

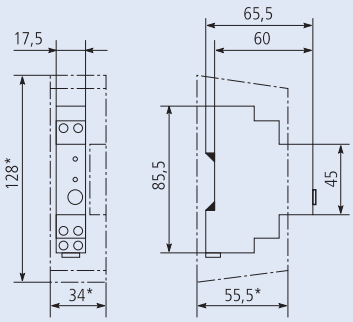


Technical Data

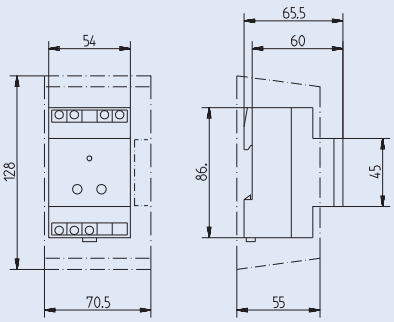
	SRSD1NO	SRSD1COW
Electrical		
Operating voltage	220–240 V AC	220–240 V AC
Frequency	50–60 Hz	50–60 Hz
Setting range for brightness	2–100 lx	2–50000 lx
Switch-on delay	20 s	0–20 min
Contact type	Make-contact	Change-over contact
Switch output	Potential-free	Potential-free, not suitable for SELV
Switching capacity at 250 V AC, cos φ = 1	16 A	16 A
Switching capacity with fluorescent lamp load	10 AX	16AX
Min. switching capacity	–	<10 mA
Incandescent lamp load	2300 W	3600 W
Fluorescent lamp load (VVG - low-loss ballast) non-compensated/series-compensated/ duo switching	2300 VA	3600 VA
Energy saving lamps	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W	34 x 7 W, 27 x 11 W, 24 x 15 W, 22 x 23 W
Stand-by power	0.8 W	1.3 W
Mechanical		
Frame size	45 mm	45 mm
Installation width	17.5 mm	54 mm
Mounting	DIN rail	DIN rail
Protection class	II	II
Ambient temperature	–25 °C ... +50 °C	–30 °C ... +55 °C
Certification mark	V	V
Max. line length to the sensor	25 m	100 m

Dimensions (mm)

SRSD1NO



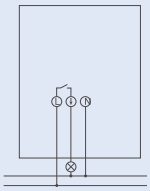
SRSD1COW



Surface-Mounted Twilight Switch SRSW1NO

- Twilight switch with an integrated light sensor
- Cable entry is possible at the rear or from the bottom
- Large terminal area
- Setting the brightness value is possible from outside, without the need to open the device
- Wide angle of light incidence (approx. 180°)
- Test button
- Switch-on and switch-off delay can be adjusted
- Brightness level can be continuously adjusted
- Expanded brightness range

Switching diagram

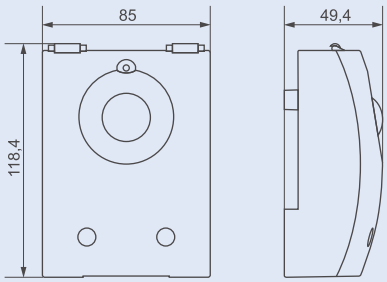


Technical Data

	SRSW1NO
Electrical	
Operating voltage	220–230 V AC
Frequency	50–60 Hz
Setting range for brightness	2–2000 lx
Switch-on delay	2–100 s
Contact type	Make-contact
Switch output	Not potential-free (230 V)
Switching capacity at 230 V AC, cos φ = 1	16 A
Switching capacity at 230 V AC, cos φ = 0.3	10 AX
Incandescent lamp load	2300 W
Fluorescent lamp load (VVG - low-loss ballast) non-compensated/series-compensated/ duo switching	2300 VA
Energy saving lamps	9 x 7 W, 7 x 11 W, 7 x 15 W, 7 x 20 W, 7 x 23 W
Stand-by power	0.6 W
Mechanical	
Height	118.4 mm
Width	85 mm
Depth	49.4 mm
Degree of protection	IP55
Protection class	II
Ambient temperature	–35 °C … +55 °C

Dimensions (mm)

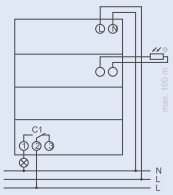
SRSW1NO



Twilight Switch with Timer, for DIN Rail, SRCD1CO

- Twilight switch with an integrated weekly timer
- Adjustable switch-on and switch-off delay
- Brightness levels and switching-delay can separately be set for switch-on and switch-off
- Fixed times for ON and OFF (e.g. interruption during the night)
- DuoFix spring terminals
- Zero-cross switching to protect the relay contact and the lamp so as to increase their service life
- Interface for the OBELISK top2 memory card (PC programming)
- Light sensor included in the scope of delivery
- Permanent ON/OFF switching
- Test function
- Pre-selected switching
- Display background lighting
- PIN coding
- Counter for operating hours
- Display of the channel and switching status
- Vacation and holiday program with annual function for fixed date and variable date holidays (e.g. the ones that depend on Easter)
- Different rules can be selected for daylight-saving start and end or they can be freely selected
- For type SRCD1CO:
  - Analog twilight switch
  - 1 Channel
  - Analog setting of brightness levels

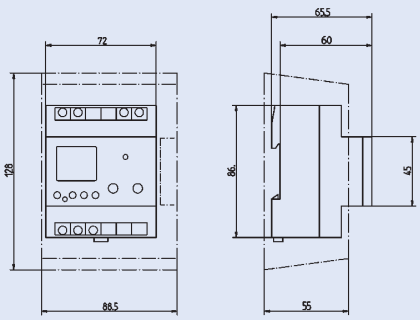
Switching diagram



Technical Data

	SRCD1CO
Electrical	
Operating voltage	220–240 V AC
Frequency	50–60 Hz
Setting range for brightness	2–2000 lx
Switch-on delay	0–59 min
Contact type	Change-over contact
Switch output	Potential-free, not suitable for SELV
Switching capacity at 250 V AC, cos φ = 1	16 A
Switching capacity at 250 V AC, cos φ = 0.6	10 A
Switching capacity with fluorescent lamp load	10 AX
Min. switching capacity	approx. 10 mA
Incandescent lamp load	2600 W
Fluorescent lamp load (VVG - low-loss ballast) non-compensated/series-compensated/ duo-switching	2300 VA
Energy saving lamp	22 x 7 W, 18 x 11 W, 16 x 15 W, 16 x 20 W, 14 x 23 W
Stand-by power	1.3 W
Mechanical	
Frame size	45 mm
Installation width	52.5 mm
Mounting	DIN rail
Protection class	II
Ambient temperature	–30 °C ... +55 °C
Max. line length to the sensor	100 m

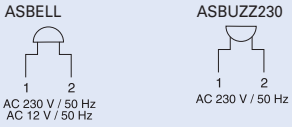
Dimensions (mm)



Signal bell ASBELL, Buzzer ASBUZZ230

- Signal bells and buzzers are typically used in residential buildings and in functional buildings such as shops, offices, banks etc. They are either used to signalize alert conditions, or generally as audible sound signals.
- These devices are built-in devices installed in distribution cabinets. They are designed for short-time operation in compliance with the IEC 62080 standard.
- Space-saving design of one module unit only.
- Safe device protection thanks to PTC to avoid overloads and short-circuits.

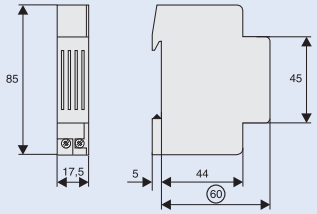
Connection diagram



Technical Data

			ASBELL230 ASBUZZ230	ASBELL12
Standards			IEC 62080	IEC 62080
Rated operating voltage U_e	VAC	230	12	
Rated operating power P_s	VA	5,5	4	
Working range	at 50/60 Hz	x U_c	0,94 ... 1,06	0,94 ... 1,06
Rated frequency		Hz	50	50
Working range of frequency		Hz	45 ... 65	45 ... 65
Rated power loss P_v				
	In idle operation	W	0,83	0,83
Degree of pollution	acc. to EN 61010-1	-	2	2
Operating voltage	acc. to EN 61010-1	VAC	230	12
Insulating material group	acc. to EN 61010-1	-	II	II
Safe separation	Air gap	mm	≥3	≥1,5
	Creep distance within the device			
		mm	≥2,5	≥1,5
Test voltage	50 Hz, 1 min.	kv	1,25	1
Flammability		Class	V0	V0
Terminal capacity	rigid	mm^2	1 x 6 or 2 x 4	1 x 6 or 2 x 4
	flexible with wire end sleeve, min.			
		mm^2	0,75	0,75
Sound volume		dB	≥75	≥75
Allowed range of ambient temperature		°C	-10 ... +55	-10 ... +55
Degree of protection	acc. to DIN EN 60529	-	IP20, with conductors connected	IP20, with conductors connected
Protection class	acc. to DIN EN 61140 / VDE 0140		II	II

Dimensions (mm)

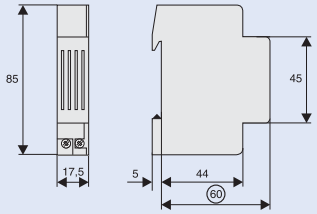


Siren ASSIR24

Technical Data

	ASSIR24
Data in compliance with	EN 60669-1
Supply Voltage	24 VAC/DC
Voltage tolerance range	± 15%
Power dissipation	2.4 VA
AC Voltage test	2.5 kV
Sound level	105 dB
Operative Temperature	-10°C to +55°C
Storage Temperature	-25°C to +70°C
Degree of protection	IP20

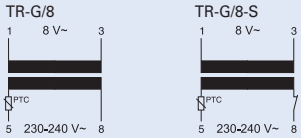
Dimensions (mm)



Bell Transformers TR-G.

- Bell transformers with separate windings according to EN 61558
- Accessories: Suface Mounting Set (mounting plate, terminal covers)

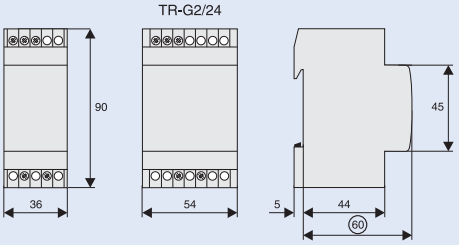
Connection diagrams (e.g.)



Technical Data

	TR-G/8	TR-G3/8	TR-G/8-S	TR-G3/18	TR-G2/24
Electrical					
Rated output	8 VA	8 VA	8 VA	18 VA	24 VA
Rated supply voltage range	230-240 V AC	230-240 V AC	230-240 V AC	230-240 V AC	230-240 V AC
at terminals	5-8	5-8	5-8	5-8	5-8
Rated frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
No-load current	25 mA	26 mA	25 mA	36 mA	24 mA
Rated supply current	69 mA	58 mA	69 mA	72/124/138 mA	155/160 mA
Primary resistance	616 Ω	667 Ω	616 Ω	229 Ω	616 Ω
Rated output voltage	8 VAC	4/8/12 VAC	8 VAC	4/8/12 VAC	12/24 VAC
at terminals	1-3	2-3/1-2/1-3	1-3	2-3/1-2/1-3	1-2/1-3
No-load output voltage	13 V	4.9/12/16.8 V	13 V	5.9/12/17.8 V	16/31 V
Output voltage	8.4 V	3.8/7.9/12.2 V	8.4 V	4.3/8.4/12.7 V	12.2/23.2 V
at rated output current	1 A	1-1-0.67 A	1 A	2-2-1.5 A	2-1 A
Secondary resistance	2 Ω	0.9/1.9/2.8 Ω	2 Ω	0.4/1/1.3 Ω	1/3 Ω
Power loss in no-load operation	1.4 W	1.4 W	1.4 W	1.8 W	1.9 W
Total power loss at nominal load	7.1 W	6.2 W	7.1 W	11.6 W	11.9 W
Short circuit proof	PTC	PTC	PTC	PTC	PTC
Test voltage (primary-secondary)	5 kV	5 kV	5 kV	5 kV	5 kV
Pollution degree	P2	P2	P2	P2	P2
Mechanical					
Frame size	45 mm	45 mm	45 mm	45 mm	45 mm
Device height	90 mm	90 mm	90 mm	90 mm	90 mm
Device width	36 mm	36 mm	36 mm	36 mm	54 mm
Weight	236 g	253 g	236 g	354 g	612 g
Mounting	quick fastening on DIN rail IEC/EN 60715				
Degree of protection, built-in	IP20	IP20	IP20	IP20	IP20
Upper and lower terminals	lift terminals	lift terminals	lift terminals	lift terminals	lift terminals
Terminal capacity	1 - 3x2.5 mm^2	1 - 3x2.5 mm^2	1 - 3x2.5 mm^2	1 - 3x2.5 mm^2	1 - 3x2.5 mm^2
Tightning torque of terminal screws	0.5 Nm	0.5 Nm	0.5 Nm	0.5 Nm	0.5 Nm
Permitted relative humidity	<95%	<95%	<95%	<95%	<95%
Rated ambient temperature	40°C	40°C	40°C	40°C	35°C
Temperature rise at intermittent duty (20 x 1min. 100% and 5min. 20%)	24 K	24 K	24 K	26 K	31 K
Insulation class	E	E	E	E	E
Glow wire-test	850°C	850°C	850°C	850°C	850°C

Dimensions (mm)



Practical Hint

Safety transformer
(Fail-safe = no danger in case of failure)

Bell transformer

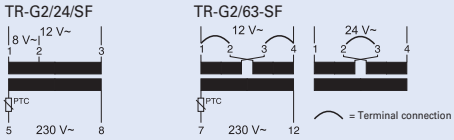
Short circuit-proof transformer

According to EN 61558

Safety Transformers TR-G./..-SF

- Safety transformers with separate windings according to EN 61558
- Accessories: Suface Mounting Set (mounting plate, terminal covers)

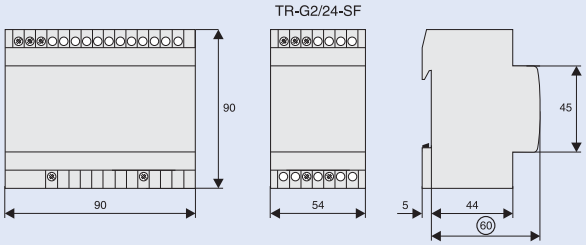
Connection diagrams (e.g.)



Technical Data

	TR-G2/24-SF	TR-G2/24-SF2	TR-G2/63-SF
Electrical			
Rated output	24 VA	24 VA	63 VA
Rated supply voltage range	230-240 V AC	230-240 V AC	230-240 V AC
at terminals	5-8	7-12	7-12
Rated frequency	50 Hz	50 Hz	50 Hz
No-load current	22 mA	58 mA	60 mA
Rated supply current	100/150 mA	140/135 mA	340 mA
Primary resistance	133 Ω	92 Ω	41 Ω
Rated output voltage	8/12 VAC	12/24 VAC	12/24 VAC
at terminals	1-2/1-3	1-2/1-3	1-4/1-4 (terminal conn.)
No-load output voltage	9.9/15.6 V	13.3/26.8 V	13.6/27.3 V
Output voltage	8.2/12.3 V	11.6/23.8 V	12/24.1 V
at rated output current	2-2 A	2-1 A	5.2-2.6 A
Secondary resistance	0.5/0.75 Ω	0.45/0.95 Ω	0.15/0.6 Ω
Power loss in no-load operation	1.8 W	4.3 W	4.1 W
Total power loss at nominal load	10.4 W	6.3 W	19.6 W
Duty	100%	100%	100%
Short circuit proof	inherently (PTC)	inherently (PTC)	inherently (PTC)
Test voltage (primary-secondary)	5 kV	5 kV	5 kV
Pollution degree	P2	P2	P2
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	90 mm	90 mm	90 mm
Device width	54 mm	90 mm	90 mm
Weight	604 g	1087 g	1256 g
Mounting	quick fastening on DIN rail IEC/EN 60715		
Degree of protection, built-in	IP40	IP40	IP40
Upper and lower terminals	lift terminals	lift terminals	lift terminals
Terminal capacity	1 - 3x2,5 mm^2	1 - 3x2,5 mm^2	1 - 3x2,5 mm^2
Tightning torque of terminal screws	0,5 Nm	0,5 Nm	0,5 Nm
Permitted relative humidity	<95%	<95%	<95%
Rated ambient temperature	25°C	35°C	25°C
Temperature rise at uninterrupted duty	56 K	34 K	51 K
Insulation class	E	F	F
Glow wire-test	850°C	850°C	850°C

Dimensions (mm)



Practical Hint

Safety transformer
(Fail-safe = no danger in case of failure)

Bell transformer

Short circuit-proof transformer

According to EN 61558

Easyvation busbar 1m 10mm², 16mm² (Fork or Pin) BB-EVF (-EVP)

for MCBs, RCCBs, RCBOs, SPDs

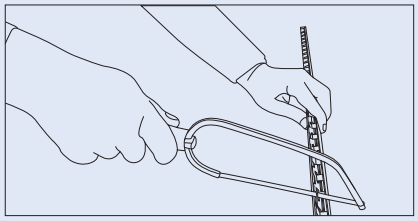
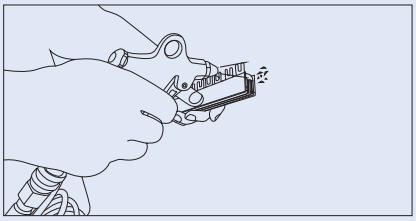
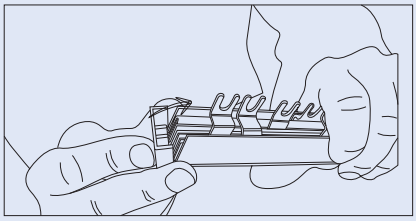
Technical Data

