

Automation  
Installation

Command and Signalling  
Motor Applications

# Component Overview Denmark Build it in.



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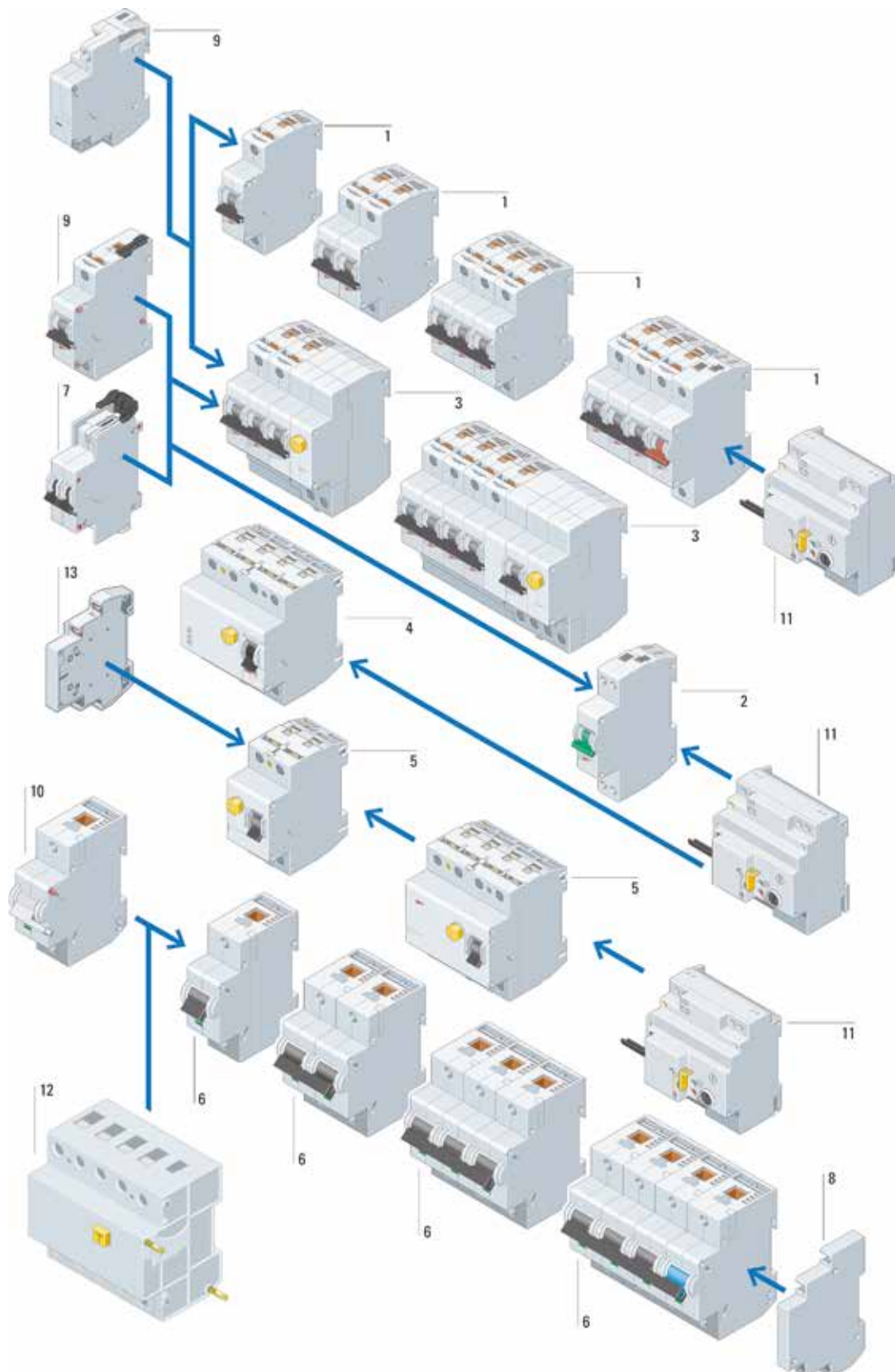
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# Miniature circuit-breaker, residual current circuit-breaker

## System overview



- |   |  |    |   |
|---|--|----|---|
| 1 | FAZ miniature circuit-breakers                               | 7  | FAZ auxiliary contact module or SmartWire-DT connection module              |
| 1 | FAZT miniature circuit-breakers                              | 8  | AZ auxiliary contacts   |
| 2 | FAZ-PN miniature circuit-breaker                             | 9  | FAZ voltage releases  |
| 3 | FBSmV residual-current protective modules for fitting to FAZ | 10 | AZ voltage releases   |
| 4 | FRBmM combination switch                                     | 11 | Remote switching module   |
| 5 | FRCmM residual current circuit breaker                       | 12 | FBHmV residual-current protective modules for fitting to AZ                 |
| 6 | AZ miniature circuit-breakers                                | 13 | Residual-current auxiliary contact module or SmartWire-DT connection module |



I <sub>n</sub> A	SG48411		SG49211		SG54811		SG63111	
	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>1 pole</b>								
<b>1+N-pole, 1.5 Module Units (MU)</b>								
<b>2 pole</b>								
<b>3 pole</b>								
<b>Miniature circuit breakers PLSM -</b>								
10 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. / Characteristic B								
1								
2								
3								
4								
6	PLSM-B6	242174	PLSM-B6/1N	242243	PLSM-B6/2	242373	PLSM-B6/3	242442
10	PLSM-B10	242176	PLSM-B10/1N	242245	PLSM-B10/2	242375	PLSM-B10/3	242444
13	PLSM-B13	242178	PLSM-B13/1N	242247	PLSM-B13/2	242377	PLSM-B13/3	242446
16	PLSM-B16	242180	PLSM-B16/1N	242249	PLSM-B16/2	242379	PLSM-B16/3	242448
20	PLSM-B20	242181	PLSM-B20/1N	242250	PLSM-B20/2	242380	PLSM-B20/3	242449
25	PLSM-B25	242182	PLSM-B25/1N	242251	PLSM-B25/2	242381	PLSM-B25/3	242450
32	PLSM-B32	242183	PLSM-B32/1N	242252	PLSM-B32/2	242382	PLSM-B32/3	242451
40	PLSM-B40	242184			PLSM-B40/2	242383	PLSM-B40/3	242452
50	PLSM-B50	242185			PLSM-B50/2	242384	PLSM-B50/3	242453
63	PLSM-B63	242186			PLSM-B63/2	242385	PLSM-B63/3	242454
<b>Characteristic C</b>								
1	PLSM-C1	242191	PLSM-C1/1N	242257	PLSM-C1/2	242390	PLSM-C1/3	242459
2	PLSM-C2	242194	PLSM-C2/1N	242260	PLSM-C2/2	242393	PLSM-C2/3	242462
3	PLSM-C3	242196	PLSM-C3/1N	242262	PLSM-C3/2	242395	PLSM-C3/3	242464
4	PLSM-C4	242198	PLSM-C4/1N	242264	PLSM-C4/2	242397	PLSM-C4/3	242466
6	PLSM-C6	242200	PLSM-C6/1N	242266	PLSM-C6/2	242399	PLSM-C6/3	242468
10	PLSM-C10	242202	PLSM-C10/1N	242268	PLSM-C10/2	242401	PLSM-C10/3	242470
13	PLSM-C13	242204	PLSM-C13/1N	242270	PLSM-C13/2	242403	PLSM-C13/3	242472
16	PLSM-C16	242206	PLSM-C16/1N	242272	PLSM-C16/2	242405	PLSM-C16/3	242474
20	PLSM-C20	242207	PLSM-C20/1N	242273	PLSM-C20/2	242406	PLSM-C20/3	242475
25	PLSM-C25	242208	PLSM-C25/1N	242274	PLSM-C25/2	242407	PLSM-C25/3	242476
32	PLSM-C32	242209	PLSM-C32/1N	242275	PLSM-C32/2	242408	PLSM-C32/3	242477
40	PLSM-C40	242210			PLSM-C40/2	242409	PLSM-C40/3	242478
50	PLSM-C50	242211			PLSM-C50/2	242410	PLSM-C50/3	242479
63	PLSM-C63	242212			PLSM-C63/2	242411	PLSM-C63/3	242480
<b>Characteristic D</b>								
1	PLSM-D1	242214			PLSM-D1/2	242413	PLSM-D1/3	242482
2	PLSM-D2	242217			PLSM-D2/2	242416	PLSM-D2/3	242485
3	PLSM-D3	242219			PLSM-D3/2	242418	PLSM-D3/3	242487
4	PLSM-D4	242221			PLSM-D4/2	242420	PLSM-D4/3	242489
6	PLSM-D6	242223			PLSM-D6/2	242422	PLSM-D6/3	242491
10	PLSM-D10	242225			PLSM-D10/2	242424	PLSM-D10/3	242493
13	PLSM-D13	242227			PLSM-D13/2	242426	PLSM-D13/3	242495
16	PLSM-D16	242229			PLSM-D16/2	242428	PLSM-D16/3	242497
20	PLSM-D20	242230			PLSM-D20/2	242429	PLSM-D20/3	242498
25	PLSM-D25	242231			PLSM-D25/2	242430	PLSM-D25/3	242499
32	PLSM-D32	242232			PLSM-D32/2	242431	PLSM-D32/3	242500
40	PLSM-D40	242233			PLSM-D40/2	242432	PLSM-D40/3	242501
50								
63								

# Xpole Miniature circuit-breakers

## Miniature circuit breakers PLSM



I <sub>n</sub> A	3+N-pole		4-pole	
	Type designation	Article no.	Type designation	Article no.
<b>Miniature circuit breakers PLSM -</b>				
10 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. / Characteristic B				
1				
2				
3				
4				
6	PLSM-B6/3N	242511	PLSM-B6/4	242580
10	PLSM-B10/3N	242513	PLSM-B10/4	242582
13	PLSM-B13/3N	242515	PLSM-B13/4	242584
16	PLSM-B16/3N	242517	PLSM-B16/4	242586
20	PLSM-B20/3N	242518	PLSM-B20/4	242587
25	PLSM-B25/3N	242519	PLSM-B25/4	242588
32	PLSM-B32/3N	242520	PLSM-B32/4	242589
40	PLSM-B40/3N	242521	PLSM-B40/4	242590
50	PLSM-B50/3N	242522	PLSM-B50/4	242591
63	PLSM-B63/3N	242523	PLSM-B63/4	242592
Characteristic C				
1	PLSM-C1/3N	242528	PLSM-C1/4	242597
2	PLSM-C2/3N	242531	PLSM-C2/4	242600
3	PLSM-C3/3N	242533	PLSM-C3/4	242602
4	PLSM-C4/3N	242535	PLSM-C4/4	242604
6	PLSM-C6/3N	242537	PLSM-C6/4	242606
10	PLSM-C10/3N	242539	PLSM-C10/4	242608
13	PLSM-C13/3N	242541	PLSM-C13/4	242610
16	PLSM-C16/3N	242543	PLSM-C16/4	242612
20	PLSM-C20/3N	242544	PLSM-C20/4	242613
25	PLSM-C25/3N	242545	PLSM-C25/4	242614
32	PLSM-C32/3N	242546	PLSM-C32/4	242615
40	PLSM-C40/3N	242547	PLSM-C40/4	242616
50	PLSM-C50/3N	242548	PLSM-C50/4	242617
63	PLSM-C63/3N	242549	PLSM-C63/4	242618
Characteristic D				
1	PLSM-D1/3N	242551	PLSM-D1/4	242620
2	PLSM-D2/3N	242554	PLSM-D2/4	242623
3	PLSM-D3/3N	242556	PLSM-D3/4	242625
4	PLSM-D4/3N	242558	PLSM-D4/4	242627
6	PLSM-D6/3N	242560	PLSM-D6/4	242629
10	PLSM-D10/3N	242562	PLSM-D10/4	242631
13	PLSM-D13/3N	242564	PLSM-D13/4	242633
16	PLSM-D16/3N	242566	PLSM-D16/4	242635
20	PLSM-D20/3N	242567	PLSM-D20/4	242636
25	PLSM-D25/3N	242568	PLSM-D25/4	242637
32	PLSM-D32/3N	242569	PLSM-D32/4	242638
40	PLSM-D40/3N	242570	PLSM-D40/4	242639
50				
63				

SG26911



SG40111



SG58211



SG77911



I <sub>n</sub> A	1 pole		1+N-pole, 1.5 Module Units (MU)		1+N-pole, 2 Module Units (MU)		2-pole	
	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>Miniature circuit breakers PLS6, PLZ6 -</b>								
6 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. / Characteristic B								
1	PLS6-B1	242640	PLS6-B1/1N	242709	PLZ6-B1/1N	242770	PLS6-B1/2	242839
1.5	PLS6-B1,5	242641	PLS6-B1,5/1N	242710	PLZ6-B1,5/1N	242771	PLS6-B1,5/2	242840
1.6	PLS6-B1,6	242642	PLS6-B1,6/1N	242711	PLZ6-B1,6/1N	242772	PLS6-B1,6/2	242841
2	PLS6-B2	242643	PLS6-B2/1N	242712	PLZ6-B2/1N	242773	PLS6-B2/2	242842
2.5	PLS6-B2,5	242644	PLS6-B2,5/1N	242713	PLZ6-B2,5/1N	242774	PLS6-B2,5/2	242843
3	PLS6-B3	242645	PLS6-B3/1N	242714	PLZ6-B3/1N	242775	PLS6-B3/2	242844
3.5	PLS6-B3,5	242646	PLS6-B3,5/1N	242715	PLZ6-B3,5/1N	242776	PLS6-B3,5/2	242845
4	PLS6-B4	242647	PLS6-B4/1N	242716	PLZ6-B4/1N	242777	PLS6-B4/2	242846
5	PLS6-B5	242648	PLS6-B5/1N	242717	PLZ6-B5/1N	242778	PLS6-B5/2	242847
6	PLS6-B6	242649	PLS6-B6/1N	242718	PLZ6-B6/1N	242779	PLS6-B6/2	242848
8	PLS6-B8	242650	PLS6-B8/1N	242719	PLZ6-B8/1N	242780	PLS6-B8/2	242849
10	PLS6-B10	242651	PLS6-B10/1N	242720	PLZ6-B10/1N	242781	PLS6-B10/2	242850
12	PLS6-B12	242652	PLS6-B12/1N	242721	PLZ6-B12/1N	242782	PLS6-B12/2	242851
13	PLS6-B13	242653	PLS6-B13/1N	242722	PLZ6-B13/1N	242783	PLS6-B13/2	242852
15	PLS6-B15	242654	PLS6-B15/1N	242723	PLZ6-B15/1N	242784	PLS6-B15/2	242853
16	PLS6-B16	242655	PLS6-B16/1N	242724	PLZ6-B16/1N	242785	PLS6-B16/2	242854
20	PLS6-B20	242656	PLS6-B20/1N	242725	PLZ6-B20/1N	242786	PLS6-B20/2	242855
25	PLS6-B25	242657	PLS6-B25/1N	242726	PLZ6-B25/1N	242787	PLS6-B25/2	242856
32	PLS6-B32	242658	PLS6-B32/1N	242727	PLZ6-B32/1N	242788	PLS6-B32/2	242857
40	PLS6-B40	242659			PLZ6-B40/1N	242789	PLS6-B40/2	242858
50	PLS6-B50	242660			PLZ6-B50/1N	242790	PLS6-B50/2	242859
63	PLS6-B63	242661			PLZ6-B63/1N	242791	PLS6-B63/2	242860
Characteristic C								
1	PLS6-C1	242666	PLS6-C1/1N	242732	PLZ6-C1/1N	242796	PLS6-C1/2	242865
1.5	PLS6-C1,5	242667	PLS6-C1,5/1N	242733	PLZ6-C1,5/1N	242797	PLS6-C1,5/2	242866
1.6	PLS6-C1,6	242668	PLS6-C1,6/1N	242734	PLZ6-C1,6/1N	242798	PLS6-C1,6/2	242867
2	PLS6-C2	242669	PLS6-C2/1N	242735	PLZ6-C2/1N	242799	PLS6-C2/2	242868
2.5	PLS6-C2,5	242670	PLS6-C2,5/1N	242736	PLZ6-C2,5/1N	242800	PLS6-C2,5/2	242869
3	PLS6-C3	242671	PLS6-C3/1N	242737	PLZ6-C3/1N	242801	PLS6-C3/2	242870
3.5	PLS6-C3,5	242672	PLS6-C3,5/1N	242738	PLZ6-C3,5/1N	242802	PLS6-C3,5/2	242871
4	PLS6-C4	242673	PLS6-C4/1N	242739	PLZ6-C4/1N	242803	PLS6-C4/2	242872
5	PLS6-C5	242674	PLS6-C5/1N	242740	PLZ6-C5/1N	242804	PLS6-C5/2	242873
6	PLS6-C6	242675	PLS6-C6/1N	242741	PLZ6-C6/1N	242805	PLS6-C6/2	242874
8	PLS6-C8	242676	PLS6-C8/1N	242742	PLZ6-C8/1N	242806	PLS6-C8/2	242875
10	PLS6-C10	242677	PLS6-C10/1N	242743	PLZ6-C10/1N	242807	PLS6-C10/2	242876
12	PLS6-C12	242678	PLS6-C12/1N	242744	PLZ6-C12/1N	242808	PLS6-C12/2	242877
13	PLS6-C13	242679	PLS6-C13/1N	242745	PLZ6-C13/1N	242809	PLS6-C13/2	242878
15	PLS6-C15	242680	PLS6-C15/1N	242746	PLZ6-C15/1N	242810	PLS6-C15/2	242879
16	PLS6-C16	242681	PLS6-C16/1N	242747	PLZ6-C16/1N	242811	PLS6-C16/2	242880
20	PLS6-C20	242682	PLS6-C20/1N	242748	PLZ6-C20/1N	242812	PLS6-C20/2	242881
25	PLS6-C25	242683	PLS6-C25/1N	242749	PLZ6-C25/1N	242813	PLS6-C25/2	242882
32	PLS6-C32	242684	PLS6-C32/1N	242750	PLZ6-C32/1N	242814	PLS6-C32/2	242883
40	PLS6-C40	242685			PLZ6-C40/1N	242815	PLS6-C40/2	242884
50	PLS6-C50	242686			PLZ6-C50/1N	242816	PLS6-C50/2	242885
63	PLS6-C63	242687			PLZ6-C63/1N	242817	PLS6-C63/2	242886

# Xpole Miniature circuit-breakers

Miniature circuit breakers PLS6, PLZ6

SG26911



SG40111



SG58211



SG77911



I <sub>n</sub> A	1 pole		1+N-pole, 1.5 Module Units (MU)		1+N-pole, 2 Module Units (MU)		2-pole	
	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>Miniature circuit breakers PLS6, PLZ6 -</b>								
6 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. / Characteristic D								
1	PLS6-D1	242689	PLS6-D1/1N	242752	PLZ6-D1/1N	242819	PLS6-D1/2	242888
1.5	PLS6-D1,5	242690	PLS6-D1,5/1N	242753	PLZ6-D1,5/1N	242820	PLS6-D1,5/2	242889
1.6	PLS6-D1,6	242691	PLS6-D1,6/1N	242754	PLZ6-D1,6/1N	242821	PLS6-D1,6/2	242890
2	PLS6-D2	242692	PLS6-D2/1N	242755	PLZ6-D2/1N	242822	PLS6-D2/2	242891
2.5	PLS6-D2,5	242693	PLS6-D2,5/1N	242756	PLZ6-D2,5/1N	242823	PLS6-D2,5/2	242892
3	PLS6-D3	242694	PLS6-D3/1N	242757	PLZ6-D3/1N	242824	PLS6-D3/2	242893
3.5	PLS6-D3,5	242695	PLS6-D3,5/1N	242758	PLZ6-D3,5/1N	242825	PLS6-D3,5/2	242894
4	PLS6-D4	242696	PLS6-D4/1N	242759	PLZ6-D4/1N	242826	PLS6-D4/2	242895
5	PLS6-D5	242697	PLS6-D5/1N	242760	PLZ6-D5/1N	242827	PLS6-D5/2	242896
6	PLS6-D6	242698	PLS6-D6/1N	242761	PLZ6-D6/1N	242828	PLS6-D6/2	242897
8	PLS6-D8	242699	PLS6-D8/1N	242762	PLZ6-D8/1N	242829	PLS6-D8/2	242898
10	PLS6-D10	242700	PLS6-D10/1N	242763	PLZ6-D10/1N	242830	PLS6-D10/2	242899
12	PLS6-D12	242701	PLS6-D12/1N	242764	PLZ6-D12/1N	242831	PLS6-D12/2	242900
13	PLS6-D13	242702	PLS6-D13/1N	242765	PLZ6-D13/1N	242832	PLS6-D13/2	242901
15	PLS6-D15	242703	PLS6-D15/1N	242766	PLZ6-D15/1N	242833	PLS6-D15/2	242902
16	PLS6-D16	242704	PLS6-D16/1N	242767	PLZ6-D16/1N	242834	PLS6-D16/2	242903
20	PLS6-D20	242705	PLS6-D20/1N	242768	PLZ6-D20/1N	242835	PLS6-D20/2	242904
25	PLS6-D25	242706	PLS6-D25/1N	242769	PLZ6-D25/1N	242836	PLS6-D25/2	242905
32	PLS6-D32	242707			PLZ6-D32/1N	242837	PLS6-D32/2	242906
40	PLS6-D40	242708			PLZ6-D40/1N	242838	PLS6-D40/2	242907
50								
63								





I <sub>n</sub> A	3-pole		3+N-pole		4-pole	
	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>Miniature circuit breakers PLS6, PLZ6 -</b>						
6 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. /						
Characteristic B						
1	PLS6-B1/3	242908	PLS6-B1/3N	242977	PLS6-B1/4	243046
1.5	PLS6-B1,5/3	242909	PLS6-B1,5/3N	242978	PLS6-B1,5/4	243047
1.6	PLS6-B1,6/3	242910	PLS6-B1,6/3N	242979	PLS6-B1,6/4	243048
2	PLS6-B2/3	242911	PLS6-B2/3N	242980	PLS6-B2/4	243049
2.5	PLS6-B2,5/3	242912	PLS6-B2,5/3N	242981	PLS6-B2,5/4	243050
3	PLS6-B3/3	242913	PLS6-B3/3N	242982	PLS6-B3/4	243051
3.5	PLS6-B3,5/3	242914	PLS6-B3,5/3N	242983	PLS6-B3,5/4	243052
4	PLS6-B4/3	242915	PLS6-B4/3N	242984	PLS6-B4/4	243053
5	PLS6-B5/3	242916	PLS6-B5/3N	242985	PLS6-B5/4	243054
6	PLS6-B6/3	242917	PLS6-B6/3N	242986	PLS6-B6/4	243055
8	PLS6-B8/3	242918	PLS6-B8/3N	242987	PLS6-B8/4	243056
10	PLS6-B10/3	242919	PLS6-B10/3N	242988	PLS6-B10/4	243057
12	PLS6-B12/3	242920	PLS6-B12/3N	242989	PLS6-B12/4	243058
13	PLS6-B13/3	242921	PLS6-B13/3N	242990	PLS6-B13/4	243059
15	PLS6-B15/3	242922	PLS6-B15/3N	242991	PLS6-B15/4	243060
16	PLS6-B16/3	242923	PLS6-B16/3N	242992	PLS6-B16/4	243061
20	PLS6-B20/3	242924	PLS6-B20/3N	242993	PLS6-B20/4	243062
25	PLS6-B25/3	242925	PLS6-B25/3N	242994	PLS6-B25/4	243063
32	PLS6-B32/3	242926	PLS6-B32/3N	242995	PLS6-B32/4	243064
40	PLS6-B40/3	242927	PLS6-B40/3N	242996	PLS6-B40/4	243065
50	PLS6-B50/3	242928	PLS6-B50/3N	242997	PLS6-B50/4	243066
63	PLS6-B63/3	242929	PLS6-B63/3N	242998	PLS6-B63/4	243067
Characteristic C						
1	PLS6-C1/3	242934	PLS6-C1/3N	243003	PLS6-C1/4	243072
1.5	PLS6-C1,5/3	242935	PLS6-C1,5/3N	243004	PLS6-C1,5/4	243073
1.6	PLS6-C1,6/3	242936	PLS6-C1,6/3N	243005	PLS6-C1,6/4	243074
2	PLS6-C2/3	242937	PLS6-C2/3N	243006	PLS6-C2/4	243075
2.5	PLS6-C2,5/3	242938	PLS6-C2,5/3N	243007	PLS6-C2,5/4	243076
3	PLS6-C3/3	242939	PLS6-C3/3N	243008	PLS6-C3/4	243077
3.5	PLS6-C3,5/3	242940	PLS6-C3,5/3N	243009	PLS6-C3,5/4	243078
4	PLS6-C4/3	242941	PLS6-C4/3N	243010	PLS6-C4/4	243079
5	PLS6-C5/3	242942	PLS6-C5/3N	243011	PLS6-C5/4	243080
6	PLS6-C6/3	242943	PLS6-C6/3N	243012	PLS6-C6/4	243081
8	PLS6-C8/3	242944	PLS6-C8/3N	243013	PLS6-C8/4	243082
10	PLS6-C10/3	242945	PLS6-C10/3N	243014	PLS6-C10/4	243083
12	PLS6-C12/3	242946	PLS6-C12/3N	243015	PLS6-C12/4	243084
13	PLS6-C13/3	242947	PLS6-C13/3N	243016	PLS6-C13/4	243085
15	PLS6-C15/3	242948	PLS6-C15/3N	243017	PLS6-C15/4	243086
16	PLS6-C16/3	242949	PLS6-C16/3N	243018	PLS6-C16/4	243087
20	PLS6-C20/3	242950	PLS6-C20/3N	243019	PLS6-C20/4	243088
25	PLS6-C25/3	242951	PLS6-C25/3N	243020	PLS6-C25/4	243089
32	PLS6-C32/3	242952	PLS6-C32/3N	243021	PLS6-C32/4	243090
40	PLS6-C40/3	242953	PLS6-C40/3N	243022	PLS6-C40/4	243091
50	PLS6-C50/3	242954	PLS6-C50/3N	243023	PLS6-C50/4	243092
63	PLS6-C63/3	242955	PLS6-C63/3N	243024	PLS6-C63/4	243093

# Xpole Miniature circuit-breakers

Miniature circuit breakers PLS6, PLZ6

SG74311



SG73911



SG70011



I <sub>n</sub> A	3-pole		3+N-pole		4-pole	
	Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>Miniature circuit breakers PLS6, PLZ6 -</b>						
6 kA Rated current I <sub>n</sub> (A) / Type designation / Article No. / Characteristic D						
1	<b>PLS6-D1/3</b>	242957	<b>PLS6-D1/3N</b>	243026	<b>PLS6-D1/4</b>	243095
1.5	<b>PLS6-D1,5/3</b>	242958	<b>PLS6-D1,5/3N</b>	243027	<b>PLS6-D1,5/4</b>	243096
1.6	<b>PLS6-D1,6/3</b>	242959	<b>PLS6-D1,6/3N</b>	243028	<b>PLS6-D1,6/4</b>	243097
2	<b>PLS6-D2/3</b>	242960	<b>PLS6-D2/3N</b>	243029	<b>PLS6-D2/4</b>	243098
2.5	<b>PLS6-D2,5/3</b>	242961	<b>PLS6-D2,5/3N</b>	243030	<b>PLS6-D2,5/4</b>	243099
3	<b>PLS6-D3/3</b>	242962	<b>PLS6-D3/3N</b>	243031	<b>PLS6-D3/4</b>	243100
3.5	<b>PLS6-D3,5/3</b>	242963	<b>PLS6-D3,5/3N</b>	243032	<b>PLS6-D3,5/4</b>	243101
4	<b>PLS6-D4/3</b>	242964	<b>PLS6-D4/3N</b>	243033	<b>PLS6-D4/4</b>	243102
5	<b>PLS6-D5/3</b>	242965	<b>PLS6-D5/3N</b>	243034	<b>PLS6-D5/4</b>	243103
6	<b>PLS6-D6/3</b>	242966	<b>PLS6-D6/3N</b>	243035	<b>PLS6-D6/4</b>	243104
8	<b>PLS6-D8/3</b>	242967	<b>PLS6-D8/3N</b>	243036	<b>PLS6-D8/4</b>	243105
10	<b>PLS6-D10/3</b>	242968	<b>PLS6-D10/3N</b>	243037	<b>PLS6-D10/4</b>	243106
12	<b>PLS6-D12/3</b>	242969	<b>PLS6-D12/3N</b>	243038	<b>PLS6-D12/4</b>	243107
13	<b>PLS6-D13/3</b>	242970	<b>PLS6-D13/3N</b>	243039	<b>PLS6-D13/4</b>	243108
15	<b>PLS6-D15/3</b>	242971	<b>PLS6-D15/3N</b>	243040	<b>PLS6-D15/4</b>	243109
16	<b>PLS6-D16/3</b>	242972	<b>PLS6-D16/3N</b>	243041	<b>PLS6-D16/4</b>	243110
20	<b>PLS6-D20/3</b>	242973	<b>PLS6-D20/3N</b>	243042	<b>PLS6-D20/4</b>	243111
25	<b>PLS6-D25/3</b>	242974	<b>PLS6-D25/3N</b>	243043	<b>PLS6-D25/4</b>	243112
32	<b>PLS6-D32/3</b>	242975	<b>PLS6-D32/3N</b>	243044	<b>PLS6-D32/4</b>	243113
40	<b>PLS6-D40/3</b>	242976	<b>PLS6-D40/3N</b>	243045	<b>PLS6-D40/4</b>	243114
50						
63						

SG14511



$I_n$ A	<b>1+N-pole Type designation</b>	Article no.
<b>Miniature circuit breakers PLN6 -</b>		
6 kA Bemessungsstrom $I_n$ (A) / Type designation / Article No. / Characteristic B		
2		
4		
6	<b>PLN6-B6/1N</b>	263161
10	<b>PLN6-B10/1N</b>	263162
13	<b>PLN6-B13/1N</b>	263163
16	<b>PLN6-B16/1N</b>	263164
20	<b>PLN6-B20/1N</b>	263165
25	<b>PLN6-B25/1N</b>	263166
32	<b>PLN6-B32/1N</b>	263167
40	<b>PLN6-B40/1N</b>	263168
Characteristic C		
2	<b>PLN6-C2/1N</b>	263169
4	<b>PLN6-C4/1N</b>	263170
6	<b>PLN6-C6/1N</b>	263171
10	<b>PLN6-C10/1N</b>	263172
13	<b>PLN6-C13/1N</b>	263173
16	<b>PLN6-C16/1N</b>	263174
20	<b>PLN6-C20/1N</b>	263175
25	<b>PLN6-C25/1N</b>	263176
32	<b>PLN6-C32/1N</b>	263177
40	<b>PLN6-C40/1N</b>	263178

# Xeffect Miniature circuit-breakers

## FAZ miniature circuit-breakers



Rated current $I_n$ A	Switching capacity (IEC/EN 60947-2) kA	1 pole		1 pole+N		2 pole		3 pole	
		Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>FAZ miniature circuit-breakers</b>									
(please enquire for circuit-breakers with 3+N and 4 poles)									
Characteristic B Instantaneous release response current 3 - 5 x $I_n$									
1	15	FAZ-B1/1	278520	FAZ-B1/1N	278633	FAZ-B1/2	278719	FAZ-B1/3	278832
1.5	15	FAZ-B1,5/1	278521	FAZ-B1,5/1N	278634	FAZ-B1,5/2	278720	FAZ-B1,5/3	278833
1.6	15	FAZ-B1,6/1	278522	FAZ-B1,6/1N	278635	FAZ-B1,6/2	278721	FAZ-B1,6/3	278834
2	15	FAZ-B2/1	278523	FAZ-B2/1N	278636	FAZ-B2/2	278722	FAZ-B2/3	278835
2.5	15	FAZ-B2,5/1	278524	FAZ-B2,5/1N	278637	FAZ-B2,5/2	278723	FAZ-B2,5/3	278836
3	15	FAZ-B3/1	278525	FAZ-B3/1N	278638	FAZ-B3/2	278724	FAZ-B3/3	278837
3.5	15	FAZ-B3,5/1	278526	FAZ-B3,5/1N	278639	FAZ-B3,5/2	278725	FAZ-B3,5/3	278838
4	15	FAZ-B4/1	278527	FAZ-B4/1N	278640	FAZ-B4/2	278726	FAZ-B4/3	278839
5	15	FAZ-B5/1	278528	FAZ-B5/1N	278641	FAZ-B5/2	278727	FAZ-B5/3	278840
6	15	FAZ-B6/1	278529	FAZ-B6/1N	278642	FAZ-B6/2	278728	FAZ-B6/3	278841
8	15	FAZ-B8/1	278530	FAZ-B8/1N	278643	FAZ-B8/2	278729	FAZ-B8/3	278842
10	15	FAZ-B10/1	278531	FAZ-B10/1N	278644	FAZ-B10/2	278730	FAZ-B10/3	278843
12	15	FAZ-B12/1	278532	FAZ-B12/1N	278645	FAZ-B12/2	278731	FAZ-B12/3	278844
13	15	FAZ-B13/1	278533	FAZ-B13/1N	278646	FAZ-B13/2	278732	FAZ-B13/3	278845
15	15	FAZ-B15/1	278534	FAZ-B15/1N	278647	FAZ-B15/2	278733	FAZ-B15/3	278846
16	15	FAZ-B16/1	278535	FAZ-B16/1N	278648	FAZ-B16/2	278734	FAZ-B16/3	278847
20	15	FAZ-B20/1	278536	FAZ-B20/1N	278649	FAZ-B20/2	278735	FAZ-B20/3	278848
25	15	FAZ-B25/1	278537	FAZ-B25/1N	278650	FAZ-B25/2	278736	FAZ-B25/3	278849
32	15	FAZ-B32/1	278538	FAZ-B32/1N	278651	FAZ-B32/2	278737	FAZ-B32/3	278850
40	15	FAZ-B40/1	278539	FAZ-B40/1N	278652	FAZ-B40/2	278738	FAZ-B40/3	278851
50	15	FAZ-B50/1	278540	FAZ-B50/1N	278653	FAZ-B50/2	278739	FAZ-B50/3	278852
63	15	FAZ-B63/1	278541	FAZ-B63/1N	278654	FAZ-B63/2	278740	FAZ-B63/3	278853
Characteristic C Instantaneous release response current 5 - 10 x $I_n$									
0.16	15	FAZ-C0,16/1	278542	FAZ-C0,16/1N	278655	FAZ-C0,16/2	278741	FAZ-C0,16/3	278854
0.25	15	FAZ-C0,25/1	278543	FAZ-C0,25/1N	278656	FAZ-C0,25/2	278742	FAZ-C0,25/3	278855
0.5	15	FAZ-C0,5/1	278544	FAZ-C0,5/1N	278657	FAZ-C0,5/2	278743	FAZ-C0,5/3	278856
0.75	15	FAZ-C0,75/1	278545	FAZ-C0,75/1N	278658	FAZ-C0,75/2	278744	FAZ-C0,75/3	278857
1	15	FAZ-C1/1	278546	FAZ-C1/1N	278659	FAZ-C1/2	278745	FAZ-C1/3	278858
1.5	15	FAZ-C1,5/1	278547	FAZ-C1,5/1N	278660	FAZ-C1,5/2	278746	FAZ-C1,5/3	278859
1.6	15	FAZ-C1,6/1	278548	FAZ-C1,6/1N	278661	FAZ-C1,6/2	278747	FAZ-C1,6/3	278860
2	15	FAZ-C2/1	278549	FAZ-C2/1N	278662	FAZ-C2/2	278748	FAZ-C2/3	278861
2.5	15	FAZ-C2,5/1	278550	FAZ-C2,5/1N	278663	FAZ-C2,5/2	278749	FAZ-C2,5/3	278862
3	15	FAZ-C3/1	278551	FAZ-C3/1N	278664	FAZ-C3/2	278750	FAZ-C3/3	278863
3.5	15	FAZ-C3,5/1	278552	FAZ-C3,5/1N	278665	FAZ-C3,5/2	278751	FAZ-C3,5/3	278864
4	15	FAZ-C4/1	278553	FAZ-C4/1N	278666	FAZ-C4/2	278752	FAZ-C4/3	278865
5	15	FAZ-C5/1	278554	FAZ-C5/1N	278667	FAZ-C5/2	278753	FAZ-C5/3	278866
6	15	FAZ-C6/1	278555	FAZ-C6/1N	278668	FAZ-C6/2	278754	FAZ-C6/3	278867
8	15	FAZ-C8/1	278556	FAZ-C8/1N	278669	FAZ-C8/2	278755	FAZ-C8/3	278868
10	15	FAZ-C10/1	278557	FAZ-C10/1N	278670	FAZ-C10/2	278756	FAZ-C10/3	278869
12	15	FAZ-C12/1	278558	FAZ-C12/1N	278671	FAZ-C12/2	278757	FAZ-C12/3	278870
13	15	FAZ-C13/1	278559	FAZ-C13/1N	278672	FAZ-C13/2	278758	FAZ-C13/3	278871
15	15	FAZ-C15/1	278560	FAZ-C15/1N	278673	FAZ-C15/2	278759	FAZ-C15/3	278872
16	15	FAZ-C16/1	278561	FAZ-C16/1N	278674	FAZ-C16/2	278760	FAZ-C16/3	278873
20	15	FAZ-C20/1	278562	FAZ-C20/1N	278675	FAZ-C20/2	278761	FAZ-C20/3	278874
25	15	FAZ-C25/1	278563	FAZ-C25/1N	278676	FAZ-C25/2	278762	FAZ-C25/3	278875
32	15	FAZ-C32/1	278564	FAZ-C32/1N	278677	FAZ-C32/2	278763	FAZ-C32/3	278876
40	15	FAZ-C40/1	278565	FAZ-C40/1N	278678	FAZ-C40/2	278764	FAZ-C40/3	278877
50	15	FAZ-C50/1	278566	FAZ-C50/1N	278679	FAZ-C50/2	278765	FAZ-C50/3	278878
63	15	FAZ-C63/1	278567	FAZ-C63/1N	278680	FAZ-C63/2	278766	FAZ-C63/3	278879





Rated current $I_n$ A	Switching capacity (IEC/EN 60947-2) kA	1 pole		1 pole+N		2 pole		3 pole	
		Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>FAZ miniature circuit-breakers</b>									
(please enquire for circuit-breakers with 3+N and 4 poles)									
Characteristic D Instantaneous release response current 10 - 20 x $I_n$									
0.5	15	FAZ-D0,5/1	278568	FAZ-D0,5/1N	278681	FAZ-D0,5/2	278767	FAZ-D0,5/3	278880
1	15	FAZ-D1/1	278569	FAZ-D1/1N	278682	FAZ-D1/2	278768	FAZ-D1/3	278881
1.5	15	FAZ-D1,5/1	278570	FAZ-D1,5/1N	278683	FAZ-D1,5/2	278769	FAZ-D1,5/3	278882
1.6	15	FAZ-D1,6/1	278571	FAZ-D1,6/1N	278684	FAZ-D1,6/2	278770	FAZ-D1,6/3	278883
2	15	FAZ-D2/1	278572	FAZ-D2/1N	278685	FAZ-D2/2	278771	FAZ-D2/3	278884
2.5	15	FAZ-D2,5/1	278573	FAZ-D2,5/1N	278686	FAZ-D2,5/2	278772	FAZ-D2,5/3	278885
3	15	FAZ-D3/1	278574	FAZ-D3/1N	278687	FAZ-D3/2	278773	FAZ-D3/3	278886
3.5	15	FAZ-D3,5/1	278575	FAZ-D3,5/1N	278688	FAZ-D3,5/2	278774	FAZ-D3,5/3	278887
4	15	FAZ-D4/1	278576	FAZ-D4/1N	278689	FAZ-D4/2	278775	FAZ-D4/3	278888
5	15	FAZ-D5/1	278577	FAZ-D5/1N	278690	FAZ-D5/2	278776	FAZ-D5/3	278889
6	15	FAZ-D6/1	278578	FAZ-D6/1N	278691	FAZ-D6/2	278777	FAZ-D6/3	278890
8	15	FAZ-D8/1	278579	FAZ-D8/1N	278692	FAZ-D8/2	278778	FAZ-D8/3	278891
10	15	FAZ-D10/1	278580	FAZ-D10/1N	278693	FAZ-D10/2	278779	FAZ-D10/3	278892
12	15	FAZ-D12/1	278581	FAZ-D12/1N	278694	FAZ-D12/2	278780	FAZ-D12/3	278893
13	15	FAZ-D13/1	278582	FAZ-D13/1N	278695	FAZ-D13/2	278781	FAZ-D13/3	278894
15	15	FAZ-D15/1	278583	FAZ-D15/1N	278696	FAZ-D15/2	278782	FAZ-D15/3	278895
16	15	FAZ-D16/1	278584	FAZ-D16/1N	278697	FAZ-D16/2	278783	FAZ-D16/3	278896
20	15	FAZ-D20/1	278585	FAZ-D20/1N	278698	FAZ-D20/2	278784	FAZ-D20/3	278897
25	15	FAZ-D25/1	278586	FAZ-D25/1N	278699	FAZ-D25/2	278785	FAZ-D25/3	278898
32	15	FAZ-D32/1	278587	FAZ-D32/1N	278700	FAZ-D32/2	278786	FAZ-D32/3	278899
40	15	FAZ-D40/1	278588	FAZ-D40/1N	278701	FAZ-D40/2	278787	FAZ-D40/3	278900
50	10	FAZ-D50/1	115370	FAZ-D50/1N	115378	FAZ-D50/2	115372	FAZ-D50/3	115374
63	10	FAZ-D63/1	115371	FAZ-D63/1N	115379	FAZ-D63/2	115373	FAZ-D63/3	115375
Characteristic K Instantaneous release response current 8 - 12 x $I_n$									
0.5	15	FAZ-K0,5/1	278589	FAZ-K0,5/1N	278702	FAZ-K0,5/2	278788	FAZ-K0,5/3	278901
1	15	FAZ-K1/1	278590	FAZ-K1/1N	278703	FAZ-K1/2	278789	FAZ-K1/3	278902
1.6	15	FAZ-K1,6/1	278591	FAZ-K1,6/1N	278704	FAZ-K1,6/2	278790	FAZ-K1,6/3	278903
2	15	FAZ-K2/1	278592	FAZ-K2/1N	278705	FAZ-K2/2	278791	FAZ-K2/3	278904
3	15	FAZ-K3/1	278593	FAZ-K3/1N	278706	FAZ-K3/2	278792	FAZ-K3/3	278905
4	15	FAZ-K4/1	278594	FAZ-K4/1N	278707	FAZ-K4/2	278793	FAZ-K4/3	278906
6	15	FAZ-K6/1	278595	FAZ-K6/1N	278708	FAZ-K6/2	278794	FAZ-K6/3	278907
8	15	FAZ-K8/1	278596	FAZ-K8/1N	278709	FAZ-K8/2	278795	FAZ-K8/3	278908
10	15	FAZ-K10/1	278597	FAZ-K10/1N	278710	FAZ-K10/2	278796	FAZ-K10/3	278909
13	15	FAZ-K13/1	278598	FAZ-K13/1N	278711	FAZ-K13/2	278797	FAZ-K13/3	278910
16	15	FAZ-K16/1	278599	FAZ-K16/1N	278712	FAZ-K16/2	278798	FAZ-K16/3	278911
20	15	FAZ-K20/1	278600	FAZ-K20/1N	278713	FAZ-K20/2	278799	FAZ-K20/3	278912
25	15	FAZ-K25/1	278601	FAZ-K25/1N	278714	FAZ-K25/2	278800	FAZ-K25/3	278913
32	15	FAZ-K32/1	278602	FAZ-K32/1N	278715	FAZ-K32/2	278801	FAZ-K32/3	278914
40	15	FAZ-K40/1	278603	FAZ-K40/1N	278716	FAZ-K40/2	278802	FAZ-K40/3	278915
50	15	FAZ-K50/1	278604	FAZ-K50/1N	278717	FAZ-K50/2	278803	FAZ-K50/3	278916
63	15	FAZ-K63/1	278605	FAZ-K63/1N	278718	FAZ-K63/2	278804	FAZ-K63/3	278917

# Xeffect Miniature circuit-breakers

FAZ, FAZ-DC miniature circuit-breaker




Rated current $I_n$ A	Switching capacity (IEC/EN 60947-2) kA	1 pole		2 pole		3 pole	
		Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>FAZ miniature circuit-breakers</b>							
Characteristic S Instantaneous release response current 13 - 17 x $I_n$							
1	10	FAZ-S1/1	278606	FAZ-S1/2	278805	-	-
2	10	FAZ-S2/1	278607	FAZ-S2/2	278806	-	-
3	10	FAZ-S3/1	278608	FAZ-S3/2	278807	-	-
4	10	FAZ-S4/1	278609	FAZ-S4/2	278808	-	-
6	10	FAZ-S6/1	278610	FAZ-S6/2	278809	-	-
10	10	FAZ-S10/1	278611	FAZ-S10/2	278810	-	-
16	10	FAZ-S16/1	278612	FAZ-S16/2	278811	-	-
20	10	FAZ-S20/1	278613	FAZ-S20/2	278812	-	-
25	10	FAZ-S25/1	278614	FAZ-S25/2	278813	-	-
32	10	FAZ-S32/1	278615	FAZ-S32/2	278814	-	-
40	10	FAZ-S40/1	278616	FAZ-S40/2	278815	-	-
Characteristic Z Instantaneous release response current 2 - 3 x $I_n$							
0.5	15	FAZ-Z0,5/1	278617	FAZ-Z0,5/2	278816	FAZ-Z0,5/3	278918
1	15	FAZ-Z1/1	278618	FAZ-Z1/2	278817	FAZ-Z1/3	278919
1.6	15	FAZ-Z1,6/1	278619	FAZ-Z1,6/2	278818	FAZ-Z1,6/3	278920
2	15	FAZ-Z2/1	278620	FAZ-Z2/2	278819	FAZ-Z2/3	278921
3	15	FAZ-Z3/1	278621	FAZ-Z3/2	278820	FAZ-Z3/3	278922
4	15	FAZ-Z4/1	278622	FAZ-Z4/2	278821	FAZ-Z4/3	278923
6	15	FAZ-Z6/1	278623	FAZ-Z6/2	278822	FAZ-Z6/3	278924
8	15	FAZ-Z8/1	278624	FAZ-Z8/2	278823	FAZ-Z8/3	278925
10	15	FAZ-Z10/1	278625	FAZ-Z10/2	278824	FAZ-Z10/3	278926
16	15	FAZ-Z16/1	278626	FAZ-Z16/2	278825	FAZ-Z16/3	278927
20	15	FAZ-Z20/1	278627	FAZ-Z20/2	278826	FAZ-Z20/3	278928
25	15	FAZ-Z25/1	278628	FAZ-Z25/2	278827	FAZ-Z25/3	278929
32	15	FAZ-Z32/1	278629	FAZ-Z32/2	278828	FAZ-Z32/3	278930
40	15	FAZ-Z40/1	278630	FAZ-Z40/2	278829	FAZ-Z40/3	278931
50	15	FAZ-Z50/1	278631	FAZ-Z50/2	278830	FAZ-Z50/3	278932
63	15	FAZ-Z63/1	278632	FAZ-Z63/2	278831	FAZ-Z63/3	278933
<b>FAZ miniature circuit-breakers for DC applications</b>							
Characteristic C Instantaneous release response current 5 - 10 x $I_n$							
2	10	FAZ-C2/1-DC	279122	FAZ-C2/2-DC	279134	-	-
3	10	FAZ-C3/1-DC	279123	FAZ-C3/2-DC	279135	-	-
4	10	FAZ-C4/1-DC	279124	FAZ-C4/2-DC	279136	-	-
6	10	FAZ-C6/1-DC	279125	FAZ-C6/2-DC	279137	-	-
10	10	FAZ-C10/1-DC	279126	FAZ-C10/2-DC	279138	-	-
13	10	FAZ-C13/1-DC	279127	FAZ-C13/2-DC	279139	-	-
16	10	FAZ-C16/1-DC	279128	FAZ-C16/2-DC	279140	-	-
20	10	FAZ-C20/1-DC	279129	FAZ-C20/2-DC	279141	-	-
25	10	FAZ-C25/1-DC	279130	FAZ-C25/2-DC	279142	-	-
32	10	FAZ-C32/1-DC	279131	FAZ-C32/2-DC	279143	-	-
40	10	FAZ-C40/1-DC	279132	FAZ-C40/2-DC	279144	-	-
50	10	FAZ-C50/1-DC	279133	FAZ-C50/2-DC	279145	-	-



Rated current $I_n$ A	Switching capacity (IEC/EN 60947-2)  kA	1 pole		1 pole+N		2 pole		3 pole	
		Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>FAZ-T miniature circuit-breaker</b>									
(please enquire for circuit-breakers with 3+N and 4 poles)									
Characteristic B Response current of short-circuit release 3-5 x $I_n$									
1	25	FAZT-B1/1	240770	FAZT-B1/1N	240994	FAZT-B1/2	240820	FAZT-B1/3	240874
2	25	FAZT-B2/1	240771	FAZT-B2/1N	240995	FAZT-B2/2	240821	FAZT-B2/3	240875
3	25	FAZT-B3/1	240772	FAZT-B3/1N	240996	FAZT-B3/2	240822	FAZT-B3/3	240876
4	25	FAZT-B4/1	240777	FAZT-B4/1N	240997	FAZT-B4/2	240823	FAZT-B4/3	240877
6	25	FAZT-B6/1	240782	FAZT-B6/1N	240998	FAZT-B6/2	240824	FAZT-B6/3	240878
10	25	FAZT-B10/1	240787	FAZT-B10/1N	240999	FAZT-B10/2	240825	FAZT-B10/3	240879
12	25	FAZT-B12/1	240792	FAZT-B12/1N	241000	FAZT-B12/2	240826	FAZT-B12/3	240880
13	25	FAZT-B13/1	240793	FAZT-B13/1N	241001	FAZT-B13/2	240827	FAZT-B13/3	240881
15	25	FAZT-B15/1	240794	FAZT-B15/1N	241005	FAZT-B15/2	240828	FAZT-B15/3	240882
16	25	FAZT-B16/1	240795	FAZT-B16/1N	241009	FAZT-B16/2	240829	FAZT-B16/3	240883
20	25	FAZT-B20/1	240796	FAZT-B20/1N	241015	FAZT-B20/2	240830	FAZT-B20/3	240884
25	25	FAZT-B25/1	240797	FAZT-B25/1N	241019	FAZT-B25/2	240831	FAZT-B25/3	240885
32	20	FAZT-B32/1	141907	FAZT-B32/1N	142509	FAZT-B32/2	142485	FAZT-B32/3	142493
40	20	FAZT-B40/1	141908	FAZT-B40/1N	142510	FAZT-B40/2	142486	FAZT-B40/3	142494
Characteristic C Response current of short-circuit release 5-10 x $I_n$									
1	25	FAZT-C1/1	240798	FAZT-C1/1N	241022	FAZT-C1/2	240832	FAZT-C1/3	240886
2	25	FAZT-C2/1	240799	FAZT-C2/1N	241023	FAZT-C2/2	240833	FAZT-C2/3	240887
3	25	FAZT-C3/1	240800	FAZT-C3/1N	241024	FAZT-C3/2	240838	FAZT-C3/3	240888
4	25	FAZT-C4/1	240801	FAZT-C4/1N	241025	FAZT-C4/2	240843	FAZT-C4/3	240889
6	25	FAZT-C6/1	240802	FAZT-C6/1N	241026	FAZT-C6/2	240850	FAZT-C6/3	240890
10	25	FAZT-C10/1	240803	FAZT-C10/1N	241027	FAZT-C10/2	240855	FAZT-C10/3	240891
12	25	FAZT-C12/1	240804	FAZT-C12/1N	241028	FAZT-C12/2	240858	FAZT-C12/3	240892
13	25	FAZT-C13/1	240805	FAZT-C13/1N	241029	FAZT-C13/2	240859	FAZT-C13/3	240893
15	25	FAZT-C15/1	240806	FAZT-C15/1N	241030	FAZT-C15/2	240860	FAZT-C15/3	240894
16	25	FAZT-C16/1	240807	FAZT-C16/1N	241034	FAZT-C16/2	240861	FAZT-C16/3	240895
20	25	FAZT-C20/1	240808	FAZT-C20/1N	241038	FAZT-C20/2	240862	FAZT-C20/3	240896
25	25	FAZT-C25/1	240809	FAZT-C25/1N	241044	FAZT-C25/2	240863	FAZT-C25/3	240897
32	20	FAZT-C32/1	141909	FAZT-C32/1N	142511	FAZT-C32/2	142487	FAZT-C32/3	142495
40	20	FAZT-C40/1	142480	FAZT-C40/1N	142512	FAZT-C40/2	142488	FAZT-C40/3	142496
Characteristic D Response current of short-circuit release 10-20 x $I_n$									
1	25	FAZT-D1/1	240810	FAZT-D1/1N	241048	FAZT-D1/2	240864	FAZT-D1/3	240898
2	25	FAZT-D2/1	240811	FAZT-D2/1N	241051	FAZT-D2/2	240865	FAZT-D2/3	240899
3	25	FAZT-D3/1	240812	FAZT-D3/1N	241052	FAZT-D3/2	240866	FAZT-D3/3	240900
4	25	FAZT-D4/1	240813	FAZT-D4/1N	241053	FAZT-D4/2	240867	FAZT-D4/3	240901
6	25	FAZT-D6/1	240814	FAZT-D6/1N	241054	FAZT-D6/2	240868	FAZT-D6/3	240902
10	25	FAZT-D10/1	240815	FAZT-D10/1N	241055	FAZT-D10/2	240869	FAZT-D10/3	240903
12	25	FAZT-D12/1	240816	FAZT-D12/1N	241056	FAZT-D12/2	240870	FAZT-D12/3	240904
13	25	FAZT-D13/1	240817	FAZT-D13/1N	241057	FAZT-D13/2	240871	FAZT-D13/3	240905
15	20	FAZT-D15/1	240818	FAZT-D15/1N	241058	FAZT-D15/2	240872	FAZT-D15/3	240910
16	20	FAZT-D16/1	240819	FAZT-D16/1N	241059	FAZT-D16/2	240873	FAZT-D16/3	240915
20	20	FAZT-D20/1	142481	FAZT-D20/1N	142513	FAZT-D20/2	142489	FAZT-D20/3	142497
25	15	FAZT-D25/1	142482	FAZT-D25/1N	142514	FAZT-D25/2	142490	FAZT-D25/3	142498
32	15	FAZT-D32/1	142483	FAZT-D32/1N	142515	FAZT-D32/2	142491	FAZT-D32/3	142499
40	15	FAZT-D40/1	142484	FAZT-D40/1N	142516	FAZT-D40/2	142492	FAZT-D40/3	142500