General	
Heat deflection temperature	≥80°C UL94 VO
Standards	EN 60947-1:2007 / IEC 60947-1:2007 / IEC 60999:2000
Climate stability	according to DIN EN 60068
Insulation coordination	Overvoltage category III / Degree of pollution 2

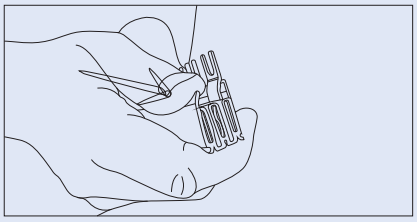
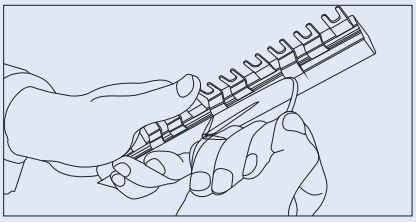
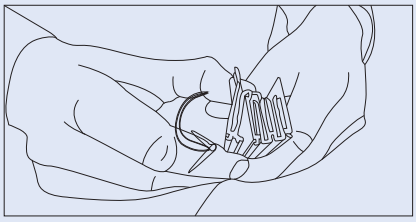
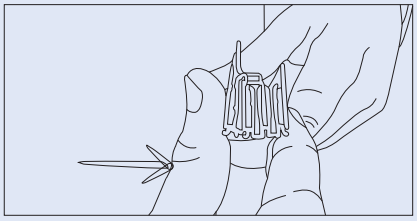
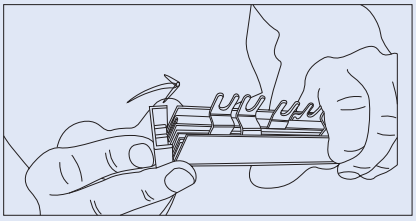
Electrical	
Impulse voltage strenght	≥4.5 kV
Min. air distance	>5.5 mm
Min. creeping distance	>5 mm
Max. operating voltage	690 V AC/DC 1000 V DC 1-pole only
Max. current I_s/Phase	
10 mm²	63 A
16 mm²	80 A
Protection class	IP20
Short circuit rating	ICC 25kA - NH3 355A gC500V JM
Dielectric strenght	PC - ABS >32 kV / mm

Assembly instruction:

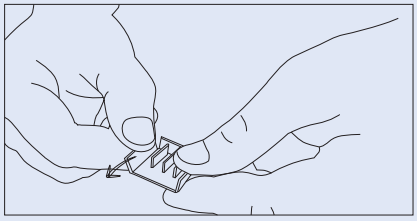
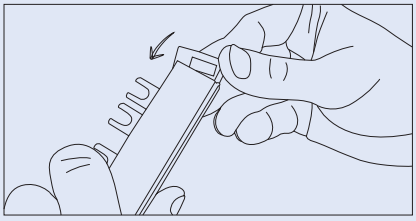
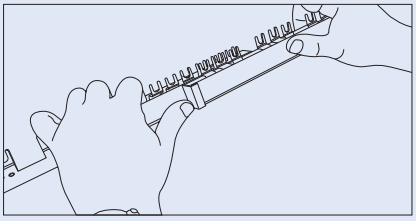
Cutting

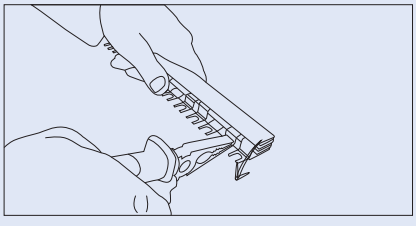
Mounting of an extension busbar

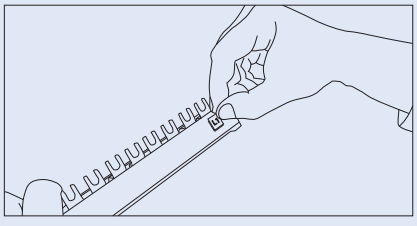
Overlapping mounting or further connection, resp.

Brecking out of connection lugs



Sticking on phase marking

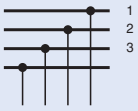


Busbar Block 10mm², 16mm² (Fork) Z-GV

for MCB, RCBO, RCCB (with Auxiliary Switch also)

- Length 1m
- Delivered without end caps. Please order separately.
- Short version (/17, /16, /8) delivered with end caps.

Connection diagram

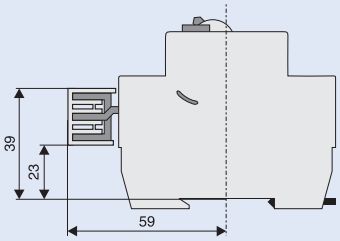


Technical Data

Electrical	
Rated voltage	240/415 V, 50/60 Hz
Rated current	
10 mm²	63 A
16 mm²	80 A
Short circuit strength	25 kA

Mechanical	
Busbar cross section	10 and 16 mm² Cu
Step distance	17.8 mm
Z-GV-16-.P+HS	17.8/27 mm

Dimensions (mm)



Busbar Block 10mm² (Pins) Z-SV...-SD

for Protected Earth Socket Z-SD230

- Delivered with end caps
- Step (distance between two pins of identical phase, i. e. L or N) 2.5 MU
- Length 1m

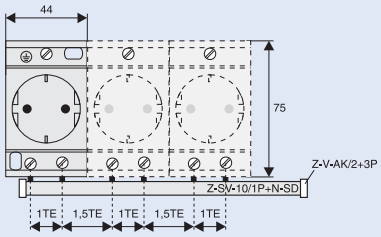
Connection diagram

Technical Data

Electrical	
Rated voltage	230/400 V, 50/60 Hz
Rated current	50 A
Short circuit strength	25 kA

Mechanical	
Busbar cross section	10 mm² Cu
Step distance	44 mm

Dimesnions



Accessories

WA_SG10602

End caps

WA_SG10702

Connection terminal
Z-EK/25/QL

WA_SG10702

Connection terminal
Z-EK/25

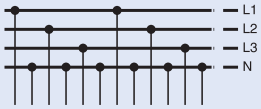
Busbar Block 10mm² (Pins) Z-SV-10/, 16mm² (Pins) Z-SV-16/

for PLN. (1MU)

- Busbar block 10mm² inclusive end caps, length 13MU
- Busbar block 16mm² without end caps, length 1m

Connection diagram

Z-SV-../3P+N-3TE..



Technical Data

Electrical	
Rated voltage	240/415 V, 50/60 Hz
Rated current	
10 mm²	50 A
16 mm²	63 A
Short circuit strength	25 kA

Mechanical	
Busbar cross section	10/16 mm² Cu
Step distance	17.95 mm

Accessories

SG4800

End caps

WA_SG10702

Connection terminal
Z-EK/25/Q

SG07703

Connection terminal
Z-EK/25/K

WA_SG10702

Connection terminal
Z-EK/25/QL

WA_SG10702

Connection terminal
Z-EK/25

Examples

Fork-Type Euro-Vario Busbar 10mm², 16mm² (Fork) EVG

for MCB, RCBO, RCCB (with Auxiliarx Switch)

Euro Vario busbars (EVG) offer maximum user comfort and a high degree of safety.
Using EVG busbars helps to save up to 30 % assembly time as compared to conventional systems.

The danger of flashover is minimised since there is no need of cutting, burring, or cleaning.
No end caps are needed.

Technical Data

Electrical	
Rated voltage	240/415 V, 50/60 Hz
Rated current	
10 mm²	63 A
16 mm²	80 A
Short circuit strength	25 kA

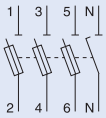
Mechanical	
Busbar length	2, 6, 9, 12, 16, 20 MU
Busbar cross section	10 mm² / 16 mm²
Step distance	
10 mm²	17,8mm / 26,8mm / 71,2mm
16 mm²	17,8mm / 27mm / 71,2mm

Fuse-Disconnector for Industrial Applications Z-SH.

- Design according to IEC/EN 60947-3
- Version
  without visual tripping indicator Z-SH
  with visual tripping indicator Z-SHL
- Can be sealed with leads
- Supplied without fuse-links

Connection diagram

Z-SH/3N

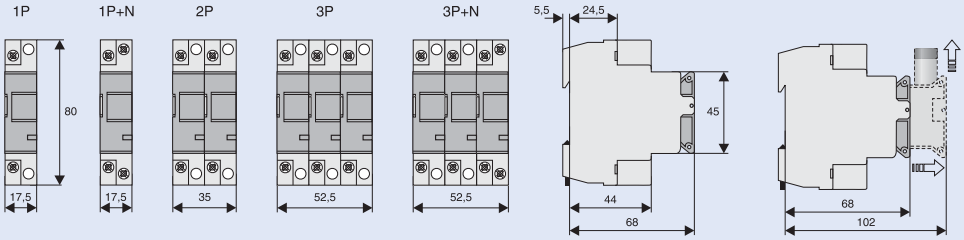


Technical Data

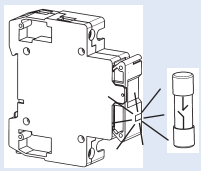
Electrical	
Number of poles	1P, 1P+N, 2P, 3P, 3P+N
Rated voltage	
1P, 1P+N	230 V AC
2P, 3P, 3P+N	400 V AC
Rated operational current I_e	32 A
Conditional short-circuit current	10 $kA_{r.m.s}$
Utilization category	AC 20 B
Rated impulse withstand voltage U_{imp}	4 kV
Fuse-links	10, 16, 20, 25 and 32 A
Operating class	gG(gL)/aM
Max. Power loss per current path	3.2 W

Mechanical		
Frame size	45 mm	
Device height	80 mm	
Device width	acc. to dimensioned drawing	
Weight	Z-SH	Z-SHL
1P	74g	76g
1P+N	84g	86g
2P	156g	158g
3P	234g	236g
4P	244g	246g
Mounting	quick fastening on DIN rail IEC/EN 60715	
Degree of protection (built-in)	IP20 (IP40)	
Upper and lower terminals	lift terminals	
Terminal capacity	1.5-10 mm^2	
Tightening torque of terminal screws	max. 2 Nm	
Dimensions of fuse-link	10.3 x 38 mm	

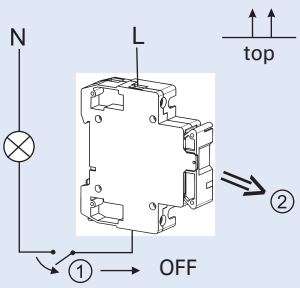
Dimensions (mm)

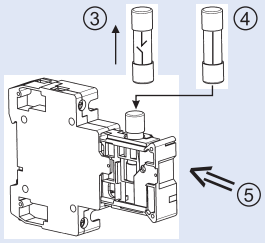


Visual Tripping Indicator



Attention



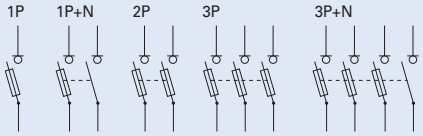


Do not switch the fuse-disconnector under load

Fuse-Switch-Disconnector C10-SLS, VLC

- Design according to IEC/EN 60947-3
- Types /L with visual tripping indicator (flashing)
- Suitable for cylindrical fuse-links with operating classes gG, aM
  - 10x38 C10-SLS
  - 14x51 VLC14
  - 22x58 VLC22
- Can be sealed with leads
- Supplied without fuse-links

Connection diagram

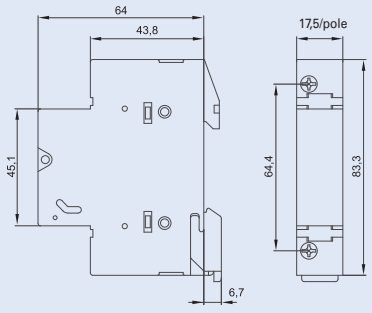


Technical Data

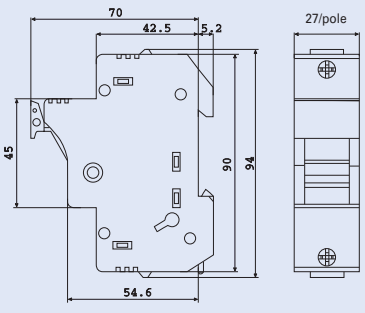
	C10-SLS	VLC14	VLC22
Electrical			
Number of poles	1P, 1P+N, 2P, 3P, 3P+N	1P, 1P+N, 2P, 3P, 3P+N	1P, 1P+N, 2P, 3P, 3P+N
Rated operational voltage U_e			
1P	690 V, 50 Hz	690 V, 50 Hz	690 V, 50 Hz
1P+N	400 V, 50 Hz	690 V, 50 Hz	690 V, 50 Hz
2P, 3P, 3P+N	690 V, 50 Hz	690 V, 50 Hz	690 V, 50 Hz
Rated operational current I_e	32 A	50 A	100 A
Rated conditional short-circuit current	100 kA (at 400 V)	100 kA	100 kA
Rated short-time withstand current I_{cw}	300 A	600 A	1200 A
Utilization category	AC 22 B	AC 22 B	AC 21 B
Rated insulation voltage U_i	690 V	690 V	690 V
Overvoltage category	II	IV	IV
Rated impulse withstand voltage U_{imp}	4 kV	8 kV	8 kV
Power loss per current path without fuse-link	0.9 W	1 W	3.1 W
Maximum permissible power loss of fuse-links			
gG	3 W	5 W	9.5 W
aM	1.2 W	3 W	7 W
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	83.3 mm	94 mm	121 mm
Device width	17.5 mm per pole	27 mm per pole	36 mm per pole
Weight			
1P	58 g	100 g	160 g
1P+N	70 g	222 g	355 g
2P	120 g	201 g	310 g
3P	180 g	308 g	480 g
3P+N	195 g	437 g	680 g
Mounting	Quick fastening on DIN rail IEC/EN 60715		
Degree of protection	IP20	IP20	IP20
Terminals above and below	lift terminals	lift terminals	lift terminals
Terminal capacity	0.5 - 10 mm^2	1.5 - 35mm^2	4 - 50 mm^2
	AWG 20-8	AWG 16-2	–
Tightening torque of terminal screws	≤ 1,2 Nm	2.5 - 3 Nm	2.5 - 3 Nm
Ambient temperature range	-25 to +40°C	-25 to +40°C	-25 to +40°C
Flame class	glow wire tested 960°C	glow wire tested 960°C	glow wire tested 960°C
Pollution degree	2	1	1
Comparative tracking index	CTI 450	CTI 400	CTI 400

Dimensions (mm)

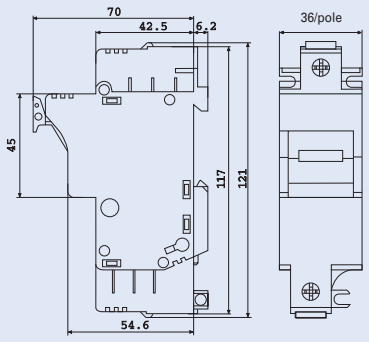
C10-SLS



VLC 14



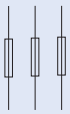
VLC 22



Fuse-Links Z-C../SE

- According to IEC 60269-1 and IEC 60269-2-1
- For fuse-switch-disconnectors C10-SLS, VLC, C10-CCI
- Operating classes gG (gL) and aM available

Connection diagram



Technical Data

Electrical	**Z-C10/SE 10x38**	**Z-C14/SE 14x51**	**Z-C22/SE 22x58**
Operating class	gG (gL)	gG (gL)	gG (gL)
Rated voltage U_n	1 - 25 A / 500 V AC 32 A / 400 V AC	2 - 32 A / 690 V AC 40 - 50 A / 500 V AC	16 - 40 A / 690 V AC 50 - 100 A / 500 V AC
Operating class	aM	aM	aM
Rated voltage U_n	1 - 16 A / 500 V AC 20 - 32 A / 400 V AC	2 - 25 A / 690 V AC 32 - 50 A / 500 V AC	16 - 50 A / 690 V AC 80 - 100 A / 500 V AC
Rated frequency	50 Hz	50 Hz	50 Hz
Rated short-circuit breaking capacity	100 kA	100 kA	100 kA

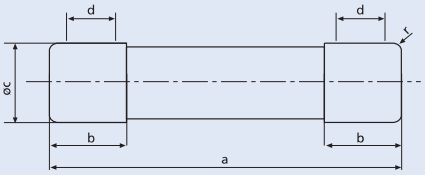
Max. Power dissipation

Operating class gG - Power dissipations 400 V / 500 V / 690 V

	max. **3 W** acc. IEC 60269-2	max. **5 W** acc. IEC 60269-2	max. **9,5 W** acc. IEC 60269-2
Rated current I_n	**10x38**	**14x51**	**22x58**
1	0,55		
2	0,90	1,45	
4	1,45	1,60	
6	1,55	1,95	
8	1,05	1,40	
10	1,10	1,45	
12	1,55	1,95	
16	2,85	3,00	3,05
20	2,80	3,15	3,40
25	2,95	4,10	4,40
32	3,00	4,80	5,10
40		4,75	7,20
50		4,95	7,60
63			8,00
80			8,20
100			9,40