# Xeffect Miniature circuit-breakers



## Auxiliary contacts, Busbars



Description	Part no.	Article no.		
<b>Accessories for circuit-breakers, IEC</b>				
SmartWire-DT connection module for miniature-circuit breakers, residual current circuit-breakers, and residual current operated circuit-breakers with overcurrent protection	<b>MCB-HK-SWD</b> 	177175		
Auxiliary contact, screwable				
Auxiliary contact for FI, 1 N/O/1 N/C	<b>Z-HK</b>	248432		
Auxiliary contact for miniature-circuit breakers and residual current operated circuit-breakers with overcurrent protection, 1 N/O / 1 N/C	<b>Z-AHK</b>	248433		
Tripping signal contact for miniature-circuit breakers, residual current circuit-breakers, and residual current operated circuit-breakers with overcurrent protection, 2 W	<b>Z-NHK</b>	248434		
Auxiliary contact, snap-on				
Auxiliary contact for miniature-circuit breakers and residual current operated circuit-breakers with overcurrent protection, 1 N/O / 1 N/C	<b>ZP-IHK</b>	286052		
Auxiliary contact for miniature-circuit breakers and residual current operated circuit-breakers with overcurrent protection, 1 W	<b>ZP-WHK</b>	286053		
Tripping signal contact for miniature-circuit breakers and residual current operated circuit-breakers with overcurrent protection, 2 W	<b>ZP-NHK</b>	248437		
Shunt release, snap-on				
12 - 110 V DC	<b>ZP-ASA/24</b>	248438		
110 - 415 V DC	<b>ZP-ASA/230</b>	248439		
Undervoltage release, non-delayed				
115 V DC	<b>Z-USA/115</b>	248288		
230 V DC	<b>Z-USA/230</b>	248289		
400 V DC	<b>Z-USA/400</b>	248290		
<b>Accessories for circuit-breakers, UL/CSA</b>				
Auxiliary contact for FAZ-NA, -RT	<b>Z-IHK-NA</b>	113895		
Shunt release for FAZ-NA, -RT, 12 - 110 V AC	<b>FAZ-XAA-NA12-110VAC</b>	102037		
Shunt release for FAZ-NA, -RT, 110 - 415 V AC	<b>FAZ-XAA-NA110-415VAC</b>	102036		
Description	Devices Number	Type	Part no.	Article no.
<b>Busbars</b>				
Busbar for FAZ, can be cut, 100 A				
Cross-section: 18 mm <sup>2</sup>	-	Single phase	<b>BB-UL-18/1P-1M/57</b>	121981
Cross-section: 18 mm <sup>2</sup>	-	2 phase	<b>BB-UL-18/2P-2M/56</b>	121982
Cross-section: 18 mm <sup>2</sup>	-	Three-phase	<b>BB-UL-18/3P-3M/57</b>	121983
Cross-section: 25 mm <sup>2</sup>	-	Single phase	<b>BB-UL-25/1P-1M/57</b>	121989
Cross-section: 25 mm <sup>2</sup>	-	2 phase	<b>BB-UL-25/2P-2M/56</b>	121990
Cross-section: 25 mm <sup>2</sup>	-	Three-phase	<b>BB-UL-25/3P-3M/57</b>	121991
Busbar for FAZ-NA and -RT, can be cut, 100 A				
Cross-section: 25 mm <sup>2</sup>	-	Single phase	<b>Z-BB/UL25/1P1MU/57</b>	171131
Cross-section: 25 mm <sup>2</sup>	-	Single-phase + auxiliary contact	<b>Z-BB/UL25/1P1MU+AUX/37</b>	171137
Cross-section: 25 mm <sup>2</sup>	-	2 x single-phase + HS	<b>Z-BB/UL25/2X1P1MU+AUX/38</b>	171143
Cross-section: 25 mm <sup>2</sup>	-	3 x single-phase + HS	<b>Z-BB/UL25/3X1P1MU+AUX/39</b>	171141
Cross-section: 25 mm <sup>2</sup>	-	2 phase	<b>Z-BB/UL25/2P1MU/56</b>	171132
Cross-section: 25 mm <sup>2</sup>	-	2-phase + auxiliary contact	<b>Z-BB/UL25/2P1MU+AUX/46</b>	171138
Cross-section: 25 mm <sup>2</sup>	-	Three-phase	<b>Z-BB/UL25/3P1MU/57</b>	171133
Cross-section: 25 mm <sup>2</sup>	-	3-phase + auxiliary contact	<b>Z-BB/UL25/3P1MU+AUX/48</b>	171139
End cap for shroud section	-	-	<b>Z-ECUL</b>	171145
Extension terminals	-	-	<b>Z-TEUL35</b>	171144
Busbar tag shroud	-	-	<b>Z-FPUL</b>	171146
Z-SV/UL busbar for FAZ-NA and -RT, 80 A				
Cross-section: 16 mm <sup>2</sup>	6	Single phase	<b>Z-SV/UL-16/1P-1TE/6</b>	104892
Cross-section: 16 mm <sup>2</sup>	12	Single phase	<b>Z-SV/UL-16/1P-1TE/12</b>	104893
Cross-section: 16 mm <sup>2</sup>	18	Single phase	<b>Z-SV/UL-16/1P-1TE/18</b>	104894
Cross-section: 16 mm <sup>2</sup>	6	2 phase	<b>Z-SV/UL-16/2P-2TE/6</b>	104895
Cross-section: 16 mm <sup>2</sup>	12	2 phase	<b>Z-SV/UL-16/2P-2TE/12</b>	104896
Cross-section: 16 mm <sup>2</sup>	18	2 phase	<b>Z-SV/UL-16/2P-2TE/18</b>	104897
Cross-section: 16 mm <sup>2</sup>	6	Three-phase	<b>Z-SV/UL-16/3P-3TE/6</b>	104898
Cross-section: 16 mm <sup>2</sup>	12	Three-phase	<b>Z-SV/UL-16/3P-3TE/12</b>	104899
Cross-section: 16 mm <sup>2</sup>	18	Three-phase	<b>Z-SV/UL-16/3P-3TE/18</b>	104900
Connection terminal 2,5 - 35 mm <sup>2</sup>	-	-	<b>Z-EK/35/UL</b>	104901
Connection terminal 1,5 - 50 mm <sup>2</sup>	-	-	<b>Z-EB/50/UL</b>	104902
Busbar tag shroud for 3 pins	-	-	<b>ZV-BS-UL</b>	104904



# Protective devices residual current devices PFIM

- 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
- Automatic re-setting possible

							
$I_n$	$I_{\Delta n}$	Type Designation	Article no.	$I_n$	$I_{\Delta n}$	Type Designation	Article no.
A	A			A	A		
<b>Residual Current Devices PFIM</b>				<b>Residual Current Devices PFIM</b>			
Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A				Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A			
16	0.01	PFIM-16/2/001-A	235422	25	0.03	PFIM-25/4/003-A	235435
16	0.03	PFIM-16/2/003-A	235423	25	0.10	PFIM-25/4/01-A	235436
25	0.03	PFIM-25/2/003-A	235424	25	0.30	PFIM-25/4/03-A	235437
25	0.10	PFIM-25/2/01-A	235425	25	0.50	PFIM-25/4/05-A	235438
25	0.30	PFIM-25/2/03-A	235426	40	0.03	PFIM-40/4/003-A	235439
40	0.03	PFIM-40/2/003-A	235427	40	0.10	PFIM-40/4/01-A	235440
40	0.10	PFIM-40/2/01-A	235428	40	0.30	PFIM-40/4/03-A	235441
40	0.30	PFIM-40/2/03-A	235429	40	0.50	PFIM-40/4/05-A	235442
40	0.50	PFIM-40/2/05-A	235430	63	0.03	PFIM-63/4/003-A	235443
63	0.03	PFIM-63/2/003-A	235431	63	0.10	PFIM-63/4/01-A	235444
63	0.10	PFIM-63/2/01-A	235432	63	0.30	PFIM-63/4/03-A	235445
63	0.30	PFIM-63/2/03-A	235433	63	0.50	PFIM-63/4/05-A	235446
63	0.50	PFIM-63/2/05-A	235434	80	0.03	PFIM-80/4/003-A	235447
100	0.10	PFIM-100/2/01-A	102827	80	0.30	PFIM-80/4/03-A	235448
100	0.30	PFIM-100/2/03-A	102828	100	0.03	PFIM-100/4/003-A	102829
				100	0.10	PFIM-100/4/01-A	102870
				100	0.30	PFIM-100/4/03-A	102871
				100	0.50	PFIM-100/4/05-A	102872

							
$I_n$	$I_{\Delta n}$	Type Designation	Article no.	$I_n$	$I_{\Delta n}$	Type Designation	Article no.
A	A			A	A		
<b>Residual Current Devices PFIM</b>				<b>Residual Current Devices PFIM</b>			
Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A (ÖVE E 8601)				Surge current-proof 3 kA, sensitive to residual pulsating DC, type G/A (ÖVE E 8601)			
40	0.03	PFIM-40/2/003-G/A	108045	40	0.03	PFIM-40/4/003-G/A	235454
40	0.1	PFIM-40/2/01-G/A	109429	63	0.03	PFIM-63/4/003-G/A	235457
63	0.03	PFIM-63/2/003-G/A	108046	63	0.1	PFIM-63/4/01-G/A	109771
80	0.03	PFIM-80/2/003-G/A	108047	100	0.03	PFIM-100/4/003-G/A	102875
100	0.03	PFIM-100/2/003-G/A	108048	100	0.3	PFIM-100/4/03-G/A	102873

# Protective devices residual current devices PFIM

SG17011



$I_n$	$I_{\Delta n}$
A	A

<b>4-pole</b>	
<b>Type Designation</b>	<b>Article no.</b>

## Residual Current Devices PFIM

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

40	0.30	<b>PFIM-40/4/03-S/A</b>	235468
63	0.30	<b>PFIM-63/4/03-S/A</b>	235472

# Xeffect Digital RCD

## Residual current circuit breakers FRC



Rated current $I_n$ A	Rated fault current $I_{\Delta N}$ A	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>Residual current circuit breakers FRCdM, digital</b> (please enquire for 60-Hz products)		<b>Type B, All current sensitive, 240/415 V</b>		<b>Type B+, All current sensitive, 240/415 V</b>		<b>Type Bfq, All current sensitive - frequency converter-proof, 240/415 V</b>	
Type G, Short time-delayed							
25	0.03	FRCDM-25/4/003-G/B	167892	FRCDM-25/4/003-G/B+	167880	FRCDM-25/4/003-G/BFQ	179530
40	0.03	FRCDM-40/4/003-G/B	167893	FRCDM-40/4/003-G/B+	167881	FRCDM-40/4/003-G/BFQ	179531
63	0.03	FRCDM-63/4/003-G/B	167894	FRCDM-63/4/003-G/B+	167882	FRCDM-63/4/003-G/BFQ	179532
25	0.3	FRCDM-25/4/03-G/B	167896	FRCDM-25/4/03-G/B+	167884	FRCDM-25/4/03-G/BFQ	167904
40	0.3	FRCDM-40/4/03-G/B	167897	FRCDM-40/4/03-G/B+	167885	FRCDM-40/4/03-G/BFQ	167905
63	0.3	FRCDM-63/4/03-G/B	167898	FRCDM-63/4/03-G/B+	167886	FRCDM-63/4/03-G/BFQ	167906
Type S, selective switch off							
25	0.3	FRCDM-25/4/03-S/B	167900	FRCDM-25/4/03-S/B+	167888	FRCDM-25/4/03-S/BFQ	167908
40	0.3	FRCDM-40/4/03-S/B	167901	FRCDM-40/4/03-S/B+	167889	FRCDM-40/4/03-S/BFQ	167909
63	0.3	FRCDM-63/4/03-S/B	167902	FRCDM-63/4/03-S/B+	167890	FRCDM-63/4/03-S/BFQ	167910
<b>Residual current circuit breakers FRCmM-125</b>							
125	0.03	FRCMM-125/4/003-G/B	171188	FRCMM-125/4/003-G/B+	171189	-	-
125	0.03	FRCMM-125/4/003-B	171184	-	-	-	-
125	0.1	FRCMM-125/4/01-B	171185	-	-	-	-
125	0.3	FRCMM-125/4/03-B	171186	-	-	FRCMM-125/4/03-S/BFQ	171190
125	0.5	FRCMM-125/4/05-B	171187	-	-	FRCMM-125/4/05-S/BFQ	171191
<b>FRCdM residual current circuit-breaker, digital</b>		<b>Type U, pulse-current sensitive, suitable for variable frequency drives, 240/415 V</b>		<b>Type R, Radiography applications, 240/415 V</b>		<b>Type A, Pulse-current sensitive, 240/415 V</b>	
Type G, Short time-delayed							
25	0.03	-	-	-	-	FRCDM-25/4/003-G/A	168646
40	0.03	FRCDM-40/4/003-U	168643	-	-	FRCDM-40/4/003-G/A	168648
63	0.03	FRCDM-63/4/003-U	168640	FRCDM-63/4/003-R	168636	FRCDM-63/4/003-G/A	168650
80	0.03	-	-	-	-	FRCDM-80/4/003-G/A	168634
25	0.3	-	-	-	-	FRCDM-25/4/03-G/A	168647
40	0.3	-	-	-	-	FRCDM-40/4/03-G/A	168649
63	0.3	-	-	-	-	FRCDM-63/4/03-G/A	168651
80	0.3	-	-	-	-	FRCDM-80/4/03-G/A	168635
Type S, selective switch off							
40	0.3	FRCDM-40/4/03-U	168644	-	-	FRCDM-40/4/03-S/A	168637
63	0.3	FRCDM-63/4/03-U	168641	-	-	FRCDM-63/4/03-S/A	168638
80	0.3	FRCDM-80/4/03-U	168642	-	-	FRCDM-80/4/03-S/A	168639
<b>FRCmM Residual current circuit-breaker</b>							
Type G, Short time-delayed							
16	0.03	FRCMM-16/4/003-U	170452	FRCMM-16/4/003-R	170308	-	-
25	0.03	FRCMM-25/4/003-U	170453	FRCMM-25/4/003-R	170309	-	-
40	0.03	FRCMM-40/4/003-U	170454	FRCMM-40/4/003-R	170310	-	-
63	0.03	FRCMM-63/4/003-U	170455	FRCMM-63/4/003-R	170311	-	-
80	0.03	FRCMM-80/4/003-U	170456	FRCMM-80/4/003-R	170312	-	-
100	0.03	FRCMM-100/4/003-U	170457	FRCMM-100/4/003-R	170313	-	-
Type S, selective switch off							
16	0.1	FRCMM-16/4/01-U	170458	-	-	-	-
25	0.1	FRCMM-25/4/01-U	170459	-	-	-	-
40	0.1	FRCMM-40/4/01-U	170460	-	-	-	-
63	0.1	FRCMM-63/4/01-U	170461	-	-	-	-
16	0.3	FRCMM-16/4/03-U	170462	-	-	-	-
25	0.3	FRCMM-25/4/03-U	170463	-	-	-	-
40	0.3	FRCMM-40/4/03-U	170464	-	-	-	-
63	0.3	FRCMM-63/4/03-U	170465	-	-	-	-
80	0.3	FRCMM-80/4/03-U	170466	-	-	-	-
100	0.3	FRCMM-100/4/03-U	170467	-	-	-	-



Rated current $I_n$ A	Rated fault current $I_{\Delta N}$ A	2 pole 240/415 V Part no.	Article no.	4 pole 240/415 V Part no.	Article no.
<b>FRCmM Residual current circuit-breaker</b>					
(please enquire for products for other voltage ranges)					
Type A, Pulse-current sensitive					
16	0.03	FRCMM-16/2/003-A	170430	FRCMM-16/4/003-A	170285
25	0.03	FRCMM-25/2/003-A	170431	FRCMM-25/4/003-A	170332
40	0.03	FRCMM-40/2/003-A	170432	FRCMM-40/4/003-A	170333
63	0.03	FRCMM-63/2/003-A	170433	FRCMM-63/4/003-A	170334
80	0.03	FRCMM-80/2/003-A	170434	FRCMM-80/4/003-A	170335
100	0.03	FRCMM-100/2/003-A	170435	FRCMM-100/4/003-A	170336
125	0.03	FRCMM-125/2/003-A	171164	FRCMM-125/4/003-A	171174
16	0.3	FRCMM-16/2/03-A	170278	FRCMM-16/4/03-A	170340
25	0.3	FRCMM-25/2/03-A	170279	FRCMM-25/4/03-A	170341
40	0.3	FRCMM-40/2/03-A	170280	FRCMM-40/4/03-A	170342
63	0.3	-	-	FRCMM-63/4/03-A	170343
80	0.3	-	-	FRCMM-80/4/03-A	170344
100	0.3	-	-	FRCMM-100/4/03-A	170345
125	0.3	FRCMM-125/2/03-A	171166	FRCMM-125/4/03-A	171176
16	0.5	FRCMM-16/2/05-A	170281	FRCMM-16/4/05-A	170346
25	0.5	FRCMM-25/2/05-A	170282	FRCMM-25/4/05-A	170347
40	0.5	FRCMM-40/2/05-A	170283	FRCMM-40/4/05-A	170348
63	0.5	FRCMM-63/2/05-A	170284	FRCMM-63/4/05-A	170349
80	0.5	-	-	FRCMM-80/4/05-A	170350
100	0.5	-	-	FRCMM-100/4/05-A	170351
125	0.5	FRCMM-125/2/05-A	171167	FRCMM-125/4/05-A	171177
Type G/A (ÖVE E 8601), Short time-delayed					
16	0.03	FRCMM-16/2/003-G/A	170382	FRCMM-16/4/003-G/A	170293
25	0.03	FRCMM-25/2/003-G/A	170383	FRCMM-25/4/003-G/A	170294
40	0.03	FRCMM-40/2/003-G/A	170384	FRCMM-40/4/003-G/A	170295
63	0.03	FRCMM-63/2/003-G/A	170385	FRCMM-63/4/003-G/A	170296
80	0.03	FRCMM-80/2/003-G/A	170386	FRCMM-80/4/003-G/A	170297
100	0.03	FRCMM-100/2/003-G/A	170387	FRCMM-100/4/003-G/A	170298
125	0.03	FRCMM-125/2/003-G/A	171168	FRCMM-125/4/003-G/A	171178
16	0.3	FRCMM-16/2/03-G/A	170290	FRCMM-16/4/03-G/A	170302
25	0.3	FRCMM-25/2/03-G/A	170291	FRCMM-25/4/03-G/A	170303
40	0.3	FRCMM-40/2/03-G/A	170292	FRCMM-40/4/03-G/A	170304
63	0.3	-	-	FRCMM-63/4/03-G/A	170305
80	0.3	-	-	FRCMM-80/4/03-G/A	170306
100	0.3	-	-	FRCMM-100/4/03-G/A	170307
125	0.3	FRCMM-125/2/03-G/A	171170	FRCMM-125/4/03-G/A	171180
Type S/A, selective switch off					
40	0.3	-	-	FRCMM-40/4/03-S/A	170448
63	0.3	-	-	FRCMM-63/4/03-S/A	170449
<b>FRCmM-NA residual current circuit-breakers for North America</b>		<b>IEC: 240/415 V; UL: 480Y/277 V</b>		<b>IEC: 240/415 V; UL: 480Y/277 V</b>	
Type A, Pulse-current sensitive					
25	0.03	FRCMM-25/2/003-A-NA	167113	FRCMM-25/4/003-A-NA	167125
40	0.03	FRCMM-40/2/003-A-NA	167114	FRCMM-40/4/003-A-NA	167102
63	0.03	FRCMM-63/2/003-A-NA	167115	FRCMM-63/4/003-A-NA	167103
25	0.3	FRCMM-25/2/03-A-NA	167116	FRCMM-25/4/03-A-NA	167104
40	0.3	FRCMM-40/2/03-A-NA	167117	FRCMM-40/4/03-A-NA	167105
63	0.3	FRCMM-63/2/03-A-NA	167118	FRCMM-63/4/03-A-NA	167106
Type G/A (ÖVE E 8601), Short time-delayed					
25	0.03	FRCMM-25/2/003-G/A-NA	167119	FRCMM-25/4/003-G/A-NA	167107
40	0.03	FRCMM-40/2/003-G/A-NA	167120	FRCMM-40/4/003-G/A-NA	167108
63	0.03	FRCMM-63/2/003-G/A-NA	167121	FRCMM-63/4/003-G/A-NA	167109
25	0.3	FRCMM-25/2/03-G/A-NA	167122	FRCMM-25/4/03-G/A-NA	167110
40	0.3	FRCMM-40/2/03-G/A-NA	167123	FRCMM-40/4/03-G/A-NA	167111
63	0.3	FRCMM-63/2/03-G/A-NA	167124	FRCMM-63/4/03-G/A-NA	167112



# Xeffect Digital RCD

Residual current circuit breakers FRC-NA, FBS, FBH residual current circuit-breaker unit



Rated current $I_n$ A	Rated fault current $I_{\Delta N}$ A	2 pole Part no.	Article no.	4 pole Part no.	Article no.
<b>Residual current circuit breakers FRCmM-NA-110 for North America</b>					
IEC: 110/190 V; UL: 208/120 V					
Type A, Pulse-current sensitive					
25	0.03	-	-	<b>FRCMM-25/4/003-A-NA-110</b>	167699
40	0.03	-	-	<b>FRCMM-40/4/003-A-NA-110</b>	167700
63	0.03	-	-	<b>FRCMM-63/4/003-A-NA-110</b>	167701
25	0.3	-	-	<b>FRCMM-25/4/03-A-NA-110</b>	167702
40	0.3	-	-	<b>FRCMM-40/4/03-A-NA-110</b>	167703
63	0.3	-	-	<b>FRCMM-63/4/03-A-NA-110</b>	167704
Type G/A (ÖVE E 8601), Short time-delayed					
25	0.03	<b>FRCMM-25/2/003-G/A-NA-110</b>	167693	<b>FRCMM-25/4/003-G/A-NA-110</b>	167705
40	0.03	<b>FRCMM-40/2/003-G/A-NA-110</b>	167694	<b>FRCMM-40/4/003-G/A-NA-110</b>	167706
63	0.03	<b>FRCMM-63/2/003-G/A-NA-110</b>	167695	<b>FRCMM-63/4/003-G/A-NA-110</b>	167707
25	0.3	<b>FRCMM-25/2/03-G/A-NA-110</b>	167696	<b>FRCMM-25/4/03-G/A-NA-110</b>	167708
40	0.3	<b>FRCMM-40/2/03-G/A-NA-110</b>	167697	<b>FRCMM-40/4/03-G/A-NA-110</b>	167709
63	0.3	<b>FRCMM-63/2/03-G/A-NA-110</b>	167698	<b>FRCMM-63/4/03-G/A-NA-110</b>	167710
<b>Add-on residual current protection unit FBSmV</b>					
240/415 V (please enquire for products for 120 V and 440 V)					
Type A, Pulse-current sensitive					
40	0.03	<b>FBSMV-40/2/003-A</b>	170207	<b>FBSMV-40/4/003-A</b>	170227
63	0.03	<b>FBSMV-63/2/003-A</b>	170208	<b>FBSMV-63/4/003-A</b>	170228
40	0.1	<b>FBSMV-40/2/01-A</b>	170209	<b>FBSMV-40/4/01-A</b>	170229
63	0.1	<b>FBSMV-63/2/01-A</b>	170210	<b>FBSMV-63/4/01-A</b>	170230
40	0.3	<b>FBSMV-40/2/03-A</b>	170211	<b>FBSMV-40/4/03-A</b>	170231
63	0.3	<b>FBSMV-63/2/03-A</b>	170212	<b>FBSMV-63/4/03-A</b>	170232
40	0.5	<b>FBSMV-40/2/05-A</b>	170213	<b>FBSMV-40/4/05-A</b>	170233
63	0.5	<b>FBSMV-63/2/05-A</b>	170214	<b>FBSMV-63/4/05-A</b>	170234
40	1	<b>FBSMV-40/2/1-A</b>	170215	<b>FBSMV-40/4/1-A</b>	170235
63	1	<b>FBSMV-63/2/1-A</b>	170216	<b>FBSMV-63/4/1-A</b>	170236
Type S/A, selective switch off					
40	0.1	<b>FBSMV-40/2/01-S/A</b>	170158	<b>FBSMV-40/4/01-S/A</b>	170166
63	0.1	<b>FBSMV-63/2/01-S/A</b>	170159	<b>FBSMV-63/4/01-S/A</b>	170167
40	0.3	<b>FBSMV-40/2/03-S/A</b>	170160	<b>FBSMV-40/4/03-S/A</b>	170168
63	0.3	<b>FBSMV-63/2/03-S/A</b>	170161	<b>FBSMV-63/4/03-S/A</b>	170169
<b>Add-on residual current protection unit FBHmV</b>					
240/415 V (please enquire for products for 440 V)					
Type A, Pulse-current sensitive					
80	0.03	<b>FBHmV-80/2/003-A</b>	170257	<b>FBHmV-80/4/003-A</b>	170265
125	0.03	<b>FBHmV-125/2/003-A</b>	170258	<b>FBHmV-125/4/003-A</b>	170130
80	0.3	<b>FBHmV-80/2/03-A</b>	170259	<b>FBHmV-80/4/03-A</b>	170131
125	0.3	<b>FBHmV-125/2/03-A</b>	170260	<b>FBHmV-125/4/03-A</b>	170132
80	0.5	<b>FBHmV-80/2/05-A</b>	170261	<b>FBHmV-80/4/05-A</b>	170133
125	0.5	<b>FBHmV-125/2/05-A</b>	170262	<b>FBHmV-125/4/05-A</b>	170134
80	1	<b>FBHmV-80/2/1-A</b>	170263	<b>FBHmV-80/4/1-A</b>	170135
125	1	<b>FBHmV-125/2/1-A</b>	170264	<b>FBHmV-125/4/1-A</b>	170136
Type A, selective switch off					
80	0.3	<b>FBHmV-80/2/03-S/A</b>	170137	<b>FBHmV-80/4/03-S/A</b>	170171
125	0.3	<b>FBHmV-125/2/03-S/A</b>	170138	<b>FBHmV-125/4/03-S/A</b>	170172
80	0.5	<b>FBHmV-80/2/05-S/A</b>	170139	<b>FBHmV-80/4/05-S/A</b>	170173
125	0.5	<b>FBHmV-125/2/05-S/A</b>	170140	<b>FBHmV-125/4/05-S/A</b>	170174
80	1	<b>FBHmV-80/2/1-S/A</b>	170141	<b>FBHmV-80/4/1-S/A</b>	170175
125	1	<b>FBHmV-125/2/1-S/A</b>	170170	<b>FBHmV-125/4/1-S/A</b>	170176



$I_n$ A	$I_{\Delta n}$ A	Characteristic: B		Characteristic: C	
		Type designation	Article no.	Type designation	Article no.
<b>Combined RCD/MCB Devices PKN6</b>					
<b>10 kA, 1+N-pole, Conditionally surge current-proof 250 A, type AC</b>					
2	0.01	PKN6-2/1N/B/001-A	236359	PKN6-2/1N/C/001-A	236369
4	0.01	PKN6-4/1N/B/001-A	236389	PKN6-4/1N/C/001-A	236399
6	0.01	PKN6-6/1N/B/001-A	236439	PKN6-6/1N/C/001-A	236449
10	0.01	PKN6-10/1N/B/001-A	236499	PKN6-10/1N/C/001-A	236509
13	0.01	PKN6-13/1N/B/001-A	236560	PKN6-13/1N/C/001-A	236572
16	0.01	PKN6-16/1N/B/001-A	236632	PKN6-16/1N/C/001-A	236644
2	0.03	PKN6-2/1N/B/003-A	236360	PKN6-2/1N/C/003-A	236370
4	0.03	PKN6-4/1N/B/003-A	236390	PKN6-4/1N/C/003-A	236400
6	0.03	PKN6-6/1N/B/003-A	236440	PKN6-6/1N/C/003-A	236450
10	0.03	PKN6-10/1N/B/003-A	236500	PKN6-10/1N/C/003-A	236510
13	0.03	PKN6-13/1N/B/003-A	236561	PKN6-13/1N/C/003-A	236573
16	0.03	PKN6-16/1N/B/003-A	236633	PKN6-16/1N/C/003-A	236645
20	0.03	PKN6-20/1N/B/003-A	236667	PKN6-20/1N/C/003-A	236677
25	0.03	PKN6-25/1N/B/003-A	236697	PKN6-25/1N/C/003-A	236707
32	0.03	PKN6-32/1N/B/003-A	236727	PKN6-32/1N/C/003-A	236737
40	0.03	PKN6-40/1N/B/003-A	236756	PKN6-40/1N/C/003-A	236766
2	0.1	PKN6-2/1N/B/01-A	236361	PKN6-2/1N/C/01-A	236371
4	0.1	PKN6-4/1N/B/01-A	236391	PKN6-4/1N/C/01-A	236401
6	0.1	PKN6-6/1N/B/01-A	236441	PKN6-6/1N/C/01-A	236451
10	0.1	PKN6-10/1N/B/01-A	236501	PKN6-10/1N/C/01-A	236511
13	0.1	PKN6-13/1N/B/01-A	236562	PKN6-13/1N/C/01-A	236574
16	0.1	PKN6-16/1N/B/01-A	236634	PKN6-16/1N/C/01-A	236646
20	0.1	PKN6-20/1N/B/01-A	236668	PKN6-20/1N/C/01-A	236678
25	0.1	PKN6-25/1N/B/01-A	236698	PKN6-25/1N/C/01-A	236708
32	0.1	PKN6-32/1N/B/01-A	236728	PKN6-32/1N/C/01-A	236738
40	0.1	PKN6-40/1N/B/01-A	236757	PKN6-40/1N/C/01-A	236767
2	0.3	PKN6-2/1N/B/03-A	236362	PKN6-2/1N/C/03-A	236372
4	0.3	PKN6-4/1N/B/03-A	236392	PKN6-4/1N/C/03-A	236402
6	0.3	PKN6-6/1N/B/03-A	236442	PKN6-6/1N/C/03-A	236452
10	0.3	PKN6-10/1N/B/03-A	236502	PKN6-10/1N/C/03-A	236512
13	0.3	PKN6-13/1N/B/03-A	236563	PKN6-13/1N/C/03-A	236575
16	0.3	PKN6-16/1N/B/03-A	236635	PKN6-16/1N/C/03-A	236647
20	0.3	PKN6-20/1N/B/03-A	236669	PKN6-20/1N/C/03-A	236679
25	0.3	PKN6-25/1N/B/03-A	236699	PKN6-25/1N/C/03-A	236709
32	0.3	PKN6-32/1N/B/03-A	236729	PKN6-32/1N/C/03-A	236739
40	0.3	PKN6-40/1N/B/03-A	236758	PKN6-40/1N/C/03-A	236768

SG13711



SG13711



$I_n$ A	$I_{\Delta n}$ A	Characteristic: B		Characteristic: C	
		Type designation	Article no.	Type designation	Article no.
<b>Combined RCD/MCB Devices PKNM</b>					
<b>10 kA, 1+N-pole, Conditionally surge current-proof 250 A, type AC</b>					
2	0.01	PKNM-2/1N/B/001-A	235931	PKNM-2/1N/C/001-A	235941
4	0.01	PKNM-4/1N/B/001-A	235961	PKNM-4/1N/C/001-A	235971
6	0.01	PKNM-6/1N/B/001-A	236011	PKNM-6/1N/C/001-A	236021
10	0.01	PKNM-10/1N/B/001-A	236071	PKNM-10/1N/C/001-A	236081
13	0.01	PKNM-13/1N/B/001-A	236132	PKNM-13/1N/C/001-A	236144
16	0.01	PKNM-16/1N/B/001-A	236204	PKNM-16/1N/C/001-A	236216
2	0.03	PKNM-2/1N/B/003-A	235932	PKNM-2/1N/C/003-A	235942
4	0.03	PKNM-4/1N/B/003-A	235962	PKNM-4/1N/C/003-A	235972
6	0.03	PKNM-6/1N/B/003-A	236012	PKNM-6/1N/C/003-A	236022
10	0.03	PKNM-10/1N/B/003-A	236072	PKNM-10/1N/C/003-A	236082
13	0.03	PKNM-13/1N/B/003-A	236133	PKNM-13/1N/C/003-A	236145
16	0.03	PKNM-16/1N/B/003-A	236205	PKNM-16/1N/C/003-A	236217
20	0.03	PKNM-20/1N/B/003-A	236239	PKNM-20/1N/C/003-A	236249
25	0.03	PKNM-25/1N/B/003-A	236269	PKNM-25/1N/C/003-A	236279
32	0.03	PKNM-32/1N/B/003-A	236299	PKNM-32/1N/C/003-A	236309
40	0.03	PKNM-40/1N/B/003-A	236328	PKNM-40/1N/C/003-A	236338
2	0.1	PKNM-2/1N/B/01-A	235933	PKNM-2/1N/C/01-A	235943
4	0.1	PKNM-4/1N/B/01-A	235963	PKNM-4/1N/C/01-A	235973
6	0.1	PKNM-6/1N/B/01-A	236013	PKNM-6/1N/C/01-A	236023
10	0.1	PKNM-10/1N/B/01-A	236073	PKNM-10/1N/C/01-A	236083
13	0.1	PKNM-13/1N/B/01-A	236134	PKNM-13/1N/C/01-A	236146
16	0.1	PKNM-16/1N/B/01-A	236206	PKNM-16/1N/C/01-A	236218
20	0.1	PKNM-20/1N/B/01-A	236240	PKNM-20/1N/C/01-A	236250
25	0.1	PKNM-25/1N/B/01-A	236270	PKNM-25/1N/C/01-A	236280
32	0.1	PKNM-32/1N/B/01-A	236300	PKNM-32/1N/C/01-A	236310
40	0.1	PKNM-40/1N/B/01-A	236329	PKNM-40/1N/C/01-A	236339
2	0.3	PKNM-2/1N/B/03-A	235934	PKNM-2/1N/C/03-A	235944
4	0.3	PKNM-4/1N/B/03-A	235964	PKNM-4/1N/C/03-A	235974
6	0.3	PKNM-6/1N/B/03-A	236014	PKNM-6/1N/C/03-A	236024
10	0.3	PKNM-10/1N/B/03-A	236074	PKNM-10/1N/C/03-A	236084
13	0.3	PKNM-13/1N/B/03-A	236135	PKNM-13/1N/C/03-A	236147
16	0.3	PKNM-16/1N/B/03-A	236207	PKNM-16/1N/C/03-A	236219
20	0.3	PKNM-20/1N/B/03-A	236241	PKNM-20/1N/C/03-A	236251
25	0.3	PKNM-25/1N/B/03-A	236271	PKNM-25/1N/C/03-A	236281
32	0.3	PKNM-32/1N/B/03-A	236301	PKNM-32/1N/C/03-A	236311
40	0.3	PKNM-40/1N/B/03-A	236330	PKNM-40/1N/C/03-A	236340

# Xpole RCD/MCB

Combined RCD/MCB devices mRB6, mRB4, 3+Npolig

SG05710



SG05710



SG05710



$I_n$ A	$I_{\Delta n}$ A	Characteristic: B		Characteristic: C		Characteristic: D	
		Type designation	Article no.	Type designation	Article no.	Type designation	Article no.
<b>Combined RCD/MCB Devices mRB6 -</b>							
6 kA, 3+N-pole, Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A							
6	0.03			mRB6-6/3N/C/003-A	120657	mRB6-6/3N/D/003-A	120669
10	0.03			mRB6-10/3N/C/003-A	120658	mRB6-10/3N/D/003-A	120670
13	0.03	mRB6-13/3N/B/003-A	120651	mRB6-13/3N/C/003-A	120659	mRB6-13/3N/D/003-A	120671
16	0.03	mRB6-16/3N/B/003-A	120652	mRB6-16/3N/C/003-A	120660	mRB6-16/3N/D/003-A	120672
6	0.1			mRB6-6/3N/C/01-A	120661	mRB6-6/3N/D/01-A	120673
10	0.1			mRB6-10/3N/C/01-A	120662	mRB6-10/3N/D/01-A	120674
13	0.1	mRB6-13/3N/B/01-A	120653	mRB6-13/3N/C/01-A	120663	mRB6-13/3N/D/01-A	120675
16	0.1	mRB6-16/3N/B/01-A	120654	mRB6-16/3N/C/01-A	120664	mRB6-16/3N/D/01-A	120676
6	0.3			mRB6-6/3N/C/03-A	120665		
10	0.3			mRB6-10/3N/C/03-A	120666		
13	0.3	mRB6-13/3N/B/03-A	120655	mRB6-13/3N/C/03-A	120667		
16	0.3	mRB6-16/3N/B/03-A	120656	mRB6-16/3N/C/03-A	120668		
<b>Combined RCD/MCB Devices mRB4 -</b>							
4.5 kA, 3+N-pole, Conditionally surge current-proof 250 A, sensitive to residual pulsating DC, type A							
20	0.03			mRB4-20/3N/C/003-A	120677	mRB4-20/3N/D/003-A	120683
25	0.03			mRB4-25/3N/C/003-A	120678		
32	0.03			mRB4-32/3N/C/003-A	167508		
20	0.1			mRB4-20/3N/C/01-A	120679	mRB4-20/3N/D/01-A	120684
25	0.1			mRB4-25/3N/C/01-A	120680		
32	0.1			mRB4-32/3N/C/01-A	167509		
20	0.3			mRB4-20/3N/C/03-A	120681		
25	0.3			mRB4-25/3N/C/03-A	120682		
32	0.3			mRB4-32/3N/C/03-A	167510		






Rated current $I_n$ A	Rated fault current $I_{\Delta N}$ A	Tripping characteristic: B Response current of short-circuit release $3-5 \times I_n$ Part no.	Article no.	Tripping characteristic: C Response current of short-circuit release $5-10 \times I_n$ Part no.	Article no.	Tripping characteristic: D Response current of short-circuit release $10-20 \times I_n$ Part no.	Article no.
<b>Digital FRBmM residual current operated circuit-breakers with overcurrent protection</b>							
Type A, Pulse-current sensitive, 240 V							
1 pole+N, Short time-delayed							
6	0.01	-	-	FRBDM-C6/1N/001-G/A	168252	FRBDM-D6/1N/001-G/A	168258
10	0.01	FRBDM-B10/1N/001-G/A	168249	FRBDM-C10/1N/001-G/A	168253	FRBDM-D10/1N/001-G/A	168259
13	0.01	FRBDM-B13/1N/001-G/A	168250	FRBDM-C13/1N/001-G/A	168254	FRBDM-D13/1N/001-G/A	168260
16	0.01	FRBDM-B16/1N/001-G/A	168251	FRBDM-C16/1N/001-G/A	168255	FRBDM-D16/1N/001-G/A	168261
20	0.01	-	-	FRBDM-C20/1N/001-G/A	168256	FRBDM-D20/1N/001-G/A	168262
25	0.01	-	-	FRBDM-C25/1N/001-G/A	168257	FRBDM-D25/1N/001-G/A	168263
6	0.03	-	-	FRBDM-C6/1N/003-G/A	168267	FRBDM-D6/1N/003-G/A	168273
10	0.03	FRBDM-B10/1N/003-G/A	168264	FRBDM-C10/1N/003-G/A	168268	FRBDM-D10/1N/003-G/A	168274
13	0.03	FRBDM-B13/1N/003-G/A	168265	FRBDM-C13/1N/003-G/A	168269	FRBDM-D13/1N/003-G/A	168275
16	0.03	FRBDM-B16/1N/003-G/A	168266	FRBDM-C16/1N/003-G/A	168270	FRBDM-D16/1N/003-G/A	168276
20	0.03	-	-	FRBDM-C20/1N/003-G/A	168271	FRBDM-D20/1N/003-G/A	168277
25	0.03	-	-	FRBDM-C25/1N/003-G/A	168272	FRBDM-D25/1N/003-G/A	168278
6	0.1	-	-	FRBDM-C6/1N/01-G/A	168282	FRBDM-D6/1N/01-G/A	168288
10	0.1	FRBDM-B10/1N/01-G/A	168279	FRBDM-C10/1N/01-G/A	168283	FRBDM-D10/1N/01-G/A	168289
13	0.1	FRBDM-B13/1N/01-G/A	168280	FRBDM-C13/1N/01-G/A	168284	FRBDM-D13/1N/01-G/A	168290
16	0.1	FRBDM-B16/1N/01-G/A	168281	FRBDM-C16/1N/01-G/A	168285	FRBDM-D16/1N/01-G/A	168291
20	0.1	-	-	FRBDM-C20/1N/01-G/A	168286	FRBDM-D20/1N/01-G/A	168292
25	0.1	-	-	FRBDM-C25/1N/01-G/A	168287	FRBDM-D25/1N/01-G/A	168293
2 pole, Short time-delayed							
6	0.01	-	-	FRBDM-C6/2/001-G/A	168297	FRBDM-D6/2/001-G/A	168303
10	0.01	FRBDM-B10/2/001-G/A	168294	FRBDM-C10/2/001-G/A	168298	FRBDM-D10/2/001-G/A	168304
13	0.01	FRBDM-B13/2/001-G/A	168295	FRBDM-C13/2/001-G/A	168299	FRBDM-D13/2/001-G/A	168305
16	0.01	FRBDM-B16/2/001-G/A	168296	FRBDM-C16/2/001-G/A	168300	FRBDM-D16/2/001-G/A	168195
20	0.01	-	-	FRBDM-C20/2/001-G/A	168301	FRBDM-D20/2/001-G/A	168196
25	0.01	-	-	FRBDM-C25/2/001-G/A	168302	FRBDM-D25/2/001-G/A	168197
6	0.03	-	-	FRBDM-C6/2/003-G/A	168201	FRBDM-D6/2/003-G/A	168207
10	0.03	FRBDM-B10/2/003-G/A	168198	FRBDM-C10/2/003-G/A	168202	FRBDM-D10/2/003-G/A	168208
13	0.03	FRBDM-B13/2/003-G/A	168199	FRBDM-C13/2/003-G/A	168203	FRBDM-D13/2/003-G/A	168209
16	0.03	FRBDM-B16/2/003-G/A	168200	FRBDM-C16/2/003-G/A	168204	FRBDM-D16/2/003-G/A	168210
20	0.03	-	-	FRBDM-C20/2/003-G/A	168205	FRBDM-D20/2/003-G/A	168211
25	0.03	-	-	FRBDM-C25/2/003-G/A	168206	FRBDM-D25/2/003-G/A	168212
6	0.1	-	-	FRBDM-C6/2/01-G/A	168216	FRBDM-D6/2/01-G/A	168222
10	0.1	FRBDM-B10/2/01-G/A	168213	FRBDM-C10/2/01-G/A	168217	FRBDM-D10/2/01-G/A	168223
13	0.1	FRBDM-B13/2/01-G/A	168214	FRBDM-C13/2/01-G/A	168218	FRBDM-D13/2/01-G/A	168224
16	0.1	FRBDM-B16/2/01-G/A	168215	FRBDM-C16/2/01-G/A	168219	FRBDM-D16/2/01-G/A	168225
20	0.1	-	-	FRBDM-C20/2/01-G/A	168220	FRBDM-D20/2/01-G/A	168226
25	0.1	-	-	FRBDM-C25/2/01-G/A	168221	FRBDM-D25/2/01-G/A	168227
<b>FRBmM combined residual-current/power circuit-breakers</b>							
Type A, Pulse-current sensitive, 240 V (please enquire for products for other voltage ranges)							
1 pole+N, non-delayed							
2	0.03	-	-	FRBMM-C2/1N/003-A	170614	FRBMM-D2/1N/003-A	170643
4	0.03	-	-	FRBMM-C4/1N/003-A	170615	FRBMM-D4/1N/003-A	170644
6	0.03	FRBMM-B6/1N/003-A	170702	FRBMM-C6/1N/003-A	170616	FRBMM-D6/1N/003-A	170645
10	0.03	FRBMM-B10/1N/003-A	170703	FRBMM-C10/1N/003-A	170617	FRBMM-D10/1N/003-A	170646
13	0.03	FRBMM-B13/1N/003-A	170704	FRBMM-C13/1N/003-A	170618	FRBMM-D13/1N/003-A	170647
16	0.03	FRBMM-B16/1N/003-A	170705	FRBMM-C16/1N/003-A	170619	FRBMM-D16/1N/003-A	170648
20	0.03	FRBMM-B20/1N/003-A	170706	FRBMM-C20/1N/003-A	170620	FRBMM-D20/1N/003-A	170649
25	0.03	FRBMM-B25/1N/003-A	170707	FRBMM-C25/1N/003-A	170621	-	-
32	0.03	FRBMM-B32/1N/003-A	170708	FRBMM-C32/1N/003-A	170622	-	-
40	0.03	FRBMM-B40/1N/003-A	170709	FRBMM-C40/1N/003-A	170623	-	-



# Xeffect RCD/MCB

FRB combined residual-current/power circuit-breakers



Rated current $I_n$ A	Rated fault current $I_{\Delta N}$ A	 <b>Tripping characteristic: B</b> Response current of short-circuit release $3-5 \times I_n$ Part no.                      Article no.	 <b>Tripping characteristic: C</b> Response current of short-circuit release $5-10 \times I_n$ Part no.                      Article no.	 <b>Tripping characteristic: D</b> Response current of short-circuit release $10-20 \times I_n$ Part no.                      Article no.	
<b>FRBmM combined residual-current/power circuit-breakers</b>					
Type A, Pulse-current sensitive, 240 V (please enquire for products for other voltage ranges)					
<b>1 pole+N, non-delayed</b>					
2	0.1	-	-	<b>FRBMM-C2/1N/01-A</b> 170682	<b>FRBMM-D2/1N/01-A</b> 170544
4	0.1	-	-	<b>FRBMM-C4/1N/01-A</b> 170683	<b>FRBMM-D4/1N/01-A</b> 170545
6	0.1	<b>FRBMM-B6/1N/01-A</b> 170664		<b>FRBMM-C6/1N/01-A</b> 170684	<b>FRBMM-D6/1N/01-A</b> 170546
10	0.1	<b>FRBMM-B10/1N/01-A</b> 170665		<b>FRBMM-C10/1N/01-A</b> 170685	<b>FRBMM-D10/1N/01-A</b> 170547
13	0.1	<b>FRBMM-B13/1N/01-A</b> 170666		<b>FRBMM-C13/1N/01-A</b> 170686	<b>FRBMM-D13/1N/01-A</b> 170548
16	0.1	<b>FRBMM-B16/1N/01-A</b> 170667		<b>FRBMM-C16/1N/01-A</b> 170687	<b>FRBMM-D16/1N/01-A</b> 170549
20	0.1	<b>FRBMM-B20/1N/01-A</b> 170668		<b>FRBMM-C20/1N/01-A</b> 170688	<b>FRBMM-D20/1N/01-A</b> 170550
25	0.1	<b>FRBMM-B25/1N/01-A</b> 170669		<b>FRBMM-C25/1N/01-A</b> 170689	-
32	0.1	<b>FRBMM-B32/1N/01-A</b> 170670		<b>FRBMM-C32/1N/01-A</b> 170690	-
40	0.1	<b>FRBMM-B40/1N/01-A</b> 170671		<b>FRBMM-C40/1N/01-A</b> 170691	-
2	0.3	-	-	<b>FRBMM-C2/1N/03-A</b> 170571	<b>FRBMM-D2/1N/03-A</b> 170594
4	0.3	-	-	<b>FRBMM-C4/1N/03-A</b> 170572	<b>FRBMM-D4/1N/03-A</b> 170595
6	0.3	<b>FRBMM-B6/1N/03-A</b> 170607		<b>FRBMM-C6/1N/03-A</b> 170573	<b>FRBMM-D6/1N/03-A</b> 170596
10	0.3	<b>FRBMM-B10/1N/03-A</b> 170608		<b>FRBMM-C10/1N/03-A</b> 170574	<b>FRBMM-D10/1N/03-A</b> 170597
13	0.3	<b>FRBMM-B13/1N/03-A</b> 170609		<b>FRBMM-C13/1N/03-A</b> 170575	<b>FRBMM-D13/1N/03-A</b> 170598
16	0.3	<b>FRBMM-B16/1N/03-A</b> 170610		<b>FRBMM-C16/1N/03-A</b> 170576	<b>FRBMM-D16/1N/03-A</b> 170599
20	0.3	<b>FRBMM-B20/1N/03-A</b> 170611		<b>FRBMM-C20/1N/03-A</b> 170577	<b>FRBMM-D20/1N/03-A</b> 170868
25	0.3	<b>FRBMM-B25/1N/03-A</b> 170552		<b>FRBMM-C25/1N/03-A</b> 170578	-
32	0.3	<b>FRBMM-B32/1N/03-A</b> 170553		<b>FRBMM-C32/1N/03-A</b> 170579	-
40	0.3	<b>FRBMM-B40/1N/03-A</b> 170554		<b>FRBMM-C40/1N/03-A</b> 170580	-
<b>1 pole+N, Short time-delayed</b>					
13	0.03	<b>FRBMM-B13/1N/003-G/A</b> 170716		-	<b>FRBMM-D13/1N/003-G/A</b> 170653
16	0.03	<b>FRBMM-B16/1N/003-G/A</b> 170717		<b>FRBMM-C16/1N/003-G/A</b> 170631	<b>FRBMM-D16/1N/003-G/A</b> 170654
20	0.03	<b>FRBMM-B20/1N/003-G/A</b> 170528		<b>FRBMM-C20/1N/003-G/A</b> 170632	<b>FRBMM-D20/1N/003-G/A</b> 170655
25	0.03	<b>FRBMM-B25/1N/003-G/A</b> 170529		<b>FRBMM-C25/1N/003-G/A</b> 170633	-
32	0.03	<b>FRBMM-B32/1N/003-G/A</b> 170530		<b>FRBMM-C32/1N/003-G/A</b> 170634	-
40	0.03	<b>FRBMM-B40/1N/003-G/A</b> 170531		<b>FRBMM-C40/1N/003-G/A</b> 170635	-
<b>2 pole, non-delayed</b>					
6	0.03	-	-	<b>FRBMM-C6/2/003-A</b> 170785	-
10	0.03	<b>FRBMM-B10/2/003-A</b> 170879		<b>FRBMM-C10/2/003-A</b> 170786	-
13	0.03	<b>FRBMM-B13/2/003-A</b> 170880		<b>FRBMM-C13/2/003-A</b> 170787	-
16	0.03	<b>FRBMM-B16/2/003-A</b> 170881		<b>FRBMM-C16/2/003-A</b> 170788	-
20	0.03	<b>FRBMM-B20/2/003-A</b> 170882		<b>FRBMM-C20/2/003-A</b> 170789	-
25	0.03	<b>FRBMM-B25/2/003-A</b> 170883		-	-
32	0.03	<b>FRBMM-B32/2/003-A</b> 170884		-	-
40	0.03	<b>FRBMM-B40/2/003-A</b> 170885		-	-
6	0.1	-	-	<b>FRBMM-C6/2/01-A</b> 170819	-
10	0.1	<b>FRBMM-B10/2/01-A</b> 170803		<b>FRBMM-C10/2/01-A</b> 170820	-
13	0.1	<b>FRBMM-B13/2/01-A</b> 170804		<b>FRBMM-C13/2/01-A</b> 170821	-
16	0.1	<b>FRBMM-B16/2/01-A</b> 170805		<b>FRBMM-C16/2/01-A</b> 170822	-
20	0.1	<b>FRBMM-B20/2/01-A</b> 170806		<b>FRBMM-C20/2/01-A</b> 170823	-
6	0.3	-	-	<b>FRBMM-C6/2/03-A</b> 170863	-
10	0.3	<b>FRBMM-B10/2/03-A</b> 170844		<b>FRBMM-C10/2/03-A</b> 170864	-
13	0.3	<b>FRBMM-B13/2/03-A</b> 170845		<b>FRBMM-C13/2/03-A</b> 170865	-
16	0.3	<b>FRBMM-B16/2/03-A</b> 170846		<b>FRBMM-C16/2/03-A</b> 170866	-
20	0.3	<b>FRBMM-B20/2/03-A</b> 170847		<b>FRBMM-C20/2/03-A</b> 170867	-


Rated current $I_n$ A	Rated fault current $I_{\Delta n}$ A	Tripping characteristic: B Response current of short-circuit release 3-5 x $I_n$		Tripping characteristic: C Response current of short-circuit release 5-10 x $I_n$		Tripping characteristic: D Response current of short-circuit release 10-20 x $I_n$	
		Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
<b>FRBmM combined residual-current/power circuit-breakers</b>							
Type A, Pulse-current sensitive (please enquire for products for other voltage ranges)							
2 pole, Short time-delayed, 240 V							
6	0.03	-	-	FRBMM-C6/2/003-LIA	170795	-	-
10	0.03	FRBMM-B10/2/003-LIA	170886	FRBMM-C10/2/003-LIA	170796	-	-
13	0.03	FRBMM-B13/2/003-LIA	170887	FRBMM-C13/2/003-LIA	170797	-	-
16	0.03	FRBMM-B16/2/003-LIA	170888	FRBMM-C16/2/003-LIA	170798	-	-
20	0.03	FRBMM-B20/2/003-LIA	170889	FRBMM-C20/2/003-LIA	170799	-	-
6	0.1	-	-	FRBMM-C6/2/01-LIA	170829	-	-
10	0.1	FRBMM-B10/2/01-LIA	170810	FRBMM-C10/2/01-LIA	170830	-	-
13	0.1	FRBMM-B13/2/01-LIA	170811	FRBMM-C13/2/01-LIA	170831	-	-
16	0.1	FRBMM-B16/2/01-LIA	170812	FRBMM-C16/2/01-LIA	170832	-	-
20	0.1	FRBMM-B20/2/01-LIA	170813	FRBMM-C20/2/01-LIA	170833	-	-
3 pole, non-delayed, 415 V							
6	0.03	-	-	FRBMM-C6/3/003-A	170737	FRBMM-D6/3/003-A	170774
10	0.03	FRBMM-B10/3/003-A	170733	FRBMM-C10/3/003-A	170738	FRBMM-D10/3/003-A	170775
13	0.03	FRBMM-B13/3/003-A	170734	FRBMM-C13/3/003-A	170739	FRBMM-D13/3/003-A	170776
16	0.03	FRBMM-B16/3/003-A	170735	FRBMM-C16/3/003-A	170740	FRBMM-D16/3/003-A	170777
20	0.03	FRBMM-B20/3/003-A	170736	FRBMM-C20/3/003-A	170741	FRBMM-D20/3/003-A	170778
25	0.03	-	-	FRBMM-C25/3/003-A	170772	FRBMM-D25/3/003-A	170779
32	0.03	-	-	FRBMM-C32/3/003-A	170773	-	-
6	0.1	-	-	FRBMM-C6/3/01-A	170742	FRBMM-D6/3/01-A	170749
10	0.1	FRBMM-B10/3/01-A	170780	FRBMM-C10/3/01-A	170743	FRBMM-D10/3/01-A	170750
13	0.1	FRBMM-B13/3/01-A	170781	FRBMM-C13/3/01-A	170744	FRBMM-D13/3/01-A	170751
16	0.1	FRBMM-B16/3/01-A	170782	FRBMM-C16/3/01-A	170745	FRBMM-D16/3/01-A	170752
20	0.1	FRBMM-B20/3/01-A	170783	FRBMM-C20/3/01-A	170746	FRBMM-D20/3/01-A	170753
25	0.1	-	-	FRBMM-C25/3/01-A	170747	FRBMM-D25/3/01-A	170754
32	0.1	-	-	FRBMM-C32/3/01-A	170748	-	-
6	0.3	-	-	FRBMM-C6/3/03-A	170759	FRBMM-D6/3/03-A	170766
10	0.3	FRBMM-B10/3/03-A	170755	FRBMM-C10/3/03-A	170760	FRBMM-D10/3/03-A	170767
13	0.3	FRBMM-B13/3/03-A	170756	FRBMM-C13/3/03-A	170761	FRBMM-D13/3/03-A	170768
16	0.3	FRBMM-B16/3/03-A	170757	FRBMM-C16/3/03-A	170762	FRBMM-D16/3/03-A	170769
20	0.3	FRBMM-B20/3/03-A	170758	FRBMM-C20/3/03-A	170763	FRBMM-D20/3/03-A	170770
25	0.3	-	-	FRBMM-C25/3/03-A	170764	FRBMM-D25/3/03-A	170771
32	0.3	-	-	FRBMM-C32/3/03-A	170765	-	-
3 pole+N, non-delayed, 240/415 V							
6	0.03	-	-	FRBM6-C6/3N/003-A	170996	FRBM6-D6/3N/003-A	171008
10	0.03	-	-	FRBM6-C10/3N/003-A	170997	FRBM6-D10/3N/003-A	170892
13	0.03	FRBM6-B13/3N/003-A	170987	FRBM6-C13/3N/003-A	170998	FRBM6-D13/3N/003-A	170893
16	0.03	FRBM6-B16/3N/003-A	170988	FRBM6-C16/3N/003-A	170999	FRBM6-D16/3N/003-A	170894
20	0.03	-	-	FRBM4-C20/3N/003-A	171000	FRBM4-D20/3N/003-A	170895
25	0.03	-	-	FRBM4-C25/3N/003-A	171001	-	-
32	0.03	-	-	FRBM4-C32/3N/003-A	171002	-	-
6	0.1	-	-	FRBM6-C6/3N/01-A	170926	FRBM6-D6/3N/01-A	170938
10	0.1	-	-	FRBM6-C10/3N/01-A	170927	FRBM6-D10/3N/01-A	170939
13	0.1	FRBM6-B13/3N/01-A	170898	FRBM6-C13/3N/01-A	170928	FRBM6-D13/3N/01-A	170940
16	0.1	FRBM6-B16/3N/01-A	170899	FRBM6-C16/3N/01-A	170929	FRBM6-D16/3N/01-A	170941
20	0.1	-	-	FRBM4-C20/3N/01-A	170930	FRBM4-D20/3N/01-A	170942
25	0.1	-	-	FRBM4-C25/3N/01-A	170931	-	-
32	0.1	-	-	FRBM4-C32/3N/01-A	170932	-	-
6	0.3	-	-	FRBM6-C6/3N/03-A	170954	FRBM6-D6/3N/03-A	170966
10	0.3	-	-	FRBM6-C10/3N/03-A	170955	FRBM6-D10/3N/03-A	170967
13	0.3	FRBM6-B13/3N/03-A	170945	FRBM6-C13/3N/03-A	170956	FRBM6-D13/3N/03-A	170968
16	0.3	FRBM6-B16/3N/03-A	170946	FRBM6-C16/3N/03-A	170957	FRBM6-D16/3N/03-A	170969
20	0.3	-	-	FRBM4-C20/3N/03-A	170958	FRBM4-D20/3N/03-A	170970
25	0.3	-	-	FRBM4-C25/3N/03-A	170959	-	-
32	0.3	-	-	FRBM4-C32/3N/03-A	170960	-	-

# AFDD

## Protective devices

### Electric Fire Protective Device, Arc Fault Protection AFDD+

10 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, alternating-current-sensitive, Type AC

	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
sg06416 	<b>Characteristic B</b>			
	10/0.01	AFDD-10/2/B/001	187164	1/40
	13/0.01	AFDD-13/2/B/001	187176	1/40
	15OL/0.01	AFDD-15/2/B/001-OL	187188	1/40
	16/0.01	AFDD-16/2/B/001	187200	1/40
	10/0.03	AFDD-10/2/B/003	187167	1/40
	13/0.03	AFDD-13/2/B/003	187179	1/40
	15OL/0.03	AFDD-15/2/B/003-OL	187191	1/40
	16/0.03	AFDD-16/2/B/003	187203	1/40
	20OL/0.03	AFDD-20/2/B/003-OL	187212	1/40
	20/0.03	AFDD-20/2/B/003	187218	1/40
	25/0.03	AFDD-25/2/B/003	187224	1/40
	<b>Characteristic C</b>			
	10/0.01	AFDD-10/2/C/001	187170	1/40
	13/0.01	AFDD-13/2/C/001	187182	1/40
	15OL/0.01	AFDD-15/2/C/001-OL	187194	1/40
	16/0.01	AFDD-16/2/C/001	187206	1/40
	10/0.03	AFDD-10/2/C/003	187173	1/40
	13/0.03	AFDD-13/2/C/003	187185	1/40
	15OL/0.03	AFDD-15/2/C/003-OL	187197	1/40
16/0.03	AFDD-16/2/C/003	187209	1/40	
20OL/0.03	AFDD-20/2/C/003-OL	187215	1/40	
20/0.03	AFDD-20/2/C/003	187221	1/40	
25/0.03	AFDD-25/2/C/003	187227	1/40	


### Electric Fire Protective Device, Arc Fault Protection AFDD+

6 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, alternating-current-sensitive, Type AC

	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic B</b>				
	32/0.03	AFDD-32/2/B/003	187230	1/40
	40/0.03	AFDD-40/2/B/003	187236	1/40
<b>Characteristic C</b>				
	32/0.03	AFDD-32/2/C/003	187233	1/40
	40/0.03	AFDD-40/2/C/003	187239	1/40

### Electric Fire Protective Device, Arc Fault Protection AFDD+

10 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, pulsed-current-sensitive, Type A

	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
sg06416 	<b>Characteristic B</b>			
	10/0.01	AFDD-10/2/B/001-A	187165	1/40
	13/0.01	AFDD-13/2/B/001-A	187177	1/40
	15OL/0.01	AFDD-15/2/B/001-A-OL	187189	1/40
	16/0.01	AFDD-16/2/B/001-A	187201	1/40
	10/0.03	AFDD-10/2/B/003-A	187168	1/40
	13/0.03	AFDD-13/2/B/003-A	187180	1/40
	15OL/0.03	AFDD-15/2/B/003-A-OL	187192	1/40
	16/0.03	AFDD-16/2/B/003-A	187204	1/40
	20OL/0.03	AFDD-20/2/B/003-A-OL	187213	1/40
	20/0.03	AFDD-20/2/B/003-A	187219	1/40
	25/0.03	AFDD-25/2/B/003-A	187225	1/40
	<b>Characteristic C</b>			
	10/0.01	AFDD-10/2/C/001-A	187171	1/40
	13/0.01	AFDD-13/2/C/001-A	187183	1/40
	15OL/0.01	AFDD-15/2/C/001-A-OL	187195	1/40
	16/0.01	AFDD-16/2/C/001-A	187207	1/40
	10/0.03	AFDD-10/2/C/003-A	187174	1/40
	13/0.03	AFDD-13/2/C/003-A	187186	1/40
	15OL/0.03	AFDD-15/2/C/003-A-OL	187198	1/40
	16/0.03	AFDD-16/2/C/003-A	187210	1/40
	20OL/0.03	AFDD-20/2/C/003-A-OL	187216	1/40
	20/0.03	AFDD-20/2/C/003-A	187222	1/40
	25/0.03	AFDD-25/2/C/003-A	187228	1/40

### Electric Fire Protective Device, Arc Fault Protection AFDD+

6 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, pulsed-current-sensitive, Type A


	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic B</b>				
	32/0.03	AFDD-32/2/B/003-A	187231	1/40
	40/0.03	AFDD-40/2/B/003-A	187237	1/40
<b>Characteristic C</b>				
	32/0.03	AFDD-32/2/C/003-A	187234	1/40
	40/0.03	AFDD-40/2/C/003-A	187240	1/40

# AFDD

## Protective devices

### Electric Fire Protective Device, Arc Fault Protection AFDD+

10 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, alternating-current-sensitive, Type AC

	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
sg06416 	<b>Characteristic B</b>			
	10/0.01	AFDD-10/2/B/001	187164	1/40
	13/0.01	AFDD-13/2/B/001	187176	1/40
	15OL/0.01	AFDD-15/2/B/001-OL	187188	1/40
	16/0.01	AFDD-16/2/B/001	187200	1/40
	10/0.03	AFDD-10/2/B/003	187167	1/40
	13/0.03	AFDD-13/2/B/003	187179	1/40
	15OL/0.03	AFDD-15/2/B/003-OL	187191	1/40
	16/0.03	AFDD-16/2/B/003	187203	1/40
	20OL/0.03	AFDD-20/2/B/003-OL	187212	1/40
	20/0.03	AFDD-20/2/B/003	187218	1/40
	25/0.03	AFDD-25/2/B/003	187224	1/40
	<b>Characteristic C</b>			
	10/0.01	AFDD-10/2/C/001	187170	1/40
	13/0.01	AFDD-13/2/C/001	187182	1/40
	15OL/0.01	AFDD-15/2/C/001-OL	187194	1/40
	16/0.01	AFDD-16/2/C/001	187206	1/40
	10/0.03	AFDD-10/2/C/003	187173	1/40
	13/0.03	AFDD-13/2/C/003	187185	1/40
	15OL/0.03	AFDD-15/2/C/003-OL	187197	1/40
16/0.03	AFDD-16/2/C/003	187209	1/40	
20OL/0.03	AFDD-20/2/C/003-OL	187215	1/40	
20/0.03	AFDD-20/2/C/003	187221	1/40	
25/0.03	AFDD-25/2/C/003	187227	1/40	

### Electric Fire Protective Device, Arc Fault Protection AFDD+

6 kA, 2-pole, To a certain extent surge-current-proof 250 A; non-delayed, alternating-current-sensitive, Type AC

	$I_n/I_{\Delta n}$ (A)	Type Designation	Article No.	Units per package
<b>Characteristic B</b>				
	32/0.03	AFDD-32/2/B/003	187230	1/40
	40/0.03	AFDD-40/2/B/003	187236	1/40
<b>Characteristic C</b>				
	32/0.03	AFDD-32/2/C/003	187233	1/40
	40/0.03	AFDD-40/2/C/003	187239	1/40



Phases	MU	Cu-factor	Type Designation	Article No.
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### Euro-Vario-Busbar (Fork) EVG

for PLS., CLS., PKN., PFIM, PFHM, PFNM

- No end caps necessary
- Do not cut!

#### 10 mm<sup>2</sup>

- Rated current 63 A

Wa\_sg02902



1-phase	2	0.015	EVG-1PHAS/2MODUL	215646
1-phase	6	0.039	EVG-1PHAS/6MODUL	215638
1-phase	12	0.075	EVG-1PHAS/12MODUL	215637
2-phases	4	0.051	EVG-2PHAS/4MODUL	268220
2-phases	6	0.079	EVG-2PHAS/6MODUL	215642
2-phases	12	0.150	EVG-2PHAS/12MODUL	215641
3-phases	6	0.086	EVG-3PHAS/6MODUL	215640
3-phases	9	0.128	EVG-3PHAS/9MODUL	215645
3-phases	12	0.168	EVG-3PHAS/12MODUL	215639
3-phases	16	0.230	EVG-3PHAS/16MODUL	285381
3-phases	20	0.310	EVG-3PHAS/20MODUL	285383
4-phases	16	0.320	EVG-3P+3N/16MODUL	105215
4-phases	18	0.350	EVG-3P+3N/18MODUL	274161
4-phases	8	0.219	EVG-4PHAS/8MODUL	215644
4-phases	12	0.324	EVG-4PHAS/12MODUL	215643

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
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for combination RCD/MCBs with RCD 4-pole

3-phases	4+5	0,138	EVG-3PHAS/N/5MODUL/LS	215659
3-phases	4+8	0,188	EVG-3PHAS/N/8MODUL/LS	215660

for applications with Auxiliary Switch

Wa\_sg01602



1-phase	2,5	0,025	EVG-1PHAS/2MODUL/HI	215655
1-phase	13	0,096	EVG-1PHAS/9MODUL/HI	215656
2-phases	4,5	0,053	EVG-2PHAS/4MODUL/HI	219573
2-phases	12	0,160	EVG-2PHAS/10MODUL/HI	215657
3-phases	6,5	0,100	EVG-3PHAS/6MODUL/HI	216411
3-phases	13,5	0,200	EVG-3PHAS/12MODUL/HI	215658

#### 16mm<sup>2</sup>

- Rated current 80 A

WA\_SG02902



1-phase	2	0,023	EVG-16/1PHAS/2MODUL	291464
1-phase	6	0,059	EVG-16/1PHAS/6MODUL	291465
1-phase	12	0,113	EVG-16/1PHAS/12MODUL	291466
2-phases	4	0,080	EVG-16/2PHAS/4MODUL	291467
2-phases	6	0,120	EVG-16/2PHAS/6MODUL	291468
2-phases	12	0,225	EVG-16/2PHAS/12MODUL	291469
3-phases	6	0,112	EVG-16/3PHAS/6MODUL	291470
3-phases	9	0,163	EVG-16/3PHAS/9MODUL	291471
3-phases	12	0,218	EVG-16/3PHAS/12MODUL	291472
3-phases	16	0,300	EVG-16/3PHAS/16MODUL	291473
3-phases	20	0,363	EVG-16/3PHAS/20MODUL	291474
4-phases	8	0,200	EVG-16/4PHAS/8MODUL	291475
4-phases	12	0,284	EVG-16/4PHAS/12MODUL	291476


# Surge protection

	Impulse Current $I_{imp}$ (10/350) $\mu$ s	Type Designation	Article No.	Units per package
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## SPD Class B

Lightning current arresters SPI

• No decoupling necessary, if arrester class C with  $U_c = 460$  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

SPI-35/440

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


Description	Type Designation	Article No.	Units per package
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## SPD Class B, SPI

	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	

SPI-3+1

## SPD Class B+C


	Impulse Current $I_{imp}$ (10/350) $\mu$ s	Type Designation	Article No.	Units per package	
	Lightning current arrester - surge arrester SPBT12				
	12.5kA	L - (PE) N	SPBT12-280/1	158306	12 / 120
	100 kA	N-PE	SPBT12-NPE100	158307	1 / 60

SPBT12-280/1

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


Description	Type Designation	Article No.	Units per package
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## SPD Class B+C, SPBT12

	<b>Without remote indication</b>				
	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

SPBT12-280/3

SG10407

	<b>With remote indication</b>				
	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
<b>Accessories</b>					
Auxiliary switch for SPBT12-280		ASAUWSC-SPM	131785	4 / 120	
Busbar		ZV-KSBI...			

SPBT12-280-3+NPE-AX

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




Description	Type Designation	Article No.	Units per package	
<b>SPD Class B+C, SP-B+C/</b>				
SG14905	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
<b>Accessories</b>				
	Auxiliary switch for SP-B+C	ASAXSC-SPM	131785	8 / 80





SP-B+C/3

# Surge protection

## SPD Class C

	Max. Cont. Op. Volt. $U_c$	$I_n$ (8/20) $\mu$ s	Type Designation	Article No.	Units per package	
<b>Plug-in surge arrester SPC-S</b>						
<b>Insert 1-pole</b>						
 <p>SG13109</p> <p>SPC-S-20/280</p>	Insert 75VAC	15kA	SPC-S-15/75	248158	4 / 120	
	Insert 130VAC	20kA	SPC-S-20/130	248159	4 / 120	
	Insert 175VAC	20kA	SPC-S-20/175	248160	4 / 120	
	Insert 280VAC	20kA	SPC-S-20/280	248161	4 / 120	
	Insert 335VAC	20kA	SPC-S-20/335	248162	4 / 120	
	Insert 385VAC	20kA	SPC-S-20/385	248163	4 / 120	
	Insert 460VAC	20kA	SPC-S-20/460	248164	4 / 120	
	Insert 580VAC	20kA	SPC-S-20/580	248165	4 / 120	
	Insert N-PE 260VAC	30kA	SPC-S-N/PE	248166	4 / 120	
	<b>Base 1- to 4-pole</b>					
 <p>SG14802</p> <p>SPC-S-S4-3+1</p>	Base 1-pole		SPC-S-S1	248167	12 / 120	
	Base 1+1 2-pole		SPC-S-S2-1+1	248201	6 / 60	
	Base 2-pole		SPC-S-S2	248168	6 / 60	
	Base 3-pole		SPC-S-S3	248169	4 / 40	
	Base 4-pole		SPC-S-S4	248170	3 / 30	
	Base 3+1 4-pole		SPC-S-S4-3+1	248171	3 / 30	
	<b>Plug-in surge arrester SPC-S, 1- to 4-pole</b>					
	<b>Complete (2- and multi-pole surge arresters are supplied with busbar)</b>					
 <p>U1202</p> <p>SPC-S-20/280/3</p>	1-pole	130VAC	1x20kA	SPC-S-20/130/1	248188	12 / 120
	1-pole	175VAC	1x20kA	SPC-S-20/175/1	248189	12 / 120
	2-pole	175VAC	2x20kA	SPC-S-20/175/2	248190	1 / 60
	1-pole	280VAC	1x20kA	SPC-S-20/280/1	248172	12 / 120
	2-pole	280VAC	2x20kA	SPC-S-20/280/2	248173	1 / 60
	3-pole	280VAC	3x20kA	SPC-S-20/280/3	248174	1 / 40
	4-pole	280VAC	4x20kA	SPC-S-20/280/4	248175	1 / 30
	1-pole	335VAC	1x20kA	SPC-S-20/335/1	248176	12 / 120
	2-pole	335VAC	2x20kA	SPC-S-20/335/2	248177	1 / 60
	3-pole	335VAC	3x20kA	SPC-S-20/335/3	248178	1 / 40
	4-pole	335VAC	4x20kA	SPC-S-20/335/4	248179	1 / 30
	1-pole	385VAC	1x20kA	SPC-S-20/385/1	248180	12 / 120
	2-pole	385VAC	2x20kA	SPC-S-20/385/2	248181	1 / 60
	3-pole	385VAC	3x20kA	SPC-S-20/385/3	248182	1 / 40
	4-pole	385VAC	4x20kA	SPC-S-20/385/4	248183	1 / 30
	1-pole	460VAC	1x20kA	SPC-S-20/460/1	248184	12 / 120
	2-pole	460VAC	2x20kA	SPC-S-20/460/2	248185	1 / 60
	3-pole	460VAC	3x20kA	SPC-S-20/460/3	248186	1 / 40
	4-pole	460VAC	4x20kA	SPC-S-20/460/4	248187	1 / 30
	1-pole	580VAC	1x20kA	SPC-S-20/580/1	248191	12 / 120
	1+1p	–	–	SPC-S-1+1	248192	1 / 60
	3+1p	–	–	SPC-S-3+1	248193	1 / 30
	3+1p	–	–	SPC-S-3+N/PE	115795	1 / 30

		Plug-in surge arrester SPCT2				
 <p>SG14902</p> <p>SPCT2-280</p>	<b>Insert 1-pole</b>					
	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

		Plug-in surge arrester SPCT2, 1- to 4-pole				
 <p>U1202</p> <p>SPCT2-280/3</p>	<b>Complete (2- and multi-pole surge arresters are supplied with busbar)</b>					
	1-pole	75VAC	20kA	SPCT2-075/1	167578	12/120
	1-pole	130VAC	20kA	SPCT2-130/1	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	SPCT2-130/2	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	SPCT2-130/3	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	SPCT2-130/4	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

# Surge protection

## Surge arrester Set

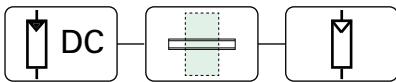
	Description	Type Designation	Article No.	Units per package
<b>Auxiliary Switch</b>				
SG60611	for SPCT2	ASAXSC-SPM	131785	8 / 80



	Description	Type Designation	Article No.	Units per package
<b>Lead-through terminal for SPB, ASLTT-63</b>				
SG59511		ASLTT-63	131784	12 / 120









**SPD-type T2 (Class C)**

Plug-in Surge Arrester SPPT2PA for Photovoltaic application

	Max. Cont. Op. Volt. $U_c$ $I_n$ (	Type Designation	Article No.	Units per package
<b>For earthed systems</b>				
	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
<b>For unearthed systems</b>				
	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
<b>Inserts for replacement</b>				
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.

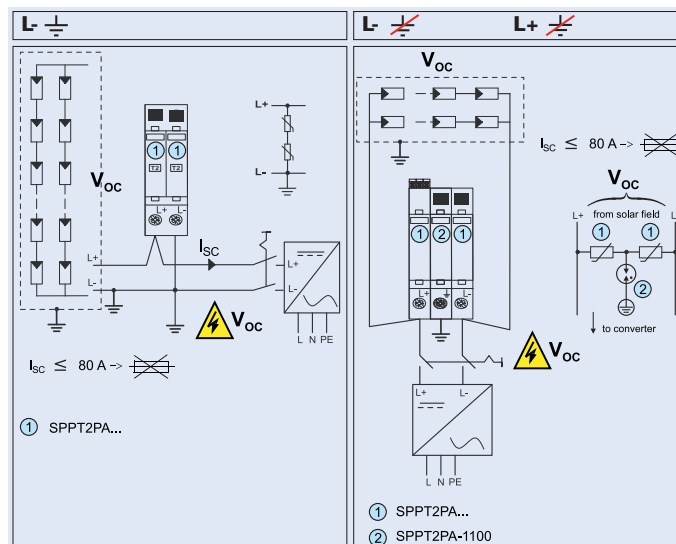
**⚠ Attention:** Even at switched off DC-Disconnector system stays under high voltage!  
Before mounting ensure de-energizing and check zero-potential.

**Earthed system**

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

**Unearthed system**

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





# Xpole Miniature circuit-breakers






Accessories for protective devices

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

Design: for screwing

	For Protective Device / Function	Type designation	Article No.
SG34812 	RCCB / 1NO+1NC	Z-HK	248432
SG60911 	MCB, RCBO, RCCB / 1NO+1NC	Z-AHK	248433
SG61011 	MCB, RCBO, RCCB / 2CO	Z-NHK	248434
SG34412 	RCCB / 1CO+1NC	Z-HD	265620
<b>Switching interlocks IS/SPE-1TE, Z-IS/SPE-1TE</b>			
	Description	Type designation	Article No.
SG47812 	Switching interlock without lock for MCBs and Circuit Breaker ZP-A	Z-IS/SPE-1TE	274418


**Main Load Disconnecter Switch (Isolator) IS**

	Rated Current (A)	Poles	Type Designation	Article No.	Units per package
 <p>SG10611</p>	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
 <p>SG10711</p>	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
 <p>SG10811</p>	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
 <p>SG10911</p>	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
 <p>SG47812</p>					


**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

	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


## Miniature Circuit Breakers (MCBs) for Auxiliary Circuits PLSM-B4/-HS, CLS6-B4/-HS

	Poles / Rated	Breaking Capacity	Type Designation	Article No.	Units per package
	1	10kA	PLSM-B4-HS	247221	2/120
	2	10kA	PLSM-B4/2-HS	247222	1/60
	1	6kA	CLS6-B4-HS	247969	2/120
	1+N	6kA	CLS6-B4/1N-HS	247970	2/80
	2	6kA	CLS6-B4/2-HS	247971	1/60


## Pushbutton Z-T/

	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/3S10	248330	12/120

## Control Switch Z-S../


	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/SS00	248337	12/120
	16	3NO+1NC	Z-S/3S10	248338	12/120

## Changeover Switch Z-S/W

	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


	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.

### Busbar block


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

## Signal Lamps

	Rated voltage	LED colour	Type Designation	Article No.	Units per package
 <p>SG59211</p> <p>Z-BEL/R230</p>	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

	Rated voltage LED	Function	Type designation	Article No.	Units per package
 <p>SG59811</p>	-	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

	Function/Switching	Position	Type Designation	Article No.	Units per package
SG85211 	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
Z-DSU1-102	2pole CHANGE	1 - 2	Z-DSU2-12	248874	1/40
SG85311 	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

Z-DSA2-01-SL

### Relay for low-level signals RE


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

	Control Voltage	Function	MU	Type Designation	Article No.	Units per package
SG83411 	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

Controlling & Switching

## Installation Relays Z-R., Z-TN

	Control Voltage/Function/MU		Type Designation	Article No.	Units per package	
	<b>Type Z-R</b>					
	<ul style="list-style-type: none"> <li>with manual operation</li> <li>20 A 250 VAC  AC1</li> </ul>					
SG12211	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

SG12211




Z-R12/S

SG60411




Z-R230/2S2O

	Control Voltage/Function/MU	Type Designation	Article No.	Units per package	
<b>Type Z-RE</b>					
<ul style="list-style-type: none"> <li>with LED, without manual operation</li> <li>20 A 250 VAC <math>\frac{1}{2}</math> —</li> </ul>					
 <p>SG59411</p> <p>Z-RE24/S</p>	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

### Type Z-RK



- with manual operation and LED
- 20 A 250 VAC  $\frac{1}{2}$  — AC1

 <p>SG59111</p> <p>Z-RK230/SS</p>	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.

### Type Z-TN

- with manual pre-selection of functions - permanently ON / AUTOM / OFF
- 20 A 250 VAC  $\frac{1}{2}$  —

 <p>SG59711</p> <p>Z-TN230/SO</p>	 <p>SG60111</p> <p>Z-TN230/3S</p>	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
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### Busbar block for Impulse Relays, Relays, Control and Switching Devices (Series Z-PU, Z-SW)


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

Installation Contactors Z-SCH/CMUC


		Installation Contactors Z-SCH				
		U <sub>s</sub> / I <sub>n</sub> , AC1 / Function	Type Designation	Article No.	Units per package	
 <p>SG84611</p> <p>Z-SCH230/25-40</p>		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	
 <p>SG84711</p> <p>Z-SCH230/63-40</p>		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<sub>c</sub> AC/DC

		U <sub>c</sub> / I <sub>n</sub> , AC1 / Function	Type Designation	Article No.	Units per package
 <p>SG28812</p> <p>CMUC230/25-40</p>		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

 <p>SG84311</p> <p>Z-SC</p>	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	12-250 VAC	Z-RC/230	101428	2 / 120
	RC-Combination				

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

# Installation relays

## Controlling & Switching

### Impulse Relays Z-S

- 16 A 250 VAC





Z-S230/SO

	Control Voltage/Function/MU			Type designation	Article No.	Units per package
SG59611	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-S240/2S20	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-S230/2S20	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-S110/2S20	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-S48/2S20	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-S24/2S20	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-S12/2S20	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-S8/2S20	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




	Control Voltage/Function/MU			Type designation	Article No.	Units per package
<b>With central control Z-SC</b>						
 Z-SC230/S	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-SC240/2S10	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-SC230/2S10	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-SC110/2S10	265328	1/60
24 V AC 50/60Hz	1NO	1	Z-SC24/S	265300	2/120	


<b>With switchable LED Z-SB</b>						
 Z-SB230/SS	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.


<b>Accessories for Z-S./.</b>						
 Z-S/K0	Compensator		1	Z-S/K0	270588	2/120
	Group block		1	Z-SC/GP	270587	2/120

<b>Busbar block</b>						
 Z-EK/25	wa_sg02512	1-pole straight grey 10mm <sup>2</sup>		Z-SV-10/1P-F/13	264918	10
		1-pole straight blue 10mm <sup>2</sup>		Z-SV-10/N-F/13	264919	10
		1-pole straight grey 16mm <sup>2</sup>		Z-SV-16/1P-1TE/F	269523	25
		1-pole straight blue 16mm <sup>2</sup>		Z-SV-16/N-1TE/F	269524	25
		Extension terminal 25mm <sup>2</sup> long, straight		Z-EK/25	264935	10/600
		Extension terminal 25mm <sup>2</sup> short, straight		Z-EK/25/K	269525	10/600
		Extension terminal 25mm <sup>2</sup> long, crosswise		Z-EK/25/QL	264937	10/600
	Extension terminal 25mm <sup>2</sup> short, crosswise		Z-EK/25/Q	264936	10/600	

### Staircase Switch with switch-off warning and stop function TL

Function	Type designation	Article No.	Units per package
 SG07312	Staircase switch with switchoff warning and stop function	TLE	101064
	Staircase switch as TLE, with additional control input for central control, zero-voltage proof	TLK	101066

### Time-Lag Relay ZR


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

# Impulse relays and staircase switch

## Controlling & Switching


### 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


	Switching Voltage / $U_N$ / Kontakte			Type designation	Article No.	Units per package
	$U_N \times 0,85$	230/400 VAC	1CO	REUVM	148598	1
	$U_N \times 0,85$	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

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


### Load Shedding (Current) Relay Z-LAR/

	Function/Op. Current Range (A)	Type designation	Article No.	Units per package
	NC 3-8	Z-LAR/8-0	248256	1/60
	NC 10-16	Z-LAR/16-0	248257	1/60
	NC 15-32	Z-LAR/32-0	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

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


### Accessories

		Type designation	Article No.	Units per package
	Base load resistor for FFS/16	Z-NKA-SCH	120890	1/12


Timers digital TSDW...

	Drive	Program	Channels	Type designation	Article No.	Units per package
 <p>PHASE OUT</p>	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
	Quarz	Day	1 chan.	SA-TD/1W	111450	1
	<b>Accessories</b>					
	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, SA-TD/1W

	Drive	Program	Channels	Type designation	Article No.	Units per package
 <p>PHASE OUT</p>	<b>Astronomical, digital</b>					
	Quartz	Week	1 chan.	TSDW1COA	167381	1
	Quartz	Day	1 chan.	SA-TD/1W	111450	1/40

Timers analogue TS...


	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

# GSM Communication


## Controlling & Switching

### Communication Center Z-CC/2CO


- Universal remote monitoring and controlling via SMS based on GSM

	Description	Type designation	Article No.	Units per package
PHASE OUT TYPE SG42612	2 Change-over contacts	Z-CC/2CO	119383	1
<b>Accessories for Z-CC/2CO</b>				
	Power supply unit (24V 0.2A)	EASYPOW200	229424	1
	Temperature sensor	Z-CC/2CO-SE	119430	1
	Patch cord 2.0 m	DNW-PX/0200/RJ45/ RJ45/5E/CSUTP/GR/PV	237271	1

### Signalling Devices: Buzzer Z-SUM, Bell Z-GLO

	Function/Rated Voltage (V~)	Type designation	Article No.	Units per package
PHASE OUT TYPE SG27712	Buzzer 230	Z-SUM230	270584	2/120
	Buzzer 24	Z-SUM24	270583	2/120
	Buzzer 12	Z-SUM12	271087	2/120
	Bell 230	Z-GLO230	270586	2/120
	Bell 24	Z-GLO24	270585	2/120
	Bell 12	Z-GLO12	271088	2/120

### Signalling Devices AS


	Function/Rated Voltage (V~)	Type designation	Article No.	Units per package
wa_sg04311	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

ASBELL230

### Transformers 230V, TR-G

Bell-Transformers 230V, TR-G.

- Type -S with primary switch

	MU	Sec.-Volt. (V)	Sec.-Current (A)	Type designation	Article No.	Units per package	
	SG82911	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.

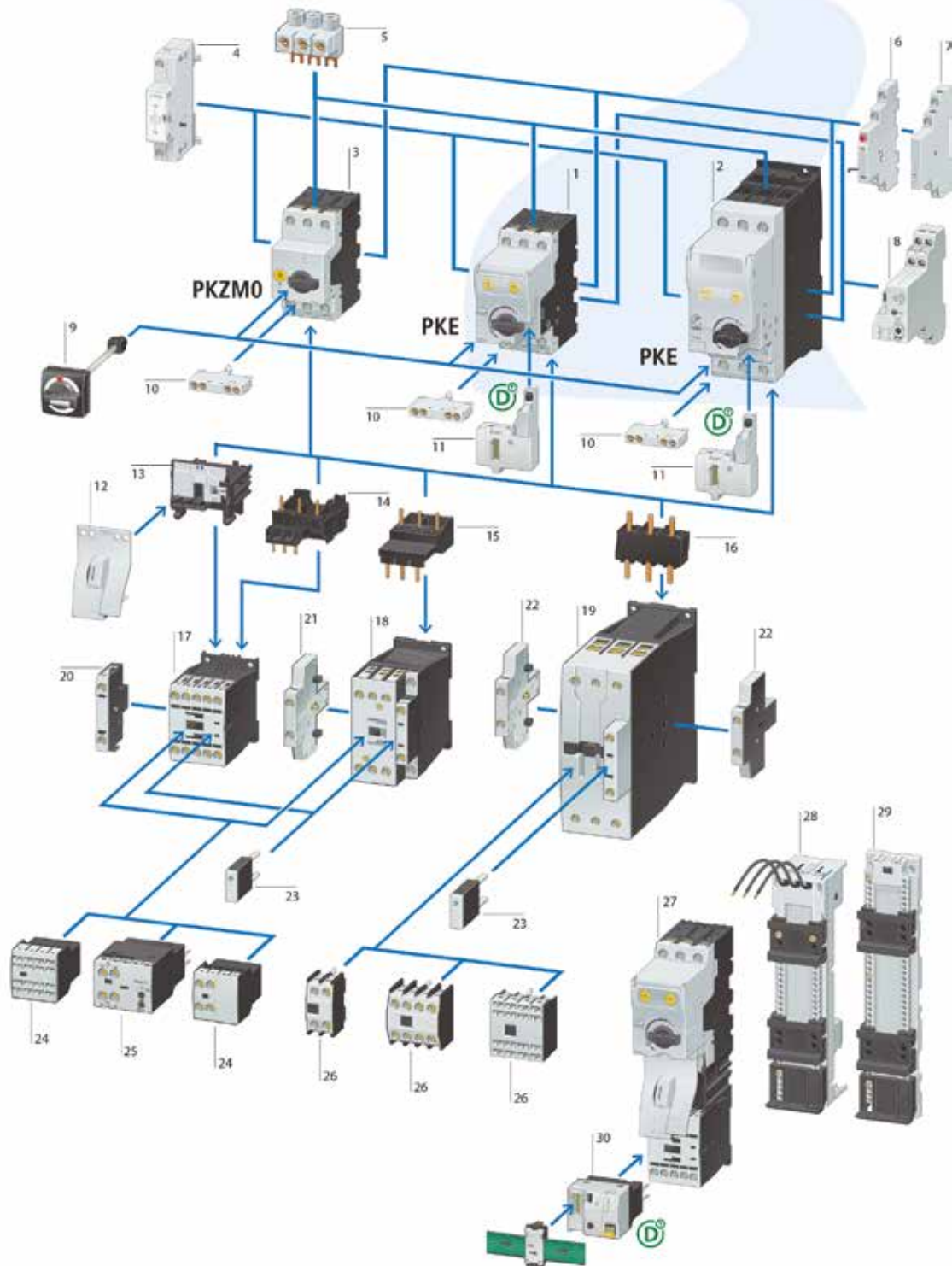
- 100% ED

	MU	Sec.-Volt. (V)	Sec.-Current (A)	Type designation	Article No.	Units per package
SG42512	5	12-24	5,2-2,6	TR-G2/63-SF	272485	1/12



## Mini compact distribution boards

	Part no.	Article no.
 <p>Mini compact distribution board, 1-row 2 SU, IP20</p>	<b>MINI-2</b>	177066
 <p>Mini compact distribution board, 1-row 4 SU, IP20</p>	<b>MINI-4</b>	177068
 <p>Mini compact distribution board, 1-row 6 SU, IP20</p>	<b>MINI-6</b>	177070









- |    |   |    |   |
|----|---|----|---|
| 1  | Motor-protective circuit breaker PKE 12/32      | 16 | Electrical plug-in connector              |
| 2  | Motor-protective circuit breaker PKE 65         | 17 | Contactor up to 15 A                      |
| 3  | Motor-protective circuit breaker PKZM01         | 18 | Contactor up to 38 A                      |
| 4  | Undervoltage release/shunt release              | 19 | Contactor up to 65 A                      |
| 5  | Feeder terminal block                           | 20 | Side mounted auxiliary contact            |
| 6  | Trip-indicating auxiliary contact               | 21 | Side mounted auxiliary contact            |
| 7  | Side mounted auxiliary contact                  | 22 | Side mounted auxiliary contact            |
| 8  | PKE-XZMR electronic overload relay module       | 23 | Suppressor                                |
| 9  | Door-coupling rotary handle and shaft extension | 24 | Surface mounted auxiliary contact         |
| 10 | Front mounted auxiliary contact                 | 25 | Electronic timer                          |
| 11 | SmartWire-DT communication interface for PKE    | 26 | Surface mounted auxiliary contact         |
| 12 | Combination plug-in connector                   | 27 | DOL starter MSC-DEA up to 5.5 kW with PKE |
| 13 | Mechanical plug-in connector                    | 28 | Busbar adapter                            |
| 14 | Motor starter link                              | 29 | DIN rail adapter plate                    |
| 15 | Electrical plug-in connector                    | 30 | SmartWire-DT PKE module                   |



# Motor-protective circuit-breakers

Basic devices

Setting range Overload releases 	Screw terminals		Incoming side screw terminals outgoer side springloaded terminals		Spring-loaded terminals		
	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	
<b>PKZM01 motor-protective circuit-breaker, Type "1" and "2" coordination</b>							
	0.1 - 0.16	<b>PKZM01-0,16</b>	278475	-	-	-	
	0.16 - 0.25	<b>PKZM01-0,25</b>	278476	-	-	-	
	0.25 - 0.4	<b>PKZM01-0,4</b>	278477	-	-	-	
	0.4 - 0.63	<b>PKZM01-0,63</b>	278478	-	-	-	
	0.63 - 1	<b>PKZM01-1</b>	278479	-	-	-	
	1 - 1.6	<b>PKZM01-1,6</b>	278480	-	-	-	
	1.6 - 2.5	<b>PKZM01-2,5</b>	278481	-	-	-	
	2.5 - 4	<b>PKZM01-4</b>	278482	-	-	-	
	4 - 6.3	<b>PKZM01-6,3</b>	278483	-	-	-	
	6.3 - 10	<b>PKZM01-10</b>	278484	-	-	-	
	8 - 12	<b>PKZM01-12</b>	278485	-	-	-	
	10 - 16	<b>PKZM01-16</b>	283390	-	-	-	
	16 - 20	<b>PKZM01-20</b>	283383	-	-	-	
	20 - 25	<b>PKZM01-25</b>	288893	-	-	-	
<b>PKZM0 motor-protective circuit-breaker, Type "1" and "2" coordination</b>							
	0.1 - 0.16	<b>PKZM0-0,16</b>	072730	<b>PKZM0-0,16-SC</b>	229828	<b>PKZM0-0,16-C</b>	229669
	0.16 - 0.25	<b>PKZM0-0,25</b>	072731	<b>PKZM0-0,25-SC</b>	229829	<b>PKZM0-0,25-C</b>	229670
	0.25 - 0.4	<b>PKZM0-0,4</b>	072732	<b>PKZM0-0,4-SC</b>	229830	<b>PKZM0-0,4-C</b>	229671
	0.4 - 0.63	<b>PKZM0-0,63</b>	072733	<b>PKZM0-0,63-SC</b>	229831	<b>PKZM0-0,63-C</b>	229672
	0.63 - 1	<b>PKZM0-1</b>	072734	<b>PKZM0-1-SC</b>	229832	<b>PKZM0-1-C</b>	229673
	1 - 1.6	<b>PKZM0-1,6</b>	072735	<b>PKZM0-1,6-SC</b>	229833	<b>PKZM0-1,6-C</b>	229674
	1.6 - 2.5	<b>PKZM0-2,5</b>	072736	<b>PKZM0-2,5-SC</b>	229834	<b>PKZM0-2,5-C</b>	229675
	2.5 - 4	<b>PKZM0-4</b>	072737	<b>PKZM0-4-SC</b>	229835	<b>PKZM0-4-C</b>	229676
	4 - 6.3	<b>PKZM0-6,3</b>	072738	<b>PKZM0-6,3-SC</b>	229836	<b>PKZM0-6,3-C</b>	229677
	6.3 - 10	<b>PKZM0-10</b>	072739	<b>PKZM0-10-SC</b>	229837	<b>PKZM0-10-C</b>	229678
	8 - 12	<b>PKZM0-12</b>	278486	<b>PKZM0-12-SC</b>	278487	<b>PKZM0-12-C</b>	278488
	10 - 16	<b>PKZM0-16</b>	046938	<b>PKZM0-16-SC</b>	229838	<b>PKZM0-16-C</b>	229679
	16 - 20	<b>PKZM0-20</b>	046988	-	-	-	-
	20 - 25	<b>PKZM0-25</b>	046989	-	-	-	-
	25 - 32	<b>PKZM0-32</b>	278489	-	-	-	-
<b>PKZM4 motor-protective circuit-breaker, Type "1" and "2" coordination</b>							
	10 - 16	<b>PKZM4-16</b>	222350	-	-	-	
	16 - 25	<b>PKZM4-25</b>	222352	-	-	-	
	24 - 32	<b>PKZM4-32</b>	222353	-	-	-	
	32 - 40	<b>PKZM4-40</b>	222354	-	-	-	
	40 - 50	<b>PKZM4-50</b>	222355	-	-	-	
	50 - 58	<b>PKZM4-58</b>	222394	-	-	-	
	55 - 65	<b>PKZM4-63</b>	222413	-	-	-	
<b>UL circuit-breaker in accordance with NFPA 79</b>							
	10 - 16	<b>PKZM4-16-CB</b>	132591	-	-	-	
	16 - 25	<b>PKZM4-25-CB</b>	132592	-	-	-	
	24 - 32	<b>PKZM4-32-CB</b>	132593	-	-	-	
<b>Transformer-protective circuit-breaker</b>							
	0.1 - 0.16	<b>PKZM0-0,16-T</b>	088907	-	-	-	
	0.16 - 0.25	<b>PKZM0-0,25-T</b>	088908	-	-	-	
	0.25 - 0.4	<b>PKZM0-0,4-T</b>	088909	-	-	-	
	0.4 - 0.63	<b>PKZM0-0,63-T</b>	088910	-	-	-	
	0.63 - 1	<b>PKZM0-1-T</b>	088911	-	-	-	
	1 - 1.6	<b>PKZM0-1,6-T</b>	088912	-	-	-	
	1.6 - 2.5	<b>PKZM0-2,5-T</b>	088913	-	-	-	
	2.5 - 4	<b>PKZM0-4-T</b>	088914	-	-	-	
	4 - 6.3	<b>PKZM0-6,3-T</b>	088915	-	-	-	
	6.3 - 10	<b>PKZM0-10-T</b>	088916	-	-	-	
	8 - 12	<b>PKZM0-12-T</b>	278492	-	-	-	
	10 - 16	<b>PKZM0-16-T</b>	088917	-	-	-	
	16 - 20	<b>PKZM0-20-T</b>	088918	-	-	-	
	20 - 25	<b>PKZM0-25-T</b>	278493	-	-	-	

# Motor-protective circuit-breakers

PKE basic devices and trip blocks



Setting range of overload releases



	Basic device with standard knob		Trip block motor protection Standard		Trip block motor protection Advanced Connection to SmartWire-DT with PKE-SWD-32 or PKE-SWD-SP		Complete device with standard knob	
	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.

## Motor-protective circuit-breakers PKE, type "1" and "2" coordination

	PKE12	121721	PKE-XTU-1,2	121723	PKE-XTUA-1,2	121727	PKE12/XTU-1,2	121731
0.3 - 1.2	PKE12	121721	PKE-XTU-1,2	121723	PKE-XTUA-1,2	121727	PKE12/XTU-1,2	121731
1 - 4	PKE12	121721	PKE-XTU-4	121724	PKE-XTUA-4	121728	PKE12/XTU-4	121732
3 - 12	PKE12	121721	PKE-XTU-12	121725	PKE-XTUA-12	121729	PKE12/XTU-12	121733
8 - 32	PKE12	121721	PKE-XTU-32	121726	PKE-XTUA-32	121730	PKE32/XTU-32	121734

Setting range of overload releases



	Basic device with standard knob		Trip block system protection Standard		Trip block system protection Advanced Connection to SmartWire-DT with PKE-SWD-CP		Complete device with standard knob	
	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.

## PKE system protective circuit-breaker, short-circuit release 5-8 x I<sub>r</sub>

	PKE32	121722	PKE-XTUCP-36	153164	PKE-XTUACP-36	168795	PKE32/XTUCP-36	168972
15 - 36	PKE32	121722	PKE-XTUCP-36	153164	PKE-XTUACP-36	168795	PKE32/XTUCP-36	168972



Setting range of overload releases



	Basic device with standard knob		Trip block motor protection Standard		Trip block motor protection Advanced Connection to SmartWire-DT with PKE-SWD-SP		Complete device with standard knob	
	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.

## Motor-protective circuit-breakers PKE, type "1" and "2" coordination

	PKE65	138258	PKE-XTUW-32	138261	PKE-XTUWA-32	138262	PKE65/XTUW-32	138517
8 - 32	PKE65	138258	PKE-XTUW-32	138261	PKE-XTUWA-32	138262	PKE65/XTUW-32	138517
16 - 65	PKE65	138258	PKE-XTU-65	138259	PKE-XTUA-65	138260	PKE65/XTU-65	138516

Setting range of overload releases







	Basic device with standard knob		Trip block system protection Standard		Trip block system protection Advanced Connection to SmartWire-DT with PKE-SWD-CP		Complete device with standard knob	
	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.






## PKE system protective circuit-breaker, short-circuit release 5-8 x I<sub>r</sub>











	PKE65	138258	PKE-XTUWCP-36	168796	PKE-XTUWACP-36	168797	PKE65/XTUWCP-36	168973
15 - 36	PKE65	138258	PKE-XTUWCP-36	168796	PKE-XTUWACP-36	168797	PKE65/XTUWCP-36	168973
30 - 65	PKE65	138258	PKE-XTUCP-65	168798	PKE-XTUACP-65	168799	PKE65/XTUCP-65	168974

# Motor-protective circuit-breakers

SmartWire-DT PKE modules, busbar adapter












	Part no.	Article no.
<b>SmartWire-DT PKE (motor-protective circuit-breaker)</b>		
For connecting the motor-protective circuit-breaker with PKE-XTU(W)A-... trip blocks(motor protection) to SmartWire-DT		
  <p>Fitted on PKE motor-protective circuit-breaker</p> <p>Messages            Contactor state PKE            Motor current in %            Thermal motor image in %            Trip indications (Overload, Short-circuit,...)            Set value of overload releases            Set time lag (CLASS)            Part no. of trip block</p> <p>Commands            Remote disconnection of motor-protective circuit-breaker</p>	<b>PKE-SWD-SP</b>	150614
<b>SmartWire-DT PKE module (circuit-breakers)</b>		
For connecting the PKE circuit-breaker with PKE-XTU(W)ACP-... trip blocks(motor protection) to SmartWire-DT		
  <p>For attachment to PKE circuit-breakers</p> <p>Messages            Contactor state PKE            All phase currents in %            Thermal load as a %            Trip indications (Overload, Short-circuit,...)            Set value of overload releases            Set short-circuit release value            Part no. of trip block</p> <p>Commands            Remote circuit-breaker de-energization</p>	<b>PKE-SWD-CP</b>	172735





	Rated operational current $I_e$ A	For use with	Part no.	Article no.
<b>Busbar adapters for PKZ and PKE</b>				
	25	PKZM0, PKE + DILM7 PKZM0, PKE + DILM9 PKZM0, PKE + DILM12 PKZM0, PKE + DILM15 MSC-D-0.25-M7... - MSC-D-16-M15...	<b>BBA0-25</b>	101451
	25	PKZM0, PKE + 2 x DILM7-01 PKZM0, PKE + 2 x DILM9-01 PKZM0, PKE + 2 x DILM12-01 MSC-R-0,25-M7... - MSC-R-12-M12...	<b>BBA0R-25</b>	101453
	32	PKZM0, PKE + DILM(C)17 PKZM0, PKE + DILM(C)25 PKZM0, PKE + DILM(C)32	<b>BBA0-32</b>	101452
	32	PKZM0, PKE + 2 x DILM(C)17-01 PKZM0, PKE + 2 x DILM(C)25-01 PKZM0, PKE + 2 x DILM(C)32-01	<b>BBA0R-32</b>	101454
	63	PKZM4, PKE65 + DILM(C)17 PKZM4, PKE65 + DILM(C)25 PKZM4, PKE65 + DILM(C)32 PKZM4, PKE65 + DILM(C)40 PKZM4, PKE65 + DILM(C)50 PKZM4, PKE65 + DILM(C)65	<b>BBA4L-63</b>	101459

	Contacts N/O = Normally open N/C = Normally closed		For use with	Part no.	Article no.
<b>Standard auxiliary contact</b>					
	1 N/O	1 NC	PKZM01	<b>NHI11-PKZ0</b>	072896
	1 N/O	1 NC	PKZM0	<b>NHI11-PKZ0-C</b>	229680
	1 N/O	2 NC	PKZM4	<b>NHI12-PKZ0</b>	072895
	2 N/O	1 NC	PKZM0-T PKM0 PKE	<b>NHI21-PKZ0</b>	072894
	1 N/O	1 NC		<b>NHI-E-11-PKZ0</b>	082882
	1 N/O	-		<b>NHI-E-10-PKZ0</b>	082884
	1 N/O	-		<b>NHI-E-10-PKZ0-C</b>	229681
	-	1 NC		<b>NHI-E-01-PKZ0-C</b>	229682
<b>Trip-indicating auxiliary contacts</b>					
	2 x 1 N/O	-	PKZM0	<b>AGM2-10-PKZ0</b>	072898
	-	2 x 1 NC	PKZM4 PKZM0-T PKM0 PKZM01 PKE	<b>AGM2-10-PKZ0</b>	072899
<b>Auxiliary contacts, early-make</b>					
	2 N/O	-	PKZM0 PKZM0-T PKM0 PKZM4	<b>VHI20-PKZ0</b>	203595
	2 N/O	-	PKZM01	<b>VHI20-PKZ01</b>	278495
<b>Shunt release</b>					
	-	-	PKZM0	<b>A-PKZ0(230V50HZ)</b>	073187
	-	-	PKZM4 PKZM0-T PKM0 PKZM01 PKE	<b>A-PKZ0(24VDC)</b>	073200
<b>Undervoltage release</b>					
	-	-	PKZM0	<b>U-PKZ0(230V50HZ)</b>	073135
	-	-	PKZM4 PKZM0-T PKM0 PKZM01 PKE	<b>U-PKZ0(24VDC)</b>	157862
<b>Overload relay function module</b>					
	1 N/O	1 NC	PKE12	<b>PKE-XZMR(24VDC)</b>	173425
	1 N/O	1 NC	PKE32 PKE65 with XTUA trip block with release 04 and higher	<b>PKE-XZMR(230V50HZ)</b>	173416
<b>Current limiter</b>					
	Current limiter, 3p, 63A, 400VAC/100kA, 690VAC/10kA Fits to: PKZM0 16-32 A, PKZM4 16-63 A,			<b>CL-PKZ0</b>	082881
<b>Rotary handle, lockable</b>					
	For locking motor-protective circuit-breakers PKZM0, PKZM4 and PKE as a main switch in compliance with EN 60204 Can be padlocked in the "0" position with a padlock Hasp thickness: 3 – 6.35 mm				

# Motor-protective circuit-breakers



















## Accessories

Enclosure for motor-protective circuit-breaker PKZM0 and PKZM 01		Enclosure for PKZM 0		Enclosure for PKZM 01	
					
		Part no.	Article no.	Part no.	Article no.
<b>Accessories</b>					
	Insulated enclosure, HxWxD=158x80x100mm, for PKZ0	<b>CI-PKZ0-M</b>	<b>267083</b>		
	Insulated enclosure, for PKZ0, +rotary handle, black/grey	<b>CI-K2-PKZ0-G</b>	<b>219654</b>		
	Insulated enclosure, flush mounting, cutout, IP41_x	<b>E-PKZ0</b>	<b>72906</b>		
	Insulated enclosure, flush mounting, rotary handle black grey, IP55_x	<b>E-PKZ0-G</b>	<b>72907</b>		
	Insulated enclosure, IP65_x, +emergency switching off mushroom pushbutton, for PKZ01			<b>CI-PKZ01-PVT</b>	<b>281406</b>
				<b>E-PKZ01-PVT</b>	<b>4365007</b>
	Insulated enclosure, IP65_x, +operating membrane, for PKZ01			<b>CI-PKZ01-G</b>	<b>281404</b>
	Insulated enclosure, flush mounting, +operating membrane, for PKZ01			<b>E-PKZ01-G</b>	<b>281634</b>
	Insulated enclosure, for PKZ01, +padlocking feature yellow			<b>CI-PKZ01-SVB</b>	<b>281405</b>
	Insulated enclosure, flush mounting, for PKZ01, +padlocking feature yellow			<b>E-PKZ01-SVB</b>	<b>281635</b>







Enclosure for motor-protective circuit-breaker PKZM0 and PKZM 01		Enclosure for PKZM 0		Enclosure for PKZM 01	
					
		Part no.	Article no.	Part no.	Article no.
<b>Accessories</b>					
	Insulated enclosure, IP40_x, for PKZ01			<b>CI-PKZ01</b>	<b>281403</b>
	Insulated enclosure, flush mounting, for PKZ01			<b>E-PKZ01</b>	<b>281633</b>

# Motor-protective circuit-breakers

## Accessories

	For use with	Part no.	Article no.
<b>Three-phase commoning link, incoming unit via terminals 1, 3, 5</b>			
For PKZM0... or PKE without side mounted auxiliary contacts or shunt releases			
	–	<b>B3.0/2-PKZ0</b>	063961
	–	<b>B3.0/3-PKZ0</b>	232289
	–	<b>B3.0/4-PKZ0</b>	063960
	–	<b>B3.0/5-PKZ0</b>	232290
Attached on the right, for motor-protective circuit-breakers, with an auxiliary contact or trip-indicating auxiliary contact			
	–	<b>B3.1/2-PKZ0</b>	044945
	–	<b>B3.1/3-PKZ0</b>	044946
	–	<b>B3.1/4-PKZ0</b>	044947
	–	<b>B3.1/5-PKZ0</b>	044948
For PKZM0... or PKE: attached with an auxiliary contact and a trip-indicating auxiliary contact on the right or attached on the left with a shunt release			
	–	<b>B3.2/2-PKZ0</b>	063963
	–	<b>B3.2/4-PKZ0</b>	063959
<b>Incoming terminal</b>			
	PKZM0 PKE	<b>BK25/3-PKZ0</b>	032720
	PKZM0	<b>BK25/3-PKZ0-E</b>	262518
<b>Shroud for unused terminals</b>			
	Protection against direct contact. For covering unused terminals on three-phase commoning link B3...-PKZ0	<b>H-B3-PKZ0</b>	032721
<b>Wiring set</b>			
For DOL Starter			
Plug-in 	PKZM0, PKE + DILM7 PKZM0, PKE + DILM9 PKZM0, PKE + DILM12 PKZM0, PKE + DILM15	<b>PKZM0-XDM12</b>	283149
Screwable 	PKZM0, PKE + DILM7 PKZM0, PKE + DILM9 PKZM0, PKE + DILM12 PKZM0, PKE + DILM15	<b>PKZM0-XDM15ME</b>	179646
	PKZM0, PKE + DILM17 PKZM0, PKE + DILM25 PKZM0, PKE + DILM32	<b>PKZM0-XDM32</b>	283153
	PKZM0, PKE + DILM7 PKZM0, PKE + DILM9 PKZM0, PKE + DILM12 PKZM0, PKE + DILM15	<b>PKZM4-XDM65</b>	101053
For reversing starters			
	PKZM0, PKE + DILM7-01 PKZM0, PKE + DILM9-01 PKZM0, PKE + DILM12-01	<b>PKZM0-XRM12</b>	283185
	PKZM0, PKE + DILM17 PKZM0, PKE + DILM25 PKZM0, PKE + DILM32	<b>PKZM0-XRM32</b>	283189



Description	For use with	Part no.	Article no.
<b>Wiring set</b>			
<b>Electric contact module</b>			
	PKZM0, PKE + DILM17 PKZM0, PKE + DILM25 PKZM0, PKE + DILM32 DS7-34...SX016... DS7-34...SX024... DS7-34...SX032...	<b>PKZM0-XM32DE</b>	239349
	PKZM4, PKE65 + DILM40 PKZM4, PKE65 + DILM50 PKZM4, PKE65 + DILM65	<b>PKZM4-XM65DE</b>	101056
<b>Door coupling handles</b>			
	For use as main switch to IEC/EN 60204	PKZM0 PKZM4	<b>PKZ0-XH</b> 106132
	For use as a main switch to EN 60204 in MCC power distribution systems and with PKZM0 installed when rotated by 90°	PKZM0 PKZM4	<b>PKZ0-XH-MCC</b> 106136
	For use as main switch to IEC/EN 60204	PKE	<b>PKE-XH</b> 142416
	For use as a main switch to EN 60204 in MCC power distribution systems and with PKE installed when rotated by 90°	PKE	<b>PKE-XH-MCC</b> 142418
	For use as a main switch with Emergency-Stop function, to EN 60204	PKZM0 PKZM4	<b>PKZ0-XRH</b> 106133
	For use as a main switch with Emergency-Stop function to EN 60204 in MCC power distribution systems and with PKZM0 installed when rotated by 90°	PKZM0 PKZM4	<b>PKZ0-XRH-MCC</b> 106137
	For use as a main switch with Emergency-Stop function, to EN 60204	PKE	<b>PKE-XRH</b> 142417
	For use as a main switch with Emergency-Stop function to EN 60204 in MCC power distribution systems and with PKE installed when rotated by 90°	PKE	<b>PKE-XRH-MCC</b> 142419

### Manual Self-Protected Combination Controller UL 60947-4-1, Type E

PKZM0(4) motor-protective circuit-breakers, used as "Manual self-protected Motor Starters" – UL 508 Type E										
Maximum motor output HP = PS				Setting ranges		Interrupting Capacity = Short Circuit Current Rating SCCR			Components	
200 V	230 V	460 V	575 V	Overload releases	Short-circuit releases	240 V	480Y/ 277 V <sup>2)</sup>	600Y/ 347 V <sup>2)</sup>	Motor Protector	Accessories
208 V	240 V	480 V	600 V			[A]	[A]	[kA]	[kA]	[kA]
[HP]	[HP]	[HP]	[HP]	[A]	[A]	[kA]	[kA]	[kA]	Type	Type
1)				0.1 – 0.16	2.5	65	65	50	<b>PKZM0-0.16</b>	<b>BK25/3-PKZ0-E</b>
				0.16 – 0.25	3.9	65	65	50	<b>PKZM0-0.25</b>	<b>BK25/3-PKZ0-E</b>
				0.25 – 0.4	6.2	65	65	50	<b>PKZM0-0.4</b>	<b>BK25/3-PKZ0-E</b>
				0.4 – 0.63	9.8	65	65	50	<b>PKZM0-0.63</b>	<b>BK25/3-PKZ0-E</b>
				0.63 – 1	16	65	65	50	<b>PKZM0-1</b>	<b>BK25/3-PKZ0-E</b>
				1 – 1.6	25	65	65	50	<b>PKZM0-1.6</b>	<b>BK25/3-PKZ0-E</b>
				1.6 – 2.5	39	65	65	50	<b>PKZM0-2.5</b>	<b>BK25/3-PKZ0-E</b>
				2.5 – 4	62	65	65	50	<b>PKZM0-4</b>	<b>BK25/3-PKZ0-E</b>
				4 – 6.3	98	65	65	50	<b>PKZM0-6.3</b>	<b>BK25/3-PKZ0-E</b>
				6.3 – 10	155	65	65	50	<b>PKZM0-10</b>	<b>BK25/3-PKZ0-E</b>
				8 – 12	186	65	65	–	<b>PKZM0-12</b>	<b>BK25/3-PKZ0-E</b>
				10 – 16	248	42	42	–	<b>PKZM0-16</b>	<b>BK25/3-PKZ0-E</b>
				16 – 20	310	18	18	–	<b>PKZM0-20</b>	<b>BK25/3-PKZ0-E</b>
				20 – 25	388	18	18	–	<b>PKZM0-25</b>	<b>BK25/3-PKZ0-E</b>
				25 – 32	496	18	18	–	<b>PKZM0-32</b>	<b>BK25/3-PKZ0-E</b>
				10 – 16	248	65	65	25	<b>PKZM4-16</b>	<b>BK50/3-PKZ4-E</b>
				16 – 25	388	65	65	25	<b>PKZM4-25</b>	<b>BK50/3-PKZ4-E</b>
				25 – 32	496	65	65	25	<b>PKZM4-32</b>	<b>BK50/3-PKZ4-E</b>
				32 – 40	620	65	65	25	<b>PKZM4-40</b>	<b>BK50/3-PKZ4-E</b>
				40 – 50	775	65	65	–	<b>PKZM4-50</b>	<b>BK50/3-PKZ4-E</b>
				50 – 58	899	65	65	–	<b>PKZM4-58</b>	<b>BK50/3-PKZ4-E</b>
				55 – 65	977	65	65	–	<b>PKZM4-63</b>	<b>BK50/3-PKZ4-E</b>