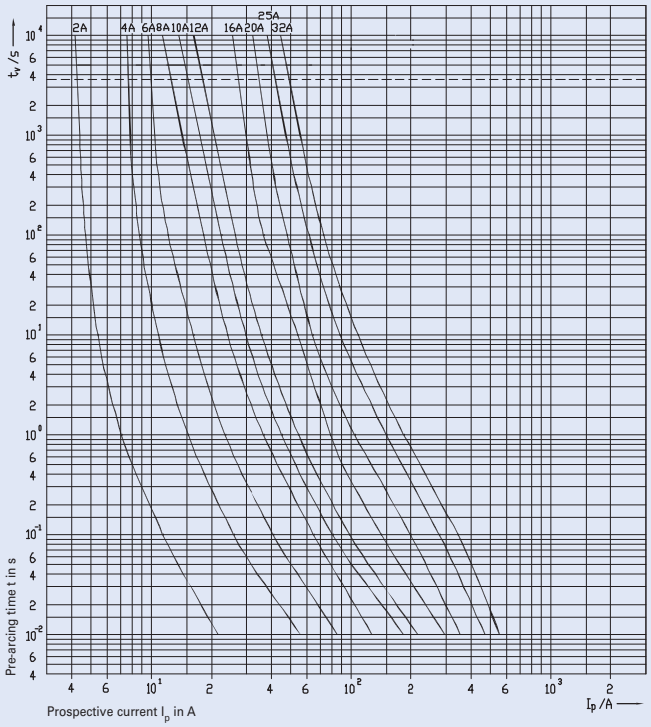
Dimensions (mm)

Type	Size	a	$b_{max.}$	c	$d_{min.}$	r
Z-C10	10x38	38.0±0.6	10.5	10.3±0.1	6	1.5±0.5
Z-C14	14x51	51.0+0.6/-1	13.8	14.3±0.1	7.5	2±0.5
Z-C22	22x58	58.0+1/-2	16.2	22.2±0.1	11	2±0.5

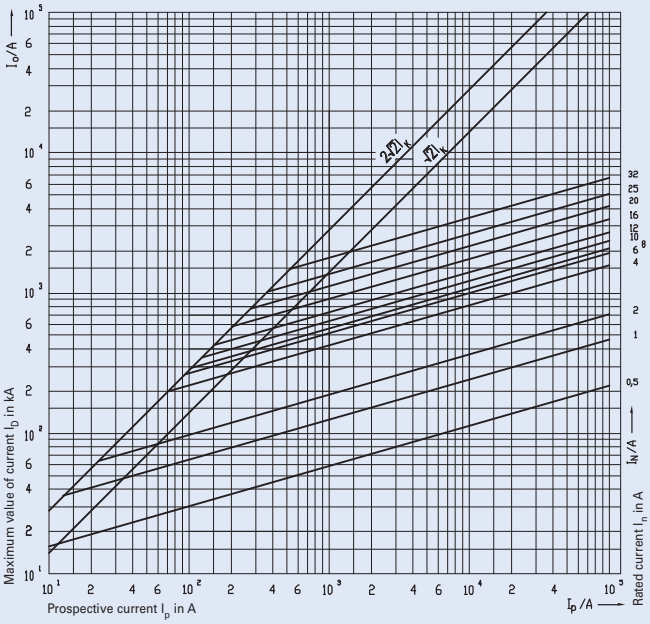


Characteristics Z-C10/SE, Operating class gG, 10x38

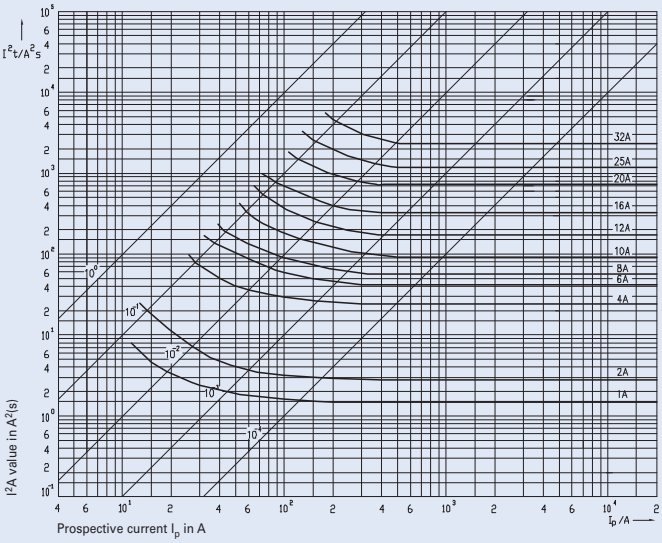
Time/current characteristics of Z-C10-Fuse-links 2 ... 32A gG(gL)



Let-through current characteristics of Z-C10-Fuse-links 2 ... 32A gG(gL)

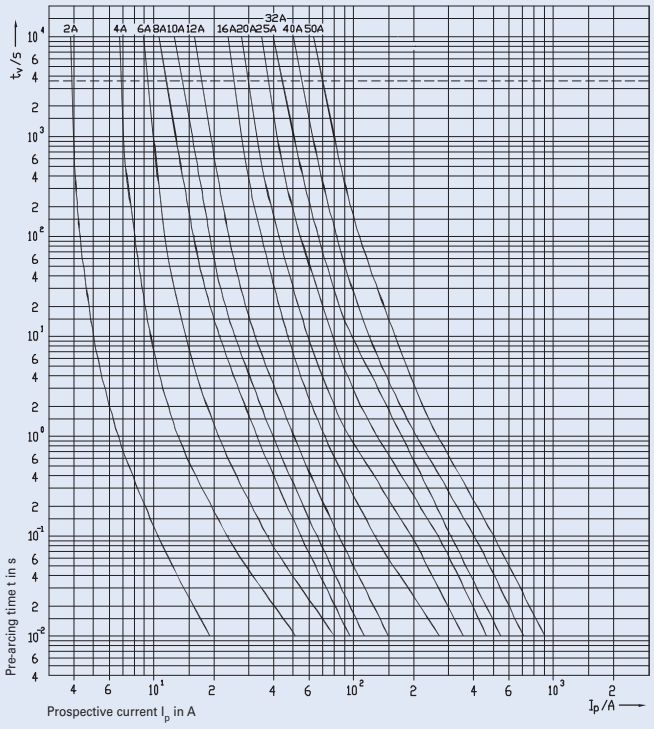


Melting energy characteristics I^2t/A of Z-C10-Fuse-links 1 ... 32A gG(gL)

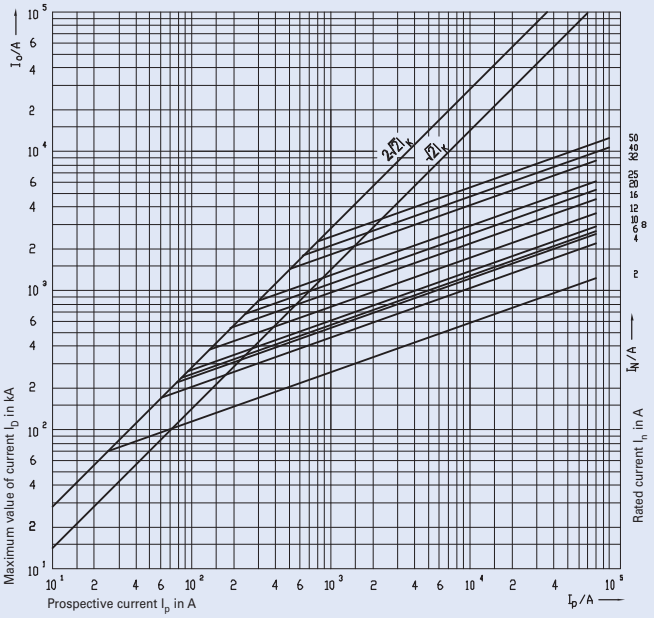


Characteristics Z-C14/SE, Operating class gG, 14x51

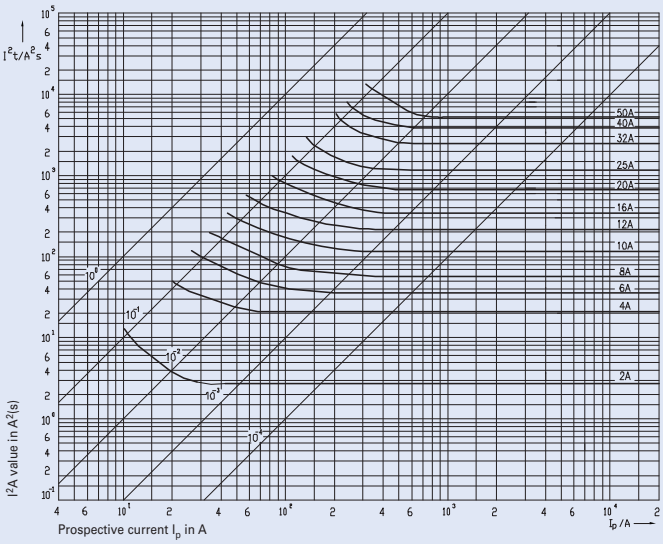
Time/current characteristics of Z-C14-Fuse-links 2 ... 50A gG(gL)



Let-through current characteristics of Z-C14-Fuse-links 2 ... 50A gG(gL)

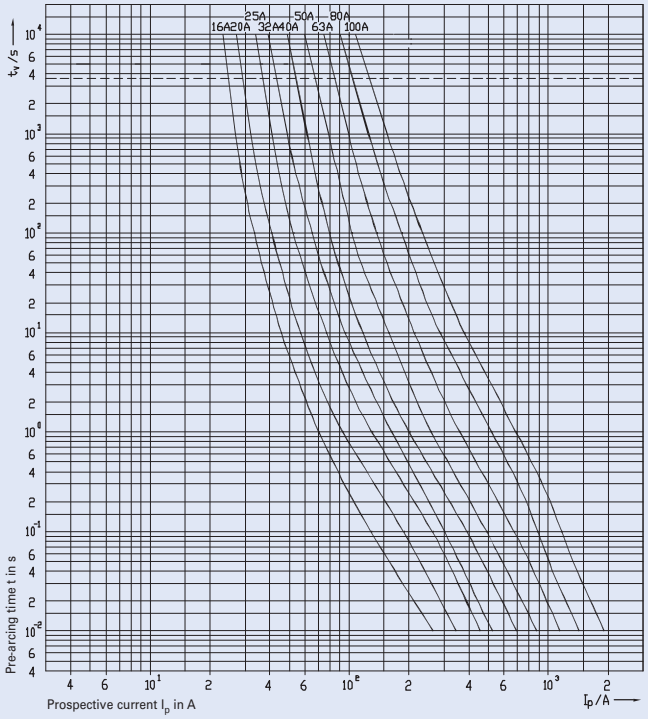


Melting energy characteristics I^2t/A of Z-C14-Fuse-links 2 ... 50A gG(gL)

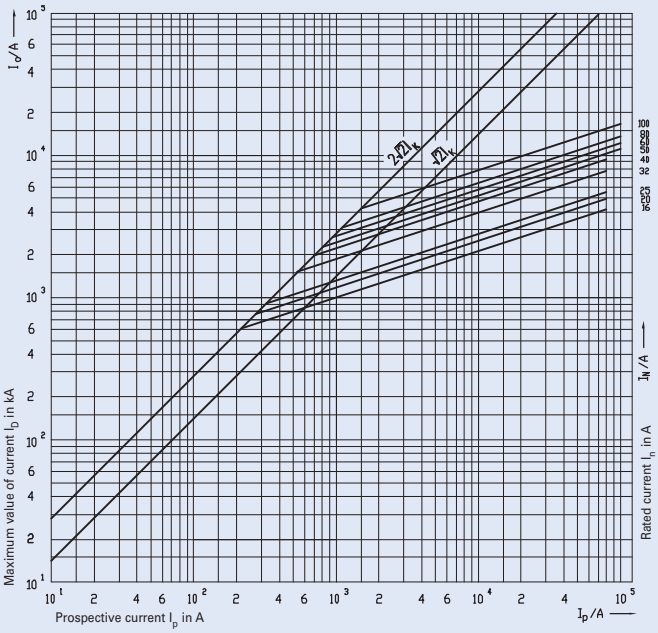


Characteristics Z-C22/SE, Operating class gG, 14x51

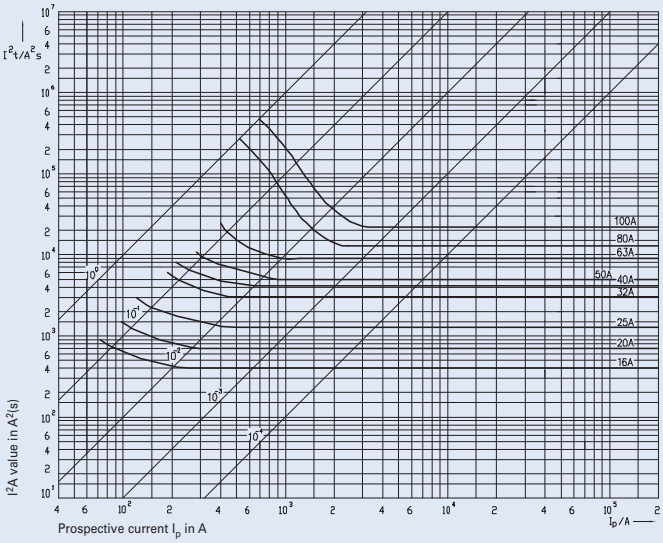
Time/current characteristics of Z-C22-Fuse-links 16 ... 100A gG(gL)



Let-through current characteristics of Z-C22-Fuse-links 16 ... 100A gG(gL)



Melting energy characteristics I^2t/A of Z-C22-Fuse-links 16 ... 100A gG(gL)



Energy-meters single-phase 32-40 A, EME

- Digital active energy meter with measurement I - U - Hz - PF measurement of active instantaneous power, by IR side set up communication - 1 tariff - 1 S0
- Active energy-meters for single-phase alternating current with a, 7 digits counter. These meters have 1 S0 output generating pulses for remote processing of the active energy measurements for 1 tariff.
- Display LCD
- For direct connection 32 A and 40 A
- 7 digits for energy values indication
- Accuracy class 1 for active energy according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}) - for direct connection 32 A and 40 A = 0.020 ... 32 A or 40 A
- The standard versions are designed to be combined with the communication module
- Active energy register zero setting (not for MID types)
- Active energy register in T1 import/export
- Instantaneous power active import/export display
- Current RMS
- Voltage RMS
- Power factor
- Frequency
- FW release
- FW checksum
- 1 DIN modules wide (18 mm)

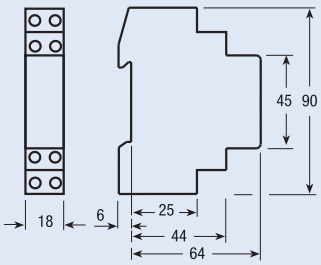
Technical Data

			EME1P32 EME1P32MID direct connection 32 A	**EME1P40 EME1P40MID direct connection 40 A**
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31	
General characteristics				
Housing	DIN 43880	DIN	1 modules	1 modules
Mounting	EN 60715	35 mm	DIN rail	DIN rail
Depth		mm	70	70
Reference standard	active energy	-	EN 50470-1-3, EN 62053-31	EN 50470-1-3, EN 62053-31
Operating features				
Connectivity	to single-phase network	n° wires	2	2
Storage of energy values and configuration				
	FRAM memory	-	yes	yes
Supply				
Rated control supply voltage U_n		VAC	230	230
Operating range voltage		V	184 ... 276	184 ... 276
Rated frequency f_n		Hz	50	50
Rated power dissipation (max.) P_v		VA (W)	≤8 (0.6)	≤8 (0.6)
Overload capability				
Voltage U_n	continuous	V	276	276
	momentary (1 s)	V	300	300
Current I_{max}	continuous	A	32	40
	momentary (10 ms)	A	960	1200
Display (readouts)				
Display type	LCD	n° digits	7 (2 decimals)	7 (2 decimals)
	digit dimensions	mm x mm	6.00 x 3	6.00 x 3
Active energy: 1 display, 7-digit		kWh	0.00 ... 999999.9	0.00 ... 999999.9
Instantaneous tariff measurement		-	1	1
	1 display, 1-digit	-	T1	T1
Display period refresh		s	1	1
Measuring accuracy	at 23 ±1°C, referred to nominal values			
Active energy and power	acc.to EN 50470-3	%	±1 (B)	±1 (B)
Measuring input				
Type of connection	phase/N	-	direct	direct
Operating range voltage	phase/N	V	184 ... 276	184 ... 276
Current I_{ref}		A	5	5
Current I_{min}		A	0.25	0.25
Operating range current (I_{st} ... I_{max})				
	direct connection	A	0.02 ... 32	0.02 ... 40
Frequency		Hz	50	50
Input waveform		-	alternating	alternating
Starting current for energy measurement (I_{st})		mA	20	20
Pulse output S0	acc.to EN 62053-31			
Pulse output	for active energy	-	yes	yes
Pulse quantity		Imp/kWh	1000	1000
Pulse duration		ms	90	90
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)			
		mA	90	90
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)			
		µA	1	1
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	5000	5000

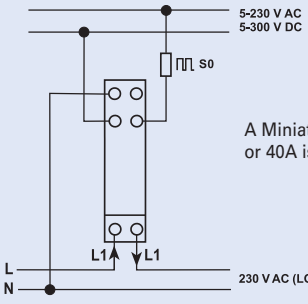
			EME1P32 EME1P32MID direct connection 32 A		EME1P40 EME1P40MID direct connection 40 A	
Safety acc. to EN 50470-1						
Indoor meter		-	yes		yes	
Degree of pollution		-	2		2	
Operational voltage		V	300		300	
AC voltage test (EN 50470-3, 7.2)		kV	4		4	
Impulse voltage test		1.2/50 µs-kV	6		6	
Protection class (EN 50470)		class	II		II	
Housing material flame resistance						
	UL 94	class	V0		V0	
Safety-sealing between upper and lower housing part						
		-	no	yes	no	yes
Adaptor for Communication						
Plug-and-play technology		-	•		•	
LAN Interface (TCP/IP)	Ethernet 802.3	EMECLAN	10/100 Mbps		10/100 Mbps	
Modbus RTU, Ascii	RS-485 3 wires	EMECMODB	up to 19.200 bps		up to 19.200 bps	
M-Bus	RS-485 2 wires	EMECMBUS	up to 9.600 bps		up to 9.600 bps	
Connection terminals						
Type cage main current paths						
	screw head Z +/-	POZIDRIV	PZ1		PZ1	
Type cage pulse output	blade for slotted screw	mm	PZ0		PZ0	
Terminal capacity main current paths						
	solid wire min. (max.)	mm^2	16		16	
	stranded wire with sleeve min. (max.)	mm^2	16		16	
Terminal capacity pulse outlet						
	solid wire min. (max.)	mm^2	0.15 (2.5)		0.15 (2.5)	
	stranded wire with sleeve min. (max.)	mm^2	0.15 (4)		0.15 (4)	
Environmental conditions						
Mechanical environment		-	M1		M1	
Electromagnetic environment		-	E2		E2	
Operating temperature		°C	-10 ... +55		-10 ... +55	
Limit temperature of transportation and storage		°C	-25 ... +70		-25 ... +70	
Relative humidity (not condensation)		%	≤80		≤80	
Vibrations	50 Hz sinusoidal vibration amplitude					
		mm	±0.075		±0.075	
Degree protectionhousing when mounted in front (terminal)						
		-	IP51*)/IP20		IP51*)/IP20	

*) For the installation in a cabinet at least with IP51 protection

Dimensions (mm)



Connection diagram



A Miniature Circuit Breaker of 32A or 40A is recommended.