#### Notes



<sup>1)</sup> Calculate instance motor power in this range according to the rated operational current. Stated values to NEC Table 430 -150

<sup>2)</sup> Suitable for networks with earthed star-point



# Motor-starter combinations

DOL starters, reversing starters

	Motor ratings		Setting range of overload releases $I_r$ A 	AC operation 230 V 50 Hz		DC operation 24 V DC		
	Rated short-circuit current 380 - 415 V Type of coordination "1" $I_q$ kA	Type of coordination "2" $I_q$ kA		Part no.	Article no.	Part no.	Article no.	
<b>Complete units MSC-D</b>								
	150	50	0.16 - 0.25	MSC-D-0,25-M7(230V50HZ)	281925	MSC-D-0,25-M7(24VDC)	283154	
	150	50	0.25 - 0.4	MSC-D-0,4-M7(230V50HZ)	281926	MSC-D-0,4-M7(24VDC)	283155	
	150	50	0.4 - 0.63	MSC-D-0,63-M7(230V50HZ)	281927	MSC-D-0,63-M7(24VDC)	283156	
	150	50	0.63 - 1	MSC-D-1-M7(230V50HZ)	281929	MSC-D-1-M7(24VDC)	283158	
	150	50	1 - 1.6	MSC-D-1,6-M7(230V50HZ)	283140	MSC-D-1,6-M7(24VDC)	283159	
	150	50	1.6 - 2.5	MSC-D-2,5-M7(230V50HZ)	283142	MSC-D-2,5-M7(24VDC)	283161	
	150	50	2.5 - 4	MSC-D-4-M7(230V50HZ)	283143	MSC-D-4-M7(24VDC)	283162	
	150	50	4 - 6.3	MSC-D-6,3-M7(230V50HZ)	283145	MSC-D-6,3-M7(24VDC)	283164	
	150	-	6.3 - 10	MSC-D-10-M7(230V50HZ)	283146	MSC-D-10-M7(24VDC)	283165	
	150	-	6.3 - 10	MSC-D-10-M9(230V50HZ)	283147	MSC-D-10-M9(24VDC)	283166	
	50	-	8 - 12	MSC-D-12-M12(230V50HZ)	283148	MSC-D-12-M12(24VDC)	283167	
	50	-	10 - 16	MSC-D-16-M15(230V50HZ)	100414	MSC-D-16-M15(24VDC)	100415	
		50	50	6.3 - 10	MSC-D-10-M17(230V50HZ)	101045	MSC-D-10-M17(24VDC)	101047
		50	50	8 - 12	MSC-D-12-M17(230V50HZ)	101046	MSC-D-12-M17(24VDC)	101048
		50	50	10 - 16	MSC-D-16-M17(230V50HZ)	283150	MSC-D-16-M17(24VDC)	283168
50		50	20 - 25	MSC-D-25-M25(230V50HZ)	283151	MSC-D-25-M25(24VDC)	283169	
50		50	25 - 32	MSC-D-32-M32(230V50HZ)	283152	MSC-D-32-M32(24VDC)	283170	
<b>Complete devices MSC-R</b>								
		150	50	0.16 - 0.25	MSC-R-0,25-M7(230V50HZ)	283171	MSC-R-0,25-M7(24VDC)	283190
	150	50	0.25 - 0.4	MSC-R-0,4-M7(230V50HZ)	283172	MSC-R-0,4-M7(24VDC)	283191	
	150	50	0.4 - 0.63	MSC-R-0,63-M7(230V50HZ)	283173	MSC-R-0,63-M7(24VDC)	283192	
	150	50	0.63 - 1	MSC-R-1-M7(230V50HZ)	283175	MSC-R-1-M7(24VDC)	283194	
	150	50	1 - 1.6	MSC-R-1,6-M7(230V50HZ)	283176	MSC-R-1,6-M7(24VDC)	283195	
	150	50	1.6 - 2.5	MSC-R-2,5-M7(230V50HZ)	283178	MSC-R-2,5-M7(24VDC)	283197	
	150	50	2.5 - 4	MSC-R-4-M7(230V50HZ)	283179	MSC-R-4-M7(24VDC)	283198	
	150	50	4 - 6.3	MSC-R-6,3-M7(230V50HZ)	283181	MSC-R-6,3-M7(24VDC)	283200	
	150	-	6.3 - 10	MSC-R-10-M7(230V50HZ)	283182	MSC-R-10-M7(24VDC)	283201	
	150	-	6.3 - 10	MSC-R-10-M9(230V50HZ)	283183	MSC-R-10-M9(24VDC)	283202	
	50	-	8 - 12	MSC-R-12-M12(230V50HZ)	283184	MSC-R-12-M12(24VDC)	283203	
		50	50	6.3 - 10	MSC-R-10-M17(230V50HZ)	101049	MSC-R-10-M17(24VDC)	101051
		50	50	8 - 12	MSC-R-12-M17(230V50HZ)	101050	MSC-R-12-M17(24VDC)	101052
		50	50	10 - 16	MSC-R-16-M17(230V50HZ)	283186	MSC-R-16-M17(24VDC)	283204
		50	50	20 - 25	MSC-R-25-M25(230V50HZ)	283187	MSC-R-25-M25(24VDC)	283205
50		50	25 - 32	MSC-R-32-M32(230V50HZ)	283188	MSC-R-32-M32(24VDC)	283206	

	<b>Motor ratings</b>		Setting range of overload releases $I_r$ A 	<b>AC operation</b>		<b>DC operation</b>	
	Rated short-circuit current 380 - 400 V			230 V 50 Hz		24 V DC	
	Type of coordination "1"	Type of coordination "2"		Part no.	Article no.	Part no.	Article no.
	$I_q$	$I_q$					
	kA	kA					
<b>MSC-DE complete devices with PKE</b>							
	100	-	0.3 - 1.2	<b>MSC-DE-1,2-M7(230V50HZ)</b>	121735	<b>MSC-DE-1,2-M7(24VDC)</b>	121736
	100	-	1 - 4	<b>MSC-DE-4-M7(230V50HZ)</b>	121737	<b>MSC-DE-4-M7(24VDC)</b>	121738
	100	-	3 - 12	<b>MSC-DE-12-M7(230V50HZ)</b>	121739	<b>MSC-DE-12-M7(24VDC)</b>	121740
	100	-	3 - 12	<b>MSC-DE-12-M9(230V50HZ)</b>	121741	<b>MSC-DE-12-M9(24VDC)</b>	121742
	100	-	3 - 12	<b>MSC-DE-12-M12(230V50HZ)</b>	121743	<b>MSC-DE-12-M12(24VDC)</b>	121744
	100	100	3 - 12	<b>MSC-DE-12-M17(230V50HZ)</b>	121745	<b>MSC-DE-12-M17(24VDC)</b>	121746
	100	100	8 - 32	<b>MSC-DE-32-M17(230V50HZ)</b>	121747	<b>MSC-DE-32-M17(24VDC)</b>	121748
	100	100	8 - 32	<b>MSC-DE-32-M25(230V50HZ)</b>	121749	<b>MSC-DE-32-M25(24VDC)</b>	121750
	100	100	8 - 32	<b>MSC-DE-32-M32(230V50HZ)</b>	121751	<b>MSC-DE-32-M32(24VDC)</b>	121752

### Combination Motor Starter UL 60947-4-1, Type F

Maximum motor rating				Setting range		Rated short-circuit breaking capacity $I_{cn}$			Extension terminal	Motor protective circuit breakers	Contactor
Alternating current HP = PS				Overload trip	Short-circuit releases	240 V	480 Y	600 Y	Type	Type	Type
200 V	230 V	460 V	575 V	Non-delayed	277 V	347 V					
208 V	240 V	480 V	600 V								
HP	HP	HP	HP	$I_r$	$I_{rm}$	kA	kA	kA			
				A 	A 						

### PKZM0, DIL, BK modules

1)					0.1 - 0.16	2.2	50	50	50	BK25/3-PKZ0	PKZM0-0,16	DILEM...(...)
					0.1 - 0.16	2.2	50	50	18	BK25/3-PKZ0	PKZM0-0,16	DILM7...(...)
					0.16 - 0.25	3.4	50	50	50	BK25/3-PKZ0	PKZM0-0,25	DILEM...(...)
					0.16 - 0.25	3.4	50	50	18	BK25/3-PKZ0	PKZM0-0,25	DILM7...(...)
					0.25 - 0.4	5.6	50	50	50	BK25/3-PKZ0	PKZM0-0,4	DILEM...(...)
					0.25 - 0.4	5.6	50	50	18	BK25/3-PKZ0	PKZM0-0,4	DILM7...(...)
					0.4 - 0.63	8.8	50	50	50	BK25/3-PKZ0	PKZM0-0,63	DILEM...(...)
					0.4 - 0.63	8.8	50	50	18	BK25/3-PKZ0	PKZM0-0,63	DILM7...(...)
					0.63 - 1	14	50	50	50	BK25/3-PKZ0	PKZM0-1	DILEM...(...)
					0.63 - 1	14	50	50	18	BK25/3-PKZ0	PKZM0-1	DILM7...(...)
					1 - 1.6	22	50	50	50	BK25/3-PKZ0	PKZM0-1,6	DILEM...(...)
					1 - 1.6	22	50	50	18	BK25/3-PKZ0	PKZM0-1,6	DILM7...(...)
	½	½	1	1½	1.6 - 2.5	35	50	50	50	BK25/3-PKZ0	PKZM0-2,5	DILEM...(...)
	½	½	1	1½	1.6 - 2.5	35	50	50	18	BK25/3-PKZ0	PKZM0-2,5	DILM7...(...)
	1	1	2	3	2.5 - 4	56	50	50	50	BK25/3-PKZ0	PKZM0-4	DILEM...(...)
	1	1	2	3	2.5 - 4	56	50	50	18	BK25/3-PKZ0	PKZM0-4	DILM7...(...)
1½	1½	3	5	4 - 6.3	88	50	50	50	BK25/3-PKZ0	PKZM0-6,3	DILEM...(...)	
1½	1½	3	5	4 - 6.3	88	65	65	18	BK25/3-PKZ0	PKZM0-6,3	DILM7...(...)	
3	3	7½	10	6.3 - 11	140	65	65	18	BK25/3-PKZ0	PKZM0-10	DILM9...(...)	
3	3	7½	-	9 - 12	168	65	65	18	BK25/3-PKZ0	PKZM0-12	DILM12...(...)	
3	5	10	-	10 - 16	224	18	18	-	BK25/3-PKZ0	PKZM0-16	DILM17...(...)	
5	5	10	-	16 - 20	280	18	18	-	BK25/3-PKZ0	PKZM0-20	DILM25...(...)	
5	7½	15	-	20 - 25	350	18	18	-	BK25/3-PKZ0	PKZM0-25	DILM25...(...)	
7½	10	20	-	25 - 32	448	18	18	-	BK25/3-PKZ0	PKZM0-32	DILM32...(...)	

### PKZM4, DIL, BK modules






3	5	10	15	10 - 16	224	65	65	30	BK50/3-PKZ4-E	PKZM4-16	DILM17...(...)
5	7½	15	20	16 - 27	350	65	65	30	BK50/3-PKZ4-E	PKZM4-25	DILM25...(...)
7½	10	25	30	24 - 34	448	65	65	50	BK50/3-PKZ4-E	PKZM4-32	DILM32...(...)
10	15	30	30	32 - 40	560	65	65	50	BK50/3-PKZ4-E	PKZM4-40	DILM40(...)
10	15	30	-	40 - 52	700	65	65	-	BK50/3-PKZ4-E	PKZM4-50	DILM50(...)
15	15	40	-	50 - 56	812	65	65	-	BK50/3-PKZ4-E	PKZM4-58	DILM65(...)
15	15	40	-	52 - 58	882	65	65	-	BK50/3-PKZ4-E	PKZM4-63	DILM65(...)



Notes

<sup>1)</sup> Calculate motor power in this range according to the rated operational current. Stated values to NEC Table 430 - 150.

# Motor-starter combinations




DOL starters, connection to SmartWire-DT

	Motor ratings		Setting range of overload releases $I_r$ A 	AC operation 230 V 50 Hz		DC operation 24 V DC	
	Rated short-circuit current 380 - 400 V	Type of coordination "1"		Type of coordination "2"	Part no.	Article no.	Part no.
 	100	-	0.3 - 1.2	-	-	<b>MSC-DEA-1,2-M7(24VDC)</b>	121753
	100	-	1 - 4	-	-	<b>MSC-DEA-4-M7(24VDC)</b>	121754
	100	-	3 - 12	-	-	<b>MSC-DEA-12-M7(24VDC)</b>	121755
	100	-	3 - 12	-	-	<b>MSC-DEA-12-M9(24VDC)</b>	121756
	100	-	3 - 12	-	-	<b>MSC-DEA-12-M12(24VDC)</b>	121757
 	100	100	3 - 12	-	-	<b>MSC-DEA-12-M17(24VDC)</b>	121758
	100	100	8 - 32	-	-	<b>MSC-DEA-32-M17(24VDC)</b>	121759
	100	100	8 - 32	-	-	<b>MSC-DEA-32-M25(24VDC)</b>	121760
	100	100	8 - 32	-	-	<b>MSC-DEA-32-M32(24VDC)</b>	121761

	Part no.	Article no.
<b>SmartWire-DT PKE module (motor-starter combinations)</b> For connecting PKE motor-starter combination MSC-DEA... with PKE-XTUA... trip blocks with a rated motor output of 15 kW/400 V to SmartWire-DT		
  <p>Mounting on DILM contactor with 24 V DC control voltage.            One module per contactor and PKE necessary            Additional SWD contactor module required for actuation of reversing starter.            1 electrical interlock for the surface mounting of reversing starters.            1-0-A switch for manual or automatic operation.            Selectable overload relay function (ZMR) for switching off the contactor on overload.            Wiring sets DILM 12-XRL and PKZM0-XRM12 cannot be used.            For current consumption of the contactor coils &gt; 3 A (UL/CSA &gt; 2 A) use additional power feeder module.            A2 connections must not be bridged.</p> <p><b>Messages</b>            Switch position contactor/PKE/1-0-A switch            Motor current in %            Thermal motor image in %            Trip indications (Overload, Short-circuit,...)            Set value of overload releases            Set time lag (CLASS)            Part no. of trip block</p> <p><b>Commands</b>            Contactor actuation            Activation Overload relay function (ZMR)</p>	<b>PKE-SWD-32</b>	126895

# Motor-starter combinations

## DOL starters/Reversing starter on busbar adapter




Motor ratings	Setting range of overload releases	AC operation		DC operation			
		230 V 50 Hz	24 V DC	230 V 50 Hz	24 V DC		
Rated short-circuit current 380 - 415 V		Part no.	Article no.	Part no.	Article no.		
Type of coordination "1"	Type of coordination "2"						
$I_q$	$I_q$						
kA	kA						
<b>PKZ and DILM complete devices on BBA for DOL starters</b>							
	100	50	0.16 - 0.25	<b>MSC-D-0,25-M7(230V50HZ)/BBA</b>	102737	<b>MSC-D-0,25-M7(24VDC)/BBA</b>	102964
	100	50	0.25 - 0.4	<b>MSC-D-0,4-M7(230V50HZ)/BBA</b>	102738	<b>MSC-D-0,4-M7(24VDC)/BBA</b>	102965
	100	50	0.4 - 0.63	<b>MSC-D-0,63-M7(230V50HZ)/BBA</b>	102739	<b>MSC-D-0,63-M7(24VDC)/BBA</b>	102966
	100	50	0.63 - 1	<b>MSC-D-1-M7(230V50HZ)/BBA</b>	102950	<b>MSC-D-1-M7(24VDC)/BBA</b>	102967
	100	50	1 - 1.6	<b>MSC-D-1,6-M7(230V50HZ)/BBA</b>	102951	<b>MSC-D-1,6-M7(24VDC)/BBA</b>	102968
	100	50	1.6 - 2.5	<b>MSC-D-2,5-M7(230V50HZ)/BBA</b>	102952	<b>MSC-D-2,5-M7(24VDC)/BBA</b>	102969
	100	50	2.5 - 4	<b>MSC-D-4-M7(230V50HZ)/BBA</b>	102953	<b>MSC-D-4-M7(24VDC)/BBA</b>	102970
	100	50	4 - 6.3	<b>MSC-D-6,3-M7(230V50HZ)/BBA</b>	102954	<b>MSC-D-6,3-M7(24VDC)/BBA</b>	102971
	100	-	6.3 - 10	<b>MSC-D-10-M7(230V50HZ)/BBA</b>	102955	<b>MSC-D-10-M7(24VDC)/BBA</b>	102972
	100	-	6.3 - 10	<b>MSC-D-10-M9(230V50HZ)/BBA</b>	102956	<b>MSC-D-10-M9(24VDC)/BBA</b>	102973
	100	-	8 - 12	<b>MSC-D-12-M12(230V50HZ)/BBA</b>	102957	<b>MSC-D-12-M12(24VDC)/BBA</b>	102974
	50	-	10 - 16	<b>MSC-D-16-M15(230V50HZ)/BBA</b>	102958	<b>MSC-D-16-M15(24VDC)/BBA</b>	102975
	100	50	6.3 - 10	<b>MSC-D-10-M17(230V50HZ)/BBA</b>	102959	<b>MSC-D-10-M17(24VDC)/BBA</b>	102976
	100	50	8 - 12	<b>MSC-D-12-M17(230V50HZ)/BBA</b>	102960	<b>MSC-D-12-M17(24VDC)/BBA</b>	102977
	50	50	10 - 16	<b>MSC-D-16-M25(230V50HZ)/BBA</b>	102961	<b>MSC-D-16-M25(24VDC)/BBA</b>	102978
	50	50	20 - 25	<b>MSC-D-25-M25(230V50HZ)/BBA</b>	102962	<b>MSC-D-25-M25(24VDC)/BBA</b>	102979
	50	50	25 - 32	<b>MSC-D-32-M32(230V50HZ)/BBA</b>	102963	<b>MSC-D-32-M32(24VDC)/BBA</b>	102980
<b>PKZ and DILM complete devices on BBA for reversing starters</b>							
	100	50	0.16 - 0.25	<b>MSC-R-0,25-M7(230V50HZ)/BBA</b>	102981	<b>MSC-R-0,25-M7(24VDC)/BBA</b>	102997
	100	50	0.25 - 0.4	<b>MSC-R-0,4-M7(230V50HZ)/BBA</b>	102982	<b>MSC-R-0,4-M7(24VDC)/BBA</b>	102998
	100	50	0.4 - 0.63	<b>MSC-R-0,63-M7(230V50HZ)/BBA</b>	102983	<b>MSC-R-0,63-M7(24VDC)/BBA</b>	102999
	100	50	0.63 - 1	<b>MSC-R-1-M7(230V50HZ)/BBA</b>	102984	<b>MSC-R-1-M7(24VDC)/BBA</b>	103000
	100	50	1 - 1.6	<b>MSC-R-1,6-M7(230V50HZ)/BBA</b>	102985	<b>MSC-R-1,6-M7(24VDC)/BBA</b>	103001
	100	50	1.6 - 2.5	<b>MSC-R-2,5-M7(230V50HZ)/BBA</b>	102986	<b>MSC-R-2,5-M7(24VDC)/BBA</b>	103002
	100	50	2.5 - 4	<b>MSC-R-4-M7(230V50HZ)/BBA</b>	102987	<b>MSC-R-4-M7(24VDC)/BBA</b>	103003
	100	50	4 - 6.3	<b>MSC-R-6,3-M7(230V50HZ)/BBA</b>	102988	<b>MSC-R-6,3-M7(24VDC)/BBA</b>	103004
	100	-	6.3 - 10	<b>MSC-R-10-M7(230V50HZ)/BBA</b>	102989	<b>MSC-R-10-M7(24VDC)/BBA</b>	103005
	100	-	6.3 - 10	<b>MSC-R-10-M9(230V50HZ)/BBA</b>	102990	<b>MSC-R-10-M9(24VDC)/BBA</b>	103006
	100	-	8 - 12	<b>MSC-R-12-M12(230V50HZ)/BBA</b>	102991	<b>MSC-R-12-M12(24VDC)/BBA</b>	103007
	100	50	6.3 - 10	<b>MSC-R-10-M17(230V50HZ)/BBA</b>	102992	<b>MSC-R-10-M17(24VDC)/BBA</b>	103008
	100	50	8 - 12	<b>MSC-R-12-M17(230V50HZ)/BBA</b>	102993	<b>MSC-R-12-M17(24VDC)/BBA</b>	103009
	50	50	10 - 16	<b>MSC-R-16-M17(230V50HZ)/BBA</b>	102994	<b>MSC-R-16-M17(24VDC)/BBA</b>	103010
	50	50	20 - 25	<b>MSC-R-25-M25(230V50HZ)/BBA</b>	102995	<b>MSC-R-25-M25(24VDC)/BBA</b>	103011
	50	50	25 - 32	<b>MSC-R-32-M32(230V50HZ)/BBA</b>	102996	<b>MSC-R-32-M32(24VDC)/BBA</b>	103012

# Motor-starter combinations

## Electronic motor starter

Description		Max. rating for three-phase motors, 50 - 60 Hz AC-53a 380 V 400 V 415 V P kW	Setting range of overload releases 	<b>DC operation</b> <b>24 V DC</b> <b>Part no.</b>	Article no.
<b>EMS complete devices</b>					
	DOL starting, Motor protection Circuit design: safety output stage with bypass, three-phase disconnect.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 6,5 (AC-53a) 9 (AC-51)	<b>EMS-DO-T-2,4-24VDC</b> <b>EMS-DO-T-9-24VDC</b>	170099 170100
	DOL starting, Motor protection, Emergency-stop actuator Circuit design: safety output stage with bypass, three-phase disconnect.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 6,5 (AC-53a) 9 (AC-51)	<b>EMS-DOS-T-2,4-24VDC</b> <b>EMS-DOS-T-9-24VDC</b>	170103 170104
	DOL starting Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. For connecting to SmartWire-DT for expanded diagnostics.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DO-T-2,4-SWD</b> <b>EMS-DO-T-9-SWD</b>	170106 170107
	DOL starting Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. Controlled stop via additional enable signal terminal up to SIL3/Plc. For connecting to SmartWire-DT for expanded diagnostics.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DOS-T-2,4-SWD</b> <b>EMS-DOS-T-9-SWD</b>	170110 170111
	DOL starting, Reversing start, Motor protection Circuit design: safety output stage with bypass, three-phase disconnect.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 6,5 (AC-53a) 9 (AC-51)	<b>EMS-RO-T-2,4-24VDC</b> <b>EMS-RO-T-9-24VDC</b>	170101 170102
	DOL starting, Reversing start, Motor protection, Emergency-stop actuator Circuit design: safety output stage with bypass, three-phase disconnect.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 6,5 (AC-53a) 9 (AC-51)	<b>EMS-ROS-T-2,4-24VDC</b> <b>EMS-ROS-T-9-24VDC</b>	170105 169789
	DOL starting Reversing start Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. For connecting to SmartWire-DT for expanded diagnostics.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-RO-T-2,4-SWD</b> <b>EMS-RO-T-9-SWD</b>	170108 170109
	DOL starting Reversing start Motor protection Circuit design: safety output stage with bypass, three-phase disconnect. Controlled stop via additional enable signal terminal up to SIL3/Plc. For connecting to SmartWire-DT for expanded diagnostics.	0.06 - 0.75 0.55 - 3	0,18 - 2,4 1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-ROS-T-2,4-SWD</b> <b>EMS-ROS-T-9-SWD</b>	170112 169790



	Pole	Devices Number	For use with	Part no.	Article no.
<b>Three-phase current connector with plug</b>					
	3	2	EMS-D...	<b>EMS-XBR3-2</b>	177248
		3	EMS-D...-SWD-...	<b>EMS-XBR3-3</b>	177249
		4	EMS-R...	<b>EMS-XBR3-4</b>	177250
		5	EMS-R...-SWD-...	<b>EMS-XBR3-5</b>	177251
<b>Connection links</b>					
	3	2	EMS-D...	<b>EMS-XBR-2</b>	171268
		3	EMS-D...-SWD-...	<b>EMS-XBR-3</b>	171269
		4	EMS-R...	<b>EMS-XBR-4</b>	171270
		5	EMS-R...-SWD-...	<b>EMS-XBR-5</b>	171271
		10		<b>EMS-XBR-10</b>	171272
	1	2	EMS-D...	<b>EMS-XCW-2</b>	172741
		3	EMS-DOS...-SWD-...	<b>EMS-XCW-3</b>	172742
		4	EMS-R...	<b>EMS-XCW-4</b>	172743
		5	EMS-ROS...-SWD-...	<b>EMS-XCW-5</b>	172744



# Overview of motor protection up to 1000 A

Electronic and electrical overload relays, thermistor protective relays

## Contactor



TYPE	DIL	EEM	EM	EM12*	M7	M9	M12	M15*	M17	M25	M32	M38*	M40	M50	M65	M72*
Rated operational power AC-3	400V	3	4	5.5	3	4	5.5	7.5	7.5	11	15	18.5	18.5	22	30	37
Rated operational current AC-3	400V	6.6	9	12	7	9	12	15.5	18	25	32	38	40	50	65	72
Rated operational power AC-1	40°C	22	22	22	22	22	22	22	40	45	45	45	60	80	98	98

\*For motors up to IE2!

## Bimetal relays



TYPE	ZE	ZB12	ZB32	ZB65
Overload release setting range	0.1 - 12 A	0.1 - 16 A	0.1 - 38 A	6 - 75 A

## Electronic overload relays



TYPE	ZEB12	ZEB32	ZEB65
Overload release setting range	0.33 - 20 A	0.33 - 45 A	9 - 100 A

## Thermistor overload relay



TYPE	EMT6, EMT6-K, EMT6-DB, ...
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**Setting range**  
Overload releases

$I_r$   
A





For use with <b>DILEM</b>		<b>DILM7 - DILM15</b>		<b>DILM17 - DILM38</b>		<b>DILM40 - DILM72</b>		<b>DILM80 - DILM170</b>	
Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.



### Overload relay ZE, ZB

0.1 - 0.16	<b>ZE-0,16</b>	014263	<b>ZB12-0,16</b>	278431	<b>ZB32-0,16</b>	278442	-	-	-	-
0.16 - 0.24	<b>ZE-0,24</b>	014285	<b>ZB12-0,24</b>	278432	<b>ZB32-0,24</b>	278443	-	-	-	-
0.24 - 0.4	<b>ZE-0,4</b>	014300	<b>ZB12-0,4</b>	278433	<b>ZB32-0,4</b>	278444	-	-	-	-
0.4 - 0.6	<b>ZE-0,6</b>	014333	<b>ZB12-0,6</b>	278434	<b>ZB32-0,6</b>	278445	-	-	-	-
0.6 - 1	<b>ZE-1,0</b>	014376	<b>ZB12-1</b>	278435	<b>ZB32-1</b>	278446	-	-	-	-
1 - 1.6	<b>ZE-1,6</b>	014432	<b>ZB12-1,6</b>	278436	<b>ZB32-1,6</b>	278447	-	-	-	-
1.6 - 2.4	<b>ZE-2,4</b>	014479	<b>ZB12-2,4</b>	278437	<b>ZB32-2,4</b>	278448	-	-	-	-
2.4 - 4	<b>ZE-4</b>	014518	<b>ZB12-4</b>	278438	<b>ZB32-4</b>	278449	-	-	-	-
4 - 6	<b>ZE-6</b>	014565	<b>ZB12-6</b>	278439	<b>ZB32-6</b>	278450	-	-	-	-
6 - 9	<b>ZE-9</b>	014708	-	-	-	-	-	-	-	-
6 - 10	-	-	<b>ZB12-10</b>	278440	<b>ZB32-10</b>	278451	<b>ZB65-10</b>	278455	-	-
9 - 12	<b>ZE-12</b>	014752	<b>ZB12-12</b>	278441	-	-	-	-	-	-
10 - 16	-	-	-	-	-	-	<b>ZB65-16</b>	278456	-	-
12 - 16	-	-	<b>ZB12-16</b>	290168	-	-	-	-	-	-
16 - 24	-	-	-	-	<b>ZB32-24</b>	278453	<b>ZB65-24</b>	278457	-	-
24 - 32	-	-	-	-	<b>ZB32-32</b>	278454	-	-	-	-
24 - 40	-	-	-	-	-	-	<b>ZB65-40</b>	278458	-	-
32 - 38	-	-	-	-	<b>ZB32-38</b>	112474	-	-	-	-
35 - 50	-	-	-	-	-	-	-	-	<b>ZB150-50</b>	278462
40 - 57	-	-	-	-	-	-	<b>ZB65-57</b>	278459	-	-
50 - 65	-	-	-	-	-	-	<b>ZB65-65</b>	278460	-	-
50 - 70	-	-	-	-	-	-	-	-	<b>ZB150-70</b>	278463
65 - 75	-	-	-	-	-	-	<b>ZB65-75</b>	108792	-	-
70 - 100	-	-	-	-	-	-	-	-	<b>ZB150-100</b>	278464
95 - 125	-	-	-	-	-	-	-	-	<b>ZB150-125</b>	278465
120 - 150	-	-	-	-	-	-	-	-	<b>ZB150-150</b>	278466
145 - 175	-	-	-	-	-	-	-	-	<b>ZB150-175</b>	107316

# Overload relays

Overload relay, thermistor overload relay for machine protection

	Setting range Overload releases $I_r$ A	For use with	Part no.	Article no.
<b>Overload relay Z5</b>				
	50 - 70	DILM185A DILM225A	<b>Z5-70/FF225A</b>	139572
	70 - 100		<b>Z5-100/FF225A</b>	139573
	95 - 125	<b>Z5-125/FF225A</b>	139574	
	120 - 160	<b>Z5-160/FF225A</b>	139575	
	160 - 220	<b>Z5-220/FF225A</b>	139576	
	200 - 250	<b>Z5-250/FF225A</b>	139577	
	50 - 70	DILM250	<b>Z5-70/FF250</b>	210070
	70 - 100		<b>Z5-100/FF250</b>	210071
	95 - 125		<b>Z5-125/FF250</b>	210072
	120 - 160		<b>Z5-160/FF250</b>	210073
	160 - 220	DILM250 DILM300A	<b>Z5-220/FF250</b>	210074
	200 - 250	<b>Z5-250/FF250</b>	210075	
	200 - 300	DILM300A	<b>Z5-300/FF250</b>	139578

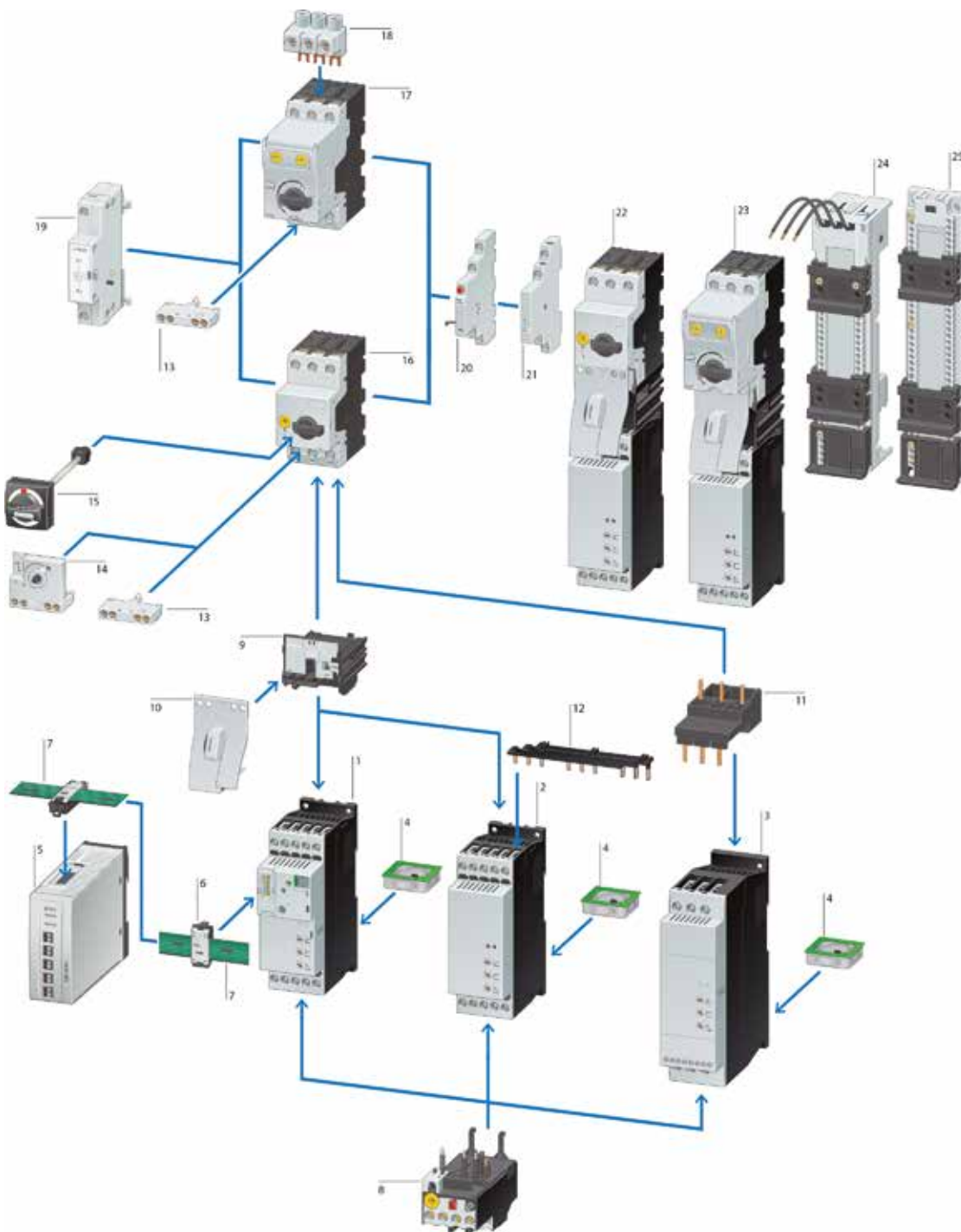
	Function	Part no.	Article no.
<b>EMT6 thermistor overload relay for machine protection</b>			
	Without manual reset Mains and fault LED display	<b>EMT6</b>	066166
		<b>EMT6(230V)</b>	066400
	Without manual reset Mains and fault LED display With 2 sensor circuits	<b>EMT62</b>	171889
	Without manual reset Mains and fault LED display Trip with short-circuit in the sensor cable	<b>EMT6-K</b>	269470
	Selector switch with/without manual reset For manual or remote resetting Test button Mains and fault LED display	<b>EMT6-DB</b>	066167
		<b>EMT6-DB(230V)</b>	066401
	Selector switch with/without manual reset For manual or remote resetting Test button Mains and fault LED display With 2 sensor circuits	<b>EMT62-DB</b>	171890
	Selector switch with/without manual reset For manual or remote resetting Test button Mains and fault LED display Trip with short-circuit in the sensor cable	<b>EMT6-KDB</b>	269471
	Multifunction device Selector switch with/without manual reset Trip with short-circuit in the sensor cable Zero-voltage safe For manual or remote resetting Test button Short-circuit recognition and zero-voltage safety can be deactivated Mains and fault LED display	<b>EMT6-DBK</b>	066168



		For use with				
		DILM7 - DILM15	DILM17 - DILM38	DILM40 - DILM72	DILM80 - DILM150	DILM185A - DILM225A
Earth-fault protection	Setting range	Part no. Article no.	Part no. Article no.	Part no. Article no.	Part no. Article no.	Part no. Article no.
	Overload releases					
	$I_r$					
	A					
<b>Electronic overload relays ZEB</b>						
<b>Direct mounting</b>						
None	0.33 - 1.65	<b>ZEB12-1,65</b> 136480	<b>ZEB32-1,65</b> 136486	-	-	-
	1 - 5	<b>ZEB12-5</b> 136481	<b>ZEB32-5</b> 136487	-	-	-
	4 - 20	<b>ZEB12-20</b> 136482	<b>ZEB32-20</b> 136488	-	-	-
	9 - 45	-	<b>ZEB32-45</b> 136489	<b>ZEB65-45</b> 136502	-	-
	20 - 100	-	-	<b>ZEB65-100</b> 136504	<b>ZEB150-100</b> 136506	-
	35 - 175	-	-	-	<b>ZEB150-175</b> 164303	<b>ZEB225-175</b> 164307
	With	0.33 - 1.65	<b>ZEB12-1,65-GF</b> 136483	<b>ZEB32-1,65-GF</b> 136490	-	-
	1 - 5	<b>ZEB12-5-GF</b> 136484	<b>ZEB32-5-GF</b> 136491	-	-	-
	4 - 20	<b>ZEB12-20-GF</b> 136485	<b>ZEB32-20-GF</b> 136492	-	-	-
	9 - 45	-	<b>ZEB32-45-GF</b> 136493	<b>ZEB65-45-GF</b> 136503	-	-
	20 - 100	-	-	<b>ZEB65-100-GF</b> 136505	<b>ZEB150-100-GF</b> 136507	-
	35 - 175	-	-	-	<b>ZEB150-175-GF</b> 164304	<b>ZEB225-175-GF</b> 164308
<b>Separate mounting</b>						
None	0.33 - 1.65	-	<b>ZEB32-1,65/KK</b> 136494	-	-	-
	1 - 5	-	<b>ZEB32-5/KK</b> 136495	-	-	-
	4 - 20	-	<b>ZEB32-20/KK</b> 136496	-	-	-
	9 - 45	-	<b>ZEB32-45/KK</b> 136497	-	-	-
	20 - 100	-	-	-	<b>ZEB150-100/KK</b> 136508	-
	35 - 175	-	-	-	<b>ZEB150-175/KK</b> 164305	-
	With	0.33 - 1.65	-	<b>ZEB32-1,65-GF/KK</b> 136498	-	-
	1 - 5	-	<b>ZEB32-5-GF/KK</b> 136499	-	-	-
	4 - 20	-	<b>ZEB32-20-GF/KK</b> 136500	-	-	-
	9 - 45	-	<b>ZEB32-45-GF/KK</b> 136501	-	-	-
	20 - 100	-	-	-	<b>ZEB150-100-GF/KK</b> 136509	-
	35 - 175	-	-	-	<b>ZEB150-175-GF/KK</b> 164306	-


# Soft starters

## DS7 < 32 A system overview



- 1 Soft starter DS7 with SmartWire-DT
- 2 DS7 soft starters in construction size 1 for assigned motor current up to 12 A
- 3 DS7 soft starters in construction size 2 for assigned motor current up to 32 A
- 4 Device fan (DS7-FAN-32)
- 5 SmartWire-DT gateway
- 6 SmartWire-DT external device plug
- 7 SmartWire-DT flat band conductor
- 8 Overload relay
- 9,10 PKZM0-XDM wiring set in tool-less plug connection
- 11 PKZM0-XM wiring set
- 12 Three-phase commoning link

- 13 Standard auxiliary contacts
- 14 Early-make auxiliary contact
- 15 Door coupling handle
- 16 PKZM0 motor-protective circuit-breakers
- 17 PKE motor-protective circuit-breakers
- 18 Connection clamp
- 19 Voltage release
- 20 Trip indicator
- 21 Standard auxiliary contacts
- 22 Motor-starter combination with PKZ
- 23 Motor-starter combination with PKE
- 24 Busbar adapter
- 25 Top-hat rail adapter

Rated operational current device (AC-53)	Assigned motor rating		Part no.	Article no.	Part no.	Article no.
	at 400 V, 50 Hz	at 460 V, 60 Hz				
$I_e$	P	P	U <sub>c</sub> 24 V AC/DC U <sub>s</sub> 24 V AC/DC Standard temperature range		U <sub>c</sub> 24 V AC/DC U <sub>s</sub> 24 V AC/DC Expanded temperature range down to -40 °C	
A	kW	HP				
<b>Soft starters</b>						
Soft starters for three-phase loads Mains supply voltage (50/60 Hz) U <sub>LN</sub> 200 - 480 V AC						
4	1.5	2	DS7-340SX004N0-N	134847	DS7-340SX004N0-L	171740
7	3	5	DS7-340SX007N0-N	134849	DS7-340SX007N0-L	171741
9	4	5	DS7-340SX009N0-N	134910	DS7-340SX009N0-L	171742
12	5.5	10	DS7-340SX012N0-N	134911	DS7-340SX012N0-L	171743
16	7.5	10	DS7-340SX016N0-N	134912	DS7-340SX016N0-L	171744
24	11	15	DS7-340SX024N0-N	134913	DS7-340SX024N0-L	171745
32	15	25	DS7-340SX032N0-N	134914	DS7-340SX032N0-L	171746
41	22	30	DS7-340SX041N0-N	134916	DS7-340SX041N0-L	171747
55	30	40	DS7-340SX055N0-N	134917	DS7-340SX055N0-L	171748
70	37	50	DS7-340SX070N0-N	134918	DS7-340SX070N0-L	171749
81	45	60	DS7-340SX081N0-N	134919	DS7-340SX081N0-L	171750
100	55	75	DS7-340SX100N0-N	134920	DS7-340SX100N0-L	171751
135	75	100	DS7-340SX135N0-N	134921	DS7-340SX135N0-L	171752
160	90	125	DS7-340SX160N0-N	134922	DS7-340SX160N0-L	171753
200	110	150	DS7-340SX200N0-N	134923	DS7-340SX200N0-L	171754
			U <sub>c</sub> 110 - 230 V AC U <sub>s</sub> 110 - 230 V AC		U <sub>c</sub> 24 V DC U <sub>s</sub> 24 V DC	
4	1.5	2	DS7-342SX004N0-N	134925	DS7-34DSX004N0-D	134943
7	3	5	DS7-342SX007N0-N	134927	DS7-34DSX007N0-D	134945
9	4	5	DS7-342SX009N0-N	134928	DS7-34DSX009N0-D	134946
12	5.5	10	DS7-342SX012N0-N	134929	DS7-34DSX012N0-D	134947
16	7.5	10	DS7-342SX016N0-N	134930	DS7-34DSX016N0-D	134948
24	11	15	DS7-342SX024N0-N	134931	DS7-34DSX024N0-D	134949
32	15	25	DS7-342SX032N0-N	134932	DS7-34DSX032N0-D	134950
41	22	30	DS7-342SX041N0-N	134934	DS7-34DSX041N0-D	134952
55	30	40	DS7-342SX055N0-N	134935	DS7-34DSX055N0-D	134953
70	37	50	DS7-342SX070N0-N	134936	DS7-34DSX070N0-D	134954
81	45	60	DS7-342SX081N0-N	134937	DS7-34DSX081N0-D	134955
100	55	75	DS7-342SX100N0-N	134938	DS7-34DSX100N0-D	134956
135	75	100	DS7-342SX135N0-N	134939	DS7-34DSX135N0-D	134957
160	90	125	DS7-342SX160N0-N	134940	DS7-34DSX160N0-D	134958
200	110	150	DS7-342SX200N0-N	134941	DS7-34DSX200N0-D	134959



## Notes





# Soft starters

## DS7 Accessories, S811+

For use with		Part no.	Article no.
<b>Device fans</b>			
Device fan for increasing the load cycle (more starts per hour higher or longer-lasting starting current)			
Flush-mounted fan 	DS7-34...SX004... DS7-34...SX007... DS7-34...SX009... DS7-34...SX012... DS7-34...SX016... DS7-34...SX024... DS7-34...SX032...	<b>DS7-FAN-032</b>	135553
Bottom fans 	DS7-34...SX041... DS7-34...SX055... DS7-34...SX070... DS7-34...SX081... DS7-34...SX100... DS7-34...SX135... DS7-34...SX160... DS7-34...SX200...	<b>DS7-FAN-100</b>      <b>DS7-FAN-200</b>	169021      169022

Frame size	Rated operational current AC-53 $I_e$ A	Assigned motor rating				Part no.	Article no.
		at 230 V, 50 Hz kW	at 230 V, 60 Hz HP	at 400 V, 50 Hz kW	at 460 V, 60 Hz HP		

<b>Soft starters S811+</b>							
Soft starter for three-phase loads, with control unit							
Mains supply voltage (50/60 Hz) $U_{LN}$ : 200 - 600 V AC							
In-line configuration/In-delta configuration							
Supply voltage $U_c$ : 24 V DC							
Control voltage $U_c$ : 24 V DC							
With internal bypass contacts							
Terminal blocks for the terminals are required for frame sizes T, U, and V -> Accessories							
N	37	7.5	10	18.5	25	<b>S811+N37N3S</b>	168976
	66	18.5	20	30	50	<b>S811+N66N3S</b>	168978
R	105	30	40	55	75	<b>S811+R10N3S</b>	168980
	135	37	50	75	100	<b>S811+R13N3S</b>	168982
T	180	55	60	90	150	<b>S811+T18N3S</b>	168984
	240	75	75	132	200	<b>S811+T24N3S</b>	168987
	304	90	100	160	250	<b>S811+T30N3S</b>	168990
U	361	110	125	200	300	<b>S811+U36N3S</b>	169869
	420	132	150	200	350	<b>S811+U42N3S</b>	169870
V	361	110	125	200	300	<b>S811+V36N3S</b>	168993
	420	132	150	200	350	<b>S811+V42N3S</b>	168996
	500	160	200	250	400	<b>S811+V50N3S</b>	168999
	650	200	250	315	500	<b>S811+V65N3S</b>	169002
	720	250	-	400	600	<b>S811+V72N3S</b>	169005
	850	-	-	450	600	<b>S811+V85N3S</b>	169008
	1000	-	-	560	750	<b>S811+V10N3S</b>	169011

### Notes

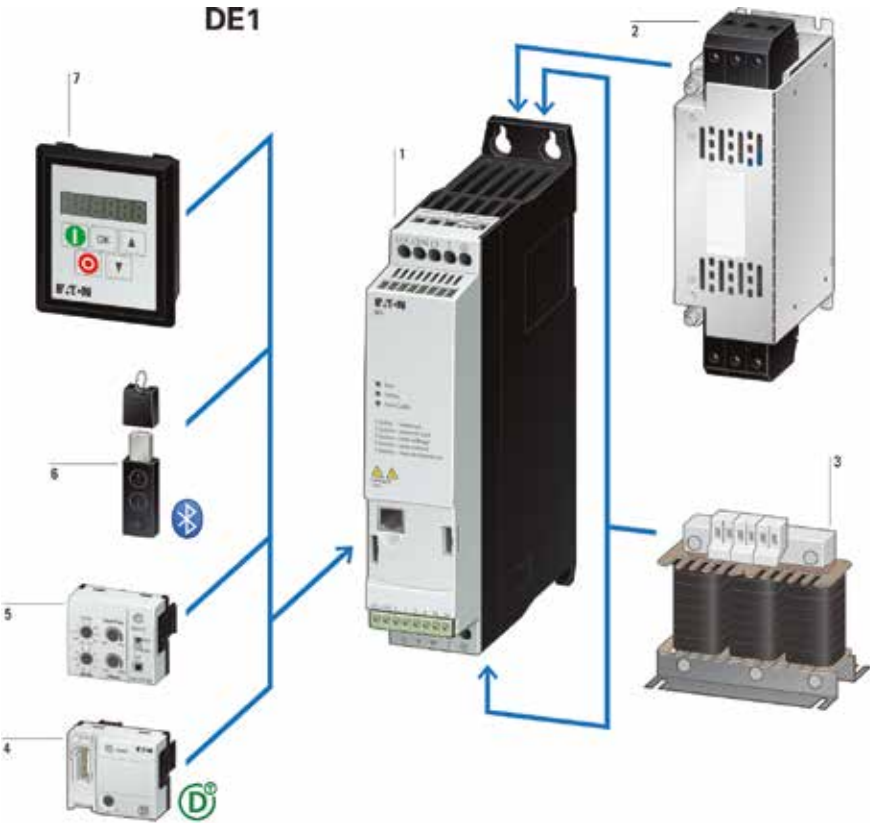
Sizes S811+





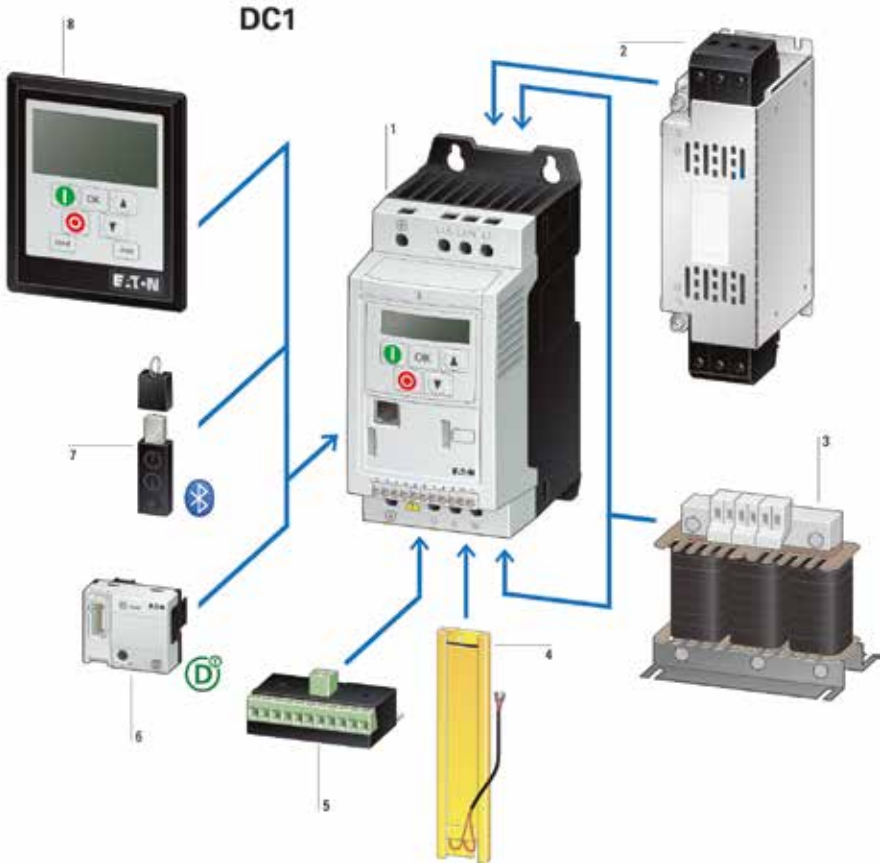
# PowerXL™ variable speed starters DE1, variable frequency drives DC1

System overview



- 1 DE1 variable speed starter
- 2 Radio interference suppression filter
- 3 Mains choke, motor choke, sine filter
- 4 SmartWire-DT module
- 5 Configuration module
- 6 Memory and Bluetooth communication stick
- 7 External keypad

- 1 DC1 variable frequency drives
- 2 Radio interference suppression filter
- 3 Mains choke, motor choke, sine filter
- 4 Braking resistance
- 5 Expansion modules
- 6 SmartWire-DT module
- 7 Memory and Bluetooth communication stick
- 8 External keypad



# PowerXL™ variable speed starter

DE1/DE11, for three-phase motors 230 V/400 V, IP20

Rated operational current <sup>1)</sup>	Assigned motor rating <sup>1), 2), 3)</sup>		Radio interference suppression filter	Frame size	Degree of Protection	Part no.	Article no.
$I_e$ A	P kW	P HP					
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 200 (-10%) - 240 (+10%) V</b> $U_e = 1 \text{ phase} / U_2 = 3 \text{ phase}$							
1.4	0.25	0.33	✓	FS1	IP20/NEMA 0	DE1-121D4FN-N20N	174327
2.3	0.37	0.5	✓			DE1-122D3FN-N20N	174328
2.7	0.55	0.5	✓			DE1-122D7FN-N20N	174329
4.3	0.75	1	✓			DE1-124D3FN-N20N	174330
7	1.5	2	✓			DE1-127D0FN-N20N	174331
9.6	2.2	3	✓	FS2		DE1-129D6FN-N20N	174332
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 380 (-10%) - 480 (+10%) V</b> $U_e = 3 \text{ phase} / U_2 = 3 \text{ phase}$							
1.3	0.37	0.5	✓	FS1	IP20/NEMA 0	DE1-341D3FN-N20N	174333
2.1	0.75	1	✓			DE1-342D1FN-N20N	174334
3.6	1.5	2	✓			DE1-343D6FN-N20N	174335
5	2.2	3	✓	FS2		DE1-345D0FN-N20N	174336
6.6	3	3	✓			DE1-346D6FN-N20N	174337
8.5	4	5	✓			DE1-348D5FN-N20N	174338
11.3	5.5	7.5	✓		DE1-34011FN-N20N	174339	
16	7.5	10	✓		DE1-34016FN-N20N	174340	
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 200 (-10%) - 240 (+10%) V</b> $U_e = 1 \text{ phase} / U_2 = 3 \text{ phase}$							
1.4	0.25	0.33	✓	FS1	IP20/NEMA 0	DE11-121D4FN-N20N <sup>4)</sup>	180650
2.3	0.37	0.5	✓			DE11-122D3FN-N20N <sup>4)</sup>	180651
2.7	0.55	0.5	✓			DE11-122D7FN-N20N <sup>4)</sup>	180652
4.3	0.75	1	✓			DE11-124D3FN-N20N <sup>4)</sup>	180653
7	1.5	2	✓			DE11-127D0FN-N20N <sup>4)</sup>	180654
9.6	2.2	3	✓	FS2		DE11-129D6FN-N20N <sup>4)</sup>	180655
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 380 (-10%) - 480 (+10%) V</b> $U_e = 3 \text{ phase} / U_2 = 3 \text{ phase}$							
1.3	0.37	0.5	✓	FS1	IP20/NEMA 0	DE11-341D3FN-N20N <sup>4)</sup>	180662
2.1	0.75	1	✓			DE11-342D1FN-N20N <sup>4)</sup>	180663
3.6	1.5	2	✓			DE11-343D6FN-N20N <sup>4)</sup>	180664
5	2.2	3	✓	FS2		DE11-345D0FN-N20N <sup>4)</sup>	180665
6.6	3	3	✓			DE11-346D6FN-N20N <sup>4)</sup>	180666
8.5	4	5	✓			DE11-348D5FN-N20N <sup>4)</sup>	180667
11.3	5.5	7.5	✓		DE11-34011FN-N20N <sup>4)</sup>	180668	
16	7.5	10	✓		DE11-34016FN-N20N <sup>4)</sup>	180669	

## Notes

- 1) Overload cycle: 150 % for 60 s every 600 s
- 2) DE1/DE11-12...: at 230 V, 50 Hz/at 220 - 240 V, 60 Hz  
DE1/DE11-34...: at 400 V, 50 Hz/at 440 - 480 V, 60 Hz
- 3) For normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm<sup>-1</sup> at 50 Hz or 1800 min<sup>-1</sup> at 60 Hz
- 4) DE11... with additional features in comparison to DE1...: CANopen, plug-in control signal terminals, configurable output relay



DE1/DE11, FS1



DE1/DE11, FS2

Rated operational current <sup>1)</sup> $I_e$ A	Assigned motor rating <sup>1), 2), 3)</sup>		Fitted with			Frame size	Degree of Protection	Part no.	Article no.
	P kW	P HP	Radio interference suppression filter	Brake chopper	7-digit display assembly				
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 110 (-10%) - 115 (+10%) V</b> $U_e = 1 \text{ phase} / U_2 = 1 \text{ phase}$									
7	0.37	0.5	-	-	✓	FS1	IP20/NEMA 0	<b>DC1-S17D0NN-A20N</b>	169497
10.5	0.55	0.75	-	✓	✓	FS2		<b>DC1-S1011NB-A20N</b>	169500
<b>Mains voltage (50/60Hz) <math>U_{LN}</math> 200 (-10%) - 240 (+10%) V</b> $U_e = 1 \text{ phase} / U_2 = 1 \text{ phase}$									
4.3	0.37	0.5	-	-	✓	FS1	IP20/NEMA 0	<b>DC1-S24D3NN-A20N</b>	169512
			✓	-	✓			<b>DC1-S24D3FN-A20N</b>	169521
7	0.75	1	-	-	✓	FS1	IP20/NEMA 0	<b>DC1-S27D0NN-A20N</b>	169515
			✓	-	✓			<b>DC1-S27D0FN-A20N</b>	169524
10.5	1.1	1.5	-	✓	✓	FS2	IP20/NEMA 0	<b>DC1-S2011NB-A20N</b>	169518
			✓	✓	✓			<b>DC1-S2011FB-A20N</b>	169527

**Notes**

- <sup>1)</sup> Overload cycle: 150 % for 60 s every 600 s
- <sup>2)</sup> DC1-S1....: at 115 V, 50 Hz/at 110 - 120 V, 60 Hz  
DC1-S2....: at 230 V, 50 Hz/at 220 - 240 V, 60 Hz
- <sup>3)</sup> For AC motors with internal and external ventilation with 50/60 Hz without additional start capacitor