Energy-meters single-phase 80 A, EME

- Digital active and reactive energy meter with measurement of active and reactive instantaneous power, by IR side set up communication - 2 tariffs - 2 S0
- Active and reaktive (not for MID types) energy-meters for single-phase alternating current with either 1, 7 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the energy active and reactive measurements for 2 tariffs.
- Green backlighted LCD
- For direct connection 80 A
- 7 digits for energy values indication
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Accuracy class 2 for reactive energy and power according to EN 62053-23
- Most attractive operating range current (I_{st} ... I_{max}) for direct connection 80 A = 0.02 ... 80 A
- The standard versions are designed to be combined with the communication module
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Instantaneous power active and reactive display (MID types: only active power)
- Sealable terminal covers
- 2 DIN modules wide (36 mm)

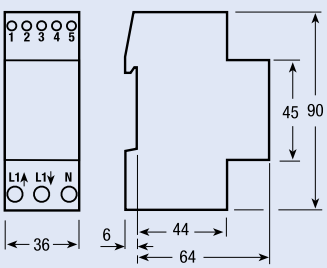
Technical Data

			EME1P80 EME1P80MID direct connection 80 A
Data in compliance with			EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	2 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3, EN 62053-23-31
	reactive energy - pulse output		
Operating features			
Connectivity	to single-phase network	n° wires	2
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active and reactive energy		
		n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max.) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous	V	276
	momentary (1 s)	V	300
Current I_{max}	continuous	A	80
	momentary (10 ms)	A	2400
Display (readouts)			
Display type	LCD	n° digits	7 (1 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 7-digit			
	tariffs 1-2	kWh	000000.0 ... 999999.9
+ display import or export (arrow)			
	overflow	kWh	999999.9 ... 000000.0
Reactive energy: 1 display, 7-digit			
	tariffs 1-2	kvarh	000000.0 ... 999999.9
+ display import or export (arrow)			
	overflow	kvarh	999999.9 ... 000000.0
Instantaneous active power: 1 display, 3-digit		W, kW or MW	000 ... 999
Instantaneous reactive power: 1 display, 3-digit		var, kvar or Mvar	000 ... 999
Instantaneous tariff measurement		-	1
	1 display, 1-digit	-	T1 or T2
Display period refresh		s	1
Measuring accuracy	at 23 ±1°C, referred to nominal values		
Active energy and power	acc.to EN 50470-3	%	B
Reactive energy and power			
	acc.to EN 62053-23	%	2
Measuring input			
Type of connection	phase/N	-	direct
Operating range voltage	phase/N	V	184 ... 276
Current I_{ref}		A	15
Current I_{min}		A	0.75
Operating range current (I_{st} ... I_{max})			
	direct connection	A	0.025 ... 80
Frequency		Hz	50
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	25

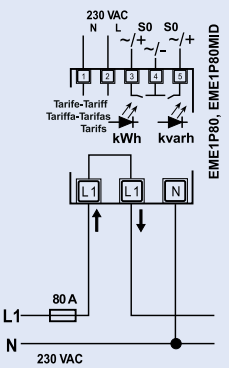
			EME1P80 direct connection 80 A	EME1P80MID
Pulse output S0	acc.to EN 62053-31			
Pulse output	for active and reactive energy T1 and T2		yes	
Pulse quantity		Imp/kWh	1000	
Pulse duration		ms	30 ±2 ms	
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	
Permissible current	pulse ON (max. 230 V AC/DC)			
		mA	90	
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)			
		µA	1	
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	1000	
Safety acc. to EN 50470-1				
Indoor meter		-	yes	
Degree of pollution		-	2	
Operational voltage		V	300	
AC voltage test (EN 50470-3, 7.2)		kV	4	
Impulse voltage test		1.2/50 µs-kV	6	
Protection class (EN 50470)		class	II	
Housing material flame resistance				
	UL 94	class	V0	
Safety-sealing between upper and lower housing part				
		-	no	yes
Adaptor for Communication				
Plug-and-play technology		-	•	
LAN Interface (TCP/IP)	Ethernet 802.3	EMECLAN	10/100 Mbps	
Modbus RTU, Ascii	RS-485 3 wires	EMECMODB	up to 19.200 bps	
M-Bus	RS-485 2 wires	EMECMBUS	up to 9.600 bps	
Connection terminals				
Type cage main current paths				
	screw head Z +/-	POZIDRIV	PZ2	
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	
Terminal capacity main current paths				
	solid wire min. (max.)	mm^2	1.5 (35)	
	stranded wire with sleeve min. (max.)			
		mm^2	1.5 (35)	
Terminal capacity pulse outlet				
	solid wire min. (max.)	mm^2	0.14 (2.5)	
	stranded wire with sleeve min. (max.)			
		mm^2	0.14 (1.5)	
Environmental conditions				
Mechanical environment		-	M1	
Electromagnetic environment		-	E2	
Operating temperature		°C	-10 ... +55	
Limit temperature of transportation and storage		°C	-25 ... +70	
Relative humidity (not condensation)		%	≤80	
Vibrations	50 Hz sinusoidal vibration amplitude			
		mm	±0.075	
Degree protectionhousing when mounted in front (terminal)				
		-	IP51*)/IP20	

*) For the installation in a cabinet at least with IP51 protection

Dimensions (mm)



Connection diagram



A Miniature Circuit Breaker of 80A is recommended.

Energy-meters single-phase 125 A, EME

- Digital active and reactive energy meter with measurement of active and reactive instantaneous power, by IR side set up communication - 2 tariffs
- Active energy-meters for single-phase alternating current with either 2, 8 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the energy active and reactive measurements for 2 tariffs.
- Green backlighted LCD
- For direct connection 125 A
- 8 digits for energy values indication
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Accuracy class 2 for reactive energy and power according to EN 62053-23
- Most attractive operating range current (I_{st} ... I_{max}) for direct connection 125 A = 0.020 ... 125 A
- The standard versions are designed to be combined with the communication module
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Instantaneous power active and reactive display
- Sealable terminal covers
- 3 DIN modules wide (52 mm)

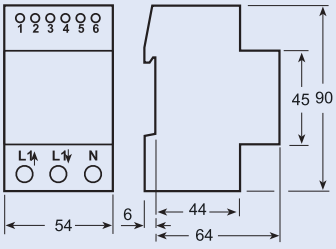
Technical Data

			EME1P125 EME1P125MID direct connection 125 A
Data in compliance with			EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	3 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3, EN 62053-23-31
	reactive energy - pulse output		
Operating features			
Connectivity	to single-phase network	n° wires	2
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active and reactive energy		
		n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max.) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous	V	276
	momentary (1 s)	V	300
Current I_{max}	continuous	A	125
	momentary (10 ms)	A	3750
Display (readouts)			
Display type	LCD	n° digits	8 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 8 digit			
	tariffs 2	Wh	0.01
+ display import or export (arrow)			
	overflow	MWh	999999.99
Reactive energy: 1 display, 8 digit			
	tariffs 2	varh	0.01
+ display import or export (arrow)			
	overflow	Mvarh	999999.99
Instantaneous active power: 1 display, 3-digit		W, kW or MW	000 ... 999
Instantaneous reactive power: 1 display, 3-digit		var, kvar or Mvar	000 ... 999
Instantaneous tariff measurement		-	1
	1 display, 1-digit	-	T1 or T2
Display period refresh		s	1
Measuring accuracy	at 23 ±1°C, referred to nominal values		
Active energy and power	acc.to EN 50470-3	%	B
Reactive energy and power			
	acc.to EN 62053-23	%	2
Measuring input			
Type of connection	phase/N	-	direct
Operating range voltage	phase/N	V	184 ... 276
Current I_{ref}		A	5
Current I_{min}		A	0.25
Operating range current (I_{st} ... I_{max})			
	direct connection	A	0.020 ... 125
Frequency		Hz	50
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	20

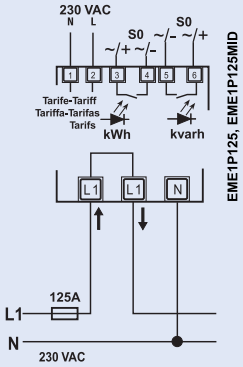
			EME1P125 direct connection 125 A	EME1P125MID direct connection 125 A
Pulse output S0	acc.to EN 62053-31			
Pulse output	for active and reactive energy T1 and T2		yes	
Pulse quantity		Imp/kWh	1000	
Pulse duration		ms	30 ±2 ms	
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	
Permissible current	pulse ON (max. 230 V AC/DC)			
		mA	90	
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)			
		µA	1	
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	1000	
Safety acc. to EN 50470-1				
Indoor meter		-	yes	
Degree of pollution		-	2	
Operational voltage		V	300	
AC voltage test (EN 50470-3, 7.2)		kV	4	
Impulse voltage test		1.2/50 µs-kV	6	
Protection class (EN 50470)		class	II	
Housing material flame resistance				
	UL 94	class	V0	
Safety-sealing between upper and lower housing part				
		-	no	yes
Adaptor for Communication				
Plug-and-play technology		-	•	
LAN Interface (TCP/IP)	Ethernet 802.3	EMECLAN	10/100 Mbps	
Modbus RTU, Ascii	RS-485 3 wires	EMECMODB	up to 19.200 bps	
M-Bus	RS-485 2 wires	EMECMBUS	up to 9.600 bps	
Connection terminals				
Type cage main current paths				
	screw head Z +/-	POZIDRIV	PZ2	
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	
Terminal capacity main current paths				
	solid wire min. (max.)	mm^2	1.5 (50)	
	stranded wire with sleeve min. (max.)			
		mm^2	1.5 (50)	
Terminal capacity pulse outlet				
	solid wire min. (max.)	mm^2	1 (4)	
	stranded wire with sleeve min. (max.)			
		mm^2	1 (2.5)	
Environmental conditions				
Mechanical environment		-	M1	
Electromagnetic environment		-	E2	
Operating temperature		°C	-10 ... +55	
Limit temperature of transportation and storage		°C	-25 ... +70	
Relative humidity (not condensation)		%	≤80	
Vibrations	50 Hz sinusoidal vibration amplitude			
		mm	±0.075	
Degree protectionhousing when mounted in front (terminal)				
		-	IP51*)/IP20	

*) For the installation in a cabinet at least with IP51 protection

Dimensions (mm)



Connection diagram



A Miniature Circuit Breaker of 125A is recommended.

Energy-meters three-phase, transformer 5 A, direct 80 A, EME

- Digital active and reactive energy-meter with measurement of active and reactive instantaneous power, by IR side set up communication - 2 tariffs - 2 S0 (MID types: displays only active power).
- Active energy-meters for three-phase alternating current with either 2, 8 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the instantaneous energy active and reactive measurements for 2 tariffs.
- Green backlighted LCD
- For direct connection 80 A, or for transformer .../5 A
- For transformer primary current of 5 A to 10.000/5 A. Input is in 5 A increments
- 8 digits - 8 display for energy values indication
- Detection of connection errors (phase transposition)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Accuracy class 2 for reactive energy and power according to EN 62053-23
- Most attractive operating range current (I_{st} ... I_{max}), for direct connection 80 A = 0.015 ... 80 A, for connection by CT .../5 A = 0.003 ... 5 A
- The standard versions are designed to be combined with the communication module
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Instantaneous power active and reactive display (MID types: only active power)
- Sealable terminal covers
- 4 DIN modules wide (72 mm)

Technical Data

			EME3P80 EME3P80MID direct connection 80 A	**EME3PCT EME3PCTMID CT connection till 10.000/5 A**
Data in compliance with			EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31	
General characteristics				
Housing	DIN 43880	DIN	4 modules	4 modules
Mounting	EN 60715	35 mm	DIN rail	DIN rail
Depth		mm	70	70
Reference standard	active energy	-	EN 50470-1-3	EN 50470-1-3
	pulse output		EN 62053-31	EN 62053-31
Operating features				
Connectivity	to single/three-phase network			
		n° wires	2-4	4
Storage of energy values and configuration				
	digital display (EEPROM)	-	yes	yes
Display tariffs identifier	for active and reactive energy			
		n° 2	T1 and T2	T1 and T2
Supply				
Rated control supply voltage U_n		VAC	230	230
Operating range voltage		V	184 ... 276	184 ... 276
Rated frequency f_n		Hz	50	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)	≤8 (0.6)
Overload capability				
Voltage U_n	continuous; phase/phase	V	480	480
	1 second: phase/phase	V	800	800
	continuous; phase/N	V	276	276
	1 second: phase/N	V	460	460
Current I_{max}	continuous	A	80	6
	momentary (0,5 s)	A	-	120
	momentary (10 ms)	A	2400	-
Display (readouts)				
Connection errors and phase out				
	discernible from phase-sequence indication			
		-	PHASE Err	PHASE Err
Display type	LCD	n° digits	8 (2 decimal)	8 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3	6.00 x 3
Active energy: 1 display, 8 digit				
	tariffs 2	Wh	0.01	0.01
+ display import or export (arrow)				
	overflow	MWh	999999.99	999999.99
Reactive energy: 1 display, 8-digit				
	tariffs 2	varh	0.01	0.01
+ display import or export (arrow)				
	overflow	Mvarh	999999.99	999999.99
Instantaneous active power: 1 display, 3-digit		W, kW or MW	000 ... 999	000 ... 999
Instantaneous reactive power: 1 display, 3-digit		var, kvar or Mvar	000 ... 999	000 ... 999
Instantaneous tariff measurement				
	1 display, 1-digit	-	T1 or T2	T1 or T2
Transformer primary current		A	-	5 ... 10.000
Display period refresh		s	1	1
Measuring accuracy				
Active energy and power acc.to EN 50470-3		class 1	B	B
Reactive energy and power acc.to EN 62053-23		class 2	2	2

			EME3P80 EME3P80MID direct connection 80 A	EME3PCT EME3PCTMID CT connection till 10.000/5 A
Measuring input				
Type of connection			direct	transformer .../5 A
Voltage U_n	phase/phase	V	400	400
	phase/N	V	230	230
Operating range voltage	phase/phase	V	319 ... 480	319 ... 480
	phase/N	V	184 ... 276	184 ... 276
Current I_{ref}		A	5	-
Current I_n		A	-	5
Current I_{min}		A	0.25	0.05
Operating range current (I_{st} ... I_{max})				
	direct connection	A	0.015 ... 80	-
	transformer connection (CT)	A	-	0.003 ... 6
Transformer current	primary current of the transformer			
		A	-	5 ...10.000
	smallest input step adjustment		-	in 5 A steps
		A	-	5
Frequency		Hz	50	50
Input waveform		-	sinusoidal	sinusoidal
Starting current for energy measurement (I_{st})		mA	15	3
Pulse output SO	acc.to EN 62053-31			
Pulse output	for act. and react. energy	T1 and T2	yes	yes
Quantity pulse output	for direct connection 80 A	Imp/kWh	500	-
	depending on the transf. factor.			
		Imp/kWh	-	100-10-1
Pulse duration		ms	30 ±2	30 ±2
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)			
		mA	90	90
Permissible current pulse OFF (leakage current max. 230 V AC/DC)				
		µA	1	1
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	1000	10.000
Safety acc. to EN 50470-1				
Indoor meter		-	yes	yes
Degree of pollution		-	2	2
Operational voltage		V	300	300
AC voltage test (EN 50470-3, 7.2)		kV	4	4
Impulse voltage test		1.2/50 µs-kV	6	6
Protection class (EN 50470)		class	II	II
Housing material flame resistance				
	UL 94	class	V0	V0
Safety-sealing between upper and lower housing part				
		-	yes no	no yes
Adaptor for Communication				
Plug-and-play technology		-	•	•
LAN (TCP/IP) interface	Ethernet 802.3	EMECLAN	10/100 Mbps	10/100 Mbps
Modbus RTU, Ascii interface				
	RS-485 - 3 wires	EMECMODB	up to 19.200 bps	up to 19.200 bps
M-Bus interface	RS-485 - 2 wires	EMECMBUS	up to 9.600 bps	up to 9.600 bps
Connection terminals				
Type cage main current paths				
	screw head Z +/-	POZIDRIV	PZ2	PZ1
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	0.8 x 3.5
Terminal capacity main current paths				
	solid wire min. (max.)	mm^2	1.5 (35)	1 (4)
	stranded wire with sleeve min. (max.)			
		mm^2	1.5 (35)	1 (4)
Terminal capacity pulse outlet				
	solid wire min. (max.)	mm^2	1 (4)	1 (4)
	stranded wire with sleeve min. (max.)			
		mm^2	1 (2.5)	1 (4)

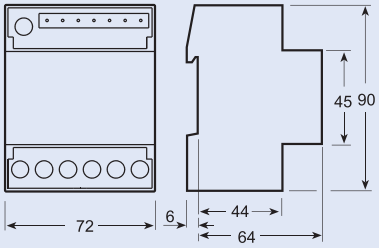
		EME3P80 EME3P80MID direct connection 80 A	EME3PCT EME3PCTMID CT connection till 10.000/5 A
Environmental conditions			
Mechanical environment	-	M1	M1
Electromagnetic environment	-	E2	E2
Operating temperature	°C	-10 ... +55	-10 ... +55
Limit temperature of transportation and storage	°C	-25 ... +70	-25 ... +70
Relative humidity (not condensation)	%	≤80	≤80
Vibrations 50 Hz sinusoidal vibration amplitude	mm	±0.075	±0.075
Degree protectionhousing when mounted in front (terminal)	-	IP51*)/IP20	IP51*)/IP20

*) For the installation in a cabinet at least with IP51 protection

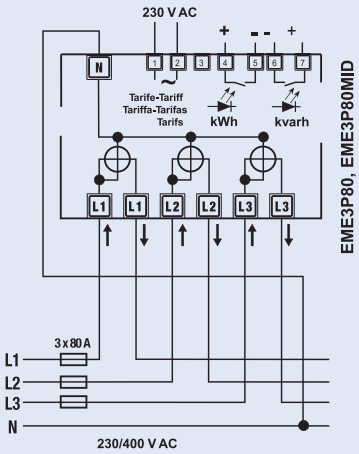
Direct connection 80 A

Dimensions (mm)

EME3P80, EME3P80MID

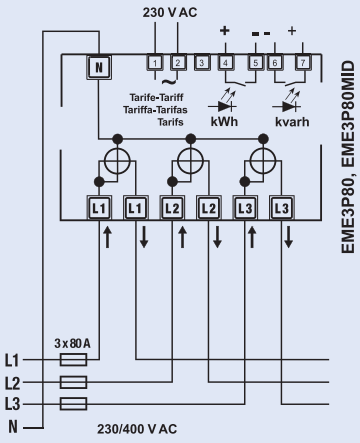


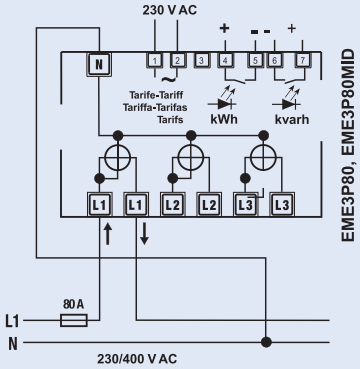
Connection diagrams



A Miniature Circuit Breaker of 80A is recommended.

Wire N needs to be connected to the meter.

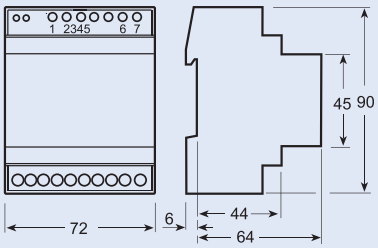




Connection through CT .../5 A till 10.000/5 A

Dimensions (mm)

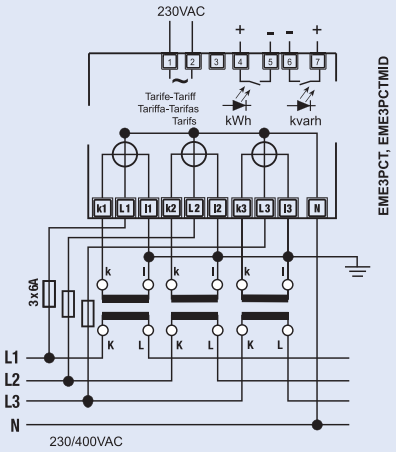
EME3PCT, EME3PCTMID

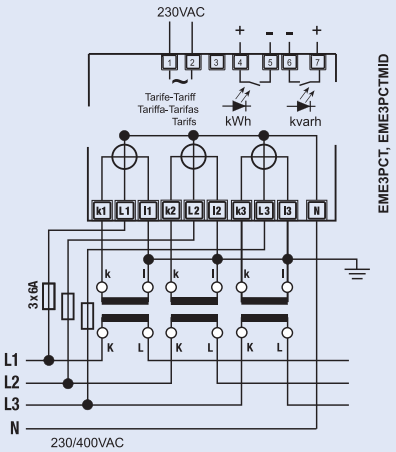


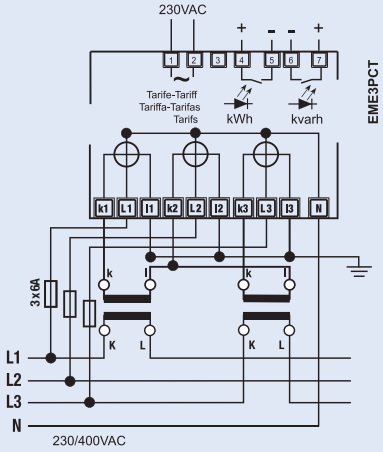
Wire N needs to be connected to the meter.

Instructions for the connection of transformer counters
A Miniature Circuit Breaker of 6A is recommended. Current transformers must not be operated with open terminals since dangerous high voltages might occur which may result in personal injuries
and property damage. In addition to this, the transformers are exposed to thermal overload.

Connection diagrams







Energy-meters three-phase 125 A, EME

- Digital active and reactive energy-meter with measurement of active and reactive instantaneous power, by IR side set up communication - 2 tariffs - 2 S0 (MID types: displays only active power).
- Active energy-meters for three-phase alternating current with either 2, 8 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the instantaneous energy active and reactive measurements for 2 tariffs.
- Green backlighted LCD
- For direct connection 125 A
- 8 digits - 8 display for energy values indication
- Detection of connection errors (phase transposition)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Accuracy class 2 for reactive energy and power according to EN 62053-23
- Most attractive operating range current (I_{st} ... I_{max}) for direct connection 125 A = 0.020 ... 125 A
- The standard versions are designed to be combined with the communication module
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Instantaneous power active and reactive display (MID types: only active power)
- Sealable terminal covers
- 6 DIN modules wide (108 mm)

Technical Data

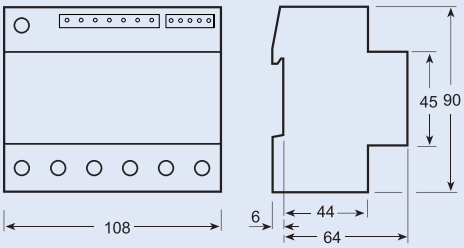
			EME3P125 EME3P125MID direct connection 125 A
Data in compliance with			EN 50470-1, EN 50470-3, EN 62053-23 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	6 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3
	reactive energy - pulse output		EN 62053-23-31
Operating features			
Connectivity	to single/three-phase network		
		n° wires	2-4
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active and reactive energy		
		n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max.) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous; phase/phase	V	480
	1 second: phase/phase	V	800
	continuous; phase/N	V	276
	1 second: phase/N	V	300
Current I_{max}	continuous	A	125
	momentary (10 ms)	A	3750
Display (readouts)			
Connection errors and phase out			
	discernible from phase-sequence indication		
		-	PHASE Err
Display type	LCD	n° digits	8 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 8 digit			
	tariffs 2	Wh	0.01
+ display import or export (arrow)			
	overflow	MWh	999999.99
Reactive energy: 1 display, 8 digit			
	tariffs 2	varh	0.01
+ display import or export (arrow)			
	overflow	Mvarh	999999.99
Instantaneous active power: 1 display, 3-digit		W, kW or MW	000 ... 999
Instantaneous reactive power: 1 display, 3-digit		var, kvar or Mvar	000 ... 999
Instantaneous tariff measurement		-	1
	1 display, 1-digit	-	T1 or T2
Display period refresh		s	1
Measuring accuracy			
Active energy and power	acc.to EN 50470-3	%	B
Reactive energy and power			
	acc.to EN 62053-23	%	2
Measuring input			
Type of connection			direct
Voltage U_n	phase/phase	V	400
	phase/N	V	230
Operating range voltage	phase/phase	V	319 ... 480
	phase/N	V	184 ... 276

			EME3P125 EME3P125MID direct connection 125 A
Measuring input			
Current I_{ref}		A	5
Current I_{min}		A	0.25
Operating range current (I_{st} ... I_{max})			
	direct connection	A	0.020 ... 125
Frequency		Hz	50 ±2%
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	20
Pulse output S0	acc.to EN 62053-31		
Pulse output	for active and reactive energy	T1 and T2	yes
Quantity pulse output		Imp/kWh	500
Pulse duration		ms	30 ±2 ms
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)		
		mA	90
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)		
		µA	1
Optical interfaces			
Front side (accuracy control)			
	LED	Imp/kWh	1000
Safety acc. to EN 50470-1			
Indoor meter		-	yes
Degree of pollution		-	2
Operational voltage		V	300
AC voltage test (EN 50470-3, 7.2)		kV	4
Impulse voltage test		1.2/50 µs-kV	6
Protection class (EN 50470)		class	II
Housing material flame resistance			
	UL 94	class	V0
Safety-sealing between upper and lower housing part			
		-	no yes
Adaptor for Communication			
Plug-and-play technology		-	•
LAN (TCP/IP) interface	Ethernet 802.3	EMECLAN	10/100 Mbps
Modbus RTU, Ascii interface			
	RS-485 - 3 wires	EMECMODB	up to 19.200 bps
M-Bus interface	RS-485 - 2 wires	ENECMBUS	up to 9.600 bps
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ2
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5
Terminal capacity main current paths			
	solid wire min. (max.)	mm^2	1.5 (50)
	stranded wire with sleeve min. (max.)		
		mm^2	1.5 (50)
Terminal capacity pulse outlet			
	solid wire min. (max.)	mm^2	1 (4)
	stranded wire with sleeve min. (max.)		
		mm^2	1 (2.5)
Environmental conditions			
Mechanical environment		-	M1
Electromagnetic environment		-	E2
Operating temperature		°C	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity (not condensation)		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.075
Degree protectionhousing when mounted in front (terminal)			
		-	IP51*)/IP20

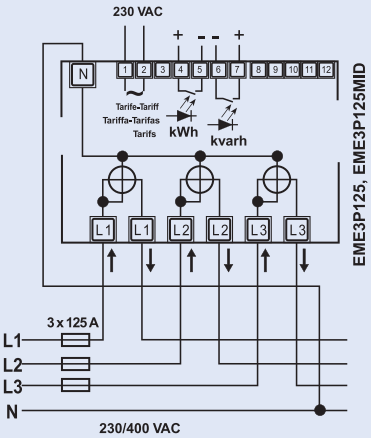
*) For the installation in a cabinet at least with IP51 protection

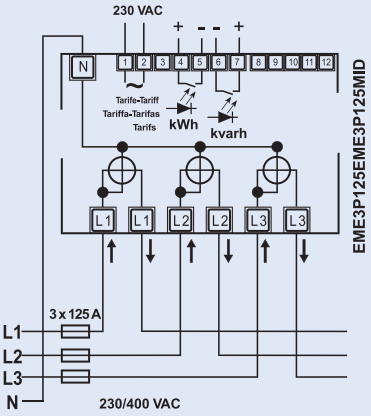
Dimensions (mm)

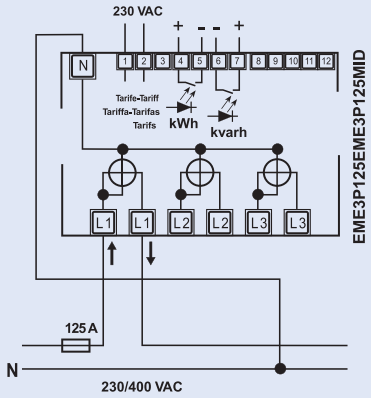
EME3P125, EME3P125MID



Connection diagrams







A Miniature Circuit Breaker of 125A is recommended.

Wire N needs to be connected to the meter.

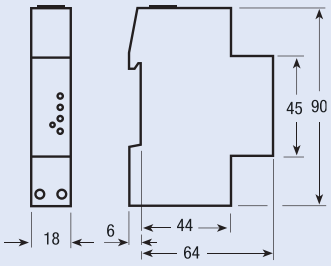
LAN-TCP/IP interface EMECLAN

- Additional communication modules for Energy-meter, Network analyzer and Power-meters
- Additional module for LAN-TCP/IP connection for energy, power, V, I, cosφ, frequency
- Data transfer speed LAN limited Mbit/s 100
- HW interface RJ 45 connector
- SW protocol TCP/IP
- Suitable for both single-phase and three-phase energy meters
- 1 DIN module wide (18 mm)

Technical Data

			EMECLAN
Data in compliance with			IEC 60950, EN 61000-6-2, EN 61000-6-3 and EN 61000-4-2
General characteristics			
Housing	DIN 43880	DIN	1 module
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Power supply			
Auxiliary voltage rating U_n		VAC	230
Auxiliary power rating		W	≤1.5
Auxiliary voltage range		VAC	0.80 ... 1.20 x U_n
Frequency rating		Hz	50/60
Frequency range		Hz	45 ... 65
Operating features			
System start		-	automatic at connection of auxiliary power
LAN Server data addressing		-	by means of it IP address
Data transfer speed	LAN limited	Mbit/s	≤100
User interface for setup and management			
	Web browser		W3C HTML 4.01 compliant
Suitable for both single-phase and three-phase energy meters			yes
LAN Interface			
HW interface		-	RJ 45 connector
SW protocol		-	TCP/IP
Interface to measuring instrument			
HW interface	optical IR	n°	2 (Tx, Rx)
SW protocol		-	proprietary
Safety acc. to IEC 60950			
Degree pollution		-	2
Overvoltage category		-	II
Working voltage		V	300
Clearance		mm	≥4
Creepage distance		mm	≥4
Test voltage	impulse (1,2/50 µs) peak value		
	on AC power supply	kV	4
	50 Hz 1 min	kV	4
Housing material flame resistance			
	UL 94	class	V0
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ0
Terminal capacity	solid wire min. (max.)	mm^2	0.15 (2.5)
	stranded wire with sleeve min. (max.)		
		mm^2	0.15 (4)
Environmental conditions			
Operating temperature		°C	0 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.25
Protection class	acc.to IEC 60950	-	II
Degree of protection	housing when mounted in front		IP20

Dimensions (mm)



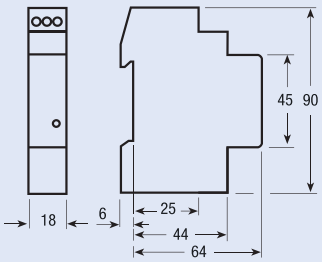
M-Bus interface EMECMBUS

- Additional communication modules for Energy-meter, Network analyzer and Power-meters
- Additional module for M-Bus connection for energy, power, V, I, cosφ, frequency
- M-Bus according to EN1434
- Suitable for both single-phase and three-phase energy meters
- 1 DIN module wide (18 mm)

Technical Data

			EMECMBUS
Data in compliance with			EN 13757-1-2-3, IEC 60950, EN 61000-6-2, EN 61000-6-3 and EN 61000-4-2
General characteristics			
Housing	DIN 43880	DIN	1 module
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Power supply			
Power supply		-	through bus connection
Operating features			
Suitable for both single-phase and three-phase energy meters			yes
M-bus interface			
HW interface		-	2 screw clamps
SW protocol		-	M-Bus according to EN1434
Baudrate		Baud	300-9600
Interface to measuring instrument			
HW interface	optical IR	n°	2 (Tx, Rx)
SW protocol		-	proprietary
Safety acc. to IEC 60950			
Degree pollution		-	2
Overvoltage category		-	II
Working voltage		V	24 ... 36
Clearance	in equipment	mm	≥1.5
	on PCB (not coated)	mm	≥1.5
Creepage distance		mm	≥2.1
Test voltage	impulse (1,2/50 µs)		
	peak value	kV	2.5
	50 Hz 1 min	kV	1.35
Housing material flame resistance			
	UL 94	class	V0
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ0
Terminal capacity	solid wire min. (max.)	mm^2	0.15 (2.5)
	stranded wire with sleeve min. (max.)		
		mm^2	0.15 (4)
Environmental conditions			
Operating temperature		°C	0 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.25
Protection class	acc.to IEC 60950	-	II
Degree of protection	housing when mounted in front		IP20

Dimensions (mm)