# PowerXL™ variable frequency drives

DC1, for three-phase motors 230 V/400 V, IP20

Rated operational current <sup>1)</sup> <i>I<sub>e</sub></i> A	Assigned motor rating <sup>1), 2), 3)</sup>		Fitted with Radio interference suppression filter Brake chopper 7-digital display assembly	Frame size	Degree of Protection	Part no.	Article no.
	P kW	P HP					
<b>Mains voltage (50/60Hz) U<sub>LN</sub> 100 (-10%) - 115 (+10%) V</b> U <sub>e</sub> = 1 phase / U <sub>2</sub> = 3 phase The mains voltage of 115 V is raised to 230 V (output voltage) through an internal voltage double connection.							
2.3	0.37	0.5	- - ✓	FS1	IP20/NEMA 0	<b>DC1-1D2D3NN-A20N</b>	169503
4.3	0.75	1	- - ✓			<b>DC1-1D4D3NN-A20N</b>	169506
5.8	1.1	1.5	- ✓ ✓	FS2		<b>DC1-1D5D8NB-A20N</b>	169509
<b>Mains voltage (50/60Hz) U<sub>LN</sub> 200 (-10%) - 240 (+10%) V</b> U <sub>e</sub> = 1 phase / U <sub>2</sub> = 3 phase							
2.3	0.37	0.5	- - ✓ ✓ - ✓	FS1	IP20/NEMA 0	<b>DC1-122D3NN-A20N</b>	169222
						<b>DC1-122D3FN-A20N</b>	169240
4.3	0.75	1	- - ✓ ✓ - ✓			<b>DC1-124D3NN-A20N</b>	169225
						<b>DC1-124D3FN-A20N</b>	169243
7	1.5	2	- - ✓ ✓ - ✓ - ✓ ✓	FS2		<b>DC1-127D0NN-A20N</b>	169228
						<b>DC1-127D0FN-A20N</b>	169246
						<b>DC1-127D0NB-A20N</b>	169231
						<b>DC1-127D0FB-A20N</b>	169249
10.5	2.2	3	- ✓ ✓ ✓ ✓ ✓			<b>DC1-12011NB-A20N</b>	169234
						<b>DC1-12011FB-A20N</b>	169252
15	4	5	- ✓ ✓ ✓ ✓ ✓	FS3		<b>DC1-12015NB-A20N</b>	169237
<b>Mains voltage (50/60Hz) U<sub>LN</sub> 380 (-10%) - 480 (+10%) V</b> U <sub>e</sub> = 3 phase / U <sub>2</sub> = 3 phase							
2.2	0.75	1	- - ✓ ✓ - ✓	FS1	IP20/NEMA 0	<b>DC1-342D2NN-A20N</b>	169453
						<b>DC1-342D2FN-A20N</b>	169475
4.1	1.5	2	- - ✓ ✓ - ✓ - ✓ ✓	FS2		<b>DC1-344D1NN-A20N</b>	169456
						<b>DC1-344D1FN-A20N</b>	169478
						<b>DC1-344D1NB-A20N</b>	169459
						<b>DC1-344D1FB-A20N</b>	169481
5.8	2.2	3	- ✓ ✓ ✓ ✓ ✓			<b>DC1-345D8NB-A20N</b>	169462
						<b>DC1-345D8FB-A20N</b>	169484
9.5	4	5	- ✓ ✓ ✓ ✓ ✓			<b>DC1-349D5NB-A20N</b>	169465
						<b>DC1-349D5FB-A20N</b>	169487
<b>Mains voltage (50/60Hz) U<sub>LN</sub> 380 (-10%) - 480 (+10%) V</b> U <sub>e</sub> = 3 phase / U <sub>2</sub> = 3 phase							
14	5.5	10	- ✓ ✓ ✓ ✓ ✓	FS3	IP20/NEMA 0	<b>DC1-34014NB-A20N</b>	169468
						<b>DC1-34014FB-A20N</b>	169490
18	7.5		- ✓ ✓ ✓ ✓ ✓			<b>DC1-34018NB-A20N</b>	169471
						<b>DC1-34018FB-A20N</b>	169493
24	11	15	- ✓ ✓ ✓ ✓ ✓			<b>DC1-34024NB-A20N</b>	169474
						<b>DC1-34024FB-A20N</b>	169496
30	15	20	- ✓ ✓ ✓ ✓ ✓	FS4		<b>DC1-34030NB-A20N</b>	180464
						<b>DC1-34030FB-A20N</b>	180461
39	18.5	25	- ✓ ✓ ✓ ✓ ✓			<b>DC1-34039NB-A20N</b>	180465
						<b>DC1-34039FB-A20N</b>	180462
46	22	30	- ✓ ✓ ✓ ✓ ✓			<b>DC1-34046NB-A20N</b>	180466
						<b>DC1-34046FB-A20N</b>	180463

## Notes

<sup>1)</sup> Overload cycle: 150 % for 60 s every 600 s

<sup>2)</sup> DC1-1D..., DC1-12..., DC1-32...: at 230 V, 50 Hz/at 220 - 240 V, 60 Hz  
DC1-34...: at 400 V, 50 Hz/at 440 - 480 V, 60 Hz

<sup>3)</sup> For normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm<sup>-1</sup> at 50 Hz or 1800 min<sup>-1</sup> at 60 Hz

Rated operational current <sup>1)</sup> I <sub>e</sub> A	Assigned motor rating <sup>1), 2), 3)</sup>		Fitted with							Frame size	Degree of Protection	Part no.	Article no.
	P kW	P HP	Radio interference suppression filter	Brake chopper	DC link choke	7-digital display assembly	OLED display	Additional PCB protection	Local controls				
<b>Mains voltage (50/60Hz) ULN 200 (-10%) - 240 (+10%) V</b>													
<b>U<sub>e</sub> = 1 phase / U<sub>2</sub> = 3 phase</b>													
4.3	0.75	1	✓	✓	-	✓	-	✓	-	FS2	IP20/NEMA 0	DA1-124D3FB-A20C	169078
7	1.5	2	✓	✓	-	✓	-	✓	-			DA1-127D0FB-A20C	169081
10.5	2.2	3	✓	✓	-	✓	-	✓	-			DA1-12011FB-A20C	169084
<b>Mains voltage (50/60Hz) ULN 380 (-10%) - 480 (+10%) V</b>													
<b>U<sub>e</sub> = 3 phase / U<sub>2</sub> = 3 phase</b>													
2.2	0.75	1	✓	✓	-	✓	-	✓	-	FS2	IP20/NEMA 0	DA1-342D2FB-A20C	169117
4.1	1.5	2	✓	✓	-	✓	-	✓	-			DA1-344D1FB-A20C	169120
5.8	2.2	3	✓	✓	-	✓	-	✓	-			DA1-345D8FB-A20C	169051
9.5	4	5	✓	✓	-	✓	-	✓	-	FS3	IP20/NEMA 0	DA1-349D5FB-A20C	169054
14	5.5	10	✓	✓	-	✓	-	✓	-			DA1-34014FB-A20C	169057
18	7.5	10	✓	✓	-	✓	-	✓	-			DA1-34018FB-A20C	169060
24	11	15	✓	✓	-	✓	-	✓	-	FS4	IP55/NEMA 12	DA1-34024FB-A20C	169063
			✓	✓	-	-	✓	✓	-			DA1-34024FB-B55C	169390
30	15	20	✓	✓	-	-	✓	✓	-			DA1-34030FB-B55C	169391
39	18.5	25	✓	✓	-	-	✓	✓	-	FS5	IP55/NEMA 12	DA1-34039FB-B55C	169392
46	22	30	✓	✓	-	-	✓	✓	-			DA1-34046FB-B55C	169393
61	30	40	✓	✓	✓	-	✓	✓	-			DA1-34061FB-B55C	169394
72	37	50	✓	✓	✓	-	✓	✓	-	FS6	IP55/NEMA 12	DA1-34072FB-B55C	169395
90	45	60	✓	✓	✓	-	✓	✓	-			DA1-34090FB-B55C	169397
110	55	75	✓	✓	✓	-	✓	✓	-			DA1-34110FB-B55C	169399
150	75	100	✓	✓	✓	-	✓	✓	-	FS7	IP55/NEMA 12	DA1-34150FB-B55C	169401
180	90	150	✓	✓	✓	-	✓	✓	-			DA1-34180FB-B55C	169403
202	110		✓	✓	✓	-	✓	✓	-			DA1-34202FB-B55C	169405
240	132	200	✓	✓	✓	-	✓	✓	-	FS8	IP20/NEMA 0	DA1-34240FB-B55C	169407
302	160	250	✓	✓	✓	-	✓	✓	-			DA1-34302FB-B55C	169217
370	200	300	✓	✓	-	-	✓	✓	-			DA1-34370FB-B20C	169219
450	250	350	✓	✓	-	-	✓	✓	-			DA1-34450FB-B20C	169221

### Notes

<sup>1)</sup> Overload cycle for 60 s every 600 s

<sup>2)</sup> DA1-12...: at 230 V, 50 Hz/at 220 - 240 V, 60 Hz

DA1-34...: at 400 V, 50 Hz/at 440 - 480 V, 60 Hz

<sup>3)</sup> For normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm<sup>-1</sup> at 50 Hz or 1800 min<sup>-1</sup> at 60 Hz

# PowerXL™ variable frequency drives

DG1, for three-phase motors 400 V, IP21


Rated operational current <sup>1)</sup>	Assigned motor rating <sup>1), 2), 3)</sup>			Rated operational current <sup>1)</sup>	Assigned motor rating <sup>1), 2), 3)</sup>			Fitted with					Frame size	Degree of Protection	Part no.	Article no.
	$I_H = 150\%$ $I_e$ A	$I_H = 150\%$ P kW	$I_H = 150\%$ P HP		$I_L = 110\%$ $I_e$ A	$I_L = 110\%$ P kW	$I_L = 110\%$ P HP	Radio interference suppression filter	Brake chopper	DC link choke	Multi-line graphic display	Additional PCB protection				
<b>Mains voltage (50/60Hz) <math>U_{LN}</math>: 380 (-15%) - 500 (+10%) V</b>																
$U_e = 3 \text{ phase} / U_2 = 3 \text{ phase}$																
2.2	0.75	1	3.3	1.1	1.5	✓	✓	✓	✓	✓	FS1	IP21/ NEMA1	<b>DG1-342D2FB-C21C</b>	9702-1002-00P		
3.3	1.1	1.5	4.3	1.5	2	✓	✓	✓	✓	✓			<b>DG1-343D3FB-C21C</b>	9702-1004-00P		
4.3	1.5	2	5.6	2.2	3	✓	✓	✓	✓	✓			<b>DG1-344D3FB-C21C</b>	9702-1006-00P		
5.6	2.2	3	7.6	3		✓	✓	✓	✓	✓			<b>DG1-345D6FB-C21C</b>	9702-1008-00P		
7.6	3		9	4	5	✓	✓	✓	✓	✓			<b>DG1-347D6FB-C21C</b>	9702-1001-00P		
9	4	5	12	5.5	7.5	✓	✓	✓	✓	✓			<b>DG1-349D0FB-C21C</b>	9702-1011-00P		
12	5.5	7.5	16	7.5	10	✓	✓	✓	✓	✓			FS2	<b>DG1-34012FB-C21C</b>	9702-2002-00P	
16	7.5	10	23	11	15	✓	✓	✓	✓	✓				<b>DG1-34016FB-C21C</b>	9702-2004-00P	
23	11	15	31	15	20	✓	✓	✓	✓	✓				<b>DG1-34023FB-C21C</b>	9702-2001-00P	
31	15	20	38	18.5	25	✓	✓	✓	✓	✓			FS3	<b>DG1-34031FB-C21C</b>	9702-3002-00P	
38	18.5	25	46	22	30	✓	✓	✓	✓	✓	<b>DG1-34038FB-C21C</b>	9702-3004-00P				
46	22	30	61	30	40	✓	✓	✓	✓	✓	<b>DG1-34046FB-C21C</b>	9702-3001-00P				
61	30	40	72	37	50	✓	✓	✓	✓	✓	FS4	<b>DG1-34061FB-C21C</b>	9702-4002-00P			
72	37	50	87	45	60	✓	-	✓	✓	✓		<b>DG1-34072FN-C21C</b>	9702-4008-00P			
						✓	✓	✓	✓	✓	<b>DG1-34072FB-C21C</b>	9702-4006-00P				
87	45	60	105	55	75	✓	-	✓	✓	✓	FS5	<b>DG1-34087FN-C21C</b>	9702-4001-00P			
						✓	✓	✓	✓	✓		<b>DG1-34087FB-C21C</b>	9702-4010-00P			
105	55	75	140	75	100	✓	-	✓	✓	✓		<b>DG1-34105FN-C21C</b>	9702-5004-00P			
						✓	✓	✓	✓	✓	<b>DG1-34105FB-C21C</b>	9702-5002-00P				
140	75	100	170	90	125	✓	-	✓	✓	✓	FS5	<b>DG1-34140FN-C21C</b>	9702-5008-00P			
						✓	✓	✓	✓	✓		<b>DG1-34140FB-C21C</b>	9702-5006-00P			
170	90	125	205	110	150	✓	-	✓	✓	✓	FS5	<b>DG1-34170FN-C21C</b>	9702-5001-00P			
						✓	✓	✓	✓	✓		<b>DG1-34170FB-C21C</b>	9702-5010-00P			

## Notes

1) Overload cycle for 60 s every 600 s

2) For normal internally and externally ventilated 4 pole, three-phase asynchronous motors with 1500 rpm<sup>-1</sup> at 50 Hz or 1800 min<sup>-1</sup> at 60 Hz

3) DG1-34...: at 400 V, 50 Hz/at 480 V, 60 Hz











	Description	For use with	Part no.	Article no.
<b>External keypad</b>				
	With 7-digit display assembly Front IP54 With approx. 3 m-long, plug-in connection cable (RJ45, 8-pin)	DE1, DE11, DC1, DA1	<b>DX-KEY-LED</b>	169132
	With OLED display Front IP54 Multilingual With approx. 3 m-long, plug-in connection cable (RJ45, 8-pin)	DC1, DA1	<b>DX-KEY-OLED</b>	169133
	With LCD display Front IP54 Multilingual	DG1	<b>DXG-KEY-LCD</b>	730-32047-00P
	Mounting frame With approx. 0.5 m-long, plug-in connection cable	DXG-KEY-LCD	<b>DXG-KEY-RMTKIT</b>	730-32033-00P
	Mounting frame		<b>DXG-KEY-HOLDER</b>	730-32032-00P
	Cover for RJ45 interface		<b>DXG-KEY-N12PLUG</b>	730-32038-00P
<b>Configuration module</b>				
Plug-in module (front)				
	With selector switch for ramp time and operating mode With potentiometer for motor protection and fixed frequency	DE1, DE11	<b>DXE-EXT-SET</b>	174621
<b>Expansion modules</b>				
Output expansion				
	2 relay outputs (N/O, 250 V AC/220 V DC, max. 1 A) 1 analog output (0 - +10 V, max. 20 mA) For connecting to the control signal terminals on the DC1	DC1	<b>DXC-EXT-2R01A0</b>	169030
	2 relay outputs (N/O, 250 V AC/220 V DC, max. 1 A) For connecting to the control signal terminals on the DC1	DC1	<b>DXC-EXT-2R0</b>	169031
	Plug-in module with plug-in terminal block, 5 pole 3 relay outputs (N/O, 250 V AC, max. 6 A/ 30 V DC, max. 5 A)	DA1	<b>DXA-EXT-3R0</b>	169121
	3 relay outputs	DG1	<b>DXG-EXT-3R0</b>	744-A2614-00P
I/O expansion				
	Plug-in module with plug-in terminal blocks, 6 pole 3 digital inputs (+24 V) 1 relay output (N/O, 250 V AC, max. 6 A/ 30 V DC, max. 5 A)	DA1	<b>DXA-EXT-3DI1R0</b>	169036
	3 digital inputs 3 Digital outputs 1 Thermistor input	DG1	<b>DXG-EXT-3DI3DO1T</b>	744-A2612-00P
	1 Analog input 2 Analog outputs	DG1	<b>DXG-EXT-1AI2A0</b>	744-A2613-00P

# PowerXL™ variable frequency drives

## Accessories








	Description	For use with	Part no.	Article no.
<b>Expansion modules</b>				
<b>Input expansion</b>				
	Thermistor input	DG1	<b>DXG-EXT-THER1</b>	744-A2615-00P
	240-V-AC input (electrically isolated) for 6 digital inputs	DG1	<b>DXG-EXT-6DI</b>	744-A2616-00P
<b>Encoder module</b>				
	Plug-in module with plug-in terminal block, 5 pole 2-channel Max. 500 kHz 5 V TTL, A & B, /A & /B, 5 V DC, max. 200 mA 24 V HTL, A & B, /A & /B, 24 V DC, external power supply required, max. 30 V DC	DA1	<b>DXA-EXT-ENCOD</b>	169035
<b>Coupling module</b>				
	115-V-AC input (electrically isolated) For 4 digital inputs For connecting to the control signal terminals on the DC1	DC1	<b>DXC-EXT-IO110</b>	169032
	230-V-AC input (electrically isolated) For 4 digital inputs For connecting to the control signal terminals on the DC1	DC1	<b>DXC-EXT-IO230</b>	169033
<b>Simulator</b>				
<b>Commissioning and testing simulator</b>				
	3 digital inputs (+24 V) 1 relay output (max. 30 V DC) 3 microswitches 1 reference value potentiometer (0 - +10 V / = 0 - f <sub>max</sub> ) For connecting to the control signal terminals on the DC1	DC1	<b>DXC-EXT-LOCSIM</b>	169034
<b>Fieldbus modules</b>				
	PROFIBUS-DP SUB-D socket, 9-pole	DA1	<b>DX-NET-PROFIBUS</b>	169124
	PROFINET 2 x RJ45, 8 pole Plug-in module	DA1	<b>DX-NET-PROFINET-2</b>	169125
	Modbus TCP 2 x RJ45, 8 pole	DA1	<b>DX-NET-MODBUSTCP-2</b>	169126
	EtherNet-IP 2 x RJ45, 8 pole	DA1	<b>DX-NET-ETHERNET-2</b>	169122
	EtherCAT 2 x RJ45, 8 pole	DA1	<b>DX-NET-ETHERCAT-2</b>	169127
	DeviceNet	DA1	<b>DX-NET-DEVICENET</b>	169123
	PROFIBUS-DP SUB-D socket, 9-pole	DG1	<b>DXG-NET-PROFIBUS</b>	744-A2617-00P
	Interface converter from 9-pin SUB-D plug to 3-pin control signal terminal	DXG-NET-PROFIBUS	<b>DXG-MNT-PROFIBUS</b>	744-A2618-00P
<b>SmartWire-DT Modules</b>				
	Plug-in module with slot for SWD4-8SF2-5 external device plug	DA1 (IP20, IP55)	<b>DX-NET-SWD1</b>	169129

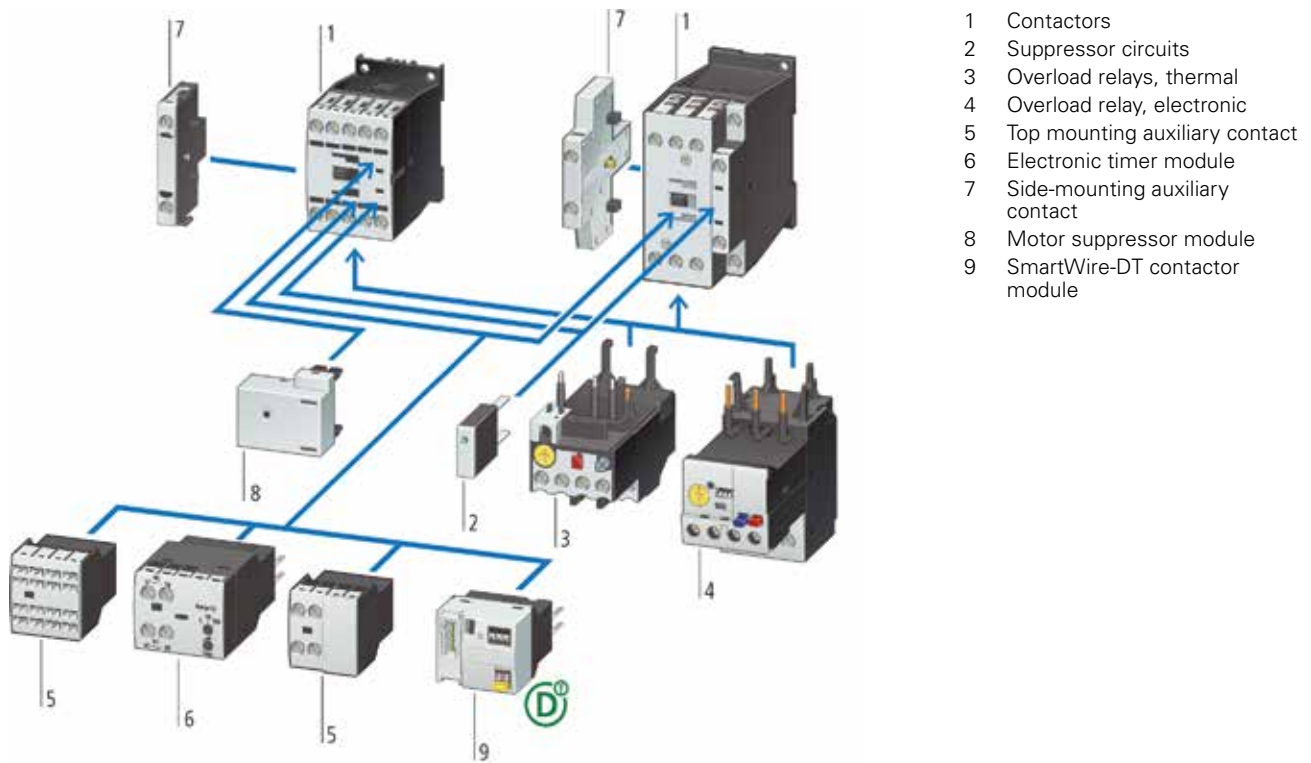


	Description	For use with	Part no.	Article no.	
	Plug-in module (front) with slot for SWD4-8SF2-5 external device plug	DE1, DE11, DC1 (IP20)	<b>DX-NET-SWD3</b>	169131	
<b>PC communication</b>					
<b>Parameter storage unit and Bluetooth communication stick</b>					
	For storage, copying parameters, and/or transferring parameters to a PC with the drivesConnect software via Bluetooth With 2 function keys for uploading and downloading parameters With configuration memory	DE1, DE11, DC1, DA1	<b>DX-COM-STICK</b>	169134	
<b>Interface converter</b>					
	Interface converter USB/RS485 with connection cable, RJ45, 8 pole Electrically isolated 1 x SUB-D plug, 9-pole Terminal strip, 5-terminal Status-LED	DE1, DE11, DC1, DA1	<b>DX-COM-PCKIT</b>	169135	
	Interface converter USB/RS485 with connection cable, RJ45, 8 pole electrically isolated	DE1, DE11, DC1, DA1	<b>DX-CBL-PC-1M5</b>	171018	
	RJ45/USB, with CD	DG1	<b>DXG-CBL-PCCABLE</b>	730-32037-00P	
<b>License Keys</b> To activate the function block editor in the DrivesConnect software					
	USB flash drive	DA1	<b>DX-COM-SOFT</b>	169136	
<b>Connection cable</b>					
	Patch cord with RJ45 plugs, 8 pole	Length 0.5 m	DE1, DE11, DC1, DA1	<b>DX-CBL-RJ45-0M5</b>	169137
		Length 1 m		<b>DX-CBL-RJ45-1M0</b>	169138
		Length 3 m		<b>DX-CBL-RJ45-3M0</b>	169139
	Patch cord with RJ45 plugs, 8 pole	Length 1 m	DG1	<b>DXG-CBL-1M0</b>	730-32034-00P
		Length 3 m		<b>DXG-CBL-3M0</b>	730-32035-00P
<b>Parameter software</b>					
	-	DG1	<b>DXG-ACC-SOFTWARE</b>	730-32036-00P	
<b>Bus terminating resistor</b>					
	RJ45 8 pole Connection to CANopen® (pin 1/2, 124 Ω) or to Modbus RTU (pin 7/8, 120 Ω)	easyNet DX-SPL-RJ45-2SL-1PL	<b>EASY-NT-R</b>	256281	

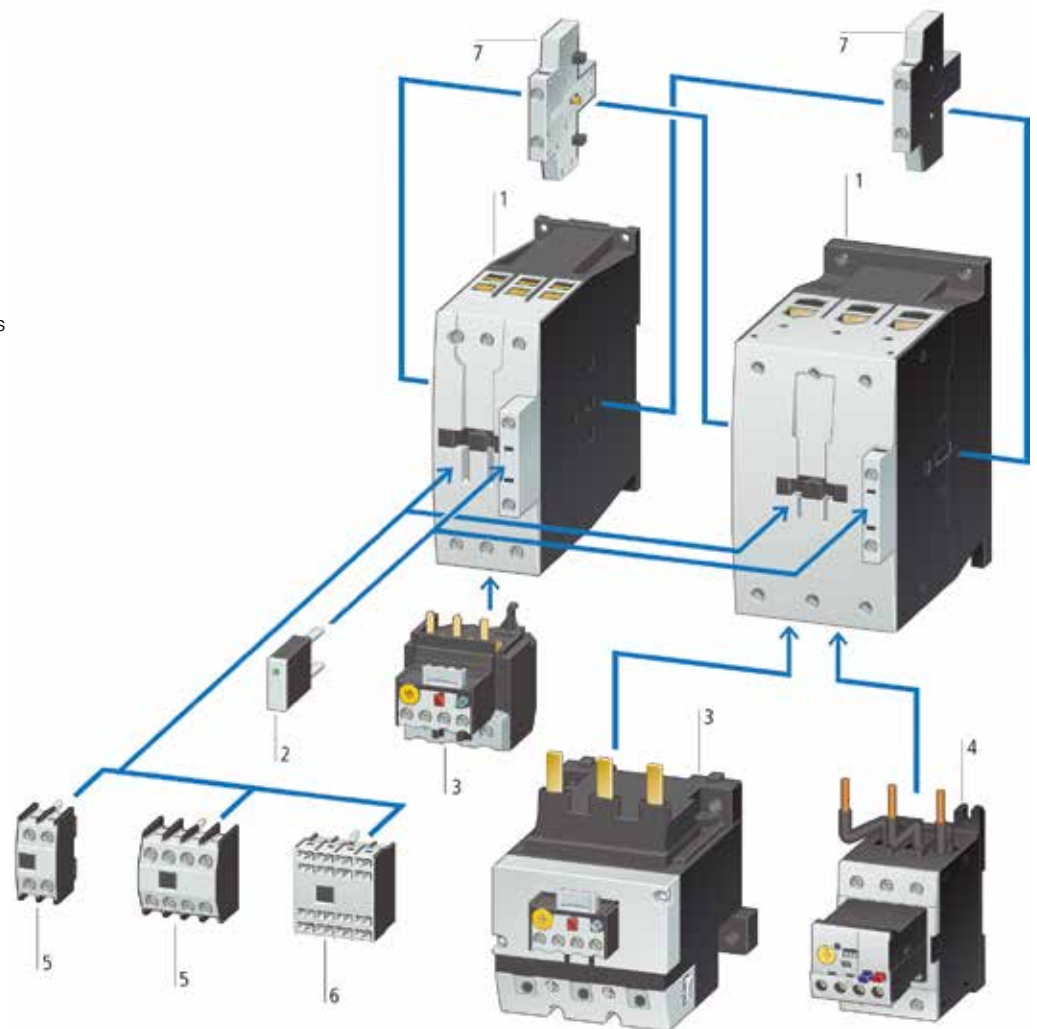
# PowerXL™ variable frequency drives

## Accessories

	Description	For use with	Part no.	Article no.
<b>PC communication</b>				
<b>Splitter</b>				
	RJ45, 8-pin, 3 sockets For CANopen® and Modbus RTU	DX-CBL-RJ45...	<b>DX-SPL-RJ45-3SL</b>	169141
	RJ45, 8-pin, 2 sockets/1 plug With cable approx. 10 cm For CANopen® and Modbus RTU	DE1, DE11, DC1, DA1	<b>DX-SPL-RJ45-2SL1PL</b>	169142
	RJ45, 8-pin, 2 sockets/1 plug For CANopen® and Modbus RTU	DE1, DE11, DC1, DA1	<b>DX-SPL-RJ45</b>	179313
	RJ45, 8-pin, 1 socket/1 plug For CANopen® and Modbus RTU With 2 resistors, 120 Ω	DE1, DE11, DC1, DA1	<b>DX-SPL-RJ45-TERM</b>	179314
<b>Battery</b>				
	Battery for real-time clock	-	<b>DXG-ACC-RTBATT</b>	730-32039-00P
<b>Mounting accessories</b>				
<b>Mounting frame</b> For the power section's push-through installation outside the control panel				
	Frame parts and fixing screws	DG1 (frame size FS1)	<b>DXG-ACC-FR1N12FK</b>	730-32022-00P
		DG1 (frame size FS2)	<b>DXG-ACC-FR2N12FK</b>	730-32023-00P
		DG1 (frame size FS3)	<b>DXG-ACC-FR3N12FK</b>	730-32024-00P
		DG1 (frame size FS4)	<b>DXG-ACC-FR4N12FK</b>	730-32025-00P
		DG1 (frame size FS5)	<b>DXG-ACC-FR5N12FK</b>	730-32026-00P
<b>Mounting set</b> For increasing the degree of protection from IP21/NEMA 1 to IP54/NEMA 12				
	Enclosure cover with seals and extra fan	DG1-34... (frame size FS1, 400/480 V)	<b>DXG-ACC-4FR1N12KIT</b>	730-32029-00P
		DG1 (frame size FS2)	<b>DXG-ACC-FR2N12KIT</b>	730-32030-00P
		DG1 (frame size FS3)	<b>DXG-ACC-FR3N12KIT</b>	730-32031-00P
		DG1-32... (frame size FS1, 230 V)	<b>DXG-ACC-2FR1N12KIT</b>	744-A2815-00P















- 1 Contactors
- 2 Suppressor circuits
- 3 Overload relays, thermal
- 4 Overload relay, electronic
- 5 Top mounting auxiliary contact
- 6 Top mounting auxiliary contact, spring-cage terminals
- 7 Side-mounting auxiliary contact



# Contactors Dil


Contactors, miniature contactors, Contactor relays

	Max. rating for three-phase motors, 50 - 60 Hz	Rated operational current	Contacts	AC operation 230 V 50 Hz, 240 V 60 Hz	AC operation 110 V 50 Hz, 120 V 60 Hz	DC operation 24 V DC	
	AC-3 380 V 660 V 400 V 690 V	AC-1 Conventional free air thermal current, 3 pole, 50 - 60 Hz	N/O = Normally open N/C = Normally closed	Part no. Article no.	Part no. Article no.	Part no. Article no.	
	P kW	P kW	Open at 40 °C $I_{th} = I_e$ A				
<b>DILEM contactors</b>							
Screw terminals							
	3	3	22	1 N/O -	<b>DILEEM-10(230V50HZ,240V60HZ)</b> 051608	<b>DILEEM-10(110V50HZ,120V60HZ)</b> 051611	<b>DILEEM-10-G(24VDC)</b> 051643
	3	3	22	- 1 NC	<b>DILEEM-01(230V50HZ,240V60HZ)</b> 051633	<b>DILEEM-01(110V50HZ,120V60HZ)</b> 051636	<b>DILEEM-01-G(24VDC)</b> 051650
	4	4	22	1 N/O -	<b>DILEM-10(230V50HZ,240V60HZ)</b> 051786	<b>DILEM-10(110V50HZ,120V60HZ)</b> 051783	<b>DILEM-10-G(24VDC)</b> 010213
	4	4	22	- 1 NC	<b>DILEM-01(230V50HZ,240V60HZ)</b> 051795	<b>DILEM-01(110V50HZ,120V60HZ)</b> 051792	<b>DILEM-01-G(24VDC)</b> 010343
	5.5	4	22	1 N/O -	<b>DILEM12-10(230V50HZ,240V60HZ)</b> 127075	<b>DILEM12-10(110V50HZ,120V60HZ)</b> 127072	<b>DILEM12-10-G(24VDC)</b> 127132
	5.5	4	22	- 1 NC	<b>DILEM12-01(230V50HZ,240V60HZ)</b> 127091	<b>DILEM12-01(110V50HZ,120V60HZ)</b> 127088	<b>DILEM12-01-G(24VDC)</b> 127137
Spring-loaded terminals							
	3	3	22	1 N/O -	<b>DILEEM-10-C(230V50HZ,240V60HZ)</b> 230042	-	<b>DILEEM-10-G-C(24VDC)</b> 230052
	3	3	22	- 1 NC	<b>DILEEM-01-C(230V50HZ,240V60HZ)</b> 230135	-	<b>DILEEM-01-G-C(24VDC)</b> 230155
	4	4	22	1 N/O -	<b>DILEM-10-C(230V50HZ,240V60HZ)</b> 230164	<b>DILEM-10-C(110V50HZ,120V60HZ)</b> 231658	<b>DILEM-10-G-C(24VDC)</b> 230165
	4	4	22	- 1 NC	<b>DILEM-01-C(230V50HZ,240V60HZ)</b> 230166	<b>DILEM-01-C(110V50HZ,120V60HZ)</b> 231681	<b>DILEM-01-G-C(24VDC)</b> 230167
<b>DILER Mini-contactors</b>							
Screw terminals							
	-	-	10	4 N/O -	<b>DILER-40(230V50HZ,240V60HZ)</b> 051759	<b>DILER-40(110V50HZ,120V60HZ)</b> 051756	<b>DILER-40-G(24VDC)</b> 010223
	-	-	10	3 N/O 1 NC	<b>DILER-31(230V50HZ,240V60HZ)</b> 051768	<b>DILER-31(110V50HZ,120V60HZ)</b> 051765	<b>DILER-31-G(24VDC)</b> 010157
	-	-	10	2 N/O 2 NC	<b>DILER-22(230V50HZ,240V60HZ)</b> 051777	<b>DILER-22(110V50HZ,120V60HZ)</b> 051774	<b>DILER-22-G(24VDC)</b> 010042
Spring-loaded terminals							
	-	-	10	4 N/O -	<b>DILER-40-C(230V50HZ,240V60HZ)</b> 230239	<b>DILER-40-C(110V50HZ,120V60HZ)</b> 231841	<b>DILER-40-G-C(24VDC)</b> 230241
	-	-	10	3 N/O 1 NC	<b>DILER-31-C(230V50HZ,240V60HZ)</b> 230178	<b>DILER-31-C(110V50HZ,120V60HZ)</b> 231818	<b>DILER-31-G-C(24VDC)</b> 230179
	-	-	10	2 N/O 2 NC	<b>DILER-22-C(230V50HZ,240V60HZ)</b> 230176	<b>DILER-22-C(110V50HZ,120V60HZ)</b> 231793	<b>DILER-22-G-C(24VDC)</b> 230177
<b>DILA relays</b>							
Screw terminals							
	-	-	16	4 N/O -	<b>DILA-40(230V50HZ,240V60HZ)</b> 276329	<b>DILA-40(110V50HZ,120V60HZ)</b> 276326	<b>DILA-40(24VDC)</b> 276344
	-	-	16	3 N/O 1 NC	<b>DILA-31(230V50HZ,240V60HZ)</b> 276364	<b>DILA-31(110V50HZ,120V60HZ)</b> 276361	<b>DILA-31(24VDC)</b> 276379
	-	-	16	2 N/O 2 NC	<b>DILA-22(230V50HZ,240V60HZ)</b> 276399	<b>DILA-22(110V50HZ,120V60HZ)</b> 276396	<b>DILA-22(24VDC)</b> 276414
Spring-loaded terminals							
	-	-	16	4 N/O -	<b>DILAC-40(230V50HZ,240V60HZ)</b> 276441	<b>DILAC-40(110V50HZ,120V60HZ)</b> 276438	<b>DILAC-40(24VDC)</b> 276456
	-	-	16	3 N/O 1 NC	<b>DILAC-31(230V50HZ,240V60HZ)</b> 276473	<b>DILAC-31(110V50HZ,120V60HZ)</b> 276470	<b>DILAC-31(24VDC)</b> 276488
	-	-	16	2 N/O 2 NC	<b>DILAC-22(230V50HZ,240V60HZ)</b> 276505	<b>DILAC-22(110V50HZ,120V60HZ)</b> 276502	<b>DILAC-22(24VDC)</b> 276520





For use with	Contacts				Part no.	Article no.
	N/O = Normally open	N/O <sub>E</sub> : NO early-make	N/C = Normally closed	NC <sub>L</sub> =NC late-break		
<b>Auxiliary contact modules</b>						
<b>Screw terminals</b>						
	DILEM-10(-G)(...)	-	-	2 NC	-	<b>02DILEM</b> 010064
	DILEM-4(-G)(...)	1 N/O	-	1 NC	-	<b>11DILEM</b> 010080
	DILEEM-10(-G)(...)	2 N/O	-	2 NC	-	<b>22DILEM</b> 010112
	DILEM12-10(-G)(...)	-	-	-	-	
	DILEM-10(-G)(...)	-	-	2 NC	-	<b>02DILE</b> 010240
	DILEM-01(-G)(...)	1 N/O	-	1 NC	-	<b>11DILE</b> 010224
	DILEM-4(-G)(...)	2 N/O	-	-	-	<b>20DILE</b> 010208
	DILER40(-G)	-	1 N/O <sub>E</sub>	-	1 NC <sub>L</sub>	<b>11DDILE</b> 049824
	DILER22	-	-	4 NC	-	<b>04DILE</b> 010256
	DILEEM-10(-G)(...)	1 N/O	-	3 NC	-	<b>13DILE</b> 002397
	DILEEM-01(-G)(...)	2 N/O	-	2 NC	-	<b>22DILE</b> 010288
	DILEM12-10(-G)(...)	3 N/O	-	1 NC	-	<b>31DILE</b> 048912
	DILEM12-01(-G)(...)	4 N/O	-	-	-	<b>40DILE</b> 010304
		1 N/O	1 N/O <sub>E</sub>	1 NC	1 NC <sub>L</sub>	<b>22DDILE</b> 049823
<b>Spring-loaded terminals</b>						
	DILE(E)M-10-C(-G)(...)	1 N/O	-	1 NC	-	<b>11DILE-C</b> 230257
	DILE(E)M-01-C(-G)(...)	-	-	4 NC	-	<b>04DILE-C</b> 230258
	DILER40(-G)-C	1 N/O	-	3 NC	-	<b>13DILE-C</b> 230259
	DILER31(-G)-C	2 N/O	-	2 NC	-	<b>22DILE-C</b> 230260
	DILER22-C	3 N/O	-	1 NC	-	<b>31DILE-C</b> 230262
		4 N/O	-	-	-	<b>40DILE-C</b> 230263
		1 N/O	1 N/O <sub>E</sub>	1 NC	1 NC <sub>L</sub>	<b>22DDILE-C</b> 230264
<b>Suppressor circuit</b>						
<b>Varistor suppressor</b>						
	DILE...	-	-	-	-	<b>VGDILE250</b> 010336
<b>RC suppressor</b>						
	DILE...	-	-	-	-	<b>RCDILE250</b> 046320
<b>Mechanical interlock</b>						
For contactors with the same or different magnet system. 0 mm distance between relays. Mechanical lifespan 2.5 x 10 <sup>6</sup> Operations. Additional auxiliary contact modules possible.						
		-	-	-	-	<b>MVDILE</b> 010113
<b>Paralleling link</b>						
Consisting of two 4 pole paralleling links						
	DILEEM DILEM12 DILEM	-	-	-	-	<b>P1DILEM</b> 019095

# Contactors DiI

Basic devices up to 170 A, screw terminals





			<b>AC operation</b> 230 V 50 Hz, 240 V 60 Hz <b>Part no.</b> Article no.	<b>AC operation</b> 110 V 50 Hz, 120 V 60 Hz <b>Part no.</b> Article no.	<b>DC operation</b> 24 V DC <b>Part no.</b> Article no.			
Max. rating for three-phase motors, 50 - 60 Hz								
AC-3		AC-1						
380 V 400 V	660 V 690 V	Conventional free air thermal current, 3 pole, 50 - 60 Hz Open at 40 °C $I_{th} = I_e$ A						
P kW	P kW							
<b>Basic device</b>								
Screw terminals								
	3	3.5	22	<b>DILM7-10(230V50HZ,240V60HZ)</b> 276550	<b>DILM7-10(110V50HZ,120V60HZ)</b> 276547	<b>DILM7-10(24VDC)</b> 276565		
	3	3.5	22	<b>DILM7-01(230V50HZ,240V60HZ)</b> 276585	<b>DILM7-01(110V50HZ,120V60HZ)</b> 276582	<b>DILM7-01(24VDC)</b> 276600		
	4	4.5	22	<b>DILM9-10(230V50HZ,240V60HZ)</b> 276690	<b>DILM9-10(110V50HZ,120V60HZ)</b> 276687	<b>DILM9-10(24VDC)</b> 276705		
	4	4.5	22	<b>DILM9-01(230V50HZ,240V60HZ)</b> 276725	<b>DILM9-01(110V50HZ,120V60HZ)</b> 276722	<b>DILM9-01(24VDC)</b> 276740		
	5.5	6.5	22	<b>DILM12-10(230V50HZ,240V60HZ)</b> 276830	<b>DILM12-10(110V50HZ,120V60HZ)</b> 276827	<b>DILM12-10(24VDC)</b> 276845		
	5.5	6.5	22	<b>DILM12-01(230V50HZ,240V60HZ)</b> 276865	<b>DILM12-01(110V50HZ,120V60HZ)</b> 276862	<b>DILM12-01(24VDC)</b> 276880		
	7.5	7	22	<b>DILM15-10(230V50HZ,240V60HZ)</b> 290058	<b>DILM15-10(110V50HZ,120V60HZ)</b> 290055	<b>DILM15-10(24VDC)</b> 290073		
	7.5	7	22	<b>DILM15-01(230V50HZ,240V60HZ)</b> 290093	<b>DILM15-01(110V50HZ,120V60HZ)</b> 290090	<b>DILM15-01(24VDC)</b> 290108		
	7.5	11	40	<b>DILM17-10(230V50HZ,240V60HZ)</b> 277004	<b>DILM17-10(110V50HZ,120V60HZ)</b> 277001	<b>DILM17-10(RDC24)</b> 277018		
	7.5	11	40	<b>DILM17-01(230V50HZ,240V60HZ)</b> 277036	<b>DILM17-01(110V50HZ,120V60HZ)</b> 277033	<b>DILM17-01(RDC24)</b> 277050		
	11	14	45	<b>DILM25-10(230V50HZ,240V60HZ)</b> 277132	<b>DILM25-10(110V50HZ,120V60HZ)</b> 277129	<b>DILM25-10(RDC24)</b> 277146		
	11	14	45	<b>DILM25-01(230V50HZ,240V60HZ)</b> 277164	<b>DILM25-01(110V50HZ,120V60HZ)</b> 277161	<b>DILM25-01(RDC24)</b> 277178		
	15	17	45	<b>DILM32-10(230V50HZ,240V60HZ)</b> 277260	<b>DILM32-10(110V50HZ,120V60HZ)</b> 277257	<b>DILM32-10(RDC24)</b> 277274		
	15	17	45	<b>DILM32-01(230V50HZ,240V60HZ)</b> 277292	<b>DILM32-01(110V50HZ,120V60HZ)</b> 277289	<b>DILM32-01(RDC24)</b> 277306		
	18.5	21	45	<b>DILM38-10(230V50HZ,240V60HZ)</b> 112428	<b>DILM38-10(110V50HZ,120V60HZ)</b> 112425	<b>DILM38-10(RDC24)</b> 112442		
	18.5	21	45	<b>DILM38-01(230V50HZ,240V60HZ)</b> 112456	<b>DILM38-01(110V50HZ,120V60HZ)</b> 112453	<b>DILM38-01(RDC24)</b> 112470		
	18.5	23	60	<b>DILM40(230V50HZ,240V60HZ)</b> 277766	<b>DILM40(110V50HZ,120V60HZ)</b> 277763	<b>DILM40(RDC24)</b> 277780		
	22	30	80	<b>DILM50(230V50HZ,240V60HZ)</b> 277830	<b>DILM50(110V50HZ,120V60HZ)</b> 277827	<b>DILM50(RDC24)</b> 277844		
	30	35	98	<b>DILM65(230V50HZ,240V60HZ)</b> 277894	<b>DILM65(110V50HZ,120V60HZ)</b> 277891	<b>DILM65(RDC24)</b> 277908		
	37	35	98	<b>DILM72(230V50HZ,240V60HZ)</b> 107670	<b>DILM72(110V50HZ,120V60HZ)</b> 109191	<b>DILM72(RDC24)</b> 107671		
	37	63	110	<b>DILM80(230V50HZ,240V60HZ)</b> 239402	<b>DILM80(110V50HZ,120V60HZ)</b> 239399	<b>DILM80(RDC24)</b> 239416		
	45	75	130	<b>DILM95(230V50HZ,240V60HZ)</b> 239480	<b>DILM95(110V50HZ,120V60HZ)</b> 239477	<b>DILM95(RDC24)</b> 239510		
	55	90	160	<b>DILM115(RAC240)</b> 239548	<b>DILM115(RAC120)</b> 239547	<b>DILM115(RDC24)</b> 239555		
	75	96	190	<b>DILM150(RAC240)</b> 239588	<b>DILM150(RAC120)</b> 239587	<b>DILM150(RDC24)</b> 239591		
	90	96	225	<b>DILM170(RAC240)</b> 107013	<b>DILM170(RAC120)</b> 107012	<b>DILM170(RDC24)</b> 107016		



			<b>AC operation</b> 230 V 50 Hz, 240 V 60 Hz <b>Part no.</b> Article no.	<b>AC operation</b> 110 V 50 Hz, 120 V 60 Hz <b>Part no.</b> Article no.	<b>DC operation</b> 24 V DC <b>Part no.</b> Article no.	
Max. rating for three-phase motors, 50 - 60 Hz		Rated operational current				
AC-3		AC-1				
380 V 400 V	660 V 690 V	Conventional free air thermal current, 3 pole, 50 - 60 Hz Open at 40 °C				
P kW	P kW	$I_{th} = I_e$ A				
<b>Basic device</b>						
<b>Spring-loaded terminals</b>						
	3	3.5	22	<b>DILMC7-10(230V50HZ,240V60HZ)</b> 277389	<b>DILMC7-10(110V50HZ,120V60HZ)</b> 277386	<b>DILMC7-10(24VDC)</b> 277404
	3	3.5	22	<b>DILMC7-01(230V50HZ,240V60HZ)</b> 277421	<b>DILMC7-01(110V50HZ,120V60HZ)</b> 277418	<b>DILMC7-01(24VDC)</b> 277436
	4	4.5	22	<b>DILMC9-10(230V50HZ,240V60HZ)</b> 277453	<b>DILMC9-10(110V50HZ,120V60HZ)</b> 277450	<b>DILMC9-10(24VDC)</b> 277468
	4	4.5	22	<b>DILMC9-01(230V50HZ,240V60HZ)</b> 277485	<b>DILMC9-01(110V50HZ,120V60HZ)</b> 277482	<b>DILMC9-01(24VDC)</b> 277500
	5.5	6.5	22	<b>DILMC12-10(230V50HZ,240V60HZ)</b> 277517	<b>DILMC12-10(110V50HZ,120V60HZ)</b> 277514	<b>DILMC12-10(24VDC)</b> 277532
	5.5	6.5	22	<b>DILMC12-01(230V50HZ,240V60HZ)</b> 277549	<b>DILMC12-01(110V50HZ,120V60HZ)</b> 277546	<b>DILMC12-01(24VDC)</b> 277564
	7.5	7	22	<b>DILMC15-10(230V50HZ,240V60HZ)</b> 293911	<b>DILMC15-10(110V50HZ,120V60HZ)</b> 293908	<b>DILMC15-10(24VDC)</b> 293926
	7.5	7	22	<b>DILMC15-01(230V50HZ,240V60HZ)</b> 293946	<b>DILMC15-01(110V50HZ,120V60HZ)</b> 293943	<b>DILMC15-01(24VDC)</b> 293961
<b>Spring-cage terminals on auxiliary and control circuit terminals</b>						
	7.5	11	40	<b>DILMC17-10(230V50HZ,240V60HZ)</b> 277581	<b>DILMC17-10(110V50HZ,120V60HZ)</b> 277578	<b>DILMC17-10(RDC24)</b> 277595
	7.5	11	40	<b>DILMC17-01(230V50HZ,240V60HZ)</b> 277611	<b>DILMC17-01(110V50HZ,120V60HZ)</b> 277608	<b>DILMC17-01(RDC24)</b> 277625
	11	14	45	<b>DILMC25-10(230V50HZ,240V60HZ)</b> 277641	<b>DILMC25-10(110V50HZ,120V60HZ)</b> 277638	<b>DILMC25-10(RDC24)</b> 277655
	11	14	45	<b>DILMC25-01(230V50HZ,240V60HZ)</b> 277671	<b>DILMC25-01(110V50HZ,120V60HZ)</b> 277668	<b>DILMC25-01(RDC24)</b> 277685
	15	17	45	<b>DILMC32-10(230V50HZ,240V60HZ)</b> 277701	<b>DILMC32-10(110V50HZ,120V60HZ)</b> 277698	<b>DILMC32-10(RDC24)</b> 277715
	15	17	45	<b>DILMC32-01(230V50HZ,240V60HZ)</b> 277731	<b>DILMC32-01(110V50HZ,120V60HZ)</b> 277728	<b>DILMC32-01(RDC24)</b> 277745
	18.5	23	60	<b>DILMC40(230V50HZ,240V60HZ)</b> 277965	<b>DILMC40(110V50HZ,120V60HZ)</b> 277962	<b>DILMC40(RDC24)</b> 277979
	22	30	80	<b>DILMC50(230V50HZ,240V60HZ)</b> 277995	<b>DILMC50(110V50HZ,120V60HZ)</b> 277992	<b>DILMC50(RDC24)</b> 278009
	30	35	98	<b>DILMC65(230V50HZ,240V60HZ)</b> 278025	<b>DILMC65(110V50HZ,120V60HZ)</b> 278022	<b>DILMC65(RDC24)</b> 278039
	37	63	110	<b>DILMC80(230V50HZ,240V60HZ)</b> 239618	-	<b>DILMC80(RDC24)</b> 239652
	45	75	130	<b>DILMC95(230V50HZ,240V60HZ)</b> 239685	-	<b>DILMC95(RDC24)</b> 239715
	55	90	160	<b>DILMC115(RAC240)</b> 239736	-	<b>DILMC115(RDC24)</b> 239741
	75	96	190	<b>DILMC150(RAC240)</b> 239751	-	<b>DILMC150(RDC24)</b> 239765

# Contactors DiI

Complete devices up to 170 A

	Max. rating for three-phase motors, 50 - 60 Hz		Rated operational current	<b>AC operation</b> 230 V 50 Hz, 240 V 60 Hz <b>Part no.</b> Article no.	<b>DC operation</b> 24 V DC <b>Part no.</b> Article no.
	AC-3 380 V 400 V	660 V 690 V	AC-1 Conventional free air thermal current, 3 pole, 50 - 60 Hz Open at 40 °C $I_{th} = I_e$ A		
	P kW	P kW			
<b>DILM complete units</b>					
Screw terminals					
	3	3.5	22	<b>DILM7-32(230V50HZ,240V60HZ)</b> 276655	<b>DILM7-32(24VDC)</b> 276670
	4	4.5	22	<b>DILM9-32(230V50HZ,240V60HZ)</b> 276795	<b>DILM9-32(24VDC)</b> 276810
	5.5	6.5	22	<b>DILM12-32(230V50HZ,240V60HZ)</b> 276935	<b>DILM12-32(24VDC)</b> 276950
	7.5	11	40	<b>DILM17-32(230V50HZ,240V60HZ)</b> 277100	<b>DILM17-32(RDC24)</b> 277114
	11	14	45	<b>DILM25-32(230V50HZ,240V60HZ)</b> 277228	<b>DILM25-32(RDC24)</b> 277242
	15	17	45	<b>DILM32-32(230V50HZ,240V60HZ)</b> 277356	<b>DILM32-32(RDC24)</b> 277370
	18.5	23	60	<b>DILM40-22(230V50HZ,240V60HZ)</b> 277798	<b>DILM40-22(RDC24)</b> 277812
	22	30	80	<b>DILM50-22(230V50HZ,240V60HZ)</b> 277862	<b>DILM50-22(RDC24)</b> 277876
	30	35	98	<b>DILM65-22(230V50HZ,240V60HZ)</b> 277926	<b>DILM65-22(RDC24)</b> 277940
	37	63	110	<b>DILM80-22(230V50HZ,240V60HZ)</b> 239449	<b>DILM80-22(RDC24)</b> 239463
	45	75	130	<b>DILM95-22(230V50HZ,240V60HZ)</b> 239527	<b>DILM95-22(RDC24)</b> 239541
	55	90	160	<b>DILM115-22(RAC240)</b> 239578	<b>DILM115-22(RDC24)</b> 239581
	75	96	190	<b>DILM150-22(RAC240)</b> 239598	<b>DILM150-22(RDC24)</b> 239601



AC3 380 V 400 V P kW	AC3 660 V 690 V P kW	AC1   $I_{th}=I_e$ A*1	Part no. Article No.	Part no. Article No.	Part no. Article No.	Part no. Article No.
		10	<b>DILER-40(230V50/60HZ)</b> 52725	<b>DILER-40(110V50/60HZ)</b> 21961	<b>DILER-40(42V50HZ,48V60HZ)</b> 51755	<b>DILER-40(24V50/60H)</b> 21924
-	-	10	<b>DILER-31(230V50/60HZ)</b> 52509	<b>DILER-31(110V50/60HZ)</b> 21624	<b>DILER-31(42V50HZ,48V60HZ)</b> 51764	<b>DILER-31(24V50/60HZ)</b> 21594
-	-	10	<b>DILER-22(230V50/60HZ)</b> 52508	<b>DILER-22(110V50/60HZ)</b> 21871	<b>DILER-22(42V50HZ,48V60HZ)</b> 51773	<b>DILER-22(24V50/60HZ)</b> 21704
-	-	16	<b>DILA-40(230V50/60HZ)</b> 276337	<b>DILA-40(110V50/60HZ)</b> 276335	<b>DILA-40(42V50HZ,48V60HZ)</b> 276325	<b>DILA-40(24V50/60HZ)</b> 276333
-	-	16	<b>DILA-31(230V50/60HZ)</b> 276372	<b>DILA-31(110V50/60HZ)</b> 276370	<b>DILA-31(42V50HZ,48V60HZ)</b> 276360	<b>DILA-31(24V50/60HZ)</b> 276368
-	-	16	<b>DILA-22(230V50/60HZ)</b> 276407	<b>DILA-22(110V50/60HZ)</b> 276405	<b>DILA-22(42V50HZ,48V60HZ)</b> 276395	<b>DILA-22(24V50/60HZ)</b> 276403
3	3	22	<b>DILEEM-10(230V50/60HZ)</b> 56674	<b>DILEEM-10(110V50/60HZ)</b> 51592	<b>DILEEM-10(42V50HZ,48V60HZ)</b> 51612	<b>DILEEM-10(24V50/60HZ)</b> 51596
3	3	22	<b>DILEEM-01(230V50/60HZ)</b> 58771	<b>DILEEM-01(110V50/60HZ)</b> 51618	<b>DILEEM-01(42V50HZ,48V60HZ)</b> 51637	<b>DILEEM-01(24V50/60HZ)</b> 51621
4	4	22	<b>DILEM-10(230V50/60HZ)</b> 52302	<b>DILEM-10(110V50/60HZ)</b> 21455	<b>DILEM-10(42V50HZ,48V60HZ)</b> 51782	<b>DILEM-10(24V50/60HZ)</b> 21417
4	4	22	<b>DILEM-01(230V50/60HZ)</b> 51114	<b>DILEM-01(110V50/60HZ)</b> 20436	<b>DILEM-01(42V50HZ,48V60HZ)</b> 51791	<b>DILEM-01(24V50/60HZ)</b> 20402
3	3.5	22	<b>DILM7-10(230V50/60HZ)</b> 276558	<b>DILM7-10(110V50/60HZ)</b> 276556	<b>DILM7-10(42V50HZ,48V60HZ)</b> 276546	<b>DILM7-10(24V50/60HZ)</b> 276554
3	3.5	22	<b>DILM7-01(230V50/60HZ)</b> 276593	<b>DILM7-01(110V50/60HZ)</b> 276591	<b>DILM7-01(42V50HZ,48V60HZ)</b> 276581	<b>DILM7-01(24V50/60HZ)</b> 276589
4	4.5	22	<b>DILM9-10(230V50/60HZ)</b> 276698	<b>DILM9-10(110V50/60HZ)</b> 276696	<b>DILM9-10(42V50HZ,48V60HZ)</b> 276686	<b>DILM9-10(24V50/60HZ)</b> 276694
4	4.5	22	<b>DILM9-01(230V50/60HZ)</b> 276733	<b>DILM9-01(110V50/60HZ)</b> 276731	<b>DILM9-01(42V50HZ,48V60HZ)</b> 276721	<b>DILM9-01(24V50/60HZ)</b> 276729
5.5	6.5	22	<b>DILM12-10(230V50/60HZ)</b> 276838	<b>DILM12-10(110V50/60HZ)</b> 276836	<b>DILM12-10(42V50HZ,48V60HZ)</b> 276826	<b>DILM12-10(24V50/60HZ)</b> 276834
5.5	6.5	22	<b>DILM12-01(230V50/60HZ)</b> 276873	<b>DILM12-01(110V50/60HZ)</b> 276871	<b>DILM12-01(42V50HZ,48V60HZ)</b> 276861	<b>DILM12-01(24V50/60HZ)</b> 276869
7.5	11	40	<b>DILM17-10(230V50/60HZ)</b> 277012	<b>DILM17-10(110V50/60HZ)</b> 277010	<b>DILM17-10(42V50HZ,48V60HZ)</b> 277000	<b>DILM17-10(24V50/60HZ)</b> 277008
7.5	11	40	<b>DILM17-01(230V50/60HZ)</b> 277044	<b>DILM17-01(110V50/60HZ)</b> 277042	<b>DILM17-01(42V50HZ,48V60HZ)</b> 277032	<b>DILM17-01(24V50/60HZ)</b> 277040
11	14	45	<b>DILM25-10(230V50/60HZ)</b> 277140	<b>DILM25-10(110V50/60HZ)</b> 277138	<b>DILM25-10(42V50HZ,48V60HZ)</b> 277128	<b>DILM25-10(24V50/60HZ)</b> 277136
11	14	45	<b>DILM25-01(230V50/60HZ)</b> 277172	<b>DILM25-01(110V50/60HZ)</b> 277170	<b>DILM25-01(42V50HZ,48V60HZ)</b> 277160	<b>DILM25-01(24V50/60HZ)</b> 277168
15	17	45	<b>DILM32-10(230V50/60HZ)</b> 277268	<b>DILM32-10(110V50/60HZ)</b> 277266	<b>DILM32-10(42V50HZ,48V60HZ)</b> 277256	<b>DILM32-10(24V50/60HZ)</b> 277264
15	17	45	<b>DILM32-01(230V50/60HZ)</b> 277300	<b>DILM32-01(110V50/60HZ)</b> 277298	<b>DILM32-01(42V50HZ,48V60HZ)</b> 277288	<b>DILM32-01(24V50/60HZ)</b> 277296
18.5	23	60	<b>DILM40(230V50/60HZ)</b> 277806	<b>DILM40(110V50/60HZ)</b> 277772	<b>DILM40(42V50HZ,48V60HZ)</b> 277762	<b>DILM40(24V50/60HZ)</b> 277770
22	30	80	<b>DILM50(230V50/60HZ)</b> 277870	<b>DILM50(110V50/60HZ)</b> 277836	<b>DILM50(42V50HZ,48V60HZ)</b> 277826	<b>DILM50(24V50/60HZ)</b> 277834
30	35	98	<b>DILM65(230V50/60HZ)</b> 277902	<b>DILM65(110V50/60HZ)</b> 277900	<b>DILM65(42V50HZ,48V60HZ)</b> 277890	<b>DILM65(24V50/60HZ)</b> 277898
37	63	110	<b>DILM80(230V50/60HZ)</b> 239410	<b>DILM80(110V50/60HZ)</b> 239408	<b>DILM80(42V50HZ,48V60HZ)</b> 239394	<b>DILM80(24V50/60HZ)</b> 239406
45	75	130	<b>DILM95(230V50/60HZ)</b> 239488	<b>DILM95(110V50/60HZ)</b> 239486	<b>DILM95(42V50HZ,48V60HZ)</b> 239476	<b>DILM95(24V50/60HZ)</b> 239484
55	90	160	<b>DILM115(RAC240)</b> 239548	<b>DILM115(RAC120)</b> 239547	<b>DILM115(RAC48)</b> 239546	<b>DILM115(RAC24)</b> 239545
75	96	190	<b>DILM150(RAC240)</b> 239588	<b>DILM150(RAC120)</b> 239587	<b>DILM150(RAC48)</b> 239586	<b>DILM150(RAC24)</b> 239585

\*1 Conventional thermal current, 3 pole, 50-60 Hz, open at 40 °C  
 RAC240 $\hat{=}$ 190-240V 50/60Hz; RAC $\hat{=}$ 100-120V 50/60Hz; RAC $\hat{=}$ 42-48V 50/60Hz; RAC24 $\hat{=}$ 24V 50/60Hz  
 For more contactors and coil voltages please look in our [Online catalog: www.eaton.eu/ecat](http://www.eaton.eu/ecat)

# Contactors DiI

Basic devices with spring-cage terminals

AC3 380 V 400 V P kW	AC3 660 V 690 V P kW	AC1 $I_{th}=I_o$ A*1	Part no. Article No.	Part no. Article No.	Part no. Article No.
-	-	10	<b>DILER-40-C(230V50/60HZ)</b> 231850	<b>DILER-40-C(48V50HZ)</b> 231835	<b>DILER-40-C(24V50/60HZ)</b> 231847
-	-	10	<b>DILER-31-C(230V50/60HZ)</b> 231827	<b>DILER-31-C(48V50HZ)</b> 231812	<b>DILER-31-C(24V50/60HZ)</b> 231824
-	-	10	<b>DILER-22-C(230V50/60HZ)</b> 231802	<b>DILER-22-C(48V50HZ)</b> 231787	<b>DILER-22-C(24V50/60HZ)</b> 231799
-	-	16	<b>DILAC-40(230V50/60HZ)</b> 276449	<b>DILAC-40(48V50HZ)</b> 276432	<b>DILAC-40(24V50/60HZ)</b> 276445
-	-	16	<b>DILAC-31(230V50/60HZ)</b> 276481	<b>DILAC-31(48V50HZ)</b> 276464	<b>DILAC-31(24V50/60HZ)</b> 276477
-	-	16	<b>DILAC-22(230V50/60HZ)</b> 276513	<b>DILAC-22(48V50HZ)</b> 276496	<b>DILAC-22(24V50/60HZ)</b> 276509
3	3	22	<b>DILEEM-10-C(230V50/60HZ)</b> 230049	-	-
4	4	22	<b>DILEM-10-C(230V50/60HZ)</b> 231667	<b>DILEM-10-C(48V50HZ)</b> 231652	<b>DILEM-10-C(24V50/60HZ)</b> 231664
4	4	22	<b>DILEM-01-C(230V50/60HZ)</b> 231690	<b>DILEM-01-C(48V50HZ)</b> 231675	<b>DILEM-01-C(24V50/60HZ)</b> 231687
3	3.5	22	<b>DILMC7-10(230V50/60HZ)</b> 277397	<b>DILMC7-10(48V50HZ)</b> 277380	<b>DILMC7-10(24V50/60HZ)</b> 277393
3	3.5	22	<b>DILMC7-01(230V50/60HZ)</b> 277429	<b>DILMC7-01(48V50HZ)</b> 277412	<b>DILMC7-01(24V50/60HZ)</b> 277425
4	4.5	22	<b>DILMC9-10(230V50/60HZ)</b> 277461	<b>DILMC9-10(48V50HZ)</b> 277444	<b>DILMC9-10(24V50/60HZ)</b> 277457
4	4.5	22	<b>DILMC9-01(230V50/60HZ)</b> 277493	<b>DILMC9-01(48V50HZ)</b> 277476	<b>DILMC9-01(24V50/60HZ)</b> 277489
5.5	6.5	22	<b>DILMC12-10(230V50/60HZ)</b> 277525	<b>DILMC12-10(48V50HZ)</b> 277508	<b>DILMC12-10(24V50/60HZ)</b> 277521
5.5	6.5	22	<b>DILMC12-01(230V50/60HZ)</b> 277557	<b>DILMC12-01(48V50HZ)</b> 277540	<b>DILMC12-01(24V50/60HZ)</b> 277553
Spring-cage terminals on auxiliary and control circuit terminals					
7.5	11	40	<b>DILMC17-10(230V50/60HZ)</b> 277589	<b>DILMC17-10(48V50HZ)</b> 277571	<b>DILMC17-10(24V50/60HZ)</b> 277585
7.5	11	40	<b>DILMC17-01(230V50/60HZ)</b> 277619	<b>DILMC17-01(48V50HZ)</b> 277601	<b>DILMC17-01(24V50/60HZ)</b> 277615
11	14	45	<b>DILMC25-10(230V50/60HZ)</b> 277649	<b>DILMC25-10(48V50HZ)</b> 277631	<b>DILMC25-10(24V50/60HZ)</b> 277645
11	14	45	<b>DILMC25-01(230V50/60HZ)</b> 277679	<b>DILMC25-01(48V50HZ)</b> 277661	<b>DILMC25-01(24V50/60HZ)</b> 277675
15	17	45	<b>DILMC32-10(230V50/60HZ)</b> 277709	<b>DILMC32-10(48V50HZ)</b> 277691	<b>DILMC32-10(24V50/60HZ)</b> 277705
15	17	45	<b>DILMC32-01(230V50/60HZ)</b> 277739	<b>DILMC32-01(48V50HZ)</b> 277721	<b>DILMC32-01(24V50/60HZ)</b> 277735
18.5	23	60	<b>DILMC40(230V50/60HZ)</b> 277973	<b>DILMC40(48V50HZ)</b> 277955	<b>DILMC40(24V50/60HZ)</b> 277969
22	30	80	<b>DILMC50(230V50/60HZ)</b> 278003	<b>DILMC50(48V50HZ)</b> 277985	-
30	35	98	<b>DILMC65(230V50/60HZ)</b> 278033	<b>DILMC65(48V50HZ)</b> 278015	-
37	63	110	-	<b>DILMC80(48V50HZ)</b> 239606	-
45	75	130	-	<b>DILMC95(48V50HZ)</b> 239657	-





\*1 Conventional thermal current, 3 pole, 50-60 Hz, open at 40 °C

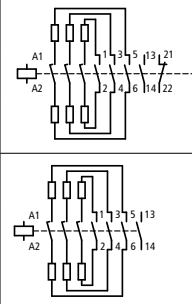

For more contactors and coil voltages please look in our [Online catalog: www.eaton.eu/ecat](http://www.eaton.eu/ecat)

			AC operation 230 V 50 Hz, 240 V 60 Hz	AC operation 110 V 50 Hz, 120 V 60 Hz	DC operation 24 V DC	
Max. rating for three-phase motors, 50 - 60 Hz			Part no. Article no.	Part no. Article no.	Part no. Article no.	
AC-3		Rated operational current AC-1				
380 V 400 V	660 V 690 V	Conventional free air thermal current, 3 pole, 50 - 60 Hz Open at 40 °C				
P kW	P kW	$I_{th} = I_e$ A				
<b>Comfort devices DILM</b>						
Screw connection						
	90	140	337	<b>DILM185A/22(RAC240)</b> 139537	<b>DILM185A/22(RAC120)</b> 139536	<b>DILM185A/22(RDC24)</b> 139540
	110	150	386	<b>DILM225A/22(RAC240)</b> 139547	<b>DILM225A/22(RAC120)</b> 139546	<b>DILM225A/22(RDC24)</b> 139550
	132	240	430	<b>DILM250/22(RA250)</b> 208201	<b>DILM250/22(RA110)</b> 208200	<b>DILM250/22(RDC48)</b> 208199
	160	240	490	<b>DILM300A/22(RA250)</b> 139556	<b>DILM300A/22(RA110)</b> 139555	<b>DILM300A/22(RDC48)</b> 139554
	200	344	612	<b>DILM400/22(RA250)</b> 208209	<b>DILM400/22(RA110)</b> 208208	<b>DILM400/22(RDC48)</b> 208207
	250	344	800	<b>DILM500/22(RA250)</b> 208213	<b>DILM500/22(RA110)</b> 208212	<b>DILM500/22(RDC48)</b> 208211
	315	560	980	<b>DILM580/22(RA250)</b> 208216	<b>DILM580/22(RA110)</b> 208215	-
	355	630	1041	<b>DILM650/22(RA250)</b> 208219	<b>DILM650/22(RA110)</b> 208218	-
	400	720	1102	<b>DILM750/22(RA250)</b> 208222	<b>DILM750/22(RA110)</b> 208221	-
	450	750	1225	<b>DILM820/22(RA250)</b> 208225	<b>DILM820/22(RA110)</b> 208224	-
	560	1000	1225	<b>DILM820/22(RA250)</b> 267214	-	-
Screw connection						
	132	240	430	<b>DILM250-S/22 (220-240V50/60HZ)</b> 274190	<b>DILM250-S/22 (110-120V50/60HZ)</b> 274189	-
	160	240	490	<b>DILM300A-S/22 (220-240V50/60HZ)</b> 139559	<b>DILM300A-S/22 (110-120V50/60HZ)</b> 139558	-
	200	344	612	<b>DILM400-S/22 (220-240V50/60HZ)</b> 274196	<b>DILM400-S/22 (110-120V50/60HZ)</b> 274195	-
	250	344	800	<b>DILM500-S/22 (220-240V50/60HZ)</b> 274199	<b>DILM500-S/22 (110-120V50/60HZ)</b> 274198	-


# Contactors DiI

Basic devices up to 200 A, 4 pole

	Rated operational current		AC operation 230 V 50 Hz, 240 V 60 Hz	AC operation 110 V 50 Hz, 120 V 60 Hz	DC operation 24 V DC
	AC-1 Conventional free air thermal current, 3 pole, 50 - 60 Hz Open		<b>Part no.</b> Article no.	<b>Part no.</b> Article no.	<b>Part no.</b> Article no.
	at 40 °C	at 60 °C			
	$I_{th} = I_e$	$I_{th} = I_e$			
	A	A			
<b>Basic devices DILMP</b>					
Screw terminals					
	22	20	<b>DILMP20(230V50HZ,240V60HZ)</b> 276970	<b>DILMP20(110V50HZ,120V60HZ)</b> 276967	<b>DILMP20(24VDC)</b> 276985
		32	28	<b>DILMP32-01(230V50HZ,240V60HZ)</b> 118911	<b>DILMP32-01(110V50HZ,120V60HZ)</b> 118912
32		28	<b>DILMP32-10(230V50HZ,240V60HZ)</b> 109797	<b>DILMP32-10(110V50HZ,120V60HZ)</b> 109790	<b>DILMP32-10(RDC24)</b> 109811
45		39	<b>DILMP45-01(230V50HZ,240V60HZ)</b> 118914	<b>DILMP45-01(110V50HZ,120V60HZ)</b> 118915	<b>DILMP45-01(RDC24)</b> 118916
45		39	<b>DILMP45-10(230V50HZ,240V60HZ)</b> 109826	<b>DILMP45-10(110V50HZ,120V60HZ)</b> 109819	<b>DILMP45-10(RDC24)</b> 109840
	63	54	<b>DILMP63(230V50HZ,240V60HZ)</b> 109855	<b>DILMP63(110V50HZ,120V60HZ)</b> 109848	<b>DILMP63(RDC24)</b> 109869
	63	54	<b>DILMP63(RAC240)</b> 167512	-	-
	80	69	<b>DILMP80(230V50HZ,240V60HZ)</b> 109884	<b>DILMP80(110V50HZ,120V60HZ)</b> 109877	<b>DILMP80(RDC24)</b> 109898
	80	69	<b>DILMP80(RAC240)</b> 167513	-	-
	125	108	<b>DILMP125(RAC240)</b> 109905	<b>DILMP125(RAC120)</b> 109903	<b>DILMP125(RDC24)</b> 109910
	160	138	<b>DILMP160(RAC240)</b> 109915	<b>DILMP160(RAC120)</b> 109913	<b>DILMP160(RDC24)</b> 109920
	200	172	<b>DILMP200(RAC240)</b> 109925	<b>DILMP200(RAC120)</b> 109923	<b>DILMP200(RDC24)</b> 109930

	Rated power of three-phase capacitors 50 - 60 Hz				Contact sequence	Part no. Article no.
	Open					
	230 V kVAr	400 V kVAr	525 V kVAr	690 V kVAr		
<b>DILK contactors for capacitors</b>						
With series resistors Basic Units	7.5	12.5	16.7	20		<b>DILK12-11(230V50HZ,240V60HZ)</b> 293988
	11	20	25	33.3		<b>DILK20-11(230V50HZ,240V60HZ)</b> 294010
	15	25	33.3	40		<b>DILK25-11(230V50HZ,240V60HZ)</b> 294032
	20	33.3	40	55		<b>DILK33-10(230V50HZ,240V60HZ)</b> 294054
	25	50	65	85		<b>DILK50-10(230V50HZ,240V60HZ)</b> 294076
						

	Rated operational current				Conventional free air thermal current, 3 pole, 50 - 60 Hz AC-1 at 60 °C	Part no. Article no.
	AC-5a		AC-5b			
	220 V 230 V	380 V 400 V	220 V 230 V	380 V 400 V		
	$I_e$	$I_e$	$I_e$	$I_e$	Open $I_{th} = I_e$	
	A	A	A	A	A	

<b>Lighting contactors DILL</b>						Part no. Article no.	
	12	12	14	14	24		<b>DILL12(230V50HZ,240V60HZ)</b> 104402
	18	18	21	21	35		<b>DILL18(230V50HZ,240V60HZ)</b> 104405
	20	20	27	27	40	<b>DILL20(230V50HZ,240V60HZ)</b> 104408	

### Switchgear for lighting systems


	DIL	L12	L18	L20	M7	M9	M12	M17	M25	M32	M40	M50
Permissible compensation capacitance	$C_{max}$ [mF]	470	470	470	47	80	100	220	330	470	470	500
Filament lamp	$I_e$ [A]	14	21	27	6	7.5	10	14	21	27	33	42
Mercury blended lamps	$I_e$ [A]	12	16	23	5	6.5	8.5	12	16	23	30	38
Fluorescent lamps, conventional -reactor – starter – connection	$I_e$ [A]	20	26	35	9	10	15	20	26	35	41	45
Fluorescent lamps, duo circuit (series compensated)	$I_e$ [A]	20	26	35	5.5	8	13	15	22.5	29	36	47
Electronic upstream devices	$I_e$ [A]	12	18	20	5	6.5	8.5	12	17.5	22.5	28	35
High-pressure mercury-arc lamps	$I_e$ [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
Metal-halide lamps	$I_e$ [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
High-pressure sodium lamps	$I_e$ [A]	12	18	20	3.5	6	10	12	17.5	20	25	30
Low-pressure sodium lamps	$I_e$ [A]	7.5	10	12	3	4	6	7.5	10	12	15	22

	DIL	M65	M80	M95	M115	M150	M185A	M225A	M250	M300A	M400	M500
Permissible compensation capacitance	$C_{max}$ [mF]	500	550	620	830	970	2055	2300	2600	3000	3250	3500
Filament lamp	$I_e$ [A]	55	67	79	95	125	153	187	208	249	332	415
Mercury blended lamps	$I_e$ [A]	45	65	67	80	110	123	150	167	200	266	332
Fluorescent lamps, conventional -reactor – starter – connection	$I_e$ [A]	55	95	100	125	145	207	237	263	300	375	525
Fluorescent lamps, duo circuit (series compensated)	$I_e$ [A]	59	71	95	100	138	186	213	236	270	338	473
Electronic upstream devices	$I_e$ [A]	45.5	56	66.5	80.5	105	130	158	175	210	280	350
High-pressure mercury vapor lamps	$I_e$ [A]	36	55	60	80	95	138	158	175	200	250	350
Metal-halide lamps	$I_e$ [A]	36	55	60	80	95	138	158	175	200	250	350
High-pressure sodium lamps	$I_e$ [A]	36	55	60	80	95	138	158	175	200	250	350
Low-pressure sodium lamps	$I_e$ [A]	25	35	40	50	70	100	111	123	140	175	245

In compensated lamps, the sum of the capacitances must not exceed the contactors' max. permissible capacitor load ( $C_{max}$ )!  
The values in the table are for each contact in the contactors.

# Contactors DiI

## Star-delta starter combinations


































	Rated operational current	Max. rating for three-phase motors, 50 - 60 Hz					Max. changeover time s	Part no. Article no.
	AC-3	AC-3						
	380 V 400 V I <sub>e</sub> A	220 V 230 V P kW	380 V 400 V P kW	500 V P kW	660 V 690 V P kW			
<b>Star-delta combinations SDAINL</b>								
Operating frequency: maximum 30 starts per hour								
	12	3	5.5	5.5	5.5	< 20	<b>SDAINLM12(230V50HZ,240V60HZ)</b> 278286	
	16	4	7.5	7.5	7.5	< 20	<b>SDAINLM16(230V50HZ,240V60HZ)</b> 278311	
	22	5.5	11	11	11	< 20	<b>SDAINLM22(230V50HZ,240V60HZ)</b> 278336	
	30	7.5	15	18.5	18.5	< 20	<b>SDAINLM30(230V50HZ,240V60HZ)</b> 278361	
	45	11	22	30	22	< 20	<b>SDAINLM45(230V50HZ,240V60HZ)</b> 278386	
	55	15	30	37	30	< 20	<b>SDAINLM55(230V50HZ,240V60HZ)</b> 278411	
	70	18.5	37	45	37	< 20	<b>SDAINLM70(230V50HZ,240V60HZ)</b> 239895	
	90	22	45	55	45	< 20	<b>SDAINLM90(230V50HZ,240V60HZ)</b> 239937	
	115	30	55	75	55	< 20	<b>SDAINLM115(230V50HZ,240V60HZ)</b> 239963	
	140	37	75	90	90	< 20	<b>SDAINLM140(230V50HZ,240V60HZ)</b> 240009	
	165	45	90	110	132	< 20	<b>SDAINLM165(230V50HZ,240V60HZ)</b> 240035	
	200	55	110	132	160	< 20	<b>SDAINLM200(230V50HZ,240V60HZ)</b> 101010	
260	75	132	160	160	< 20	<b>SDAINLM260(230V50HZ,240V60HZ)</b> 101031		

### Components for self-assembly of star-delta combinations

Max. motor rating  
for three-phase motors 50 – 60 Hz  
AC-3




### Individual components of the combination

Spare auxiliary contacts

230 V kW	400 V kW	500 V kW	690 V kW	1000 V kW	Changeover time <sup>1)</sup>			Coil in accordance with 50005 Contacts EN 50005 and EN 50012			Timing relay K1 Part no.	Spare auxiliary contacts		
					up to 12 s	up to 20 s	up to 30 s	Mains contactor Q11 Part no. DIL	Delta contactor Q15 Part no. DIL	Star contactor Q13 Part no. DIL		Q11	Q15	Q13
90	160	200	250	132	●	●	●	M185A/22	M185A/22	M115/22	ETR4-51			
110	200	250	315	160	●	●	-	M225A/22	M225A/22	M150/22	ETR4-51			
132	250	315	400	200	●	●	●	M250/22	M250/22	M185A/22	ETR4-51			
160	300	355	450	200	●	●	●	M300A/22	M300A/22	M185A/22	ETR4-51			
200	355	450	560	220	●	●	-	M400/22	M400/22	M250/22	ETR4-51			
250	450	560	600	220	●	●	●	M500/22	M500/22	M300A/22	ETR4-51			
300	560	710	900	355	●	●	●	M580/22	M580/22	M400/22	ETR4-51			
350	630	750	950	355	●	●	●	M650/22	M650/22	M400/22	ETR4-51			
400	710	900	1200	1400	●	●	●	M750/22	M750/22	M580/22	ETR4-51			
450	800	950	1300	1400	●	●	●	M820/22	M820/22	M580/22	ETR4-51			
560	1000	1200	1700	1700	●	●	-	M1000/22	M1000/22	M650/22	ETR4-51			









Notes

<sup>1)</sup> Longer changeover times please enquire






	Rated operational current	Max. rating for three-phase motors, 50 - 60 Hz						Part no. Article no.
		AC-3			AC-4			
		380 V 400 V	220 V 230 V	380 V 400 V	660 V 690 V	220 V 230 V	380 V 400 V	
$I_c$	P	P	P	P	P	P		
	A	kW	kW	kW	kW	kW	kW	
<b>DIUL reversing combinations</b>								
<b>AC operation</b>								
	9	2.2	4	4	1.5	3	3	<b>DIULEM/21/MV(230V50HZ,240V60HZ)</b> 051849
	9	2.2	4	4	1.5	3	3	<b>DIULEM/21/MV-G(24VDC)</b> 214655
	7	2.2	3	3.5	1	2.2	2.9	<b>DIULM7/21(230V50HZ,240V60HZ)</b> 278061
	7	2.2	3	3.5	1	2.2	2.9	<b>DIULM7/21(24VDC)<sup>2)</sup></b> 107021
	9	2.5	4	4.5	1.5	2.5	3.6	<b>DIULM9/21(230V50HZ,240V60HZ)</b> 278086
	9	2.5	4	4.5	1.5	2.5	3.6	<b>DIULM9/21(24VDC)</b> 107022
	12	3.5	5.5	6.5	2	3	4.4	<b>DIULM12/21(230V50HZ,240V60HZ)</b> 278111
	12	3.5	5.5	6.5	2	3	4.4	<b>DIULM12/21(24VDC)</b> 107023
	18	5	7.5	11	2.5	4.5	6.5	<b>DIULM17/21(230V50HZ,240V60HZ)</b> 278136
	18	5	7.5	11	2.5	4.5	6.5	<b>DIULM17/21(RDC24)</b> 107024
	25	7.5	11	14	3.5	6	8.5	<b>DIULM25/21(230V50HZ,240V60HZ)</b> 278161
	25	7.5	11	14	3.5	6	8.5	<b>DIULM25/21(RDC24)</b> 107025
	32	10	15	17	4	7	10	<b>DIULM32/21(230V50HZ,240V60HZ)</b> 278186
	32	10	15	17	4	7	10	<b>DIULM32/21(RDC24)</b> 107026
	40	12.5	18.5	23	5	9	12	<b>DIULM40/11(230V50HZ,240V60HZ)</b> 278211
	50	15.5	22	30	6	10	14	<b>DIULM50/11(230V50HZ,240V60HZ)</b> 278236
	65	20	30	35	7	12	17	<b>DIULM65/11(230V50HZ,240V60HZ)</b> 278261

# Contactors DiI

## SmartWire-DT module, Auxiliary contact modules





Contacts		For use with		Part no.	Article no.
N/O = Normally open N/O <sub>E</sub> : NO early-make N/C = Normally closed NC <sub>L</sub> =NC late-break					
<b>SmartWire-DT protective modules</b>					
For connecting the contactors to SmartWire-DT Per contactor 1 module necessary.					
 	Messages Switch status Contactor, status of the digital inputs 1 and 2 Commands Contactor actuation		DILM(C)7... - DILM(C)32 DILM38 DILA MSC-D(E)-...(24VDC)	<b>DIL-SWD-32-001</b>	118560
	Messages Contactor switching position, status of the digital inputs 1 and 2, 1-0-A switch position Commands Contactor actuation			<b>DIL-SWD-32-002</b>	118561
<b>Auxiliary contact modules</b>					
With interlocked opposing contacts, except for ...XHI(C)V					
Top mounting auxiliary contacts					
Screw terminals 	1 N/O	1 NC	DILM(C)7-10... DILM(C)9-10... DILM(C)12-10... DILM(C)15-10... DILM(C)17-10... DILM(C)25-10... DILM(C)32-10... DILM38-10... DILMP20... DILMP32-10... DILMP45-10...	<b>DILM32-XHI11</b>	277376
	-	2 NC		<b>DILM32-XHI02</b>	277375
	2 N/O	2 NC	DILM38-10... DILMP20... DILMP32-10... DILMP45-10...	<b>DILM32-XHI22</b>	277377
	3 N/O	1 NC		<b>DILM32-XHI31</b>	106112
Spring-loaded terminals 	1 N/O	1 NC		<b>DILM32-XHIC11</b>	277751
	-	2 NC		<b>DILM32-XHIC02</b>	277750
	2 N/O	2 NC		<b>DILM32-XHIC22</b>	277752
Screw terminals 	2 N/O	-	DILA... DILM(C)7... DILM(C)9... DILM(C)12... DILM(C)15... DILM(C)17... DILM(C)25... DILM(C)32... DILM38... DILMP20... DILMP32... DILMP45...	<b>DILA-XHI20</b>	276422
	1 N/O	1 NC		<b>DILA-XHI11</b>	276421
	-	2 NC		<b>DILA-XHI02</b>	276420
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>		<b>DILA-XHIV11</b>	276423
	4 N/O	-		<b>DILA-XHI40</b>	276428
	3 N/O	1 NC		<b>DILA-XHI31</b>	276427
	2 N/O	2 NC		<b>DILA-XHI22</b>	276426
	1 N/O	3 NC		<b>DILA-XHI13</b>	276425
	-	4 NC		<b>DILA-XHI04</b>	276424
	1 N/O	1 NC		<b>DILA-XHIV22</b>	276429
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>			







Contacts		For use with		Part no.	Article no.
N/O = Normally open N/O <sub>E</sub> : NO early-make N/C = Normally closed NC <sub>L</sub> =NC late-break					
<b>Auxiliary contact modules</b>					
With interlocked opposing contacts, except for ...XHI(C)V					
Top mounting auxiliary contacts					
Screw terminals 	1 N/O (for electronic applications)	1 NC (for electronic applications)	DILA... DILM(C)7... DILM(C)9... DILM(C)12... DILM(C)15... DILM(C)17... DILM(C)25... DILM(C)32... DILM38... DILMP20... DILMP32... DILMP45...	<b>DILA-XHIR11</b>	110140
	2 N/O (1 N/O above microswitch for electronic applications)	2 NC (1 NC above microswitch for electronic applications)		<b>DILA-XHIR22</b>	139580
Spring-loaded terminals 	2 N/O	-		<b>DILA-XHIC20</b>	276528
	1 N/O	1 NC		<b>DILA-XHIC11</b>	276527
	-	2 NC		<b>DILA-XHIC02</b>	276526
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>		<b>DILA-XHICV11</b>	276529
	4 N/O	-	DILA... DILM(C)7... DILM(C)9... DILM(C)12... DILM(C)15... DILM(C)17... DILM(C)25... DILM(C)32... DILM38... DILMP20... DILMP32... DILMP45...	<b>DILA-XHIC40</b>	276534
	3 N/O	1 NC		<b>DILA-XHIC31</b>	276533
	2 N/O	2 NC		<b>DILA-XHIC22</b>	276532
	1 N/O	3 NC		<b>DILA-XHIC13</b>	276531
	-	4 NC		<b>DILA-XHIC04</b>	276530
	1 N/O	1 NC		<b>DILA-XHICV22</b>	276535
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>			
Screw terminals 	2 N/O	-	DILM40... DILM50... DILM65... DILM72... DILM80... DILM95... DILM115... DILM150... DILM170... DILMP63... DILMP80... DILMP125... DILMP160... DILMP200...	<b>DILM150-XHI20</b>	277945
	1 N/O	1 NC		<b>DILM150-XHI11</b>	277946
	1 N/O	1 NC		<b>DILM150-XHIA11</b>	283463
	-	2 NC		<b>DILM150-XHI02</b>	277947
	4 N/O	-		<b>DILM150-XHI40</b>	277948
	3 N/O	1 NC		<b>DILM150-XHI31</b>	277949
	2 N/O	2 NC		<b>DILM150-XHI22</b>	277950
	2 N/O	2 NC		<b>DILM150-XHIA22</b>	283464
	1 N/O	3 NC		<b>DILM150-XHI13</b>	277951
	-	4 NC		<b>DILM150-XHI04</b>	277952
	1 N/O	1 NC		<b>DILM150-XHIV22</b>	277953
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>			

# Contactors DiI











## Auxiliary contact modules






		Contacts	For use with	Part no.	Article no.
		N/O = Normally open N/O <sub>E</sub> : NO early-make N/C = Normally closed NC <sub>L</sub> =NC late-break			
<b>Auxiliary contact modules</b>					
With interlocked opposing contacts, except for ...XHI(C)V					
Side-mounting auxiliary contact					
Screw terminals 	1 N/O	-	DILM7... DILM9... DILM12... DILM15... DILMP20... DILA...	<b>DILA-XHI10-S</b>	115948
	-	1 NC		<b>DILA-XHI01-S</b>	115949
	1 N/O	1 NC	DILM17... DILM25... DILM32... DILM38...	<b>DILM32-XHI11-S</b>	101371
	1 N/O	1 NC	DILM250 - DILH2600	<b>DILM820-XHI11-SI</b>	208281
	1 N/O	1 NC		<b>DILM820-XHI11-SA</b>	208282
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>		<b>DILM820-XHI11V-SI</b>	208283
	1 N/O	1 NC	DILM40 - DILM225A DILMP63 - DILMP200	<b>DILM1000-XHI11-SI</b>	278425
	1 N/O <sub>E</sub>	1 NC <sub>L</sub>		<b>DILM1000-XHIV11-SI</b>	278426
	1 N/O	1 NC		<b>DILM1000-XHI11-SA</b>	278427
Spring-loaded terminals 	1 N/O	-	DILMC7... DILMC9... DILMC12... DILMC15... DILAC...	<b>DILA-XHIC10-S</b>	115950
		1 NC		<b>DILA-XHIC01-S</b>	115951

For use with		<b>AC operation</b> 230 V 50 Hz, 240 V 60 Hz <b>Part no.</b> Article no.	<b>AC operation</b> 110 V 50 Hz, 120 V 60 Hz <b>Part no.</b> Article no.	<b>DC operation</b> 24 V DC <b>Part no.</b> Article no.
<b>Suppressors</b>				
<b>RC suppressors</b>				
	DILM7 - DILM15 DILMP20 DILA	<b>DILM12-XSPR240</b> 281200	<b>DILM12-XSPR240</b> 281200	-
	DILM17 - DILM32 DILMP32 - DILMP45	<b>DILM32-XSPR240</b> 281203	<b>DILM32-XSPR240</b> 281203	-
	DILM40 - DILM95 DILMP63 - DILMP200	<b>DILM95-XSPR240</b> 281206	<b>DILM95-XSPR240</b> 281206	-
<b>Varistor suppressors</b>				
	DILM7 - DILM15 DILMP20 DILA	<b>DILM12-XSPV240</b> 281210	<b>DILM12-XSPV130</b> 281209	-
	DILM17 - DILM32 DILMP32 - DILMP45	<b>DILM32-XSPV240</b> 281214	<b>DILM32-XSPV130</b> 281213	-
	DILM40 - DILM95 DILMP63 - DILMP200	<b>DILM95-XSPV240</b> 281218	<b>DILM95-XSPV130</b> 281217	-
<b>Varistor suppressors with integrated LED</b>				
	DILM7 - DILM12 DILMP20 DILA	<b>DILM12-XSPVL240</b> 281221	<b>DILM12-XSPVL240</b> 281221	-
	DILM17 - DILM32 DILMP32 - DILMP45	<b>DILM32-XSPVL240</b> 281223	<b>DILM32-XSPVL240</b> 281223	-
	DILM40 - DILM95 DILMP63 - DILMP200	<b>DILM95-XSPVL240</b> 281225	<b>DILM95-XSPVL240</b> 281225	-
<b>Free-wheel diode suppressor</b>				
	DILM7 - DILM15 DILMP20 DILA	-	-	<b>DILM12-XSPD</b> 101672

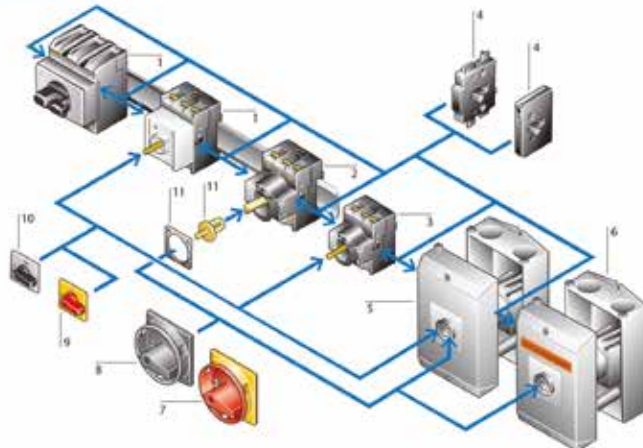
# Contactors DiI

## Accessories

	For use with	Part no. Article no.
<b>Mechanical interlock</b>		
	DILM7 - DILM15 DILMP20 DILA	<b>DILM12-XMV</b> 281196
	DILM17 - DILM38 DILMP32 - DILMP45	<b>DILM32-XMV</b> 281197
	DILM40 - DILM72 DILMP63 - DILMP80	<b>DILM65-XMV</b> 281198
	DILM80 - DILM170 DILMP125 - DILMP200	<b>DILM150-XMV</b> 240081
	DILM185A, DILM225A, DILM250, DILM300A, DILM400, DILM500,	<b>DILM500-XMV</b> 208289
	DILM580, DILM650 DILM750, DILM820 DILM1000	<b>DILM820-XMV</b> 208288
<b>Paralleling links for main contacts</b>		
Consisting of 2 paralleling links		
	DILM7 - DILM15	<b>DILM12-XP1</b> 281193
	DILM17 - DILM32	<b>DILM32-XP1</b> 281194
	DILM40 - DILM72	<b>DILM65-XP1</b> 281195
	DILM80 - DILM170	<b>DILM150-XP1</b> 284769
	DILM185A	<b>DILM185-XP1</b> 208292
<b>Star-point bridges</b>		
	DILM7 - DILM15	<b>DILM12-XS1</b> 281190
	DILM17 - DILM32	<b>DILM32-XS1</b> 281191
	DILM40 - DILM72	<b>DILM65-XS1</b> 281192
	DILM80 - DILM170	<b>DILM150-XS1</b> 284768
	DILM185A - DILM400	<b>DILM400-XS1</b> 208291
	DILM500	<b>DILM500-XS1</b> 208290

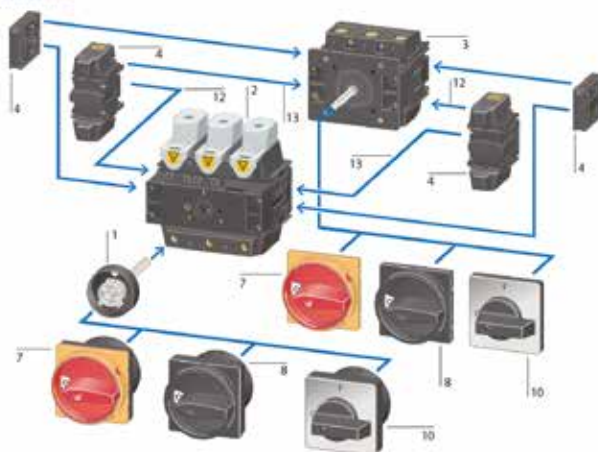
	For use with	Part no. Article no.
<b>Star-delta wiring kit Including star-point bridge</b>		
Main current wiring for star-delta combination		
	DILM7/9/12/15 mains contactor DILM7/9/12/15 delta contactor DILM7/9/12/15 star contactor	<b>DILM12-XSL</b> 283130
	DILM17/25/32 mains contactor DILM17/25/32 delta contactor DILM17/25/32 star contactor	<b>DILM32-XSL</b> 283131
	DILM40/50/65 mains contactor DILM40/50/65 delta contactor DILM40/50/65 star contactor	<b>DILM65-XSL</b> 101058
<b>Reversing wiring kits</b>		
Main current wiring for reversing combinations		
	DILM7 DILM9 DILM12	<b>DILM12-XRL</b> 283108
	DILM17 DILM25 DILM32	<b>DILM32-XRL</b> 283109
	DILM40 DILM50 DILM65	<b>DILM65-XRL</b> 101057
<b>IP2X cover</b>		
	DILM17 DILM25 DILM32 DILM38 DILMP32 DILMP45	<b>DILM32-XIP2X</b> 118855
	DILM40 DILM50 DILM65 DILM72 DILMP63 DILMP80	<b>DILM65-XIP2X</b> 106491
	DILM80 DILM95 DILM115 DILM150 DILM170 DILMP125 DILMP160 DILMP200 ZB150	<b>DILM150-XIP2X</b> 106492
<b>Covers</b>		
	DILM185A DILM225A Z5-... FF225A	<b>DILM225A-XHB</b> 139560
	DILM250 DILM300A DILM400	<b>DILM400-XHB</b> 208287
	DILM500 DILM570	<b>DILM500-XHB</b> 208286
	DILM580 DILM650	<b>DILM650-XHB</b> 208285
	DILM750 DILM820, DILM1000	<b>DILM820-XHB</b> 208284
<b>Cable terminal block</b>		
With control cable connection consisting of 3 box terminals Connection options: round conductors, flexible and stranded, ribbon cables.		
	DILM185A DILM225A	<b>DILM225A-XKU-S</b> 139561
	DILM250 DILM300A DILM400	<b>DILM400-XKU-S</b> 208293

ON-OFF switches P1, P3

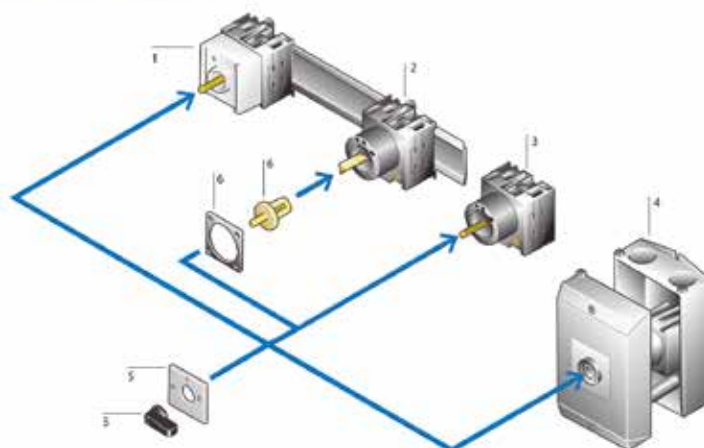


- 1 Service distribution board mounting
- 2 Rear mounting
- 3 Flush mounting
- 4 Neutral conductors, auxiliary contacts
- 5 Surface mounting
- 6 Safety switch
- 7 Main switch (kit) for use as emergency switching off device
- 8 Main switch (kit)
- 9 Thumb-grip, for use as emergency switching off device
- 10 Thumb-grip
- 11 Coupling drive
- 12 Protective conductor terminal
- 13 Neutral terminal

ON OFF switches P5



Control switches T0, T3, T5B, T5



- 1 Service distribution board mounting
- 2 Rear mounting
- 3 Flush mounting
- 4 Surface mounting
- 5 Thumb-grip
- 6 Coupling drive

# Cam switches

Main switch, maintenance switch, repair switch

Main circuits Poles	Auxiliary circuits	Rated uninterrupted current	Surface mounting		Flush mounting		Rear mounting		Rear mounting	
			Part no.	Article no.	Part no.	Article no.	Part no.	Article no.	Part no.	Article no.
			IP65		Front IP65		Front IP65		Front IP65	

## Main switch, maintenance switch, Repair switch

With red rotary handle and yellow locking ring

Note: All types are available with a black thumb-grip → Online Catalog.

Lockable in the 0 (Off) position

1	-	-	20	<b>T0-1-8200/I1/SVB</b>	207145	<b>T0-1-8200/EA/SVB</b>	053110	<b>T0-1-8200/V/SVB</b>	057856	-	
			32	<b>T3-1-8200/I2/SVB</b>	207200	<b>T3-1-8200/EA/SVB</b>	066576	<b>T3-1-8200/V/SVB</b>	007255	-	
			63	<b>T5B-1-8200/I4/SVB</b>	207240	<b>T5B-1-8200/EA/SVB</b>	094279	<b>T5B-1-8200/V/SVB</b>	094273	-	
			100	-	-	<b>T5-1-8200/EA/SVB</b>	097224	<b>T5-1-8200/V/SVB</b>	097222	-	
2	-	-	20	<b>T0-1-102/I1/SVB</b>	207143	<b>T0-1-102/EA/SVB</b>	091078	<b>T0-1-102/V/SVB</b>	095824	-	
			32	<b>T3-1-102/I2/SVB</b>	207198	<b>T3-1-102/EA/SVB</b>	014374	<b>T3-1-102/V/SVB</b>	019120	-	
			63	<b>T5B-1-102/I4/SVB</b>	207238	<b>T5B-1-102/EA/SVB</b>	094469	<b>T5B-1-102/V/SVB</b>	094463	-	
			100	<b>T5-1-102/I5/SVB</b>	207273	<b>T5-1-102/EA/SVB</b>	098808	<b>T5-1-102/V/SVB</b>	098806	-	
3	-	-	20	<b>T0-2-1/I1/SVB</b>	207147	<b>T0-2-1/EA/SVB</b>	038873	<b>T0-2-1/V/SVB</b>	043619	-	
			25	<b>P1-25/I2/SVB</b>	207293	<b>P1-25/EA/SVB</b>	041097	<b>P1-25/V/SVB</b>	055335	<b>P1-25/M4/SVB</b>	172875
			32	<b>P1-32/I2/SVB</b>	207314	<b>P1-32/EA/SVB</b>	081438	<b>P1-32/V/SVB</b>	095676	<b>P1-32/M4/SVB</b>	172865
			63	<b>P3-63/I4/SVB</b>	207343	<b>P3-63/EA/SVB</b>	031607	<b>P3-63/V/SVB</b>	048218	<b>P3-63/M4/SVB</b>	172784
			100	<b>P3-100/I5/SVB</b>	207373	<b>P3-100/EA/SVB</b>	074320	<b>P3-100/V/SVB</b>	088558	<b>P3-100/M4/SVB</b>	172818
			125	<b>DMM-125/3/I5/P-R</b>	172851	<b>P5-125/EA/SVB</b>	280898	<b>P5-125/V/SVB</b>	280914	<b>DMM-125/3/M4/P-R</b>	6094964
			160	<b>DMM-160/3/I5/P-R</b>	172794	<b>P5-160/EA/SVB</b>	280922	<b>P5-160/V/SVB</b>	280928	<b>DMM-160/3/M4/P-R</b>	6094965
			250	-	-	<b>P5-250/EA/SVB</b>	280936	<b>P5-250/V/SVB</b>	280942	<b>DMV-250/3/M4/P-R</b>	6094966
315	-	-	<b>P5-315/EA/SVB</b>	280950	<b>P5-315/V/SVB</b>	280956	-	-			
400	-	-	-	-	-	-	<b>DMV-400/3/M4/P-R</b>	6094967			
3 + N	-	-	20	<b>T0-2-8900/I1/SVB</b>	207151	-	-	-	-	-	
			25	<b>P1-25/I2/SVB/N</b>	207298	<b>P1-25/EA/SVB/N</b>	081587	<b>P1-25/V/SVB/N</b>	086333	<b>P1-25/M4/SVB/N</b>	172877
			32	<b>P1-32/I2/SVB/N</b>	207319	<b>P1-32/EA/SVB/N</b>	091079	<b>P1-32/V/SVB/N</b>	095825	<b>P1-32/M4/SVB/N</b>	172867
			63	<b>P3-63/I4/SVB/N</b>	207349	<b>P3-63/EA/SVB/N</b>	010398	<b>P3-63/V/SVB/N</b>	015144	<b>P3-63/M4/K2-PR/N</b>	172812
			100	<b>P3-100/I5/SVB/N</b>	207379	<b>P3-100/EA/SVB/N</b>	019890	<b>P3-100/V/SVB/N</b>	024636	<b>P3-100/M4/K2-PR/N</b>	172828
			125	<b>DMM-125/4/I5/P-R</b>	172854	<b>P5-125/EA/SVB/N</b>	280910	<b>P5-125/V/SVB/N</b>	280916	<b>DMM-125/4/M4/P-R</b>	6094968
			160	<b>DMM-160/4/I5/P-R</b>	172797	<b>P5-160/EA/SVB/N</b>	280924	<b>P5-160/V/SVB/N</b>	280930	<b>DMM-160/4/M4/P-R</b>	6094969
			250	-	-	<b>P5-250/EA/SVB/N</b>	280938	<b>P5-250/V/SVB/N</b>	280944	<b>DMV-250/4/M4/P-R</b>	6094970
315	-	-	<b>P5-315/EA/SVB/N</b>	280952	<b>P5-315/V/SVB/N</b>	280958	-	-			
400	-	-	-	-	-	-	<b>DMV-400/4/M4/P-R</b>	6094971			
3	1	0	20	<b>T0-2-15679/I1/SVB</b>	207149	<b>T0-2-15679/EA/SVB</b>	081588	<b>T0-2-15679/V/SVB</b>	086334	-	
3	1	1	25	<b>P1-25/I2/SVB/HI11</b>	207297	<b>P1-25/EA/SVB/HI11</b>	091080	<b>P1-25/V/SVB/HI11</b>	095826	<b>P1-25/M4/SVB/HI11</b>	172767
			32	<b>P1-32/I2/SVB/HI11</b>	207318	<b>P1-32/EA/SVB/HI11</b>	072567	<b>P1-32/V/SVB/HI11</b>	015145	<b>P1-32/M4/SVB/HI11</b>	172869
			63	<b>P3-63/I4/SVB/HI11</b>	207348	<b>P3-63/EA/SVB/HI11</b>	019891	<b>P3-63/V/SVB/HI11</b>	024637	<b>P3-63/M4/SVB/HI11</b>	172788
			100	<b>P3-100/I5/SVB/HI11</b>	207378	<b>P3-100/EA/SVB/HI11</b>	029383	<b>P3-100/V/SVB/HI11</b>	034129	<b>P3-100/M4/SVB/HI11</b>	172822
3 + N	1	1	20	<b>T0-3-15680/I1/SVB</b>	207153	<b>T0-3-15680/EA/SVB</b>	038875	<b>T0-3-15680/V/SVB</b>	043621	-	
			25	-	-	<b>P1-25/EA/SVB/N/HI11</b>	048367	<b>P1-25/V/SVB/N/HI11</b>	053113	<b>P1-25/M4/SVB/N/HI11</b>	172769
			32	<b>T3-3-15680/I2/SVB</b>	207202	<b>P1-32/EA/SVB/N/HI11</b>	057859	<b>P1-32/V/SVB/N/HI11</b>	062605	<b>P1-32/M4/SVB/N/HI11</b>	172871
			63	<b>P3-63/I4/SVB/N/HI11</b>	207350	<b>P3-63/EA/SVB/N/HI11</b>	067351	<b>P3-63/V/SVB/N/HI11</b>	072097	<b>P3-63/M4/K2-PR/N/HI11</b>	172816
100	<b>P3-100/I5/SVB/N/HI11</b>	207380	<b>P3-100/EA/SVB/N/HI11</b>	076843	<b>P3-100/V/SVB/N/HI11</b>	081589	<b>P3-100/M4/K2-PR/N/HI11</b>	172832			
3	2	1	20	<b>T0-3-15683/I1/SVB</b>	207157	<b>T0-3-15683/EA/SVB</b>	015571	<b>T0-3-15683/V/SVB</b>	015634	-	
6	-	-	20	<b>T0-3-8342/I1/SVB</b>	207159	<b>T0-3-8342/EA/SVB</b>	029382	<b>T0-3-8342/V/SVB</b>	034128	-	
			32	<b>T3-3-8342/I2/SVB</b>	207208	<b>T3-3-8342/EA/SVB</b>	071326	<b>T3-3-8342/V/SVB</b>	076072	-	
			63	<b>T5B-3-8342/I4/SVB</b>	207242	<b>T5B-3-8342/EA/SVB</b>	092308	<b>T5B-3-8342/V/SVB</b>	092300	-	
			100	<b>T5-3-8342/I5/SVB</b>	207279	<b>T5-3-8342/EA/SVB</b>	096383	<b>T5-3-8342/V/SVB</b>	096381	-	











## Molded case switch (UL/CSA) as main switch in accordance with NFPA 79

3	-	-	30	-	<b>P3-30/EA/SVB-MCS</b>	237892	<b>P3-30/V/SVB-MCS</b>	237894	-
				-	<b>P3-30/EA/SVB-SW-MCS<sup>1)</sup></b>	237893	<b>P3-30/V/SVB-SW-MCS</b>	237895	-

Notes












<sup>1)</sup> With black handle



Front plate no.	Main circuits Poles								
		N/O	N/C	Flush mounting	Centre mounting	Surface mounting	Service distribution board mounting	Rear mounting	
				Front IP65 <b>Part no.</b> Article no.	Front IP65 <b>Part no.</b> Article no.	IP65 <b>Part no.</b> Article no.	Front IP30 <b>Part no.</b> Article no.	Front IP65 <b>Part no.</b> Article no.	
<b>On-Off switch</b>									
	1	-	-	<b>T0-1-8200/E</b> 067352	<b>T0-1-8200/EZ</b> 069725	<b>T0-1-8200/I1</b> 207074	<b>T0-1-8200/IVS</b> 074471	<b>T0-1-8200/Z</b> 076844	
	2	-	-	<b>T0-1-102/E</b> 088709	<b>T0-1-102/EZ</b> 091082	<b>T0-1-102/I1</b> 207061	<b>T0-1-102/IVS</b> 015147	<b>T0-1-102/Z</b> 095828	
	3	-	-	<b>T0-2-1/E</b> 024639	<b>T0-2-1/EZ</b> 027012	<b>T0-2-1/I1</b> 207081	<b>T0-2-1/IVS</b> 031758	<b>T0-2-1/Z</b> 036504	
	3	1	0	<b>T0-2-15679/E</b> 029387	<b>T0-2-15679/EZ</b> 031760	<b>T0-2-15679/I1</b> 207094	<b>T0-2-15679/IVS</b> 036506	<b>T0-2-15679/Z</b> 041252	
	3 + N	-	-	<b>T0-2-8900/E</b> 207398	<b>T0-2-8900/EZ</b> 207402	<b>T0-2-8900/I1</b> 207109	<b>T0-2-8900/IVS</b> 207403	<b>T0-2-8900/Z</b> 207407	
<b>Changeoverswitches</b>									
	1	-	-	<b>T0-1-8210/E</b> 012742	<b>T0-1-8210/EZ</b> 048337	<b>T0-1-8210/I1</b> 207076	<b>T0-1-8210/IVS</b> 074440	<b>T0-1-8210/Z</b> 019862	
	2	-	-	<b>T0-2-8211/E</b> 022234	<b>T0-2-8211/EZ</b> 053083	<b>T0-2-8211/I1</b> 207102	<b>T0-2-8211/IVS</b> 076813	<b>T0-2-8211/Z</b> 029354	
	3	-	-	<b>T0-3-8212/E</b> 029353	<b>T0-3-8212/EZ</b> 057829	<b>T0-3-8212/I1</b> 207123	<b>T0-3-8212/IVS</b> 079186	<b>T0-3-8212/Z</b> 036473	
	4	-	-	<b>T0-4-8213/E</b> 031726	<b>T0-4-8213/EZ</b> 062575	<b>T0-4-8213/I1</b> 207136	<b>T0-4-8213/IVS</b> 081559	<b>T0-4-8213/Z</b> 043592	
	1	-	-	<b>T0-1-8220/E</b> 031728	<b>T0-1-8220/EZ</b> 095799	<b>T0-1-8220/I1</b> 207078	<b>T0-1-8220/IVS</b> 055459	<b>T0-1-8220/Z</b> 086312	
	2	-	-	<b>T0-2-8221/E</b> 038847	<b>T0-2-8221/EZ</b> 010372	<b>T0-2-8221/I1</b> 207104	<b>T0-2-8221/IVS</b> 057832	<b>T0-2-8221/Z</b> 074450	
	3	-	-	<b>T0-3-8222/E</b> 048339	<b>T0-3-8222/EZ</b> 015118	<b>T0-3-8222/I1</b> 207124	<b>T0-3-8222/IVS</b> 060205	<b>T0-3-8222/Z</b> 088686	
	4	-	-	<b>T0-4-8223/E</b> 050712	<b>T0-4-8223/EZ</b> 019864	<b>T0-4-8223/I1</b> 207137	<b>T0-4-8223/IVS</b> 062578	<b>T0-4-8223/Z</b> 086315	
	1	-	-	<b>T0-1-8214/E</b> 019863	<b>T0-1-8214/EZ</b> 076815	<b>T0-1-8214/I1</b> 207077	<b>T0-1-8214/IVS</b> 045967	<b>T0-1-8214/Z</b> 050720	
	2	-	-	<b>T0-2-8215/E</b> 022236	<b>T0-2-8215/EZ</b> 081561	<b>T0-2-8215/I1</b> 207103	<b>T0-2-8215/IVS</b> 048340	<b>T0-2-8215/Z</b> 053093	
	3	-	-	<b>T0-3-8216/E</b> 024609	<b>T0-3-8216/EZ</b> 086307	<b>T0-3-8216/I1</b> 207434	<b>T0-3-8216/IVS</b> 050713	<b>T0-3-8216/Z</b> 055466	
<b>Reversing switches</b>									
	3	-	-	<b>T0-3-8401/E</b> 091047	<b>T0-3-8401/EZ</b> 093420	<b>T0-3-8401/I1</b> 207132	<b>T0-3-8401/IVS</b> 098166	<b>T0-3-8401/Z</b> 010366	