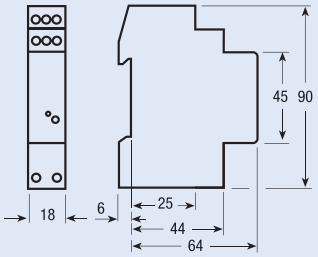
Modbus interface RTU and Ascii EMECMODB

- Additional communication modules for Energy-meter, Network analyzer and Power-meters
- Additional module for Modbus RTU and Ascii connection for energy, power, V, I, cosφ, frequency
- Protocols Modbus Ascii - Modbus RTU
- Suitable for both single-phase and three-phase energy meters
- 1 DIN module wide (18 mm)

Technical Data

			EMECMODB
Data in compliance with			IEC 60950, EN 61000-6-2, EN 61000-6-3 and EN 61000-4-2
General characteristics			
Housing	DIN 43880	DIN	1 module
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Power supply			
Auxiliary voltage rating U_n		VAC	230
Auxiliary power rating		W	≤10
Auxiliary voltage range		VAC	0.80 ... 1.20 x U_n
Frequency rating		Hz	50/60
Frequency range		Hz	45 ... 65
Operating features			
Protocol	selectable by software	-	Modbus RTU or Ascii
Suitable for both single-phase and three-phase energy meters			yes
Modbus interface			
HW interface	RS-485	terminals n°	3 (+/-, cable shield)
Input resistance		UL (kΩ)	1 (12)
Termination resistance		Ω	80
SW protocol	SW selectable	-	Modbus Ascii - Modbus RTU
Data transfer speed	SW selectable	baud	≤38.400 - default 19200
Parity		-	none/even - default: none
Addressing		-	1 to 247
Interface to measuring instrument			
HW interface	optical IR	n°	2 (Tx, Rx)
SW protocol		-	proprietary
Safety acc. to IEC 60950			
Degree pollution		-	2
Overvoltage category		-	II
Working voltage		V	300
Clearance		mm	≥4
Creepage distance		mm	≥4
Test voltage	impulse (1,2/50 µs) peak value		
	on AC power supply	kV	2.5
	on telecommunication network		
		kV	1.5
	50 Hz 1 min	kV	2.5
Housing material flame resistance			
	UL 94	class	V0
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ0
Terminal capacity	solid wire min. (max.)	mm^2	0.15 (2.5)
	stranded wire with sleeve min. (max.)		
		mm^2	0.15 (4)
Environmental conditions			
Operating temperature		°C	0 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.25
Protection class	acc.to IEC 60950	-	II
Degree of protection	housing when mounted in front		IP20

Dimensions (mm)



BASIC Energy-meters three-phase, transformer 5 A, EME

- Active energy-meters for three-phase alternating current with either 2, 9 digits digital counters. These meters have 1 S0 output generating pulses for remote processing of the instantaneous energy active measurements for 2 tariffs.
- Three-phase digital active energy-meter with connection by CT .../5 A, up to 10.000/5 A - 0.05-5 (6) A - 2 tariffs - 2 S0
- For transformer .../5 A
- For transformer primary current of 5 A to 10.000/5 A. Input is in 5 A increments
- 9 digits - 4 display for energy values indication
- Detection of connection errors (phase transposition and phase missing)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}), for connection by CT .../5 A = 0.003 ... 5 A
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Sealable terminal covers
- 4 DIN modules wide (72 mm)

Technical Data

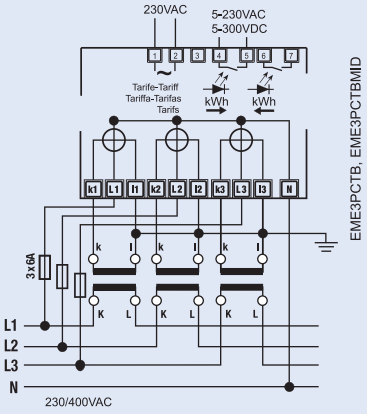
			EME3PCTB EME3PCTBMID **CT connection till 10.000/5 A**
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	4 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3
	pulse output		EN 62053-31
Operating features			
Connectivity	to three-phase network	n° wires	4
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active energy	n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous; phase/phase	V	480
	1 second: phase/phase	V	800
	continuous; phase/N	V	276
	1 second: phase/N	V	300
Current I_{max}	continuous	A	6
	momentary (0,5 s)	A	120
	momentary (10 ms)	A	-
Display (readouts)			
Connection errors and phase out			
	discernible from phase-sequence indication		
		-	PHASE Err
Display type	LCD	n° digits	9 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 9 digit - 2 tariffs			
	min. measuring energy	kWh	0.01
+ display import or export (arrow)			
	max. measuring overflow	kWh	9999999.99
Instantaneous tariff measurement			
	1 display, 1-digit	-	T1 or T2
Transformer primary current		A	5 ... 10.000
Display period refresh		s	1
Measuring accuracy			
Active energy	acc.to EN 50470-3	class 1	B
Measuring input			
Type of connection			transformer .../5 A
Voltage U_n	phase/phase	V	400
	phase/N	V	230
Operating range voltage	phase/phase	V	319 ... 480
	phase/N	V	184 ... 276
Current I_{ref}		A	-
Current I_n		A	5
Current I_{min}		A	0.05
Operating range current (I_{st} ... I_{max})			
	direct connection	A	-
	transformer connection (CT)	A	0.003 ... 6

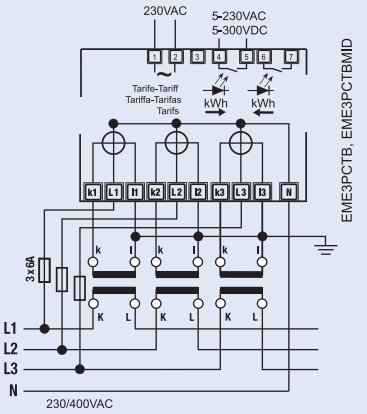
			EME3PCTB EME3PCTBMID CT connection till 10.000/5 A
Measuring input			
Transformer current	primary current of the transformer		
		A	5 ...10.000
	smallest input step adjustment		in 5 A steps
		A	5
Frequency		Hz	50
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	3
Pulse output S0	acc.to EN 62053-31		
Pulse output	for active and reactive energy	T1 and T2	yes
Quantity pulse output	for direct connection 63 A	Imp/kWh	-
	depending on the transf. factor		
		Imp/kWh	100-10-1
Pulse duration		ms	30 ±2 ms
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)		
		mA	90
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)		
		µA	1
Optical interfaces			
Front side (accuracy control)			
	LED	Imp/kWh	10.000
Safety acc. to EN 50470-1			
Indoor meter		-	yes
Degree of pollution		-	2
Operational voltage		V	300
AC voltage test (EN 50470-3, 7.2)		kV	4
Impulse voltage test		1.2/50 µs-kV	6
Protection class (EN 50470)		class	II
Housing material flame resistance			
	UL 94	class	V0
Safety-sealing between upper and lower housing part			
		-	no yes
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ1
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5
Terminal capacity main current paths			
	solid wire min. (max.)	mm^2	1 (4)
	stranded wire with sleeve min. (max.)		
		mm^2	1 (4)
Terminal capacity pulse outlet			
	solid wire min. (max.)	mm^2	1 (4)
	stranded wire with sleeve min. (max.)		
		mm^2	1 (4)
Environmental conditions			
Mechanical environment		-	M1
Electromagnetic environment		-	E2
Operating temperature		°C	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity (not condensation)		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.075
Degree protectionhousing when mounted in front (terminal)			
		-	IP51*)/IP20

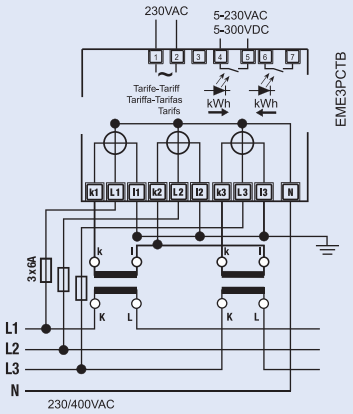
*) For the installation in a cabinet at least with IP51 protection

Connection through CT .../5 A till 10.000/5 A

Connection diagrams

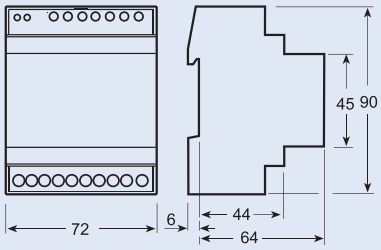






Dimensions (mm)

EME3PCTB, EME3PCTBMID



Wire N needs to be connected to the meter.

Instructions for the connection of transformer counters
A Miniature Circuit Breaker of 6A is recommended.
Current transformers must not be operated with open terminals since dangerous high voltages might occur which may result in personal injuries and property damage. In addition to this, the transformers are exposed to thermal overload.

BASIC Energy-meters three-phase, direct 63 A, EME

- Active energy-meters for three-phase alternating current with either 2, 9 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the instantaneous energy active measurements for 2 tariffs.
- Three-phase digital active energy-meter with direct connection 0.25-5 (63) A - 2 tariffs - 2 S0
- For direct connection 63 A
- 9 digits - display for 4 energy values indication
- Detection of connection errors (phase transposition and phase missing)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}), for direct connection 63 A = 0.015 ... 63 A
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Sealable terminal covers
- 4 DIN modules wide (72 mm)

Technical Data

			EME3P63B direct connection 63 A	EME3P63BMID direct connection 63 A
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31	
General characteristics				
Housing	DIN 43880	DIN	4 modules	4 modules
Mounting	EN 60715	35 mm	DIN rail	DIN rail
Depth		mm	70	70
Reference standard	active energy	-	EN 50470-1-3	EN 50470-1-3
	pulse output		EN 62053-31	EN 62053-31
Operating features				
Connectivity	to three-phase network	n° wires	4	4
Storage of energy values and configuration				
	digital display (EEPROM)	-	yes	yes
Display tariffs identifier	for active energy	n° 2	T1 and T2	T1 and T2
Supply				
Rated control supply voltage U_n		VAC	230	230
Operating range voltage		V	184 ... 276	184 ... 276
Rated frequency f_n		Hz	50	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)	≤8 (0.6)
Overload capability				
Voltage U_n	continuous; phase/phase	V	480	480
	1 second: phase/phase	V	800	800
	continuous; phase/N	V	276	276
	1 second: phase/N	V	300	300
Current I_{max}	continuous	A	63	63
	momentary (0,5 s)	A	-	-
	momentary (10 ms)	A	1900	1900
Display (readouts)				
Connection errors and phase out				
	discernible from phase-sequence indication			
		-	PHASE Err	PHASE Err
Display type	LCD	n° digits	9 (2 decimal)	9 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3	6.00 x 3
Active energy: 1 display, 9 digit - 2 tariffs				
	min. measuring energy	kWh	0.01	0.01
+ display import or export (arrow)				
	max. measuring overflow	kWh	9999999.99	9999999.99
Instantaneous tariff measurement				
	1 display, 1-digit	-	T1 or T2	T1 or T2
Transformer primary current		A	-	-
Display period refresh		s	1	1
Measuring accuracy				
Active energy	acc.to EN 50470-3	class 1	B	B
Measuring input				
Type of connection			direct	direct
Voltage U_n	phase/phase	V	400	400
	phase/N	V	230	230
Operating range voltage	phase/phase	V	319 ... 480	319 ... 480
	phase/N	V	184 ... 276	184 ... 276
Current I_{ref}		A	5	5
Current I_n		A	-	-
Current I_{min}		A	0.25	0.25
Operating range current (I_{st} ... I_{max})				
	direct connection	A	0.015 ... 80	0.015 ... 80
	transformer connection (CT)	A	-	-

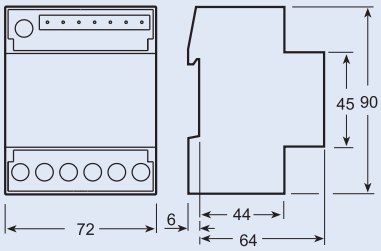
			EME3P63B direct connection 63 A	EME3P63BMID direct connection 63 A
Measuring input				
Transformer current	primary current of the transformer			
		A	-	-
	smallest input step adjustment		-	-
		A	-	-
Frequency		Hz	50	50
Input waveform		-	sinusoidal	sinusoidal
Starting current for energy measurement (I_{st})		mA	15	15
Pulse output S0	acc.to EN 62053-31			
Pulse output	for active and reactive energy T1 and T2		yes	yes
Quantity pulse output	for direct connection 63 A	Imp/kWh	500	500
	depending on the transf. factor			
		Imp/kWh	-	-
Pulse duration		ms	30 ±2 ms	30 ±2 ms
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)			
		mA	90	90
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)			
		µA	1	1
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	1000	1000
Safety acc. to EN 50470-1				
Indoor meter		-	yes	yes
Degree of pollution		-	2	2
Operational voltage		V	300	300
AC voltage test (EN 50470-3, 7.2)		kV	4	4
Impulse voltage test		1.2/50 µs-kV	6	6
Protection class (EN 50470)		class	II	II
Housing material flame resistance				
	UL 94	class	V0	V0
Safety-sealing between upper and lower housing part				
		-	yes	yes
Connection terminals				
Type cage main current paths				
	screw head Z +/-	POZIDRIV	PZ2	PZ2
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	0.8 x 3.5
Terminal capacity main current paths				
	solid wire min. (max.)	mm^2	1.5 (35)	1.5 (35)
	stranded wire with sleeve min. (max.)			
		mm^2	1.5 (35)	1.5 (35)
Terminal capacity pulse outlet				
	solid wire min. (max.)	mm^2	1 (4)	1 (4)
	stranded wire with sleeve min. (max.)			
		mm^2	1 (2.5)	1 (2.5)
Environmental conditions				
Mechanical environment		-	M1	M1
Electromagnetic environment		-	E2	E2
Operating temperature		°C	-10 ... +55	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70	-25 ... +70
Relative humidity (not condensation)		%	≤80	≤80
Vibrations	50 Hz sinusoidal vibration amplitude			
		mm	±0.075	±0.075
Degree protectionhousing when mounted in front (terminal)				
		-	IP51*)/IP20	IP51*)/IP20

*) For the installation in a cabinet at least with IP51 protection

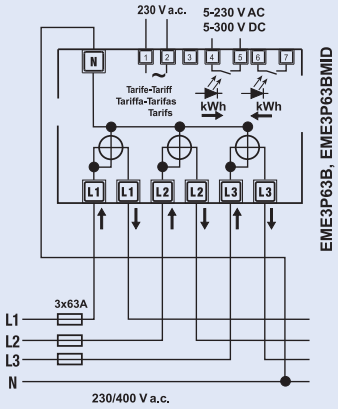
Direct connection 63 A

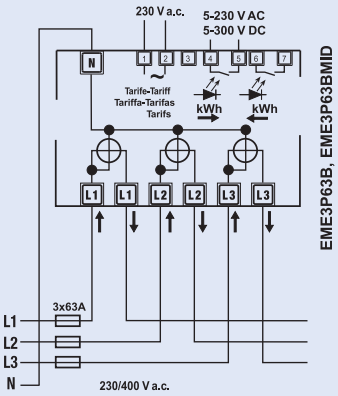
Dimensions (mm)

EME3P63B, EME3P63BMID



Connection diagrams





A Miniature Circuit Breaker of 63A is recommended.

Wire N needs to be connected to the meter.

BASIC Energy-meters three-phase, 63 A, EME

- Digital active energy meter with partial active energy counter resettable and inbuilt communication Modbus RTU- 2 tariffs
- Three-phase digital active energy-meter with direct connection 0.25-5 (63) A, and inbuilt communication Modbus RTU - 2 tariffs
- For direct connection 63 A
- 9 digits for 8 energy indication values
- Detection of connection errors (phase transposition and phase missing)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}), for direct connection 63 A = 0.015 ... 63 A
- Energy register zero setting (not for MID types)
- Energy register "Partial" zero setting also for MID types
- Sealable terminal covers
- Energy register for delivery and supply
- 4 DIN modules wide (72 mm)

Technical Data

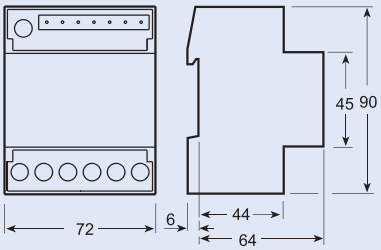
			EME3P63BMODBUS direct connection 63 A	EME3P63BMODBUSMID direct connection 63 A
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31	
General characteristics				
Housing	DIN 43880	DIN	4 modules	4 modules
Mounting	EN 60715	35 mm	DIN rail	DIN rail
Depth		mm	70	70
Reference standard	active energy	-	EN 50470-1-3	EN 50470-1-3
	pulse output		EN 62053-31	EN 62053-31
Operating features				
Connectivity	to three-phase network	n° wires	4	4
Storage of energy values and configuration				
	digital display (EEPROM)	-	yes	yes
Display tariffs identifier	for active energy	n° 2	T1 and T2	T1 and T2
Supply				
Rated control supply voltage U_n		VAC	230	230
Operating range voltage		V	184 ... 276	184 ... 276
Rated frequency f_n		Hz	50	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)	≤8 (0.6)
Overload capability				
Voltage U_n	continuous; phase/phase	V	480	480
	1 second: phase/phase	V	800	800
	continuous; phase/N	V	276	276
	1 second: phase/N	V	300	300
Current I_{max}	continuous	A	80	80
	momentary (0,5 s)	A	-	-
	momentary (10 ms)	A	2400	2400
Display (readouts)				
Connection errors and phase out				
	discernible from phase-sequence indication			
		-	PHASE Err	PHASE Err
Display type	LCD	n° digits	9 (2 decimal)	9 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3	6.00 x 3
Active energy: 1 display, 9 digit - 2 tariffs				
	min. measuring energy	kWh	0.01	0.01
+ display import or export (arrow)				
	max. measuring overflow	kWh	9999999.99	9999999.99
Instantaneous tariff measurement				
	1 display, 1-digit	-	T1 or T2	T1 or T2
Transformer primary current		A	-	-
Display period refresh		s	1	1
Measuring accuracy				
Active energy	acc.to EN 50470-3	class 1	B	B
Measuring input				
Type of connection			direct	direct
Voltage U_n	phase/phase	V	400	400
	phase/N	V	230	230
Operating range voltage	phase/phase	V	319 ... 480	319 ... 480
	phase/N	V	184 ... 276	184 ... 276
Current I_{ref}		A	5	5
Current I_n		A	-	-
Current I_{min}		A	0.25	0.25
Operating range current (I_{st} ... I_{max})				
	direct connection	A	0.015 ... 63	0.015 ... 63
	transformer connection (CT)	A	-	-
Transformer current	primary current of the transformer			
		A	-	-
	smallest input step adjustment		-	-
		A	-	-
Frequency		Hz	50	50
Input waveform		-	sinusoidal	sinusoidal
Starting current for energy measurement (I_{st})		mA	15	15

			EME3P63BMODBUS direct connection 63 A	EME3P63BMODBUSMID direct connection 63 A
Optical interfaces				
Front side (accuracy control)				
	LED	Imp/kWh	1000	1000
Safety acc. to EN 50470-1				
Indoor meter		-	yes	yes
Degree of pollution		-	2	2
Operational voltage		V	300	300
AC voltage test (EN 50470-3, 7.2)		kV	4	4
Impulse voltage test		1.2/50 µs-kV	6	6
Protection class (EN 50470)		class	II	II
Housing material flame resistance				
	UL 94	class	V0	V0
Safety-sealing between upper and lower housing part				
		-	yes	yes
Embedded communication				
Modbus RTU	RS-485 - 3 wires	-	up to 19.200 bps	up to 19.200 bps
Connection terminals				
Type cage main current paths				
	screw head Z +/-	POZIDRIV	PZ2	PZ2
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5	0.8 x 3.5
Terminal capacity main current paths				
	solid wire min. (max.)	mm^2	1.5 (35)	1.5 (35)
	stranded wire with sleeve min. (max.)			
		mm^2	1.5 (35)	1.5 (35)
Terminal capacity pulse outlet				
	solid wire min. (max.)	mm^2	1 (4)	1 (4)
	stranded wire with sleeve min. (max.)			
		mm^2	1 (2.5)	1 (2.5)
Environmental conditions				
Mechanical environment		-	M1	M1
Electromagnetic environment		-	E2	E2
Operating temperature		°C	-10 ... +55	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70	-25 ... +70
Relative humidity (not condensation)		%	≤80	≤80
Vibrations	50 Hz sinusoidal vibration amplitude			
		mm	±0.075	±0.075
Degree protectionhousing when mounted in front (terminal)				
		-	IP51*)/IP20	IP51*)/IP20

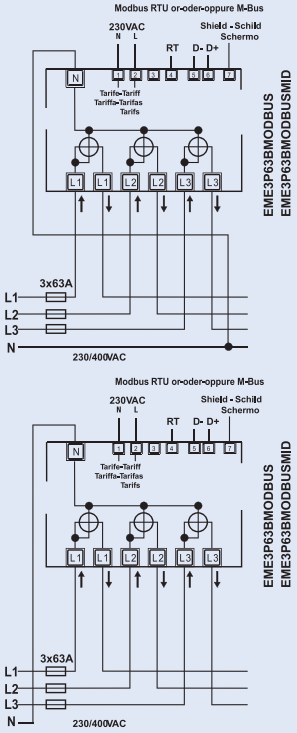
*) For the installation in a cabinet at least with IP51 protection

Dimensions (mm)

EME3P63BMODBUS, EME3P63BMODBUSMID



Connection diagrams



Wire N needs to be connected to the meter.

A Miniature Circuit Breaker of 63A is recommended.

BASIC Energy-meters three-phase, direct 80 A, EME

- Active energy-meters for three-phase alternating current with either 2, 9 digits digital counters. These meters have 2 S0 output generating pulses for remote processing of the instantaneous energy active measurements for 2 tariffs.
- Three-phase digital active energy-meter with direct connection 0.015 (80) A - 2 tariffs - 2 S0
- For direct connection 80 A
- 9 digits - display for 4 energy values indication
- Detection of connection errors (phase transposition and phase missing)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}), for direct connection 80 A = 0.015 ... 80 A
- Energy register zero setting (not for MID types)
- Energy register for import and export
- Sealable terminal covers
- 4 DIN modules wide (72 mm)

Technical Data

			EME3P80BMID direct connection 80 A
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	4 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3
	pulse output		EN 62053-31
Operating features			
Connectivity	to three-phase network	n° wires	4
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active energy	n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous; phase/phase	V	480
	1 second: phase/phase	V	800
	continuous; phase/N	V	276
	1 second: phase/N	V	300
Current I_{max}	continuous	A	80
	momentary (0,5 s)	A	-
	momentary (10 ms)	A	2400
Display (readouts)			
Connection errors and phase out			
	discernible from phase-sequence indication		
		-	PHASE Err
Display type	LCD	n° digits	9 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 9 digit - 2 tariffs			
	min. measuring energy	kWh	0.01
+ display import or export (arrow)			
	max. measuring overflow	kWh	9999999.99
Instantaneous tariff measurement			
	1 display, 1-digit	-	T1 or T2
Transformer primary current		A	-
Display period refresh		s	1
Measuring accuracy			
Active energy	acc.to EN 50470-3	class 1	B
Measuring input			
Type of connection			direct
Voltage U_n	phase/phase	V	400
	phase/N	V	230
Operating range voltage	phase/phase	V	319 ... 480
	phase/N	V	184 ... 276
Current I_{ref}		A	5
Current I_n		A	-
Current I_{min}		A	0.25
Operating range current (I_{st} ... I_{max})			
	direct connection	A	0.015 ... 80
	transformer connection (CT)	A	-

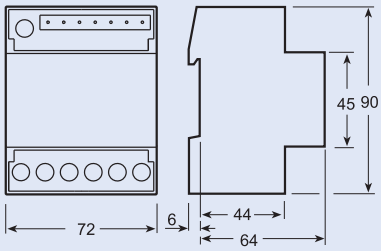
			EME3P80BMID direct connection 80 A
Measuring input			
Transformer current	primary current of the transformer		
		A	-
	smallest input step adjustment		-
		A	-
Frequency		Hz	50
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	15
Pulse output S0	acc.to EN 62053-31		
Pulse output	for active and reactive energy	T1 and T2	yes
Quantity pulse output	for direct connection 63 A	Imp/kWh	500
	depending on the transf. factor		
		Imp/kWh	-
Pulse duration		ms	30 ±2 ms
Required voltage	min. (max.)	VAC (DC)	5 ... 230 ±5% (5 ... 300)
Permissible current	pulse ON (max. 230 V AC/DC)		
		mA	90
Permissible current	impuls OFF (leakage currrent max. 230 V AC/DC)		
		µA	1
Optical interfaces			
Front side (accuracy control)			
	LED	Imp/kWh	1000
Safety acc. to EN 50470-1			
Indoor meter		-	yes
Degree of pollution		-	2
Operational voltage		V	300
AC voltage test (EN 50470-3, 7.2)		kV	4
Impulse voltage test		1.2/50 µs-kV	6
Protection class (EN 50470)		class	II
Housing material flame resistance			
	UL 94	class	V0
Safety-sealing between upper and lower housing part			
		-	yes
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ2
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5
Terminal capacity main current paths			
	solid wire min. (max.)	mm^2	1.5 (35)
	stranded wire with sleeve min. (max.)		
		mm^2	1.5 (35)
Terminal capacity pulse outlet			
	solid wire min. (max.)	mm^2	1 (4)
	stranded wire with sleeve min. (max.)		
		mm^2	1 (2.5)
Environmental conditions			
Mechanical environment		-	M1
Electromagnetic environment		-	E2
Operating temperature		°C	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity (not condensation)		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.075
Degree protectionhousing when mounted in front (terminal)			
		-	IP51*)/IP20

*) For the installation in a cabinet at least with IP51 protection

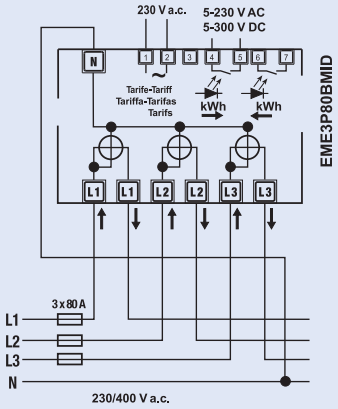
Direct connection 80 A

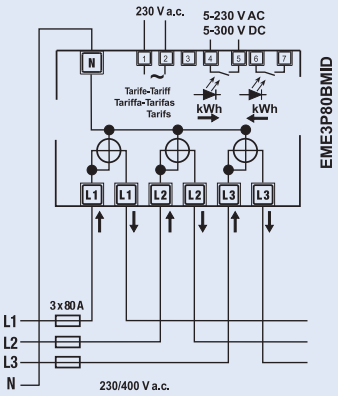
Dimensions (mm)

EME3P80BMID



Connection diagrams





A Miniature Circuit Breaker of 80A is recommended.

Wire N needs to be connected to the meter.

BASIC Energy-meters three-phase, 80 A, EME

- Digital active energy meter with partial active energy counter resettable and inbuilt communication Modbus RTU- 2 tariffs
- Three-phase digital active energy-meter with direct connection 0.015 (80) A, and inbuilt communication Modbus RTU - 2 tariffs
- For direct connection 80 A
- 9 digits for 8 energy indication values
- Detection of connection errors (phase transposition and phase missing)
- Accuracy class 1 for active energy and power according to EN 50470-3 (B)
- Most attractive operating range current (I_{st} ... I_{max}), for direct connection 80 A = 0.015 ... 80 A
- Energy register zero setting (not for MID types)
- Energy register "Partial" zero setting
- Sealable terminal covers
- 4 DIN modules wide (72 mm)

Technical Data

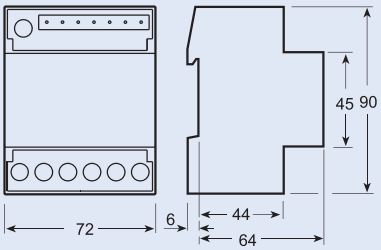
			EME3P80BMODBUSMID direct connection 80 A
Data in compliance with			EN 50470-1, EN 50470-3 and EN 62053-31
General characteristics			
Housing	DIN 43880	DIN	4 modules
Mounting	EN 60715	35 mm	DIN rail
Depth		mm	70
Reference standard	active energy	-	EN 50470-1-3
	pulse output		EN 62053-31
Operating features			
Connectivity	to three-phase network	n° wires	4
Storage of energy values and configuration			
	digital display (EEPROM)	-	yes
Display tariffs identifier	for active energy	n° 2	T1 and T2
Supply			
Rated control supply voltage U_n		VAC	230
Operating range voltage		V	184 ... 276
Rated frequency f_n		Hz	50
Rated power dissipation (max. for phase) P_v		VA (W)	≤8 (0.6)
Overload capability			
Voltage U_n	continuous; phase/phase	V	480
	1 second: phase/phase	V	800
	continuous; phase/N	V	276
	1 second: phase/N	V	300
Current I_{max}	continuous	A	80
	momentary (0,5 s)	A	-
	momentary (10 ms)	A	2400
Display (readouts)			
Connection errors and phase out			
	discernible from phase-sequence indication		
		-	PHASE Err
Display type	LCD	n° digits	9 (2 decimal)
	digit dimensions	mm x mm	6.00 x 3
Active energy: 1 display, 9 digit - 2 tariffs			
	min. measuring energy	kWh	0.01
+ display import or export (arrow)			
	max. measuring overflow	kWh	9999999.99
Instantaneous tariff measurement			
	1 display, 1-digit	-	T1 or T2
Transformer primary current		A	-
Display period refresh		s	1
Measuring accuracy			
Active energy	acc.to EN 50470-3	class 1	B
Measuring input			
Type of connection			direct
Voltage U_n	phase/phase	V	400
	phase/N	V	230
Operating range voltage	phase/phase	V	319 ... 480
	phase/N	V	184 ... 276
Current I_{ref}		A	5
Current I_n		A	-
Current I_{min}		A	0.25
Operating range current (I_{st} ... I_{max})			
	direct connection	A	0.015 ... 80
	transformer connection (CT)	A	-
Transformer current	primary current of the transformer		
		A	-
	smallest input step adjustment		-
		A	-
Frequency		Hz	50
Input waveform		-	sinusoidal
Starting current for energy measurement (I_{st})		mA	15

			EME3P80BMODBUSMID direct connection 80 A
Optical interfaces			
Front side (accuracy control)			
	LED	Imp/kWh	1000
Safety acc. to EN 50470-1			
Indoor meter		-	yes
Degree of pollution		-	2
Operational voltage		V	300
AC voltage test (EN 50470-3, 7.2)		kV	4
Impulse voltage test		1.2/50 µs-kV	6
Protection class (EN 50470)		class	II
Housing material flame resistance			
	UL 94	class	V0
Safety-sealing between upper and lower housing part			
		-	yes
Embedded communication			
Modbus RTU	RS-485 - 3 wires	-	up to 19.200 bps
Connection terminals			
Type cage main current paths			
	screw head Z +/-	POZIDRIV	PZ2
Type cage pulse output	blade for slotted screw	mm	0.8 x 3.5
Terminal capacity main current paths			
	solid wire min. (max.)	mm^2	1.5 (35)
	stranded wire with sleeve min. (max.)		
		mm^2	1.5 (35)
Terminal capacity pulse outlet			
	solid wire min. (max.)	mm^2	1 (4)
	stranded wire with sleeve min. (max.)		
		mm^2	1 (2.5)
Environmental conditions			
Mechanical environment		-	M1
Electromagnetic environment		-	E2
Operating temperature		°C	-10 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70
Relative humidity (not condensation)		%	≤80
Vibrations	50 Hz sinusoidal vibration amplitude		
		mm	±0.075
Degree protectionhousing when mounted in front (terminal)			
		-	IP51*)/IP20

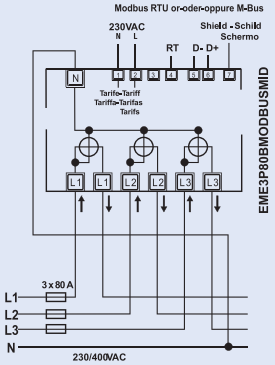
*) For the installation in a cabinet at least with IP51 protection

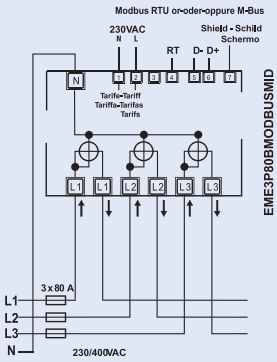
Dimensions (mm)

EME3P80BMODBUSMID



Connection diagrams





Wire N needs to be connected to the meter.

A Miniature Circuit Breaker of 80A is recommended.