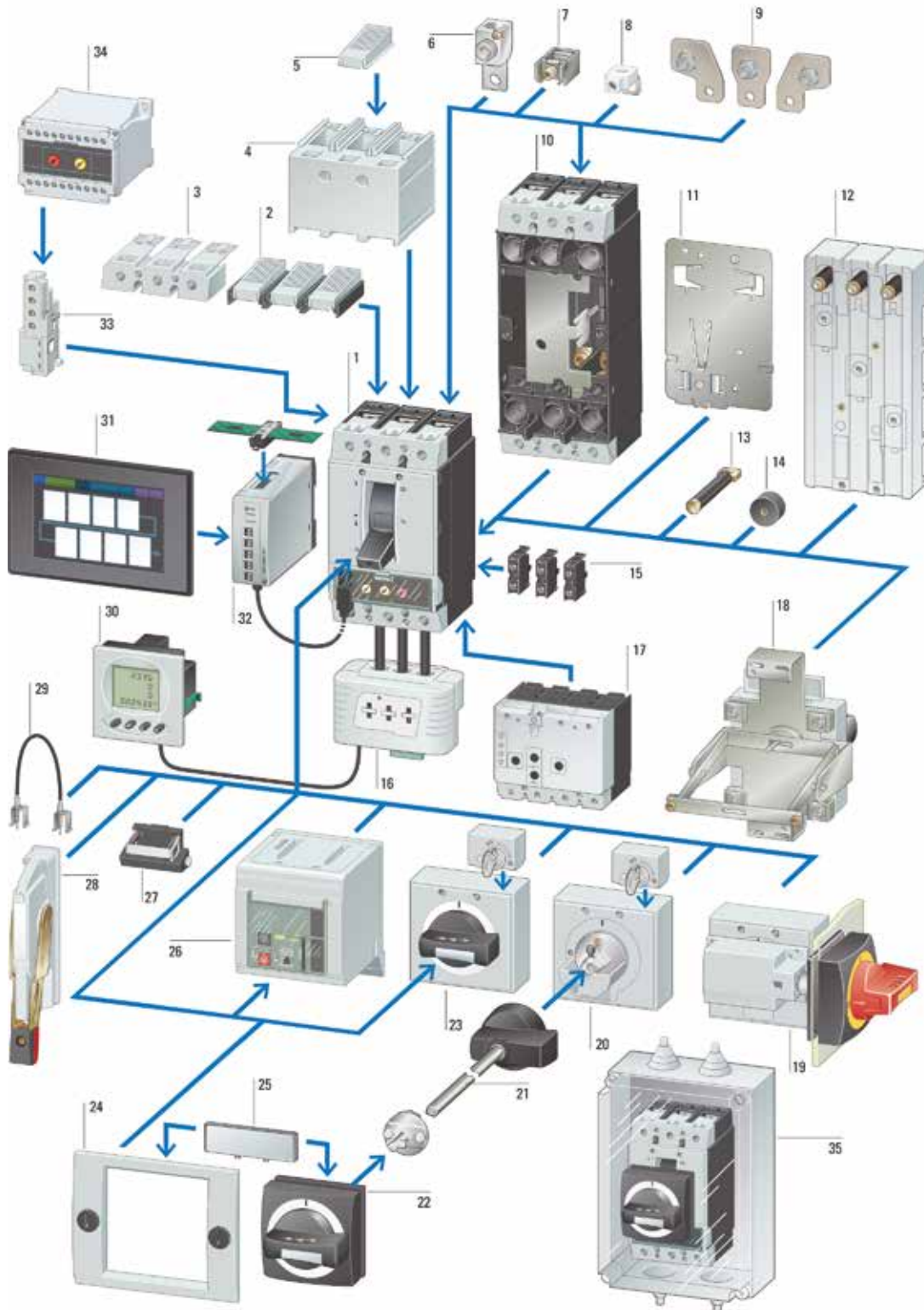
# Cam switches

## Control switches





Front plate no.	Main circuits Poles										
		<b>Flush mounting</b>	<b>Centre mounting</b>	<b>Surface mounting</b>	<b>Service distribution board mounting</b>	<b>Rear mounting</b>					
		Front IP65 <b>Part no.</b> Article no.	Front IP65 <b>Part no.</b> Article no.	IP65 <b>Part no.</b> Article no.	Front IP30 <b>Part no.</b> Article no.	Front IP65 <b>Part no.</b> Article no.					
<b>ON-OFF switches</b>											
 FS 415	1	<b>T0-1-15401/E</b> 038854	<b>T0-1-15401/EZ</b> 041227	<b>T0-1-15401/I1</b> 207067	<b>T0-1-15401/IVS</b> 045973	<b>T0-1-15401/Z</b> 048346					
	2	<b>T0-1-15402/E</b> 053092	<b>T0-1-15402/EZ</b> 055465	<b>T0-1-15402/I1</b> 207068	<b>T0-1-15402/IVS</b> 060211	<b>T0-1-15402/Z</b> 062584					
	3	<b>T0-2-15403/E</b> 067330	<b>T0-2-15403/EZ</b> 069703	<b>T0-2-15403/I1</b> 207088	<b>T0-2-15403/IVS</b> 074449	<b>T0-2-15403/Z</b> 076822					
<b>Voltmeter selector switches</b>											
 FS 1410759	3 + N	<b>T0-3-8007/E</b> 095813	<b>T0-3-8007/EZ</b> 098186	<b>T0-3-8007/I1</b> 207120	<b>T0-3-8007/IVS</b> 012759	<b>T0-3-8007/Z</b> 015132					
<b>Ammeter selector switches</b>											
 FS 9440	3	<b>T0-3-8048/E</b> 034116	<b>T0-3-8048/EZ</b> 036489	-	<b>T0-3-8048/IVS</b> 041235	<b>T0-3-8048/Z</b> 043608					
<b>Step switches</b>											
 FS 606	1	<b>T0-2-8231/E</b> 012750	<b>T0-2-8231/EZ</b> 015123	<b>T0-2-8231/I1</b> 207106	<b>T0-2-8231/IVS</b> 019869	<b>T0-2-8231/Z</b> 022242					
 FS 420	1	<b>T0-2-8241/E</b> 050716	<b>T0-2-8241/EZ</b> 053089	<b>T0-2-8241/I1</b> 207107	<b>T0-2-8241/IVS</b> 057835	<b>T0-2-8241/Z</b> 062581					
<b>Changeoverswitches</b>											
 FS 1401	1	<b>T0-1-15431/E</b> 019872	<b>T0-1-15431/EZ</b> 022245	<b>T0-1-15431/I1</b> 207070	<b>T0-1-15431/IVS</b> 026991	<b>T0-1-15431/Z</b> 029364					
	2	<b>T0-2-15432/E</b> 034110	<b>T0-2-15432/EZ</b> 036483	<b>T0-2-15432/I1</b> 207091	<b>T0-2-15432/IVS</b> 041229	<b>T0-2-15432/Z</b> 043602					
	3	<b>T0-3-15433/E</b> 048348	<b>T0-3-15433/EZ</b> 050721	<b>T0-3-15433/I1</b> 207115	<b>T0-3-15433/IVS</b> 055467	<b>T0-3-15433/Z</b> 057840					

# NZM circuit breakers, switch-disconnectors

## System overview



- |   |   |    |   |    |   |    |   |
|---|---|----|---|----|---|----|---|
| 1 | Switch-disconnector; circuit breaker; circuit breaker for North America; Molded case switches for North America | 9  | Connection width extension                                      | 18 | Rear operator                                     | 30 | Display                                     |
| 2 | IP2X protection against contact with a finger   | 10 | Plug-in and withdrawable unit                                   | 19 | Main switch rotary handle for side panel mounting | 31 | BreakerVisu Display                         |
| 3 | Terminal cover, knockout  | 11 | Adapter plate   | 20 | Door coupling rotary handle                       | 32 | NZM communication module for SmartWire-DT   |
| 4 | Terminal cover  | 12 | Busbar adapter  | 21 | Extension shaft                                   | 33 | Voltage release Earlymake auxiliary contact |
| 5 | IP2X protection against contact with a finger   | 13 | Connection on rear  | 22 | Rotary handle                                     | 34 | Delay unit for undervoltage releases        |
| 6 | Tunnel terminals  | 14 | Spacer  | 23 | Insulating surround                               | 35 | Insulated enclosure                         |
| 7 | Box terminals   | 15 | Standard auxiliary contacts, trip-indicating auxiliary switches | 24 | Remote operator                                   |    |   |
| 8 | Control circuit terminal  | 16 | Measuring and communication module                              | 25 | Toggle lever interlock device                     |    |   |
|   |   | 17 | Residual-current protection device                              | 26 | Side operator handle                              |    |   |
|   |   |    |   | 27 | Mechanical interlock                              |    |   |

	Rated current = rated uninterrupted current $I_n = I_u$ A	Setting range		Short-circuit releases		Switching capacity 400/415 V 50/60 Hz		Switching capacity 400/415 V 50/60 Hz	
		Overload trip	Short-circuit releases	Part no.	Article no.	Part no.	Article no.		
								Non-delayed $I_i = I_n \times \dots$	Delayed $I_{sd} = I_r \times \dots$
<b>System and cable protection: Thermomagnetic release</b>									
Fixed, Box terminal						<b>Basic switching capacity 25 kA</b>	<b>Normal switching capacity 50 kA</b>		
	20	15 - 20	350 A fixed	-	<b>NZMB1-A20</b>	280987	<b>NZMN1-A20</b>	281231	
	25	20 - 25	350 A fixed	-	<b>NZMB1-A25</b>	280988	<b>NZMN1-A25</b>	281232	
	32	25 - 32	350 A fixed	-	<b>NZMB1-A32</b>	280989	<b>NZMN1-A32</b>	281233	
	40	32 - 40	8 - 10	-	<b>NZMB1-A40</b>	259075	<b>NZMN1-A40</b>	259081	
	50	40 - 50	6 - 10	-	<b>NZMB1-A50</b>	259076	<b>NZMN1-A50</b>	259082	
	63	50 - 63	6 - 10	-	<b>NZMB1-A63</b>	259077	<b>NZMN1-A63</b>	259083	
	80	63 - 80	6 - 10	-	<b>NZMB1-A80</b>	259078	<b>NZMN1-A80</b>	259084	
	100	80 - 100	6 - 10	-	<b>NZMB1-A100</b>	259079	<b>NZMN1-A100</b>	259085	
	125	100 - 125	6 - 10	-	<b>NZMB1-A125</b>	259080	<b>NZMN1-A125</b>	259086	
	160	125 - 160	1280 A fixed	-	<b>NZMB1-A160</b>	281230	<b>NZMN1-A160</b>	281234	
Fixed, Screw connection									
	160	125 - 160	6 - 10	-	<b>NZMB2-A160</b>	259088	<b>NZMN2-A160</b>	259092	
	200	160 - 200	6 - 10	-	<b>NZMB2-A200</b>	259089	<b>NZMN2-A200</b>	259093	
	250	200 - 250	6 - 10	-	<b>NZMB2-A250</b>	259090	<b>NZMN2-A250</b>	259094	
	300	240 - 300	5 - 8.3	-	<b>NZMB2-A300</b>	107518	<b>NZMN2-A300</b>	107580	
	320	250 - 320	6 - 10	-	-	-	<b>NZMN3-A320</b>	109669	
	400	320 - 400	6 - 10	-	-	-	<b>NZMN3-A400</b>	109670	
	500	400 - 500	6 - 10	-	-	-	<b>NZMN3-A500</b>	109671	
<b>Systems, cable, selectivity and generator protection: Electronic release</b>									
Fixed, Screw connection						<b>Normal switching capacity 50 kA</b>	<b>High switching capacity 150 kA</b>		
	100	50 - 100	1200 A fixed	2 - 10	<b>NZMN2-VE100</b>	259122	<b>NZMH2-VE100</b>	259125	
	160	80 - 160	1920 A fixed	2 - 10	<b>NZMN2-VE160</b>	259123	<b>NZMH2-VE160</b>	259126	
	250	125 - 250	3000 A fixed	2 - 10	<b>NZMN2-VE250</b>	259124	<b>NZMH2-VE250</b>	259127	
	250	125 - 250	2 - 11	2 - 10	<b>NZMN3-VE250</b>	259131	<b>NZMH3-VE250</b>	259134	
	400	200 - 400	2 - 11	2 - 10	<b>NZMN3-VE400</b>	259132	<b>NZMH3-VE400</b>	259135	
	630	315 - 630	2 - 8	1.5 - 7	<b>NZMN3-VE630</b>	259133	<b>NZMH3-VE630</b>	259136	

# NZM circuit-breakers, switch-disconnectors

Circuit-breaker, Switch-disconnectors, 3 pole

Rated current = rated uninterrupted current	Setting range		Motor rating AC-3 50/60 Hz  380 V 400 V	Rated operational current AC-3 50/60 Hz 400 V	Switching capacity 400/415 V 50/60 Hz		Switching capacity 400/415 V 50/60 Hz	
	Overload trip	Short-circuit releases Non-delayed			Part no.	Article no.	Part no.	Article no.
$I_n = I_u$ A	$I_r$ A	$I_i = I_n \times \dots$	P kW	$I_e$ A				

## Motor protection: Thermomagnetic release

Tripping class 10 A

Fixed, Box terminal  
With phase-failure sensitivity



40	32 - 40	8 - 14	18.5	36
50	40 - 50	8 - 14	22	41
63	50 - 63	8 - 14	30	55
80	63 - 80	8 - 14	37	68
100	80 - 100	8 - 12.5	45	81

Basic switching capacity  
25 kA

<b>NZMB1-M40</b>	265710
<b>NZMB1-M50</b>	265711
<b>NZMB1-M63</b>	265712
<b>NZMB1-M80</b>	265713
<b>NZMB1-M100</b>	265714

Normal switching capacity  
50 kA

<b>NZMN1-M40</b>	265718
<b>NZMN1-M50</b>	265719
<b>NZMN1-M63</b>	265720
<b>NZMN1-M80</b>	265721
<b>NZMN1-M100</b>	265722

Fixed, Screw connection



125	100 - 125	8 - 14	55	99
160	125 - 160	8 - 14	75	134
200	160 - 200	8 - 14	110	196

<b>NZMB2-M125</b>	265715
<b>NZMB2-M160</b>	265716
<b>NZMB2-M200</b>	265717

<b>NZMN2-M125</b>	265723
<b>NZMN2-M160</b>	265724
<b>NZMN2-M200</b>	265725

## Motor protection: Electronic release

Fixed, Screw connection  
With phase-failure sensitivity, Adjustable release class



220	110 - 220	2 - 14	110	196
350	175 - 350	2 - 14	200	349
450	225 - 450	2 - 14	250	437

Normal switching capacity  
50 kA

<b>NZMN3-ME220</b>	265781
<b>NZMN3-ME350</b>	265782
<b>NZMN3-ME450</b>	284468

High switching capacity  
150 kA

<b>NZMH3-ME220</b>	265789
<b>NZMH3-ME350</b>	265790
<b>NZMH3-ME450</b>	284469

Rated current = rated uninterrupted current

$$I_n = I_u$$

A

Short-circuit protection max. fuse gL-characteristic

A gL

Part no.

Article no.

## Switch-disconnectors

3 contactor states I, +, 0

Can be remotely operated with voltage release XU/XA, remote operator XR,  
Can be equipped with M22-K... trip-indicating auxiliary switch

Fixed, Box terminal



63	125
100	125
125	125
160	160

<b>N1-63</b>	259143
<b>N1-100</b>	259144
<b>N1-125</b>	259145
<b>N1-160</b>	281236

Fixed, Screw connection








160	250
200	250
250	250
400	630
630	630

<b>N2-160</b>	266008
<b>N2-200</b>	266009
<b>N2-250</b>	266010
<b>N3-400</b>	266019
<b>N3-630</b>	266020

# NZM circuit-breakers, switch-disconnectors












UL/CSA, IEC circuit-breaker, Molded case switches for North America, 3 pole

	Rated current = rated uninterrupted current	Setting range		Switching capacity 480 V 60 Hz		Switching capacity 480 V 60 Hz	
		Overload trip	Short-circuit releases	Part no.	Article no.	Part no.	Article no.
	$I_n = I_u$	$I_t$	Non-delayed				
	A	A	$I_t = I_n \times \dots$				
<b>System and cable protection: Thermomagnetic release</b>							
Adjustable overload releases Ir							
Fixed, Box terminal							
	20	15 - 20	350 A fixed	<b>Normal switching capacity</b> 35 kA			
	25	20 - 25	350 A fixed	NZMN1-A20-NA	281570	-	
	32	25 - 32	350 A fixed	NZMN1-A25-NA	281571	-	
	40	32 - 40	8 - 10	NZMN1-A32-NA	281572	-	
	50	40 - 50	6 - 10	NZMN1-A40-NA	274237	-	
	63	50 - 63	6 - 10	NZMN1-A50-NA	274239	-	
	80	63 - 80	6 - 10	NZMN1-A63-NA	274240	-	
	100	80 - 100	6 - 10	NZMN1-A80-NA	274241	-	
	125	100 - 125	6 - 10	NZMN1-A100-NA	274242	-	
				NZMN1-A125-NA	281573	-	
Fixed, Screw connection							
	20	15 - 20	350 A fixed			<b>High switching capacity</b> 150 kA	
	25	20 - 25	350 A fixed	NZMN2-A20-NA	269217	NZMH2-A20-NA	269228
	32	25 - 32	350 A fixed	NZMN2-A25-NA	269218	NZMH2-A25-NA	269229
	40	32 - 40	8 - 10	NZMN2-A32-NA	269219	NZMH2-A32-NA	269230
	50	40 - 50	6 - 10	NZMN2-A40-NA	269220	NZMH2-A40-NA	269231
	63	50 - 63	6 - 10	NZMN2-A50-NA	269221	NZMH2-A50-NA	269232
	80	63 - 80	6 - 10	NZMN2-A63-NA	269222	NZMH2-A63-NA	269233
	100	80 - 100	6 - 10	NZMN2-A80-NA	269223	NZMH2-A80-NA	269234
	125	100 - 125	6 - 10	NZMN2-A100-NA	269224	NZMH2-A100-NA	269235
				NZMN2-A125-NA	269225	NZMH2-A125-NA	269236
	160	125 - 160	6 - 10			<b>High switching capacity</b> 100 kA	
	200	160 - 200	6 - 10	NZMN2-A160-NA	269226	NZMH2-A160-NA	269237
	250	200 - 250	6 - 10	NZMN2-A200-NA	269227	NZMH2-A200-NA	269238
				NZMN2-A250-NA	271106	NZMH2-A250-NA	271107
<b>System and cable protection: Electronic release</b>							
Adjustable overload releases Ir							
R.m.s. value measurement and "thermal memory"							
Fixed, Screw connection							
	250	125 - 250	2 - 11	<b>Normal switching capacity</b> 42 kA		<b>High switching capacity</b> 100 kA	
	400	200 - 400	2 - 11	NZMN3-AE250-NA	269299	NZMH3-AE250-NA	269302
	600	300 - 600	2 - 8	NZMN3-AE400-NA	269300	NZMH3-AE400-NA	269303
				NZMN3-AE600-NA	269301	NZMH3-AE600-NA	269304
<b>Molded case switches for North America</b>							
Fixed short-circuit release (self-protection)							
3 contactor states I, +, 0							
Can be remotely operated with voltage release XU/XA, remote operator XR,							
Can be equipped with M22-K... trip-indicating auxiliary switch							
Fixed, Box terminal							
	63	-	1250 A fixed	<b>High switching capacity</b> 35 kA			
	100	-	1250 A fixed	NS1-63-NA	102681	-	
	125	-	1250 A fixed	NS1-100-NA	102682	-	
				NS1-125-NA	102683	-	
Fixed, Screw connection							
	160	-	2500 A fixed	<b>High switching capacity</b> 100 kA			
	200	-	2500 A fixed	NS2-160-NA	102684	-	
	250	-	2500 A fixed	NS2-200-NA	102685	-	
	400	-	6600 A fixed	NS2-250-NA	102686	-	
	600	-	6600 A fixed	NS3-400-NA	102687	-	
				NS3-600-NA	102688	-	














# NZM circuit-breakers, switch-disconnectors

## Connection types





	For use with	Terminal capacities Connection	Terminal capacities mm <sup>2</sup>	Part no. suffix	Article no. When ordering with basic device	Part no.	Article no. When ordered separately
<b>Connection types NZM1</b>							
	<b>Control circuit terminal</b>						
	NZM1, PN1, N(S)1	Box terminal	1 x 0.75 - 2.5 2 x 0.75 - 1.5	-	-	<b>NZM-XSTK</b>	266739
	<b>Multi tunnel terminal</b>						
	NZM1, N(S)1 ≤ 160 A	Cu cable	6 x 2.5 - 16	-	-	<b>NZM1-XKAM</b>	144112
	<b>Terminal cover, knockout, not UL/CSA approved For box terminal</b>						
	NZM1, N1	-	-	-	-	<b>NZM1-XKSFA</b>	100780
	<b>Shroud</b>						
	NZM1, N(S)1	-	-	-	-	<b>NZM1-XKSA</b>	260021
	<b>IP2X protection against contact with a finger For box terminal</b>						
	NZM1, N1	-	-	-	-	<b>NZM1-XIPK</b>	266744
	<b>For cover NZM1-XKSA or NZM1 or NZM1...(C)NA und N(S)1...NA</b>						
	NZM1, N(S)1	-	-	-	-	<b>NZM1-XIPA</b>	266748
	<b>Phase isolators</b>						
	NZM1, N(S)1	-	-	-	-	<b>NZM1-XKP</b>	119862
<b>Connection types NZM2</b>							
	<b>Box terminal</b>						
	NZM2, N(S)2 ≤ 160 A	Cu cable	1 x 10 - 185 2 x 4 - 70	<b>+NZM2-160-XKCO</b>	262218	<b>NZM2-160-XKC</b>	262240
				<b>+NZM2-160-XKCU</b>	262223	-	-
	NZM2, N(S)2 > 160 A			<b>+NZM2-250-XKCO</b>	262242	<b>NZM2-250-XKC</b>	262244
				<b>+NZM2-250-XKCU</b>	262243	-	-
	<b>Multi tunnel terminal</b>						
	NZM2, N(S)2 ≤ 250 A	Cu cable	6 x 2.5 - 35	-	-	<b>NZM2-XKAM</b>	144113
	<b>Control circuit terminal</b>						
	NZM2, PN2, N(S)2	Screw connection	1 x 0.75 - 2.5 2 x 0.75 - 1.5	-	-	<b>NZM2-XSTS</b>	260156
	NZM2, PN2, N(S)2	Box terminal	1 x 0.75 - 2.5 2 x 0.75 - 1.5	-	-	<b>NZM-XSTK</b>	266739
	<b>Cable lug-cover</b>						
	NZM2, N(S)2	Copper cable lugs Aluminium cable lug	1 x 10 - 185 2 x 4 - 70 1 x 10 - 50 2 x 10 - 50	-	-	<b>NZM2-XKSAE</b>	119868
















	For use with	Terminal capacities Connection	Terminal capacities mm <sup>2</sup>	Part no. suffix	Article no. When ordering with basic device	Part no.	Article no. When ordered separately
<b>Phase isolators</b>							
	NZM2, N(S)2	-	-	-	-	<b>NZM2-XKP</b>	119864
IP2X protection against contact with a finger							
For box terminal							
	NZM2, PN2, N2	-	-	-	-	<b>NZM2-XIPK</b>	266773
For cover NZM2-XKSA or NZM2 or NZM2...(C)NA und N(S)2...NA							
	NZM2, PN2, N(S)2	-	-	-	-	<b>NZM2-XIPA</b>	266777
CU-Cable lug Not UL/CSA approved. When using without cover NZM2 (-4)-XKSA, the cable lug must be insulated.							
	NZM2, N2	-	95	-	-	<b>KS95-NZM7</b>	059775
		-	120	-	-	<b>KS120-NZM7</b>	059776
		-	150	-	-	<b>KS150-NZM7</b>	059777
		-	185	-	-	<b>NZM2-XKS185</b>	260032
<b>Connection types NZM3</b>							
Box terminal							
	NZM3, N(S)3	Cu cable	1 x 35 ... 240 2 x 16 ... 120	<b>+NZM3-XKCO</b>	262246	<b>NZM3-XKC</b>	260042
				<b>+NZM3-XKCU</b>	262245	-	-
Control circuit terminal							
	NZM3, PN3, N(S)3	Screw connection	1 x 0.75 ... 2.5 2 x 0.75 ... 1.5	-	-	<b>NZM3/4-XSTS</b>	266797
				Box terminal	1 x 0.75 - 2.5 2 x 0.75 - 1.5	-	-
Cable lug-cover							
	NZM3, N(S)3	Copper cable lugs Aluminium cable lug	1 x 16 - 240 2 x 16 - 240 1 x 10 - 120 2 x 10 - 120	-	-	<b>NZM3-XKSAE</b>	119869
Phase isolator							
	NZM3, N(S)3	-	-	-	-	<b>NZM3-XKP</b>	100512
IP2X protection against contact with a finger							
For box terminal							
	NZM3, N3	-	-	-	-	<b>NZM3-XIPK</b>	266804
For cover NZM3-XKSA or NZM3 or NZM3...(C)NA und N(S)3...NA							
	NZM3, N(S)3	-	-	-	-	<b>NZM3-XIPA</b>	266808
CU-Cable lug Not UL/CSA approved. When using without cover NZM3(-4)-XKSA, the cable lug must be insulated.							
	NZM3, N3	-	185	-	-	<b>NZM3-XKS185</b>	260040
		-	240	-	-	<b>NZM3-XKS240</b>	260041
		-	300	-	-	<b>NZM3-XKS300</b>	153186

# NZM circuit-breakers, switch-disconnectors

## Auxiliary contacts



		For use with	Contacts ⊖ = safety function, by positive opening to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed		Part no.	Article no.
<b>Auxiliary contact with screw connection/spring-cage terminal</b>						
Standard auxiliary contact (HIN) Switching with the main contacts Used for indicating and interlocking tasks.						
	Single contact	NZM1, 2, 3 N(S)1, 2, 3	1 N/O	-	<b>M22-K10</b>	216376
			-	1 NC ⊖	<b>M22-K01</b>	216378
Early-make auxiliary contact For interlocking and load shedding circuits, as well as for early make of the undervoltage release in main switch/Emergency-stop applications						
	with terminal block on the left-hand switch side	NZM1 N(S)1	2 N/O	-	<b>NZM1-XHIV</b>	259426
			-	-	<b>NZM2/3-XHIV</b>	259430
	-	NZM2, 3 N(S)2, 3	2 N/O	-	<b>NZM2/3-XHIV</b>	259430
			-	-		
Trip-indicating auxiliary switch (HIA) General trip indication '+', when tripped by shunt release, overload release, short-circuit release or by the residual-current release due to residual-current.						
	Single contact	NZM1, 2, 3 N(S)1, 2, 3	1 N/O	-	<b>M22-K10</b>	216376
			-	1 NC ⊖	<b>M22-K01</b>	216378










		For use with	Rated control voltage U <sub>s</sub> V	Part no.	Article no.
<b>Undervoltage releases</b>					
Without auxiliary contacts Non-delayed disconnection of NZM circuit-breaker or N switch-disconnector when the control voltage sinks below 35 – 70% U <sub>s</sub> .					
For use with emergency switching off devices in conjunction with Emergency switching off button.					
	With terminal block on the left-hand switch side	NZM1 N(S)1	208 - 240 V 50/60 Hz	<b>NZM1-XU208-240AC</b>	259442
			380 - 440 V 50/60 Hz	<b>NZM1-XU380-440AC</b>	259444
			24 V DC	<b>NZM1-XU24DC</b>	259452
	With bolt connection	NZM2, 3 N(S)2, 3	208 - 240 V 50/60 Hz	<b>NZM2/3-XU208-240AC</b>	259499
			380 - 440 V 50/60 Hz	<b>NZM2/3-XU380-440AC</b>	259501
			24 V DC	<b>NZM2/3-XU24DC</b>	259509
<b>Shunt releases</b>					
Without auxiliary contacts Switches are tripped by a voltage pulse or by the application of uninterrupted voltage.					
	With terminal block on the left-hand switch side	NZM1 N(S)1	24 V AC/DC	<b>NZM1-XA24AC/DC</b>	259708
			208 - 250 V AC/DC	<b>NZM1-XA208-250AC/DC</b>	259726
	With bolt connection	NZM2, 3 N(S)2, 3	24 V AC/DC	<b>NZM2/3-XA24AC/DC</b>	259754
			208 - 250 V AC/DC	<b>NZM2/3-XA208-250AC/DC</b>	259763

	For use with	Part no.	Article no.	Notes	
<b>Door coupling rotary handles</b>					
Complete including rotary drive and coupling parts Extension shaft additionally required. Protection class IP66 UL/CSA Type 4X, Type 12					
<b>Standard, black/grey</b>					
	Lockable on the 0 position on the handle using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVD</b>	260166	<ul style="list-style-type: none"> <li>Door interlock</li> <li>Not defeated in the locked OFF and ON positions</li> <li>Can be modified in the unlocked ON position</li> <li>Can be modified such that it can be defeated from the outside using a screwdriver</li> <li>Door can be opened in OFF</li> <li>External warning plate/designation label can be clipped on.</li> </ul>
		NZM2, N(S)2	<b>NZM2-XTVD</b>	260168	
		NZM3, N(S)3	<b>NZM3-XTVD</b>	260170	
	Lockable on the handle on the switch using up to 3 padlocks Modifiable on handle in I position as well With door interlock	NZM1, N(S)1	<b>NZM1-XTVDV</b>	260172	
		NZM2, N(S)2	<b>NZM2-XTVDV</b>	260174	
		NZM3, N(S)3	<b>NZM3-XTVDV</b>	260176	
<b>Red-yellow for emergency switching off</b>					
	Lockable on the handle on the switch using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVDVR</b>	260178	<ul style="list-style-type: none"> <li>Door interlock</li> <li>Not defeated in the locked OFF position.</li> <li>Can be modified in the unlocked ON position</li> <li>Can be modified such that it can be defeated from the outside using a screwdriver</li> <li>Door can be opened in OFF</li> <li>External warning plate/designation label can be clipped on.</li> </ul>
		NZM2, N(S)2	<b>NZM2-XTVDVR</b>	260180	
		NZM3, N(S)3	<b>NZM3-XTVDVR</b>	260182	
	Lockable on the handle on the switch using up to 3 padlocks With door interlock	NZM1, N1	<b>NZM1-XTVD-NA</b>	271445	
		NZM2, N2	<b>NZM2-XTVD-NA</b>	271446	
		NZM3, N3	<b>NZM3-XTVD-NA</b>	271447	
<b>Door coupling rotary handle for North America</b>					
Complete including rotary drive and coupling parts Extension shaft additionally required. Protection class IP66 UL/CSA Type 4X, Type 12					
<b>Standard, black/grey</b>					
	Lockable on the 0 position on the handle using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVDV-NA</b>	271449	<ul style="list-style-type: none"> <li>Door interlock</li> <li>Not defeated in the locked OFF position.</li> <li>Door opens only with active rotation beyond the 0 position</li> <li>Cannot be combined with mechanical interlock</li> <li>External warning plate/designation label can be clipped on.</li> </ul>
		NZM2, N(S)2	<b>NZM2-XTVDV-NA</b>	271450	
		NZM3, N(S)3	<b>NZM3-XTVDV-NA</b>	271451	
	Lockable on the handle on the switch using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVDVR-NA</b>	271449	
		NZM2, N(S)2	<b>NZM2-XTVDVR-NA</b>	271450	
		NZM3, N(S)3	<b>NZM3-XTVDVR-NA</b>	271451	
<b>Red-yellow for emergency switching off</b>					
	Lockable on the handle on the switch using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVDVR-NA</b>	271449	<ul style="list-style-type: none"> <li>Door interlock</li> <li>Not defeated in the locked OFF position.</li> <li>Door opens only with active rotation beyond the 0 position</li> <li>Cannot be combined with mechanical interlock</li> <li>External warning plate/designation label can be clipped on.</li> </ul>
		NZM2, N(S)2	<b>NZM2-XTVDVR-NA</b>	271450	
		NZM3, N(S)3	<b>NZM3-XTVDVR-NA</b>	271451	
	Lockable on the handle on the switch using up to 3 padlocks With door interlock	NZM1, N(S)1	<b>NZM1-XTVDV-NA</b>	271445	
		NZM2, N(S)2	<b>NZM2-XTVDV-NA</b>	271446	
		NZM3, N(S)3	<b>NZM3-XTVDV-NA</b>	271447	
<b>Extension shaft</b>					
	400 mm max. mounting depth	NZM1, N(S)1	<b>NZM1/2-XV4</b>	261232	Length 290 mm, can be cut to desired length
		NZM2, N(S)2			
		NZM3, N(S)3	<b>NZM3/4-XV4</b>	261234	
	600 mm max. mounting depth	NZM1, N(S)1	<b>NZM1/2-XV6</b>	260191	Length 425 mm, can be cut to desired length
		NZM2, N(S)2			
		NZM3, N(S)3	<b>NZM3/4-XV6</b>	260193	

# NZM circuit-breakers, switch-disconnectors



## Main switch assembly kit, remote operator



		For use with	Rated control voltage $U_s$ V	Part no. Article no.
<b>Main switch assembly kit for IEC, UL/CSA</b>				
Equipment supplied				
<ul style="list-style-type: none"> <li>• Door coupling rotary handle with rotary drive</li> <li>• NZM...-XV4 extension shaft</li> <li>• External warning plate/marketing plate in German/English</li> <li>• Black and yellow lightning symbol</li> </ul>				
Protection class IP66 UL/CSA Type 4X, Type 12				
With black door coupling rotary handle				
	Door interlock on OFF with max. 3 padlocks Can also be modified in I position After the door interlock is activated, must not be opened while on ON or TRIP. Must only be opened on OFF	NZM1, N(S)1	-	<b>NZM1-XHB</b> 266626
	Can be modified such that it can be defeated from the outside using a screwdriver Not defeated in the locked OFF position. Can only be switched ON when the door is closed	NZM2, N(S)2	-	<b>NZM2-XHB</b> 266627
		NZM3, N(S)3	-	<b>NZM3-XHB</b> 266628
With red door coupling rotary handle for use of switch as emergency switching off device to IEC/EN 60204-1, VDE 0113 part 1				
	Door interlock on OFF with max. 3 padlocks After the door interlock is activated, must not be opened while on ON or TRIP. Must only be opened on OFF	NZM1, N(S)1	-	<b>NZM1-XHBR</b> 266632
	Can be modified such that it can be defeated from the outside using a screwdriver Not defeated in the locked OFF position. Can only be switched ON when the door is closed	NZM2, N(S)2	-	<b>NZM2-XHBR</b> 266633
		NZM3, N(S)3	-	<b>NZM3-XHBR</b> 266634
<b>Main switch assembly kit with additional rotary handle for IEC, UL/CSA</b>				
Equipment supplied				
<ul style="list-style-type: none"> <li>• Door coupling rotary handle with rotary drive</li> <li>• Add-on rotary handle on switch with "Deliberate Action" operation as per NFPA79 and UL508A Part 2</li> <li>• NZM1/2-XV4 shaft extension for mounting depth of 400 mm</li> <li>• External warning plate/marketing plate in German/English</li> <li>• Black and yellow lightning symbol</li> </ul>				
Protection class IP66 UL/CSA Type 4X, Type 12				
With black door coupling rotary handle				
	Door interlock on OFF with max. 3 padlocks With activated door interlock. Cannot be opened in ON, OFF, or TRIP. Can only be opened in RESET.	NZM1, N(S)1	-	<b>NZM1-XHB-DA-NA</b> 125958
	Can be modified such that it can be defeated from the outside using a screwdriver Not defeated in the locked OFF position.	NZM2, N(S)2	-	<b>NZM2-XHB-DA-NA</b> 116897
		NZM3, N(S)3	-	<b>NZM3-XHB-DA-NA</b> 119000
With red door coupling rotary handle for use of switch as emergency switching off device				
	Door interlock on OFF with max. 3 padlocks With activated door interlock. Cannot be opened in ON, OFF, or TRIP. Can only be opened in RESET.	NZM1, N(S)1	-	<b>NZM1-XHB-DAR-NA</b> 125959
	Can be modified such that it can be defeated from the outside using a screwdriver Not defeated in the locked OFF position.	NZM2, N(S)2	-	<b>NZM2-XHB-DAR-NA</b> 116898
		NZM3, N(S)3	-	<b>NZM3-XHB-DAR-NA</b> 119001
<b>Remote operator</b>				
For remote switching of circuit-breakers and switch-disconnectors. ON and OFF switching and resetting by means of two-wire or three-wire control. Local switching by hand possible. Lockable in the 0 position of the remote operator with up to 3 padlocks (hasp thickness: 4 – 8 mm)				
Closing delay 110 - 170 ms, Break time 110 - 170 ms				
	Sliding switch for "Auto" or "Manual" Max. number auxiliary contacts: 2 standard auxiliary contacts, 1 trip-indicating auxiliary switches	NZM2, N(S)2	208 - 240 V 50/60 Hz	<b>NZM2-XRD208-240AC</b> 115391
	-	NZM2, N(S)2	24 - 30 V DC	NZM2-XRD24-30DC 115393
Closing delay 60 - 100 ms, Break time 300 - 3000 ms Synchronized				
	-	NZM3, N(S)3	208 - 240 V 50/60 Hz	<b>NZM3-XR208-240AC</b> 259850
	-	NZM3, N(S)3	24 - 30 V DC	<b>NZM3-XR24-30DC</b> 259854

Description	Part no. Article no.	Notes	
<b>Diagnostics and configuration software for NZM and DMI (local)</b>			
 <p>PC software for direct connection to all NZM circuit-breakers with electronic releases (IEC and UL/CSA devices), including the connection cable required in order to connect to an NZM device.</p>	<b>NZM-XPC-KIT</b> 265631	Only in combination with circuit-breakers with electronic trip blocks.	
<b>Touch display with integrated controller BreakerVisu (HMI-PLC)</b>			
<p>Visualize and log circuit-breaker and/or measuring device data            Read diagnostic memories            Create energy logs            Connect NZM using NZM-XSWD-704            Connect all NZM...-XMC-MB... measuring modules and NZM-XMC-TC-MB            Connection of IZMX16/40 using IZMX-MCAM            Connect IZM26... using IZM-MMINT            Connect PKE with XTUA or XTUWA using PKE-SWD-SP            Connect PKE with XTUACP or XTUWACP using PKE-SWD-CP            Connect RCCBs, MCBs, RCBOs using MCB-HK-SWD            Ethernet connection for display on web browsers            FTP connection for data transfers            Gateway function for forwarding data            Non-Eaton devices can be connected</p>			
	Max. 8 devices via MODBUS RTU 3.5 Inch Color display, TFT	<b>NZM-XMC-MDISP35-MOD</b> 172764	
	Max. 8 devices via SmartWire-DT 3.5 Inch Color display, TFT	<b>NZM-XMC-MDISP35-SWD</b> 172765	
	Max. 32 devices via MODBUS RTU and/or max. 16 devices via SmartWire-DT 7 Inch Color display, TFT	<b>NZM-XMC-MDISP70</b> 172766	
<b>SmartWire-DT interface for NZM circuit-breakers</b>			
	<p>The module implements the data connection between the NZM2/3/4 with electronic release and the SmartWire-DT.</p> <ul style="list-style-type: none"> <li>• Status data NZM: ON/OFF/TRIPPED</li> <li>• Load warnings</li> <li>• Reason for last trip</li> <li>• Actual current value in A</li> <li>• Switch type</li> <li>• Actual settings of the rotary coding switches</li> </ul>	<b>NZM-XSWD-704</b> 135530	<p>A connection cable (1.90 m) for the circuit-breaker and two NZM auxiliary contacts (1 x NO, 1 x NC) are included as standard.</p> 
<b>Measuring and communication module</b>			
	<p>For measuring current, voltage, power and energy.            The module has three built-in current transformers and three voltage taps, which are contacted with self-tapping screws, which penetrate the the cable insulation.            Power supply 24 VDC            Two SO pulse outputs            Modbus interface (Slave)            The total energy consumption value is permanently stored in the module.            Display device NZM-XMC-DISP can be connected for local indication of the readings.</p>	<b>NZM2-XMC-MB-250</b> 156641 <b>NZM2-XMC-MB</b> 129961 <b>NZM3-XMC-MB</b> 129962	<p>The minimum clearances relative to the NZM circuit-breaker need to be maintained for installation.            The module can be installed on the input or outgoer side and can be set up using the Eaton Modbus Configurator(www.eaton.eu).</p>

# NZM circuit-breakers, switch-disconnectors

Diagnostics, communication

Description	Part no. Article no.	Notes
<p><b>Measuring and communication module for external current transformers</b></p>  <p>For measuring current, voltage, power, and energy. In addition, the module requires three current transformers and three voltage taps wired externally. X/5A standard current transformers rated for up to 6,300 A are suitable. 230 VAC power supply 2 configurable outputs (SO pulse, alarm, etc.) RS-485 Modbus port (slave) The total energy consumption value will be stored in retentive memory on the module. BreakerVisu displays (NZM-XMC-MDISP...) can be used for visualization and logging purposes.</p>	<b>NZM-XMC-TC-MB</b> 169832	The minimum clearances relative to the NZM circuit-breaker need to be maintained for installation. The module can be installed on the input or outgoing side, as well as on a top hat DIN rail. The Eaton Modbus Configurator ( <a href="http://www.eaton.eu">www.eaton.eu</a> ) can be used to set up the module. Cannot be combined with NZM-XMC-DISP display device.
<p><b>Digital display device</b></p>  <p>For flush mounting on doors (connection to local display) For all measuring and communication modules with a Modbus interface Phase-specific indication of currents, voltages, power, and energy values Pre-configured screens available Cannot be combined with NZM-XMC-TC-MB Front dimensions 96 x 96 mm Front cutout 92 x 92 mm</p>	<b>NZM-XMC-DISP</b> 129967	Connection to NZM...XMC-MB using four-wire data cable (not included as standard). Cannot be combined with NZM-XMC-TC-MB.

Number of poles	Rated current = rated uninterrupted current $I_n = I_u$ A	Setting range		High switching capacity 150 kA Part no. Article no.  Screw connection	
		Overload trip $I_r$ A	Short-circuit releases $I_i$ A		
					
<b>Circuit-breakers with earth-fault release</b>					
<p>For equipment with power electronics, such as inverters and variable frequency drives Not UL/CSA approved Suitability for the application in three-phase systems Rated operating voltage 400 V 50 Hz (+/- 10 %) Rated fault current <math>I_{\Delta n} = 0.03</math> A Internal power supply <math>U_e = 50 - 400</math> V AC/DC sensitive according to core-balance principle in range of 0 – 100 kHz residual-current frequency. Prefabricated combination of current-limiting circuit-breaker and residual current device Adjusting buttons can be sealed.</p>					
	3 pole	125	100 - 125	750 - 1250	<b>NZMH2-A125-FIA30</b> 129710
		160	125 - 160	960 - 1600	<b>NZMH2-A160-FIA30</b> 112627
		200	160 - 200	1200 - 2000	<b>NZMH2-A200-FIA30</b> 112628
		250	200 - 250	1500 - 2500	<b>NZMH2-A250-FIA30</b> 112629

The product range contains 3-pole configurations (with optional switched and solid neutral). This chapter gives information on **standard (DIN fuse-link) type QSA switches**.

## Standards

- The range complies with IEC 60947-3 and has KEMA-KEUR approval up to 315 A, Lloyd's (LR), Veritas and CSA.
- Switches will accommodate DIN fuse-links.



See page 6 for accessories of switch-disconnector-fuses, type QSA.  
See page 31 for the technical characteristics of switch-disconnector-fuses, type QSA.  
See page 25 for knobs and handles, K-line.

## Switch-disconnector-fuses, frame size 1

### Type QSA, 690 V<sub>ac</sub>, DIN fuse-links

- Suitable for DIN fuse-links (blade contacts type).

Description	Thermal current I <sub>the</sub>	Pole configuration	Frame size	Part no.	Std. pack	Article no.
Switch-disconnector-fuse, DIN fuse-link	63 A	3P	1	QSA 63N1-00/3	1	1318027
Switch-disconnector-fuse, DIN fuse-link	100 A	3P	1	QSA 100N1-00/3	1	1318546
Switch-disconnector-fuse, DIN fuse-link	125 A	3P	1	QSA 125N1-00/3	1	1318030
Switch-disconnector-fuse, DIN fuse-link	160 A	3P	1	QSA 160N1-00/3	1	1318033



1318033

## Switch-disconnector-fuses, frame size 2

### Type QSA, 690 V<sub>ac</sub>, DIN fuse-links

- Suitable for DIN fuse-links (blade contacts type).

Description	Thermal current I <sub>the</sub>	Pole configuration	Frame size	Part no.	Std. pack	Article no.
Switch-disconnector-fuse, DIN fuse-link	200 A	3P	2	QSA 200N-2/3	1	1318547
Switch-disconnector-fuse, DIN fuse-link	250 A	3P	2	QSA 250N-2/3	1	1318526
Switch-disconnector-fuse, DIN fuse-link	315 A	3P	2	QSA 315N-2/3	1	1318548
Switch-disconnector-fuse, DIN fuse-link	400 A	3P	2	QSA 400N-2/3	1	1318533*



1318547

\* In ventilated enclosure

## Switch-disconnector-fuses, frame size 3

### Type QSA, 690 V<sub>ac</sub>, DIN fuse-links

- Suitable for DIN fuse-links (blade contacts type).

Description	Thermal current I <sub>the</sub>	Pole configuration	Frame size	Part no.	Std. pack	Article no.
Switch-disconnector-fuse, DIN fuse-link	400 A	3P	3	QSA 400-3/3	1	1318549
Switch-disconnector-fuse, DIN fuse-link	630 A	3P	3	QSA 630-3/3	1	1318542
Switch-disconnector-fuse, DIN fuse-link	800 A	3P	3	QSA 800-3/3	1	1318543*



1318542

\* I<sub>the</sub> 750 A.

## Accessories for switches, type QSA

Additional accessories include safety handles with standard interlocking and padlocking facility, auxiliary switches and protective terminal covers.

See page 6 for accessories of switch-disconnector-fuses, type QSA for more information.

### Shielding

Wide range of terminal covers, front and rear covers are available.

### Knobs and handles

To optimise the application of different switch and handle mechanisms, without the burden of high inventories, the switches and handles are packaged and ordered as separate items.

A wide range of K-line handles is available for any application.

See page 25 for K-line knobs and handles, K-line for different shafts with various lengths for type QSA switches.



# Accessories for Switch-disconnector-fuses, type QSA

## DIN and BS fuse-links

Additional accessories include safety handles with standard interlocking and padlocking facility, auxiliary switches and protective terminal covers.


### Shielding

Wide range of terminal covers, front and rear covers are available.

### Knobs and handles


To optimise the application of different switch and handle mechanisms, without the burden of high inventories, the switches and handles are packaged and ordered as separate items.

A wide range of K-line handles is available for any application.

 See page 39 for dimensional drawings of solid and switched neutrals.  
See page 29 for shafts with various lengths for QSA switches.

### Solid neutrals


- Solid neutrals are designed for mounting on-site.

	Description	Thermal current $I_{the}$	For switch-disconnector- fuse type	Std. pack	Article no.
	Solid neutral	40 / 63 A	QSA 40N0 - QSA 63N0 - QSA 63N1	1	1319460
	Solid neutral	100 / 125 A	QSA 100N1 - QSA125N1	1	1319466
	Solid neutral	160 A	QSA 160N1	1	1319472
	Solid neutral	160 / 200 A	QSA 160N - QSA200N	1	1319473
	Solid neutral	250 / 315 / 400 A	QSA 250N - QSA 315N - QSA 400N	1	1319480
	Solid neutral	400 / 630 / 800 A	QSA 400 - QSA 630 - QSA 800	1	1319486

1319460

### Switched neutrals


- Switched neutrals are designed for mounting on-site.

	Description	Thermal current $I_{the}$	For switch-disconnector- fuse type	Std. pack	Article no.
	Switched neutral	40 / 63 A	QSA 40N0 - QSA 63N0 - QSA 63N1	1	1319462
	Switched neutral	100 / 125 A	QSA 100N1 - QSA 125N1	1	1319467
	Switched neutral	160 A	QSA 160N1	1	1319474
	Switched neutral	160 / 200 A	QSA 160N - QSA 200N	1	1319476
	Switched neutral	250 / 315 / 400 A	QSA 250N - QSA 315N - QSA 400N	1	1319482
	Switched neutral	400 / 630 / 800 A	QSA 400 - QSA 630 - QSA 800	1	1319662

1319482

### Auxiliary switches for switch-disconnector-fuses type QSA

- The auxiliary switch is excluding adaptor, one adaptor needed per auxiliary switch. Except 630 / 800 A.


	Description	For switch-disconnector-fuse type	Contact configuration	Std. pack	Article no.
	Adaptor for auxiliary switch	For all QSA-types	-	5	6028292
	Auxiliary switch	For all QSA-types	1 NO + 1 NC	1	6028293
	Auxiliary switch	For all QSA-types	2 NO	1	6028294
	Auxiliary switch incl. adaptor	For types 630 / 800 A	1 NO + 1 NC	1	6030647

6028292, 6028293,  
6028294

### Terminal covers (transparent), 1-pole

#### For QSA types


- Terminal cover for cable lugs on connection terminals of QSA types.

	Description	For switch-disconnector- type	Bolt	Std. pack	Article no.
	Terminal cover (transparent) for cable lugs on connection terminal	QSA 40N0, QSA 63N0, QSA 100N1, QSA 125N1	M6	1	1319409
	Terminal cover (transparent) for cable lugs on connection terminal	QSA 160N1, QSA 160N, QSA 200N (BS)	M8	1	1319411
	Terminal cover (transparent) for cable lugs on connection terminal	QSA 200N (DIN) - QSA 250N, QSA 315N, QSA 400N	M10	1	1319413
	Terminal cover (transparent) for cable lugs on connection terminal	QSA 400, QSA 630, QSA 800	M12	1	1319415

1319411

## Rear covers for switch-disconnector-fuse, 1-pole


- Rear cover to shield live parts on rear of switch-disconnector-fuse.

	Description	Pole configuration	For switch-disconnector fuse type	Std. pack	Article no.
	Rear cover for switch-disconnector-fuse	1P	QSA 63N1-00/3, QSA 63N1-A3/3, QSA 100N1-A4/3, QSA 125N1-00/3, QSA 125N1-B2/3, QSA 160N1-B2/3, QSA 160 N1-00/3	1	1319439
	Rear cover for switch-disconnector-fuse	1P	QSA 160N-00/3, QSA 160N-B2/3, QSA 200N-2/3, QSA 200N-B2/3, QSA 250N-2/3, QSA 250N-B4/3, QSA 315-2/3, QSA 315N-B4/3, QSA 400N-B4/3	1	1319441

1319439

## Terminal covers (transparent), 3-pole


- For cable lugs on connection terminals of QSA-types.

	Description	Pole configuration	For switch-disconnector fuse type	Std. pack	Article no.
	Terminal cover (transparent)	3P	QSA 40N0, QSA 63N0	1	1320239
	Terminal cover (transparent)	3P	QSA 63N1, QSA 100N1, QSA 125N1, QSA 160N1	1	1319432
	Terminal cover (transparent)	3P	QSA 160N, QSA 200N, QSA 250N, QSA 315N, QSA 400N	1	1319418

1319432

## Front covers (transparent) for switch-disconnector-fuse


- To shield live parts on front of switch-disconnector-fuse.

	Description	For switch-disconnector- type	Std. pack	Article no.
	Front cover (transparent) for switch-disconnector-fuse	QSA 40N0, QSA 63N0, QSA 63N1, QSA 100N1-00/3	1	1320237
	Front cover (transparent) for switch-disconnector-fuse	QSA 63N1-00/3, QSA100N1-00/3, QSA 125N1-00/3	1	1319435
	Front cover (transparent) for switch-disconnector-fuse	QSA 160N1-00/3	1	1318476
	Front cover (transparent) for switch-disconnector-fuse	QSA 100N1-A4/3	1	1319423
	Front cover (transparent) for switch-disconnector-fuse	QSA 125N1-B2/3, QSA 160N1-B2/3	1	1319438
	Front cover (transparent) for switch-disconnector-fuse	QSA 160N, QSA 200N, QSA 250N, QSA 315N, QSA 400N	1	1319429
	Front cover (transparent) for switch-disconnector-fuse	QSA 400, QSA 600, QSA 800	1	1319426

1319435

## Rear cover for switch-disconnector-fuse

- Rear cover to shield live parts on rear of switch-disconnector-fuse.

	Description	For switch-disconnector fuse type	Std. pack	Article no.
	Rear cover for switch-disconnector-fuse	QSA 400-3/3, QSA 400-C3/3, QSA 630-3/3, QSA 630-C3/3, QSA 800-C3/3	1	1319417

1319417

# Knobs and handles, K-line


## Knobs and handles for direct mounting, A-type

	Description	For shaft (square)	Colour	Part no.	Std. pack	Article no.
 1818110	Direct mounting, A-type	6 mm	Blue	K1AB	1	1818001
	Direct mounting, A-type	6 mm	Blue	K2SAB	1	1818003
	Direct mounting, A-type	8 mm	Blue	K2AB	1	1818005
	Direct mounting, A-type	10 mm	Blue	K3KAB	1	1818110
	Direct mounting, A-type	12 mm	Blue	K4AB	1	1818009
	Direct mounting, A-type	14 mm	Blue	K5AB	1	1818011
	Direct mounting, A-type	14 mm	Blue	K6AB	1	1818013
	Direct mounting, A-type	6 mm	Red	K1AR	1	1818002
	Direct mounting, A-type	6 mm	Red	K2SAR	1	1818004
	Direct mounting, A-type	8 mm	Red	K2AR	1	1818006
	Direct mounting, A-type	10 mm	Red	K3KAR	1	1818111
	Direct mounting, A-type	12 mm	Red	K4AR	1	1818010
	Direct mounting, A-type	14 mm	Red	K5AR	1	1818012
	Direct mounting, A-type	14 mm	Red	K6AR	1	1818014

## Knobs and handles for cover mounting, C-type


	Description	For shaft (square)	Colour	Part no.	Std. pack	Article no.
 1818023	Cover mounting, C-type	6 mm	Blue	K1CB	1	1818015
	Cover mounting, C-type	6 mm	Blue	K2SCB	1	1818017
	Cover mounting, C-type	8 mm	Blue	K2CB	1	1818019
	Cover mounting, C-type	10 mm	Blue	K3KCB	1	1818068
	Cover mounting, C-type	12 mm	Blue	K4CB	1	1818023
	Cover mounting, C-type	14 mm	Blue	K5CB	1	1818025
	Cover mounting, C-type	14 mm	Blue	K6CB	1	1818027
	Cover mounting, C-type	6 mm	Red/yellow	K1CR	1	1818016
	Cover mounting, C-type	6 mm	Red/yellow	K2SCR	1	1818018
	Cover mounting, C-type	8 mm	Red/yellow	K2CR	1	1818020
	Cover mounting, C-type	10 mm	Red/yellow	K3KCR	1	1818112
	Cover mounting, C-type	12 mm	Red/yellow	K4CR	1	1818024
	Cover mounting, C-type	14 mm	Red/yellow	K5CR	1	1818026
	Cover mounting, C-type	14 mm	Red/yellow	K6CR	1	1818028

## Knobs and handles for cover mounting, C-type


	Description	For shaft (square)	Colour	Part no.	Std. pack	Article no.
 1818033	Door mounting, with padlock, D/P-type	6 mm	Blue	K1DB/P	1	1818029
	Door mounting, with padlock, D/P-type	6 mm	Blue	K2SDB/P	1	1818032
	Door mounting, with padlock, D/P-type	8 mm	Blue	K2DB/P	1	1818035
	Door mounting, with padlock, D/P-type	10 mm	Blue	K3KDB/P	1	1818113
	Door mounting, with padlock, D/P-type	12 mm	Blue	K4DB/P	1	1818050
	Door mounting, with padlock, D/P-type	14 mm	Blue	K5DB/P	1	1818056
	Door mounting, with padlock, D/P-type	14 mm	Blue	K6DB/P	1	1818062*
	Door mounting, with padlock, D/P-type	6 mm	Red/yellow	K1DR/P	1	1818030
	Door mounting, with padlock, D/P-type	6 mm	Red/yellow	K2SDR/P	1	1818033
	Door mounting, with padlock, D/P-type	8 mm	Red/yellow	K2DR/P	1	1818036
	Door mounting, with padlock, D/P-type	10 mm	Red/yellow	K3KDR/P	1	1818096
	Door mounting, with padlock, D/P-type	12 mm	Red/yellow	K4DR/P	1	1818051
	Door mounting, with padlock, D/P-type	14 mm	Red/yellow	K5DR/P	1	1818057
	Door mounting, with padlock, D/P-type	14 mm	Red/yellow	K6DR/P	1	1818063*
	Door mounting, with padlock, D/P-type	6 mm	Grey	K1DG/P	1	1818031
	Door mounting, with padlock, D/P-type	6 mm	Grey	K2SDG/P	1	1818034
	Door mounting, with padlock, D/P-type	8 mm	Grey	K2DG/P	1	1818037
	Door mounting, with padlock, D/P-type	10 mm	Grey	K3DG/P	1	1818046
	Door mounting, with padlock, D/P-type	10 mm	Grey	K3KDG/P	1	1818069
	Door mounting, with padlock, D/P-type	12 mm	Grey	K4DG/P	1	1818052
	Door mounting, with padlock, D/P-type	14 mm	Grey	K5DG/P	1	1818058
	Door mounting, with padlock, D/P-type	14 mm	Grey	K6DG/P	1	1818064*

\* Order 2 handles in combination with change-over mechanism 1250 / 1600 A.