Voltmeter EMV600 - Ammeter EMA20

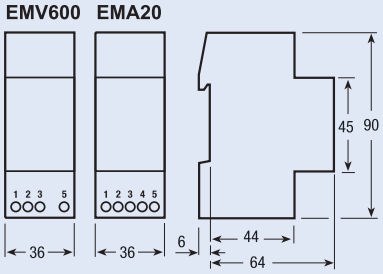
- Digital measuring instruments offer greater readout immediacy for the value displayed. They also offer the advantage of having no moving parts which are subject to wear over the long term, an issue which can affect the precision and reliability of the instrument.
- Voltmeter AC
- Ammeter AC
- 2 DIN modules wide (36 mm)

Technical Data

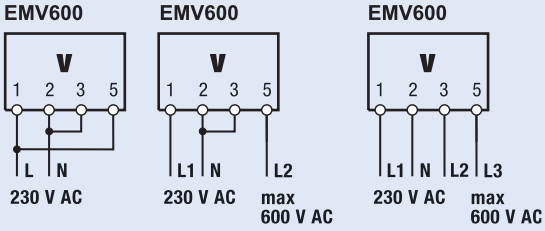
			Voltmeter EMV600	Ammeter EMA20
Data in compliance with			EN 61010-1, EN 61000-6-2, EN 61000-6-3	
General characteristics				
Housing	DIN 43880	DIN	2 modules	2 modules
Mounting	EN 60715	35 mm	DIN rail	DIN rail
Depth		mm	70	70
Reference standard		-	DIN 43751-1-2	DIN 43751-1-2
Power supply				
Voltage		VAC	230	230
Operating range voltage		VAC	0.90 ... 1.15	0.90 ... 1.15
Frequency rating		Hz	50	50
Operating range frequency		Hz	45 ... 65	45 ... 65
Power rating		VA	2	2
Overload capability				
Voltage U_n	continuous	V	1.2 x voltage rating	-
	momentary (1 s)	V	1.3 x voltage rating	-
Current I_b/I_n	continuous	A	-	1.1 x current rating
	momentary (1 s)	A	-	10 x current rating
Display (readouts)				
Voltage	3 digits h = 10 mm	V	12 ... 600	-
	voltages >600 V	-	HHH	-
	voltages <12 V	-	---	-
Current	3 digits h = 10 mm	A	-	0.4 ... 20 (a) 0.1 ... 5 (b) (CT operat.)
	currents >10 A - 20 A/5 A (connection CT)	A	-	HHH
	currents <0.1 A - 0.2 A - 0.4 A (connection CT)	A	-	---
Readout refresh rate		readout/s	4	4
Measuring accuracy	at 23 ±1°C referred to nominal values			
Voltage		%	±1 ±1 digit	-
Current		%	-	± 0.5 ±1 digit
Temperature (deviating)		% for °C	±0.03	±0.03
Measuring input				
Connectivity		-	direct	direct (a)(b < 5 A) with CT .../5 A (b)
Voltage U_n		V	600	-
Measurement range	voltage	V	12 ... 600	-
Current I_b/I_n		A	-	20 (a) 5 (b)
Measurement range	current	A	- 0.2 ... 10 (b)	0.4 ... 20 (a) (0.1 ... 5) x transformer ratio (b)
Frequency rating		Hz	50	50
Measurement range	frequency	Hz	45 ... 65	45 ... 65
Input waveform		-	synus. symmetric	synus. symmetric
Safety acc. to EN 61010-1				
Degree pollution		-	2	2
Overvoltage category		-	II	II
Working voltage		V	300	600
Material group		-	II	II
Clearance		mm	≥3.0	≥1.5
Creepage distance	inside the equipment	mm	≥4.3	≥2.1
	on printed wiring boards (not coated)	mm	≥3.0	≥1.5
Test voltage	impulse (1,2/50 µs) peak value	kV	4.0	2.5
	50 Hz 1 min	kV	2.2	1.35
Housing material flame resistance				
	UL 94	class	V0	V0

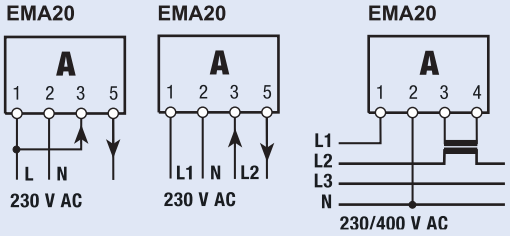
			Voltmeter EMV600	Ammeter EMA20
Connection terminals				
Type cage	screw head Z +/-	POZIDRIV	PZ1	PZ1
Terminal capacity	solid wire min. (max.)	mm^2	1 (6)	1 (6)
	stranded wire with sleeve min. (max.)	mm^2	1 (6)	1 (6)
Environmental conditions				
Operating temperature		°C	0 ... +55	0 ... +55
Limit temperature of transportation and storage		°C	-25 ... +70	-25 ... +70
Relative humidity		%	≤80	≤80
Vibrations (sinusoidal)	50 Hz sinusoidal vibration amplitude	mm	±0.25	±0.25
Protection class	acc.to EN 61010-1	-	II	II
Degree of protection	housing when mounted (terminal)		IP52 (IP20)	IP52 (IP20)

Dimensions (mm)



Connection diagrams



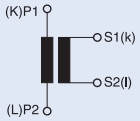


Accessories for Measuring Instruments

Current Transformer for Cable Z-MG/WAK, Current Transformer for Busbar Z-MG/WAS,

- Transform high currents to standard measuring currents
- Current transformers help to cut costs when installing and connecting busbar system
- Recommended from 40 A upward
- Accuracy classes
  Class 0.5: for accurate measurement and calibrated kWh-meters
  Class 1: for general measurement and non-calibrated kWh-meters
  Class 3: for coarse measurement, relays and for protection
- When winding several turns of the primary cable around the current transformer, you will receive half the primary current per turn while power and class remain unchanged.

Connection diagram

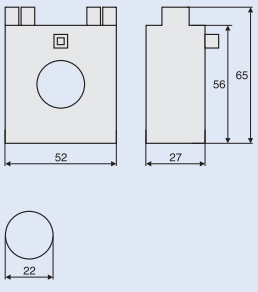


Technical Data

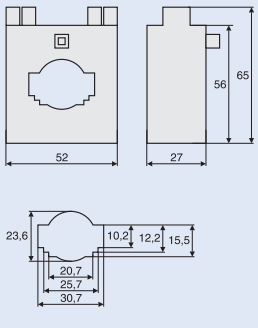
	Z-MG/WAK		Z-MG/WAS	
Electrical				
Max. service voltage	720 V		720 V	
Secondary current	5 A		5 A	
Rated frequency	50-60 Hz		50-60 Hz	
Cable diameter	21 mm		23 mm, 30 mm	
Busbar cross section	–		30 x 10 mm, 40 x 10 mm, 50 x 12 mm	
	Class	P [VA]	Class	P [VA]
Primary nominal current IpN 40 A	3	1.3		
50 A	3	1.5		
60 A	3	1.5		
80 A	3	2		
100 A			1	1.5
150 A			1	3
200 A			1	3
250 A			0.5	2
300 A			0.5	2
400 A			0.5	3
500 A			0.5	10
600 A			0.5	10
800 A			0.5	10
1000 A			0.5	10
Connections	P1 (K) primary input, P2 (L) primary output, s1 (k) secondary input, s2 (l) secondary output			
Nominal thermic short-time current Ith	60 x IpN for 1 s		60 x IpN for 1 s	
Nominal dynamic short circuit current Idyn	2.5 x Ith for 1 s		2.5 x Ith for 1 s	
Permanent overload	1.2 x IpN		1.2 x IpN	
Insulation class (IEC 85)	E		E	
Test voltage 50Hz/1min.	6 kV		6 kV	
Mechanical				
Mounting	quick fastening on DIN rail IEC/EN 60715, wall mounting, directly onto the cable or onto busbar			
Degree of protection	IP30		IP30	
Secondary connection	plug-in terminals 6.3 mm		plug-in terminals 6.3 mm	
Permitted relative humidity	80%		80%	
Perm. ambient temperature range	-20 to +50°C		-20 to +50°C	
Max. temperature of busbars	–		70°C	

Dimensions (mm)

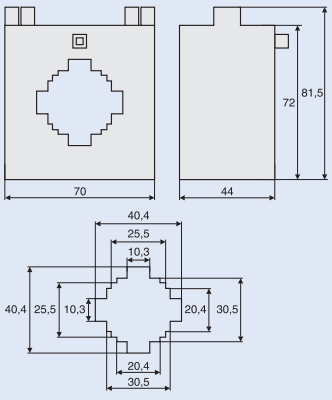
Z-MG/WAK-40 ... -80



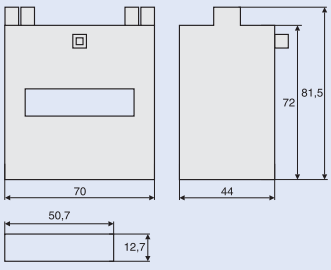
Z-MG/WAS-100 ... -400



Z-MG/WAS-500, -600



Z-MG/WAS-800, -1000



Operating Hours Counter ASOHC230

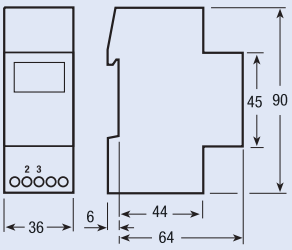
- The operating hours counter registers the operating hours to an accuracy of two decimals (hundredths of a second).
- Power supply for terminals 1 and 3 of the electronic counter is required to enable the device to continuously display the measured values. If terminal 3 is supplied with voltage (at DC "+"), the counting process will get started. Supplying terminal 4 with voltage for a moment (at DC "+") will reset the counter.
- In case of a power failure, the counting result will be saved for an indefinite period of time (EEPROM). Once power is back again, counting will be continued from the value that has been saved before.
- The 7-digit LCD display can be reset electrically or manually.
- Time counters are used for a reliable collection of production and service hours, which allows an accurate planning and monitoring of production processes, maintenance cycles and warranty periods.

Connection diagram

Technical Data

			ASOHC230
Standards			DIN VDE 0435-110, DIN EN 60255-6, UL 863
Approvals			UL 863, UL File No. E300537, CSA C22.2 No. 6 and 55
Rated control supply voltage U_c		VAC	230
Working range	at 50/60 Hz	x U_c	0,9 ... 1,1
Rated frequency		Hz	50
Rated power loss P_v	VA	<1	
Type of operation	counting of	-	hours
Display	Cyclometer register	h	00000,00
Terminals	±Screws (Philips)	-	1
Terminal capacity	rigid	mm^2	1,5
	flexible with wire end sleeve, min.	mm^2	0,75
Allowed range of ambient temperature		°C	-10 ... +70
Degree of protection	acc. to DIN EN 60529	-	IP20, with conductors connected
Protection class	acc. to DIN EN 61140 / VDE 0140		II
Allowed range of air humidity		%	<80

Dimensions (mm)



Pulse Counter ASPC230

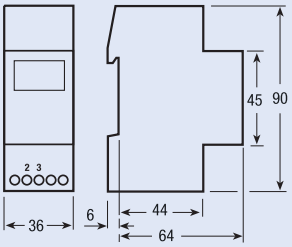
- The pulse counter sums up the number of pulses, e.g. how many times a device is switched on.
- Power supply for terminals 1 and 3 of the electronic counter is required to enable the device to continuously display the measured values. If terminal 3 is supplied with voltage (at DC "+"), the counting process will get started. Supplying terminal 4 with voltage for a moment (at DC "+") will reset the counter.
- In case of a power failure, the counting result will be saved for an indefinite period of time (EEPROM). Once power is back again, counting will be continued from the value that has been saved before.
- The 7-digit LCD display can be reset electrically or manually.
- Pulse counters are used for a reliable collection of production and service hours, which allows an accurate planning and monitoring of production processes, maintenance cycles and warranty periods.
- Pulse counting is used for general quantity counting, registration of the switch-on frequency, and for the collection of switch-on cycles or production quantities in systems and machines.

Connection diagram

Technical Data

			ASPC230
Standards			DIN VDE 0435-110, DIN EN 60255-6, UL 863
Approvals			UL 863, UL File No. E300537, CSA C22.2 No. 6 and 55
Rated control supply voltage U_c		VAC	230
Working range	at 50/60 Hz	x U_c	0,9 ... 1,1
Rated frequency		Hz	50/60
Rated power loss P_v	VA	<1	
Type of operation	counting of	-	pulses
Display	Cyclometer register	⎍	0000000
	LCD Display	h	--
		⎍	--
Frequency of counting		Hz	10
Pulse duration		ms	50
Resetting	electrical		--
	mechanical		--
Terminals	±Screws (Philips)	-	1
Terminal capacity	rigid	mm^2	1,5
	flexible with wire end sleeve, min.		
		mm^2	0,75
Allowed range of ambient temperature		°C	-10 ... +70
Degree of protection	acc. to DIN EN 60529	-	IP20, with conductors connected
Protection class	acc. to DIN EN 61140 / VDE 0140		II
Allowed range of air humidity		%	<80

Dimensions (mm)



Protective Earth Socket Z-SD230

- Design according to VDE, ÖVE
- Modular busbar connection system L/N
- Screw fastening is possible
- Width 2.5MU
- Busbar block Z7-SD/1P+N 10 mm^2 available
- Model -BS with child protection device and earth pin

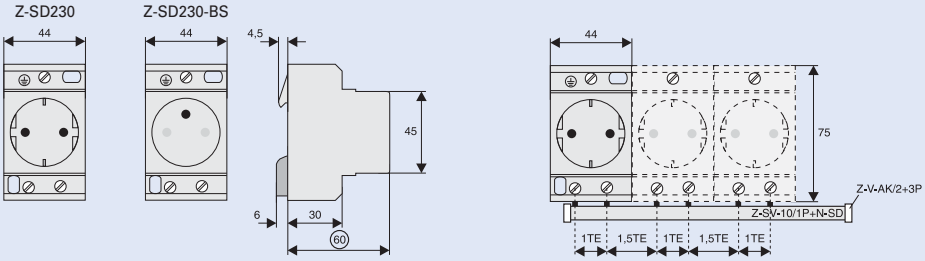
Connection diagram

Technical Data

Electrical	
Rated voltage	250V AC
Rated current	10/16 A

Mechanical	
Frame size	45 mm
Device height	76 mm
Device width	44 mm
Mounting	quick fastening on DIN rail IEC/EN 60715, screw fastening is possible
Degree of protection, built-in	IP40
Upper and lower terminals	lift terminals
Terminal capacity	1 to 2x2.5 mm^2

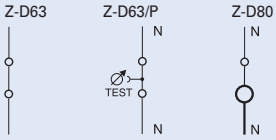
Dimensions (mm)



Neutral Terminal, Feeder Block Z-D

- Compatible with standard busbar to Xtra Combination devices
- **Z-D80:** Feeder block for busbar system 80 A.
  Lift terminal (35 mm^2) and open mouthed terminal above,
  lift terminal (50 mm^2) below.
  Busbar positioning optionally above or below
- **Z-D80:** with testing bush 4mm Ø, 10 A for N-conductor

Connection diagrams

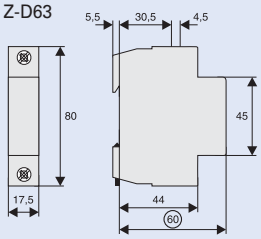


Technical Data

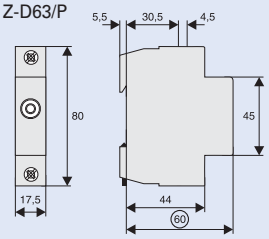
	Z-D63	Z-D63/P	Z-D80
Electrical			
Rated current	63 A	63 A	100 A
Frequency	50-60 Hz	50-60 Hz	50-60 Hz
N-conductor test bush	–	10 A, Ø 4	–
Mechanical			
Frame size	45 mm	45 mm	45 mm
Device height	80 mm	80 mm	80 mm
Device width	17.5 mm (1MU)	17.5 mm (1MU)	17.5 mm (1MU)
Mounting	quick fastening with 2 lock-in positions on DIN rail IEC/EN 60715		
Degree of protection, built-in	IP40	IP40	IP40
Terminals			
above	open mouthed/lift	open mouthed/lift	open mouthed/lift
below	open mouthed/lift	open mouthed/lift	lift terminals
Terminal capacity			
above	1-25 mm^2	1-25 mm^2	1-35 mm^2
below	1-25 mm^2	1-25 mm^2	2.5-50 mm^2
Terminal protection	finger and hand touch safe, gemäß BGV A3, ÖVE-EN 6		
Busbar thickness	0.8 - 2 mm	0.8 - 2 mm	0.8 - 2 mm

Dimensions (mm)

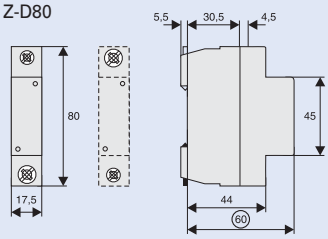
Z-D63



Z-D63/P



Z-D80



Front Plate Tripping Device Z-MFPA

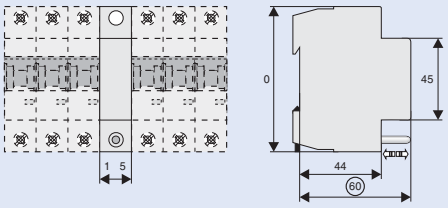
- Mechanical tripping device for PLSM, CLS, Z-A40, PKNM and PKDM, responds when the front plate of a distribution box is removed
- Maximum tripping capacity: 4 + 4 poles symmetrically
- Can be interlocked by twisting when the tripping pin is in the pressed position

Function Diagram

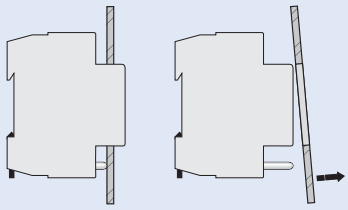
Technical Data

Mechanical	
Frame size	45 mm
Device height	80 mm
Device width	17.5 mm
Mounting	quick fastening on DIN rail IEC/EN 60715
Degree of protection, built-in	IP40

Dimensions (mm)



Function



Compact Enclosure KLV-TC

- Compact enclosure, degree of protection IP30
- Without door
- For 45 mm devices for modular installation

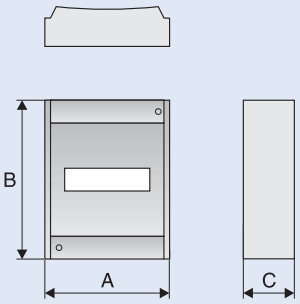
Technical Data

	KLV-TC-2	KLV-TC-4	KLV-TC-4-TB	KLV-TC-8	KLV-TC-8-TB1	KLV-TC-8-TB1
Mechanical						
Module units (MU)	1+1	3+1	3+1	6+2	6+2	6+2
Weight	0.09 kg	0.15 kg	0.17 kg	0.32 kg	0.35 kg	0.36 kg
Terminal Support wirh Terminal Block	–	–	KLV-TC-TB-4/4	–	KLV-TC-TBC-4/4	KLV-TC-TBC-4/4+4

Terminal Support wirh Terminal Block

Type Designation	Number of Terminal	Weight
KLV-TC-TB-4/4	2 x 10mm^2 + 2 x 16 mm^2	0.018 kg
KLV-TC-TBC-4/4	2 x 10mm^2 + 2 x 16 mm^2	0.030 kg
KLV-TC-TBC-4/4+4	2 x (2 x 10mm^2 + 2 x 16 mm^2)	0.045kg

Dimensions (mm)



	A	B	C
	(Outside dimensions)		
KLV-TC-2	50	135	72
KLV-TC-4	90	160	78
KLV-TC-8	162	170	78

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