## Knobs and handles for door mounting, D-type, with cylinder lock

	Description	For shaft (square)	Colour	Part no.	Std. pack	Article no.
 1818114	Door mounting, with cylinder lock	6 mm	Blue	K2SDB/C	1	1818038
	Door mounting, with cylinder lock	8 mm	Blue	K2DB/C	1	1818041
	Door mounting, with cylinder lock	10 mm	Blue	K3KDB/C	1	1818114
	Door mounting, with cylinder lock	12 mm	Blue	K4DB/C	1	1818053
	Door mounting, with cylinder lock	14 mm	Blue	K2DB/C	1	1818059
	Door mounting, with cylinder lock	14 mm	Blue	K6DB/C	1	1818065
	Door mounting, with cylinder lock	6 mm	Red/yellow	K2SDR/C	1	1818039
	Door mounting, with cylinder lock	8 mm	Red/yellow	K2DR/C	1	1818042
	Door mounting, with cylinder lock	10 mm	Red/yellow	K3KDR/C	1	1818097
	Door mounting, with cylinder lock	12 mm	Red/yellow	K4DR/C	1	1818054
	Door mounting, with cylinder lock	14 mm	Red/yellow	K5DR/C	1	1818060
	Door mounting, with cylinder lock	14 mm	Red/yellow	K6DR/C	1	1818066
	Door mounting, with cylinder lock	6 mm	Grey	K2SDG/C	1	1818040
	Door mounting, with cylinder lock	8 mm	Grey	K2DG/C	1	1818043
	Door mounting, with cylinder lock	10 mm	Grey	K3KDG/C	1	1818070
	Door mounting, with cylinder lock	12 mm	Grey	K4DG/C	1	1818055
	Door mounting, with cylinder lock	14 mm	Grey	K5DG/C	1	1818061
	Door mounting, with cylinder lock	14 mm	Grey	K6DG/C	1	1818067


## Knobs and handles for change-over mechanisms, D-type with integrated padlock

	Description	For shaft (square)	Colour	Part no.	Std. pack	Article no.
 1818114	Door mounting, with integrated padlock	6 mm	Blue	KO2SDB/P	1	1818072
	Door mounting, with integrated padlock	10 mm	Blue	KO3KDB/P	1	1818116
	Door mounting, with integrated padlock	14 mm	Blue	KO5DB/P	1	1818076
	Door mounting, with integrated padlock	14 mm	Blue	KO6DB/P	1	1818078

## Conversion kits for locking in On/Off position, padlock or cylinder lock


	Description	Handle type	Std. pack	Article no.
 1818105	Conversion 0 - 1 locking	K1	1	1818103
	Conversion 0 - 1 locking	K2	1	1818104
	Conversion 0 - 1 locking	K3	1	1818105
	Conversion 0 - 1 locking	K4, K5, K6	1	1818106

## Operating shafts for Dumeco type DMV 160N

	Description	Shaft (square)	Height	For handle	Std. pack	Article no.
 1314691	Operating shaft	6 mm	116 mm	K1, K2S	1	1314996*
	Operating shaft	6 mm	132 mm	K1, K2S	1	1314751*
	Operating shaft	6 mm	148 mm	K1, K2S	1	1314752*
	Operating shaft	6 mm	172 mm	K1, K2S	1	1314691*
	Operating shaft	6 mm	270 mm	K1, K2S	1	1314692*
	Operating shaft	6 mm	400 mm	K1, K2S	1	1314693*

\* Height of switch, from bottom of the switch to top of shaft.


## Operating shafts for Dumeco types DMVS 160N, DMV 250N and 400N

	Description	Shaft (square)	Height	For handle	Std. pack	Article no.
 1050241	Operating shaft	10 mm	135 mm	K3	1	1050240*
	Operating shaft	10 mm	185 mm	K3	1	1050241*
	Operating shaft	10 mm	245 mm	K3	1	1050242*
	Operating shaft	10 mm	400 mm	K3	1	1050243*

\* Height of switch, from bottom of the switch to top of shaft.


## Knobs and handles, K-line

### Operating shafts, universally applicable (including types QSA and QM)


	Description	Shaft (square)	Length	For handle	Std. pack	Article no.
 1319830	Operating shaft	6 mm	180 mm	K1/K2S	1	<b>1319830*</b>
	Operating shaft	6 mm	300 mm	K1/K2S	1	<b>1319831*</b>
	Operating shaft	6 mm	600 mm	K1/K2S	1	<b>1319832*</b>
	Operating shaft	8 mm	115 mm	K2	1	<b>1319303*</b>
	Operating shaft	8 mm	140 mm	K2	1	<b>1319306*</b>
	Operating shaft	8 mm	180 mm	K2	1	<b>1319307*</b>
	Operating shaft	8 mm	300 mm	K2	1	<b>1319311*</b>
	Operating shaft	8 mm	600 mm	K2	1	<b>1319301*</b>
	Operating shaft	10 mm	135 mm	K3	1	<b>1319314*</b>
	Operating shaft	10 mm	180 mm	K3	1	<b>1319315*</b>
	Operating shaft	10 mm	300 mm	K3	1	<b>1319319*</b>
	Operating shaft	10 mm	600 mm	K3	1	<b>1319322*</b>
	Operating shaft	12 mm	300 mm	K4	1	<b>1319326*</b>
	Operating shaft, tempered steel	12 mm	300 mm	K4	1	<b>1319328*</b>
	Operating shaft	12 mm	600 mm	K4	1	<b>1319329*</b>

\*Length = length of the shaft from top to bottom.

### Coupling links for extension of universal shafts (including type QSA)

	Description	For shaft square)	Std. pack	Article no.
 1319332	Coupling link for extension of universal shaft (including type QSA)	6 x 6 mm	1	<b>1319833</b>
	Coupling link for extension of universal shaft (including type QSA)	8 x 8 mm	1	<b>1319332</b>
	Coupling link for extension of universal shaft (including type QSA)	10 x 10 mm	1	<b>1319334</b>
	Coupling link for extension of universal shaft (including type QSA)	12 x 12 mm	1	<b>1319336</b>

### Couplings for universal shafts (including type QSA)

	Description	For shaft square)	Part no.	Std. pack	Article no.
 1319398	Shaft reducing coupling for universal shaft (including type QSA)	From 8 x 8 mm to 12 x 12 mm	4K8/4K12	1	<b>1319397</b>
	Shaft reducing coupling for universal shaft (including type QSA)	From 10 x 10 mm to 12 x 12 mm	4K10/K12	1	<b>1319398</b>
	Shaft reducing coupling for universal shaft (including type QSA)	From 12 x 12 mm to 14 x 14 mm	4K12/4K14	1	<b>1318685</b>

From table 4.1 show the accuracy classes corresponding to the HF-series.

The accuracy classes must be respected at rated burden according to IEC 61869-1/2 (VA mentioned at the rating plate of the transformer) as well as at 25% of the rated burden, however not less than 1 VA.

**It is valid for all transformers from Eaton Electric that the respective accuracy class is respected from 1 VA till rated burden irrespective of that the 25% of the rated burden could allow a value greater than 1 VA.**

**Table 4.1: Current - and phase displacement error**

Accuracy classes acc. to IEC 61869-1/2	Percentage current error +/- % Rated current ( $I_{pn}$ )						Phase displacement +/- minutes % Rated current ( $I_{pn}$ )					
	1	5	20	50	100	120	1	5	20	100	120	
0,2S	0,75	0,35	0,2		0,2	0,2	30	15	10	10	10	
0,2		0,75	0,35		0,2	0,2		30	15	10	10	
0,5		1,5	0,75		0,5	0,5		90	45	30	30	
1		3	1,5		1	1		180	90	60	60	
3				3		3						

The measuring accuracy of a current transformer depend on the total burden in the secondary circuit.

To obtain the measuring accuracy of a given class, the total burden must therefore stay within the output of the current transformer in the required class.

The total burden of the transformer is made up of the burden from the connected instrument (Table 4.2) and wires (Table 4.2). The tables below may be used as a guide on typical burdens.

**Table 4.2: Burden - instrument**



Burden instrument	[VA]
Moving iron instrument	0,3 - 1,2
Moving coil instrument	0,3 - 1,2
Bimetal instrument	2,0 - 3,2
KWh-meter/current circuit	0,3 – 4,0

**Table 4.3: Burden - wire**

Rated secondary current [A]	Wire [m] <sup>1*</sup> Size of conductor [mm <sup>2</sup> ]	Copper wire Burden [VA]				
		0,5	1,0	2,5	5	10
5	1,5	0,29	0,58	1,45	2,9	5,8
5	2,5	0,18	0,35	0,88	1,75	3,5
1	1	0,018	0,035	0,09	0,18	0,35
1	1,5	0,012	0,023	0,06	0,12	0,23
1	2,5	0,007	0,014	0,035	0,07	0,14

\*Double wire. With double wire means: From transformer to instrument and return to transformer.



## Survey Chart – Accuracy Class 0,5 – 1 – 3

	HF3A				Rated secondary current [A]		HF3B				Rated secondary current [A]	
	Rated primary current [A]	Accuracy class			5	1	Accuracy class			5	1	
		0,5	1	3			0,5	1	3			
	Burden [VA]				Article no. 741B00 ____				Burden [VA]	Article no. 741B00 ____		
	30	-	-	1	-	08						
	50	-	1	2	11	31						
	60	-	1	2,5	13	21						
	75	-	1,5	3	12	32						
	80	-	2	3	87	88						
	100	1,5	3	5	14	33	-	-	2	04	06	
	125	2,5	3	5	25	89	1	2	2,5	97	23	
	150	2,5	5	5	16	34	1	2,5	3	05	07	
	200	2,5	5	7,5	17	35	1	2,5	3	18	36	
	250	5	5	7,5	27	28	2,5	2,5	4	19	29	
	300						2,5	5	5	20	37	
	400						2,5	5	5	22	38	
	500						2,5	5	5	24	39	
	600						5	5	7,5	26	40	

	Units	HF3A	HF3B
Max. dimension of primary bar	[mm x mm]	5 x 20	10 x 30
Conductor (diameter)	[mm]	17	23
Secondary terminals	[mm <sup>2</sup> ]	max. 2,5	max. 2,5
I <sub>th rms</sub> i 1 sec.	[kA]	15	45
Buch	-	741B0321	741B0322
Sealable cover	-		741B0232
Clamp (for bar mounting)	-		741B0030
Fittings for DIN-Rail	-		741B0231
Fittings for base plate	-		741B0230






# Survey Chart – Accuracy Class 0,5 – 1 – 3

	HF4B			Rated secondary current [A]		HF5			Rated secondary current [A]		
	Rated primary current [A]	Accuracy class			5	1	Accuracy class			5	1
		0,5	1	3	Article no. 741C20 ____		0,5	1	3	Article no. 741E00 ____	
	Burden [VA]					Burden [VA]					
 <p style="text-align: center;">HF4B</p>	50	-	-	2	57	54					
	60	-	-	2	58	55					
	75	-	1	2,5	59	56					
	80										
	100	1	2,5	5	60	68					
	125										
	150	2,5	5	5	61	69					
	200	5	5	7,5	62	70					
	250	5	7,5	10	63	71					
	300	7,5	10	15	64	72	5	7,5	10	11	-
 <p style="text-align: center;">HF5</p>	400	7,5	10	15	65	73	10	10	15	21	28
	500	10	10	15	66	74	15	20	20	22	29
	600	10	15	20	67	75	15	20	20	23	30
	750						15	20	20	34	35
	800						20	20	20	24	31
	1000						30	30	30	25	32
	1200						30	30	30	26	33
	1250						30	30	30	37	38
	1500						20	20	30	27	17
	1600						20	20	30	39	18

	Units	HF4B	HF5
Max. dimension of primary bar	[mm x mm] [mm x mm]	10 x 40	12 x 60
Conductor (diameter)	[mm]	28	39
Secondary terminals	[mm <sup>2</sup> ]	max. 6	max. 6
I <sub>th rms</sub> i 1 sec.	[kA]	60	100
Insert	-		741C0329
Sealable cover	-	741C0221	
Clamp* (for bar mounting)	-	741C0256	
Fittings for DIN-Rail	-	741C0243	
Fittings for base plate	-	741B0230	

\* Accessories included with the transformers (number only for spare part ordering).






# Survey Chart – Accuracy Class 0,5 – 1 – 3

	HF7A			Rated secondary current [A]		HF6			Rated secondary current [A]		HF8A			Rated secondary current [A]		
	Accuracy class					Accuracy class					Accuracy class					
	0,5	1	3	5	1	0,5	1	3	5	1	0,5	1	3	5	1	
Rated primary current [A]	Burden [VA]			Article no. 741H00 ____		Burden [VA]			Article no. 741F00 ____		Burden [VA]			Article no. 741K00 ____		
 HF7A	200															
	250															
	300															
	400	5	7,5	10	11	24										
	500	7,5	10	15	12	25										
	600	7,5	10	15	13	26										
	750	10	15	20	14	27										
 HF6	800	10	15	20	15	28										
	1000	15	20	30	16	29	20	30	30	23	33					
	1200	15	20	30	17	30	20	30	30	24	-					
	1250	15	20	30	18	31	20	30	30	22	-					
	1500	20	30	45	19	32	30	45	45	25	35	15	30	45	11	19
	1600	20	30	45	20	33	30	45	45	26	-					
	2000	30	45	45	21	34	30	45	60	27	37	15	30	45	13	21
	2500	30	45	45	23	36	30	45	60	28	38	15	30	45	14	22
	3000						30	45	60	29	39	30	45	60	16	24
	4000											30	45	60	17	25
 HF8A	5000											30	45	60	18	-

	Units	HF7A	HF6	HF8A
Max. dimension of primary bar	[mm x mm] [mm x mm]	2 // 10 x 80 3 // 10 x 50	3 // 10 x 100	2 // 10 x 120 3 // 10 x 100
Conductor (diameter)	[mm]	65	2//55	81
Secondary terminals	[mm <sup>2</sup> ]	max. 6	max. 6	max. 6
I <sub>th rms i 1 sec.</sub>	[kA]	120	>120	>120
Insert	-	741H0240		
Clamp* (for bar mounting)	-	741C0256		741F0220
Sealable cover	-		741C0221	
Fittings for DIN-Rail	-		741C0243	
Fittings for base plate	-		741B0230	

\* Accessories included with the transformers (number only for spare part ordering).





# Survey Chart – Accuracy Class 0,2S og 0,2

	HF4B			HF5			HF7A			HF6			HF8A		
	Accuracy class		Rated secondary current [A]	Accuracy class		Rated secondary current [A]	Accuracy class		Rated secondary current [A]	Accuracy class		Rated secondary current [A]	Accuracy class		Rated secondary current [A]
	0,2S	0,2	5	0,2S	0,2	5	0,2S	0,2	5	0,2S	0,2	5	0,2S	0,2	5
Rated primary current [A]	Burden [VA]		Article no. 741C20 _____	Burden [VA]		Article no. 741E00 _____	Burden [VA]		Article no. 741H00 _____	Burden [VA]		Article no. 741F00 _____	Burden [VA]		Article no. 741K00 _____
 HF4B	100	1,25	78												
	150	1,25	79												
	200	1,5 2	80												
	250	2 2,5	82												
	300	2 3	81	1,5 2	60										
 HF5	400	2,5 4	84	2 4	40										
	500	5 7,5	86	2,5 5	42										
	600	5 7,5	88	5 7,5	44										
	750		90	5 7,5	46	5 7,5	50								
	800		92	5 7,5	48	5 7,5	52								
 HF7A	1000			7,5 10	50	7,5 10	54	5 10	50						
	1200			10 10	52	10 10	56	7,5 10	52						
	1250			10 10	54	10 10	58	7,5 10	54						
	1500			10 10	56	10 10	60	10 10	56	7,5 10	31				
	1600			10 10	58	10 10	62	10 10	58						
 HF6	2000					10 10	64	10 10	60	10 10	33				
	2400					10 10	66	10 10	62						
	2500					10 10	68	10 10	64	10 10	34				
	3000							10 10	66	10 10	36				
	4000									10 10	37				
 HF8A	5000									10 10	38				

	Units	HF4B	HF5	HF7A	HF6	HF8A
Max. dimension of primary	[mm x mm]	10 x 40	12 x 60	2 // 10 x 80	3 // 10 x 100	2 // 10 x 120
bar	[mm x mm]	28	39	3 // 10 x 50	2 // 55	3 // 10 x 100
	[mm]			65		81
Conductor						
Secondary terminals	[mm <sup>2</sup> ]	max. 6	max. 6	max. 6	max. 6	max. 6
I <sub>th</sub> rms i 1 sec.	[kA]	60	100	120	>120	>120
Insert	-		741C0329	741H0240		
Clamp*	-		741C0256			741F0220
Sealable cover	-			741C0221		
Fittings for DIN-Rail	-			741C0243		
Fittings for base plate	-			741H0230		

\* Accessories included with the transformers (number only for spare part ordering).

# Accessories

	For type:	Units	Article.
<b>Clamp for bar mounting:</b>			
	HF3A and HF3B	1 pc. per bag	741B0030
	HF4B, HF4C, HF5 and HF7A *	1 pc. per bag	741C0256
<b>Clamp for bar mounting:</b>			
	HF6 and HF8A *	2 pc. per bag = 1 set	741F0220
<b>Fitting for mounting on base plate:</b>			
	HF3A, HF3B	12 pcs. per bag (2 pcs. pr. transformer)	741B0230
	HF4B, HF4C, HF5, HF6, HF7A and HF8A	12 pcs. per bag (4 pcs. pr. transformer)	741H0230
<b>Fitting for DIN-rail mounting:</b>			
	HF3A and HF3B	2 pc. per bag = 1 set	741B0231
	HF4B, HF4C, HF5, HF7A and HF8A	2 pc. per bag = 1 set	741C0243

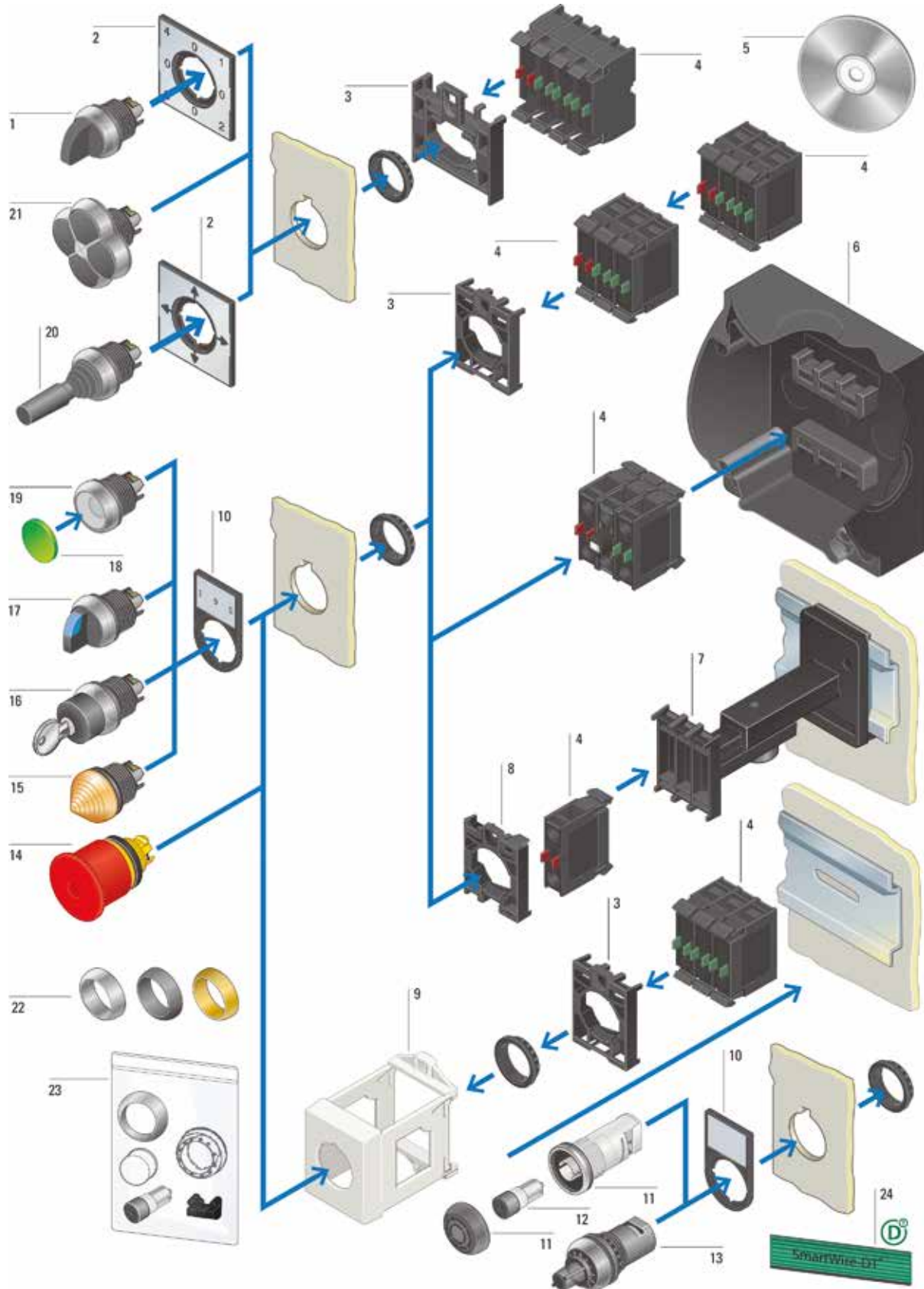
\* Accessories included with the transformers (numbers only for spare parts ordering).

	For type:	Units	Article.
<b>Bush for mounting between bar and cable lug:</b>			
	HF3A, for M10 screw	1 pc. per bag	741B0321
	HF3B, for M10 screw	1 pc. per bag	741B0322
<b>Insert:</b>			
	HF4B and HF5		741C0329
<b>Insert:</b>			
	HF7A*	6 pcs. per bag	741H0240
<b>Sealable cover for secondary terminals:</b>			
	HF3A and HF3B	12 pcs. per bag (4 pcs. pr. transformer)	741B0232
<b>Sealable cover for secondary terminals:</b>			
	HF4B, HF4C, HF5, HF7A and HF8A	12 pcs. per bag (4 pcs. pr. transformer)	741C0221

\* Accessories included with the transformers (numbers only for spare parts ordering).

# RMQ-Titan pilot devices















## System overview



- 1 4-way selector switch actuators
- 2 Labels with label mounts
- 3 Mounting clamp
- 4 Contact/LED elements
- 5 Individual inscription
- 6 Surface mounting enclosure
- 7 Telescopic clip
- 8 Centring adapter
- 9 IVS top-hat rail adapter
- 10 Label mounts
- 11 Acoustic device
- 12 Buzzer
- 13 Potentiometer
- 14 Controlled stop pushbuttons/  
emergency-stop buttons
- 15 Indicator light
- 16 Key-operated actuators
- 17 Changeover switches
- 18 Button plates/lenses
- 19 Pushbutton actuators
- 20 Joystick
- 21 4-way pushbutton
- 22 Bezels
- 23 Accessories
- 24 SmartWire-DT ribbon cable

- 9 IVS top-hat rail adapter
- 10 Label mounts
- 11 Acoustic device
- 12 Buzzer
- 13 Potentiometer
- 14 Controlled stop pushbuttons/  
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- 15 Indicator light
- 16 Key-operated actuators
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- 20 Joystick
- 21 4-way pushbutton
- 22 Bezels
- 23 Accessories
- 24 SmartWire-DT ribbon cable




































- 17 Changeover switches
- 18 Button plates/lenses
- 19 Pushbutton actuators
- 20 Joystick
- 21 4-way pushbutton
- 22 Bezels
- 23 Accessories
- 24 SmartWire-DT ribbon cable

	Button plate	Part no.	Article no.
<b>Double actuators</b>			
IP66 White lens			
	Actuators and indicator lights non-flush		<b>Momentary</b> <b>M22-DDL-GR</b> 216698
			<b>M22-DDL-GR-X1/X0</b> 216700
			<b>M22-DDL-GR-GB1/GB0</b> 216702
			<b>M22-DDL-WS</b> 216704
			<b>M22-DDL-WS-X1/X0</b> 216706
			<b>M22-DDL-WS-GB1/GB0</b> 216708
			<b>M22-DDL-S-X4/X5</b> 218145
			<b>M22-DDL-S-X7/X7</b> 216710
			<b>M22-DDL-S-X226/X26</b> 105227
	Actuators and indicator lights flush		<b>M22-DDLF-GR-X1/X0</b> 284814
			<b>M22-DDLF-WS-X1/X0</b> 284816
	Pushbutton actuator I and indicator light flush, pushbutton actuator O non-flush		<b>M22-DDLM-GR-X1/X0</b> 284830
			<b>M22-DDLM-WS-X1/X0</b> 284832









# RMQ-Titan pilot devices














Pushbutton actuators, Mushroom-headed pushbutton

		Button plate	Part no.	Article no.	Part no.	Article no.
<b>Pushbutton actuators</b>						
IP67, IP69K						
	Flat		<b>Momentary</b>		<b>Momentary<sup>(1)</sup></b>	
			M22-D-S	216590	M22-DR-S	216613
			M22-D-W	216592	M22-DR-W	216615
			M22-D-R	216594	M22-DR-R	216617
			M22-D-G	216596	M22-DR-G	216619
			M22-D-Y	216598	M22-DR-Y	216621
			M22-D-B	216600	M22-DR-B	216623
		-	M22-D-GR	132671		
			M22-D-X	216602	M22-DR-X	216625
			M22-D-R-X0	216605	M22-DR-R-X0	216628
			M22-D-G-X1	216607	M22-DR-G-X1	216630
			M22-D-S-X0	216609	M22-DR-S-X0	216632
			M22-D-W-X1	216611	M22-DR-W-X1	216634
			Extended		M22-DH-S	216636
	M22-DH-W			216638	M22-DRH-W	216665
	M22-DH-R			216641	M22-DRH-R	216667
	M22-DH-G			216643	M22-DRH-G	216669
	M22-DH-Y			216646	M22-DRH-Y	216671
	M22-DH-B			216649	M22-DRH-B	216673
	M22-DH-R-X0			216655	M22-DRH-R-X0	216675
	M22-DH-G-X1			216657	M22-DRH-G-X1	216677
	M22-DH-S-X0			216659	M22-DRH-S-X0	216679
	M22-DH-W-X1			216661	M22-DRH-W-X1	216681
	Guard-ring	-	M22-DG-X	220921		
<b>Mushroom-headed pushbutton</b>						
IP67, IP69K						
	Mushroom		<b>Momentary</b>		<b>Momentary<sup>(1)</sup></b>	
			M22-DP-S	216712	M22-DRP-S	216743
			M22-DP-R	216714	M22-DRP-R	216745
			M22-DP-G	216716	M22-DRP-G	216747
			M22-DP-Y	216718	M22-DRP-Y	216749
			M22-DP-R-X0	216720	M22-DRP-R-X0	216751
			M22-DP-G-X1	216722	M22-DRP-G-X1	216753
			M22-DP-S-X0	216724	M22-DRP-S-X0	216755
	M22-DP-W-X1	216726	M22-DRP-W-X1	216757		

Notes

<sup>1)</sup> Stay-put/spring-return function can be changed on device







				Mushroom head	Part no.	Article no.
<b>Stop buttons</b>						
Diameter 38 mm Base yellow IP66, IP69K						
	<b>Non-illuminated</b>	Pull-to-release function		<b>M22S-PV</b>	225528	
	<b>Non-illuminated</b>	Turn-to-release function		<b>M22S-PVT</b>	271499	
	<b>Illuminated with LED element</b>	Pull-to-release function		<b>M22S-PVL</b>	230962	
	<b>Illuminated with LED element</b>	Turn-to-release function		<b>M22S-PVLT</b>	271540	
	<b>Non-illuminated</b>	Turn-to-release function		<b>M22Y-PVT</b>	147403	













			Function:	Button plate	Part no.	Article no.
			↳ = spring-return			
			└ = stay-put			
<b>Selector switch actuators</b>						
IP66 Stay-put/spring-return function, can be changed with coding parts M22-XC-Y						
	With rotary head	2 positions	↳ 40°		<b>M22-W</b>	216853
		2 positions	└ 60°		<b>M22-WR</b>	216855
		2 positions	└ 60°		<b>M22-WR-X92</b>	216857
		2 positions	└ 60°	AUTO HAND 	<b>M22-WR-X91</b>	216859
		3 positions <sup>1)</sup>	40° < > 40°		<b>M22-W3</b>	216861
		3 positions <sup>1)</sup>	60° ↓ 60°		<b>M22-WR3</b>	216863
		3 positions <sup>1)</sup>	60° ↓ 60°		<b>M22-WR3-X94</b>	226838
		4 positions <sup>2)</sup>			<b>M22-WR4</b>	279419
		With thumb-grip	2 positions	↳ 40°	-	<b>M22-WK</b>
		2 positions	└ 60°	-	<b>M22-WRK</b>	216867
		2 positions (V position)	└ 60°	-	<b>M22-WKV</b>	216874
		3 positions <sup>1)</sup>	40° < > 40°	-	<b>M22-WK3</b>	216870
		3 positions <sup>1)</sup>	60° ↓ 60°	-	<b>M22-WRK3</b>	216872
		4 positions <sup>2)</sup>			<b>M22-WRK4</b>	279431

**Notes**  
 1) With plunger bridge for the middle contact  
 2) Not suitable for coding adapters  
 Use M22-A4 fixing adapter → accessories



# RMQ-Titan pilot devices





































Key-operated buttons, Joystick, Pushbuttons

		Key withdrawable in position				Part no.	Article no.
<b>Key-operated buttons</b>							
IP66 Not suitable for master key systems With 1 key Stay-put/spring-return function, can be changed with coding parts M22-XC-Y Key withdraw convertible with coding adapters M22-XC-..							
	2 positions		40°	-	0	-	<b>M22-WS</b> 216881
	2 positions		60°	-	0	I	<b>M22-WRS</b> 216887
	3 positions		40°	-	0	-	<b>M22-WS3</b> 216894
	3 positions		60°	I	0	II	<b>M22-WRS3</b> 216900

		Function:	Description	Part no.	Article no.
			= spring-return		
			= stay-put		
<b>Joystick</b>					
With metal shaft IP66					
	2 positions		With one operating point per operating direction	<b>M22-WJS2H</b>	178570
			With 2 operating points per operating direction	<b>M22-WJS2H-2P<sup>1)</sup></b>	178565
			With one operating point per operating direction	<b>M22-WJS2V</b>	178571
	2 positions		With 2 operating points per operating direction	<b>M22-WJS2V-2P<sup>1)</sup></b>	178564
			With one operating point per operating direction	<b>M22-WRJS2H</b>	178574
			With one operating point per operating direction	<b>M22-WRJS2V</b>	178575
	4 positions		With one operating point per operating direction	<b>M22-WJS4</b>	178568
			With 2 operating points per operating direction	<b>M22-WJS4-2P<sup>1)</sup></b>	178563
			With one operating point per operating direction	<b>M22-WRJS4</b>	178566

**Notes** <sup>1)</sup> These joysticks are combined with normal normally open contacts M22-K10 and NO early-make contacts M22-K10P.

		Part no.	Article no.
<b>Pushbuttons</b>			
Actuators non-flush IP66			
	4-fold Opposing pushbuttons not mechanically interlocked	<b>M22-D4-S</b>	279411
	4-fold Opposing pushbuttons not mechanically interlocked	<b>M22-D4-S-X7</b>	286336
	4-fold Opposing pushbuttons not mechanically interlocked	<b>M22-D14-S-X7</b>	286338
























		Lens	Part no.	Article no.			
<b>Indicator lights</b>							
IP67, IP69K							
	Flush		<b>M22-L-W</b>	216771			
			<b>M22-L-R</b>	216772			
			<b>M22-L-G</b>	216773			
			<b>M22-L-Y</b>	216774			
			<b>M22-L-B</b>	216775			
			<b>M22-L-A</b>	164374			
		Without lens	<b>M22-L-X</b>	216776			
	Extended, conical		<b>M22-LH-W</b>	216778			
			<b>M22-LH-R</b>	216779			
			<b>M22-LH-G</b>	216780			
			<b>M22-LH-Y</b>	216781			
			<b>M22-LH-B</b>	216782			
			<b>M22-LH-A</b>	164375			
<b>Illuminated pushbutton actuators</b>							
IP67, IP69K							
	Flush		<b>M22-DL-W</b>	216922	<b>M22-DRL-W</b>	216944	
			<b>M22-DL-R</b>	216925	<b>M22-DRL-R</b>	216946	
			<b>M22-DL-G</b>	216927	<b>M22-DRL-G</b>	216948	
			<b>M22-DL-Y</b>	216929	<b>M22-DRL-Y</b>	216950	
			<b>M22-DL-B</b>	216931	<b>M22-DRL-B</b>	216952	
			<b>M22-DL-A</b>	167429	<b>M22-DRL-A</b>	167431	
	Without button plate		<b>M22-DL-X</b>	216933	<b>M22-DRL-X</b>	216954	
			<b>M22-DL-R-X0</b>	216936	<b>M22-DRL-R-X0</b>	216957	
			<b>M22-DL-G-X1</b>	216938	<b>M22-DRL-G-X1</b>	216959	
			<b>M22-DL-W-X0</b>	216940	<b>M22-DRL-W-X0</b>	216961	
			<b>M22-DL-W-X1</b>	216942	<b>M22-DRL-W-X1</b>	216963	
		Extended		<b>M22-DLH-W</b>	216965	<b>M22-DRLH-W</b>	216788
				<b>M22-DLH-R</b>	216967	<b>M22-DRLH-R</b>	216789
				<b>M22-DLH-G</b>	216969	<b>M22-DRLH-G</b>	216796
				<b>M22-DLH-Y</b>	216971	<b>M22-DRLH-Y</b>	216799
				<b>M22-DLH-B</b>	216973	<b>M22-DRLH-B</b>	216802
				<b>M22-DLH-A</b>	167433	<b>M22-DRLH-A</b>	167435
				<b>M22-DLH-R-X0</b>	216975	<b>M22-DRLH-R-X0</b>	216804
				<b>M22-DLH-G-X1</b>	216977	<b>M22-DRLH-G-X1</b>	216805
Guard-ring	Without button plate		<b>M22-DLH-W-X0</b>	216979	<b>M22-DRLH-W-X0</b>	216806	
			<b>M22-DLH-W-X1</b>	216981	<b>M22-DRLH-W-X1</b>	216807	
			<b>M22-DGL-X</b>	230961			





Notes

<sup>1)</sup> Stay-put/spring-return function can be changed on device

# RMQ-Titan pilot devices

## Illuminated selector switch actuator

		Function:	Part no.	Article no.
		↳ = spring-return		
		└ = stay-put		
<b>Illuminated selector switch actuator</b>				
With thumb-grip				
IP66				
Stay-put/spring-return function, can be changed with coding parts M22-XC-Y				
2 positions 	↳ 40°		<b>M22-WLK-W</b>	216812
	↳ 40°		<b>M22-WLK-R</b>	216814
	↳ 40°		<b>M22-WLK-G</b>	216816
	↳ 40°		<b>M22-WLK-Y</b>	216818
	↳ 40°		<b>M22-WLK-B</b>	216820
	└ 60°		<b>M22-WRLK-W</b>	216823
	└ 60°		<b>M22-WRLK-R</b>	216825
	└ 60°		<b>M22-WRLK-G</b>	216827
	└ 60°		<b>M22-WRLK-Y</b>	216829
	└ 60°		<b>M22-WRLK-B</b>	216831
	∨ 60°		<b>M22-WLKV-W</b>	284393
	∨ 60°		<b>M22-WLKV-R</b>	284394
	∨ 60°		<b>M22-WLKV-G</b>	284395
	∨ 60°		<b>M22-WLKV-Y</b>	284396
	∨ 60°		<b>M22-WLKV-B</b>	284397
3 positions 	40° <  > 40°		<b>M22-WLK3-W</b>	216833
	40° <  > 40°		<b>M22-WLK3-R</b>	216835
	40° <  > 40°		<b>M22-WLK3-G</b>	216837
	40° <  > 40°		<b>M22-WLK3-Y</b>	216839
	40° <  > 40°		<b>M22-WLK3-B</b>	216841
	60° ∨ 60°		<b>M22-WRLK3-W</b>	216843
	60° ∨ 60°		<b>M22-WRLK3-R</b>	216845
	60° ∨ 60°		<b>M22-WRLK3-G</b>	216847
	60° ∨ 60°		<b>M22-WRLK3-Y</b>	216849
	60° ∨ 60°		<b>M22-WRLK3-B</b>	216851




		Contacts		Part no.	Article no.	Part no.	Article no.
		N/O = Normally open	N/O = Normally closed <sup>1)</sup>				
<b>Contact elements</b>							
<b>IP20</b>							
<b>Single contact</b>							
	Front fixing	1 N/O	-	<b>M22-K10</b>	216376	<b>M22-CK10</b>	216384
		-	1 NC ⊕	<b>M22-K01</b>	216378	<b>M22-CK01</b>	216385
		1 NO early-make	-	<b>M22-K10P</b>	110835		
	Base fixing	-	1 NC late-break	<b>M22-K01D</b>	262165	<b>M22-CK01D</b>	262510
		1 N/O	-	<b>M22-KC10</b>	216380	<b>M22-CKC10</b>	216386
		-	1 NC ⊕	<b>M22-KC01</b>	216382	<b>M22-CKC01</b>	216387
<b>Double contact</b>							
	Front fixing	2 N/O	-			<b>M22-CK20</b>	107898
		-	2 NC ⊕			<b>M22-CK02</b>	107899
		1 N/O	1 NC ⊕			<b>M22-CK11</b>	107940
<b>Self-monitoring contact elements<sup>3)</sup></b>							
	Front fixing	1 N/O	1 NC ⊕	<b>M22-K01SMC10</b>	121472		
		1 N/O	2 NC ⊕	<b>M22-K02SMC10</b>	121474		
	Base fixing	1 N/O	1 NC ⊕	<b>M22-KC01SMC10</b>	121473		
		1 N/O	2 NC ⊕	<b>M22-KC02SMC10</b>	121720		
		1 N/O	3 NC ⊕	<b>M22-KC03SMC10</b>	173028		
		2 N/O	2 NC ⊕	<b>M22-KC12SMC10</b>	173029		
<b>Combination of contact element with screw terminals, M22-A fixing adapter and M22-XSMC indication contact actuator.<sup>3)</sup></b>							
	Front fixing	1 N/O	3 NC ⊕	<b>M22-AK03SMC10</b>	173026		
		2 N/O	2 NC ⊕	<b>M22-AK12SMC10</b>	173027		

**Notes**

<sup>1)</sup> ⊕ = safety function, by positive opening to IEC/EN 60947-5-1



















<sup>2)</sup> Cage Clamp is a registered trademark of Wago Kontakttechnik GmbH/Minden, Germany


<sup>3)</sup> The N/O is actuated when mounted on the pushbutton.

		Part no.	Article no.
<b>Mounting adapter</b>			
<b>Mounting clamp (front mounting) for 3-contact LED elements</b>			
	-	<b>M22-A</b>	216374
<b>Mounting clamp (front mounting) for 4-contact LED elements</b>			
	-	<b>M22-A4</b>	279437
<b>Front fixing</b>			
	For 2 function elements M22-SWD-K22... For use with M22-WR4, -WRJ4, -D4 in conjunction with M22-(SWD)-K	<b>M22-SWD-A4</b>	116016

# RMQ-Titan pilot devices






LED elements, Potentiometer, Acoustic device

Rated operational voltage $U_o$ V		Part no.	Article no.	Part no.	Article no.		
<b>LED elements</b>							
<b>IP20</b>							
Front fixing	12 - 30 V AC/DC, 50/60 Hz	   	<b>Screw terminals</b>		<b>Cage Clamp<sup>1)</sup></b>		
			<b>M22-LED-W</b>	216557	<b>M22-CLED-W</b>	216569	
		<b>M22-LED-R</b>	216558	<b>M22-CLED-R</b>	216570		
		<b>M22-LED-G</b>	216559	<b>M22-CLED-G</b>	216571		
		<b>M22-LED-B</b>	218057	<b>M22-CLED-B</b>	218061		
	85 - 264 V AC, 50/60 Hz	   	<b>M22-LED230-W</b>	216563	<b>M22-CLED230-W</b>	216575	
	<b>M22-LED230-R</b>		216564	<b>M22-CLED230-R</b>	216576		
	<b>M22-LED230-G</b>		216565	<b>M22-CLED230-G</b>	216577		
	<b>M22-LED230-B</b>		218059	<b>M22-CLED230-B</b>	218063		
Base fixing <sup>2)</sup>	12 - 30 V AC/DC, 50/60 Hz	   	<b>M22-LEDC-W</b>		<b>M22-CLEDC-W</b>		
			<b>M22-LEDC-R</b>	216560	<b>M22-CLEDC-R</b>	216572	
			<b>M22-LEDC-G</b>	216561	<b>M22-CLEDC-G</b>	216573	
			<b>M22-LEDC-B</b>	216562	<b>M22-CLEDC-B</b>	216574	
		85 - 264 V AC, 50/60 Hz	   	<b>M22-LEDC230-W</b>		<b>M22-CLEDC230-W</b>	
				<b>M22-LEDC230-R</b>	218058	<b>M22-CLEDC230-R</b>	218062
				<b>M22-LEDC230-G</b>	216566	<b>M22-CLEDC230-G</b>	216578
				<b>M22-LEDC230-B</b>	216567	<b>M22-CLEDC230-B</b>	216579
<b>Notes</b>							
		<sup>1)</sup> Cage Clamp is a registered trademark of Wago Kontakttechnik GmbH/Minden, Germany					
		<sup>2)</sup> Can be used for M22-I... surface mounting enclosure					

Impedance R kΩ		Part no.	Article no.
<b>Potentiometer</b>			
<b>IP66</b>			
	1	<b>M22-R1K</b>	229489
	2.2	<b>M22-R2K2</b>	171157
	4.7	<b>M22-R4K7</b>	229490
	10	<b>M22-R10K</b>	229491
	47	<b>M22-R47K</b>	229492
	<b>100</b>	<b>M22-R100K</b>	229493
	470	<b>M22-R470K</b>	229494








		Part no.	Article no.
<b>Acoustic device</b>			
	Without buzzer	<b>M22-AMC</b>	229015
	With BA 9s lamp socket IP40		
<b>Buzzer for acoustic device</b>			
	Continuous tone, 18 - 30 V AC/DC	<b>M22-XAM</b>	229025
	Pulsed tone, 24 V DC (+10 %/-15 %)	<b>M22-XAMP</b>	229028



















	For use with	Width mm	Height mm	Part no.	Article no.
<b>Legend holder</b>					
IP66					
	For actuators	30	50	<b>M22S-ST-X</b>	216392
	For double actuators	30	75	<b>M22S-STDD-X</b>	216394
<b>Insert label</b>					
	-	27	18	<b>M22-XST</b>	216480
<b>Bulkhead interface, RJ45 socket</b>					
IP65 (with closed cover) IP20 (with plug connected)					
	Front mounting RJ45, socket to socket 8/8, CAT5e	-	-	<b>M22-RJ45-SA</b>	107413
	Front mounting USB 3.0, Type A socket to socket	-	-	<b>M22-USB</b>	147539
					
<b>Bulkhead interface, USB socket</b>					
IP65 (with closed cover) IP20 (with plug connected)					
	Front mounting Prefabricated cable with permanently connected USB 2.0 Type A plug, 60 cm.	-	-	<b>M22-USB-SA</b>	107412
	Front mounting Type A socket with prefabricated cable (150 cm) with permanently connected USB 3.0, Type A plug	-	-	<b>M22-USB-SA-150</b>	147543

# RMQ-Titan pilot devices

## Complete units

Number of locations		Degree of Protection		Part no.	Article no.			
<b>Surface mounting enclosure</b>								
With high-grade steel screws								
	1	IP67, IP69K		<b>M22-I1</b>	216535			
	2	IP67, IP69K		<b>M22-I2</b>	216537			
	3	IP67, IP69K		<b>M22-I3</b>	216538			
	4	IP67, IP69K		<b>M22-I4</b>	216539			
	6	IP66		<b>M22-I6</b>	216540			
<b>Pushbutton actuators</b>								
IP67, IP69K								
	1	1 NC ⊖	1 N/O	-	-		<b>M22-D-G-X1/KC11/I</b>	216522
	1	1 NC ⊖	1 N/O	-	-		<b>M22-D-R-X0/KC11/I</b>	216521
	2	2 NC ⊖	2 N/O	-	-		<b>M22-I2-M1</b>	216529
	3	3 NC ⊖	3 N/O	-	-		<b>M22-I3-M1</b>	216532
<b>Key-operated buttons</b>								
IP66								
	1	1 NC ⊖	1 N/O	0	I	-	<b>M22-WRS/KC11/I</b>	216526

**Notes** ⊖ = safety function, by positive opening to IEC/EN 60947-5-1

				Part no.	Article no.	Part no.	Article no.
<b>Controlled stop pushbuttons/emergency-stop buttons</b>							
Tamper-proof according to ISO 13850/EN 418 IP66, IP69K							
	Pull-to-release function	Non-illuminated		<b>Diameter 38 mm</b> <b>M22-PV-ESS</b>	178983		
		Non-illuminated		<b>M22-PV</b>	216876		
		Illuminated with LED element		<b>M22-PVL</b>	216878		
	Turn-to-release function	Non-illuminated		<b>M22-PVT</b>	263467		
		Illuminated with LED element		<b>M22-PVLT</b>	263469		
	Key-release	Non-illuminated		<b>M22-PVS</b>	216879		
	Pull-to-release function	Non-illuminated		<b>Diameter 45 mm</b> <b>M22-PV45P</b>	152862	<b>Diameter 60 mm</b> <b>M22-PV60P</b>	152864
		Illuminated with LED element		<b>M22-PVL45P</b>	152860	<b>M22-PVL60P</b>	152861
		Non-illuminated		<b>M22-PV45P-MPI<sup>1)</sup></b>	152863	<b>M22-PV60P-MPI<sup>1)</sup></b>	152865
	Turn-to-release function	Non-illuminated		<b>M22-PVT45P</b>	121462	<b>M22-PVT60P</b>	121464
		Illuminated with LED element		<b>M22-PVLT45P</b>	121460	<b>M22-PVLT60P</b>	121461
		Non-illuminated		<b>M22-PVT45P-MPI<sup>1)</sup></b>	121463	<b>M22-PVT60P-MPI<sup>1)</sup></b>	121465
	Key-release	Non-illuminated		<b>M22-PVS45P-MS1</b>	121468	<b>M22-PVS60P-MS1</b>	121469
		Non-illuminated		<b>M22-PVS45P-RS</b>	121466	<b>M22-PVS60P-RS</b>	121467


### Notes





Max. number of contacts: four M22-(C)K01, ...10 or two M22-(C)K02, ...20, ...11

<sup>1)</sup>With mechanical switch position indication  
Switch position indicator red → pushbutton actuated  
Switch position indication green → pushbutton released








# RMQ-Titan pilot devices

Complete units EMERGENCY STOP/EMERGENCY SWITCHING OFF

For use with	Part no.	Article no.
<b>Surface mounting enclosure</b>		
With high-grade steel screws IP67, IP69K		
		
M22-XPV60... illuminated ring	<b>M22-IY1</b>	216536
	<b>M22-IY1-XPV60</b>	167798






























	Lock mechanism	Contacts		Part no.	Article no.	Part no.	Article no.
		N/O = Normally open	N/C = Normally closed				
<b>Controlled stop pushbuttons/emergency-stop buttons</b>							
Tamper-proof according to ISO 13850/EN 418							
Non-illuminated							
Mushroom-shaped							
Pull-to-release function	-	1 N/O	1 NC ⊕	<b>M22-PV/KC11/IY</b>	216525		
							
Key-release	-	1 N/O	1 NC ⊕	<b>M22-PVS/KC11/IY</b>	216523		
							
Palm-tree shape							
Key-release	MS1	-	2 NC ⊕	<b>C22-PVS45P-MS1-K02</b>	121619	<b>C22-PVS60P-MS1-K02</b>	121621
	MS1	1 N/O	1 NC ⊕	<b>C22-PVS45P-MS1-K11</b>	121618	<b>C22-PVS60P-MS1-K11</b>	121620
							
Turn-to-release function	-	-	2 NC ⊕	<b>C22-PVT45P-K02</b>	121611	<b>C22-PVT60P-K02</b>	121613
	-	1 N/O	1 NC ⊕	<b>C22-PVT45P-K11</b>	121610	<b>C22-PVT60P-K11</b>	121612
							

**Notes** ⊕ = safety function, by positive opening to IEC/EN 60947-5-1

	Name	Form	Language	Part no.	Article no.	
<b>Emergency stop labels</b>						
IP66						
	Symbol (5638) for CONTROLLED STOP	Diameter = 90 mm	-	<b>M22-XAK-ESS</b>	180469	
	Symbol (5638) for CONTROLLED STOP	Diameter = 60 mm	-	<b>M22-XBK-ESS</b>	180472	
	Symbol (5638) for CONTROLLED STOP	33 x 50 mm	-	<b>M22-XZK-ESS</b>	180470	
	Symbol (5638) for CONTROLLED STOP	33 x 50 mm	-	<b>M22-XZK-ESS2</b>	180474	
	Symbol (5638) for CONTROLLED STOP	50 x 50 mm	-	<b>M22-XYK-ESS</b>	180471	
<b>Emergency-stop labels</b>						
IP66						
		Diameter = 90 mm	de, en, fr, it	<b>M22-XAK1</b>	216465	
		Diameter = 60 mm	de, en, fr, it	<b>M22-XBK1</b>	216483	
	NOT-AUS	33 x 50 mm	de	<b>M22-XZK-D99</b>	216471	
		50 x 50 mm	de, en, fr, it	<b>M22-XYK1</b>	216484	
			Rated operational voltage $U_o$ V	Diameter d mm	Part no.	Article no.
<b>LED-Luminous ring</b>						
IP67, IP69K						
	Three groups of 4 LEDs each (series-connected), can be actuated separately (e.g. for continuous light)	24 V AC/DC	60 mm	<b>M22-XPV60-Y-24</b>	121477	
	One group of 8 LEDs (series-connected)	120 V AC	60 mm	<b>M22-XPV60-Y-120</b>	121476	
	One group of 8 LEDs (series-connected)	230 V AC	60 mm	<b>M22-XPV60-Y-230</b>	138280	
<b>Guard-ring</b>						
IP65						
	Protection against accidental actuation	-	-	<b>M22-XGPV</b>	231273	
<b>Sealable shroud</b>						
IP65						
	For devices with mushroom diameter 38 mm Transparent with collapse point, can be reused after Emergency-Stop, Emergency switching off operation. With grid 30 x 50 mm the drilling dimensions can be closed with M22(S)-B blanking plug	-	-	<b>M22-PL-PV</b>	216397	

# RMQ pilot devices compact solution

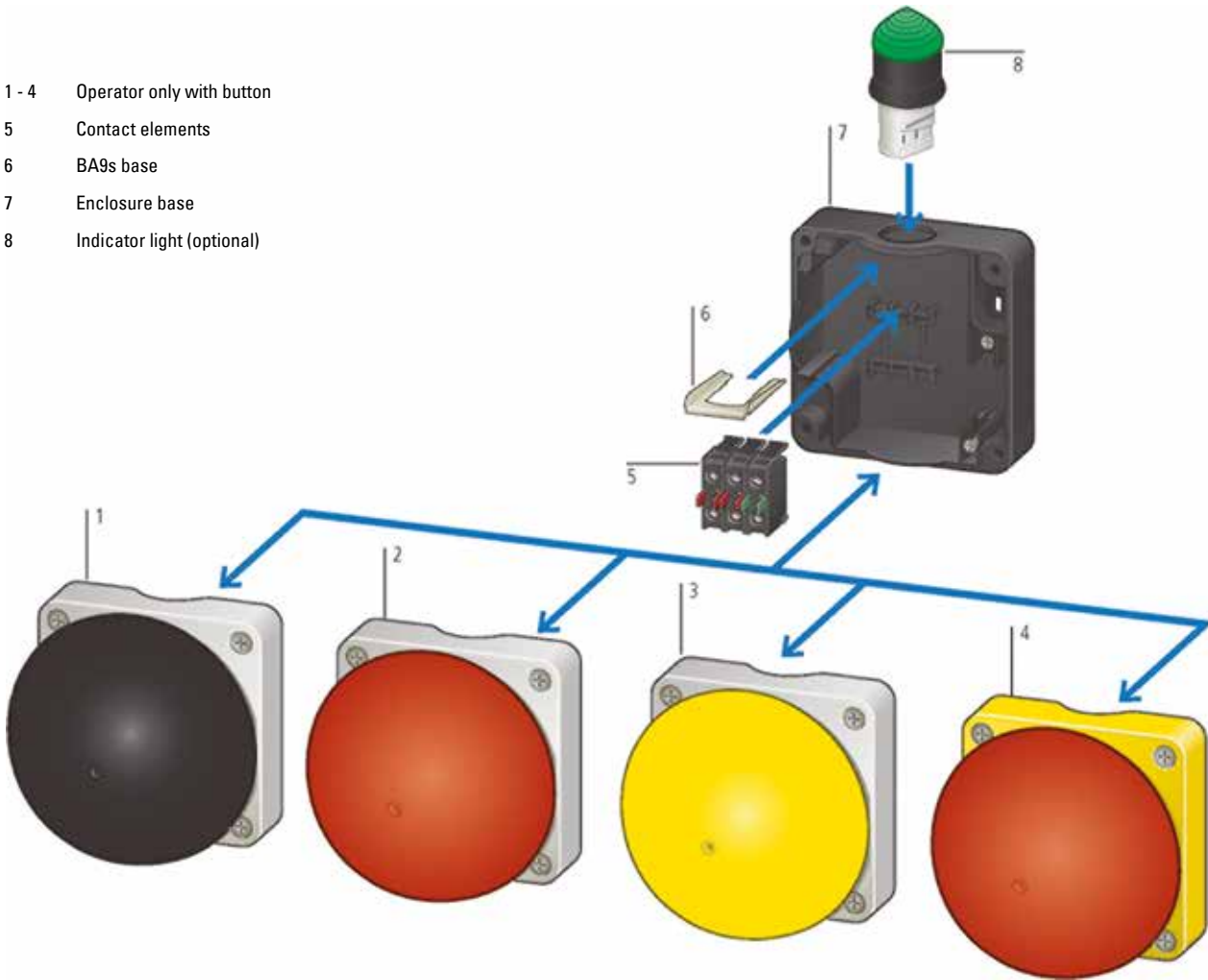
Pushbutton actuators, Indicator lights

	Cable Length m	Button plate	Contacts		Momentary		Maintained	
			N/C = Normally closed <sup>1)</sup>	N/O = Normally open	Part no.	Article no.	Part no.	Article no.
<b>Complete unit</b>								
IP66, IP67, IP69K (front) IP65 (on rear) M12A plug with cable (black) Flat								
<b>Pushbutton actuators</b>								
	0.5		-	1 N/O	<b>C22-D-G-K10-P3</b>	181632	<b>C22-DR-G-K10-P3</b>	181610
	1		-	1 N/O	<b>C22-D-G-K10-P5</b>	181041	<b>C22-DR-G-K10-P5</b>	181079
	0.5		-	1 N/O	<b>C22-D-W-K10-P3</b>	181635	<b>C22-DR-W-K10-P3</b>	181613
	1		-	1 N/O	<b>C22-D-W-K10-P5</b>	181047	<b>C22-DR-W-K10-P5</b>	181085
	0.5	Without button plate	-	1 N/O	<b>C22-D-X-K10-P3</b>	181607	<b>C22-DR-X-K10-P3</b>	181616
	1	Without button plate	-	1 N/O	<b>C22-D-X-K10-P5</b>	181051	<b>C22-DR-X-K10-P5</b>	181089
	0.5		1 NC ⊖	-	<b>C22-D-R-K01-P3</b>	181633	<b>C22-DR-R-K01-P3</b>	181611
	1		1 NC ⊖	-	<b>C22-D-R-K01-P5</b>	181043	<b>C22-DR-R-K01-P5</b>	181081
	0.5		1 NC ⊖	-	<b>C22-D-S-K01-P3</b>	181634	<b>C22-DR-S-K01-P3</b>	181612
	1		1 NC ⊖	-	<b>C22-D-S-K01-P5</b>	181045	<b>C22-DR-S-K01-P5</b>	181083
	0.5	Without button plate	1 NC ⊖	-	<b>C22-D-X-K01-P3</b>	181605	<b>C22-DR-X-K01-P3</b>	181614
	1	Without button plate	1 NC ⊖	-	<b>C22-D-X-K01-P5</b>	181049	<b>C22-DR-X-K01-P5</b>	181087
	0.5	Without button plate	1 NC ⊖	1 N/O	<b>C22-D-X-K11-P3</b>	181608	<b>C22-DR-X-K11-P3</b>	181617
	1	Without button plate	1 NC ⊖	1 N/O	<b>C22-D-X-K11-P5</b>	181052	<b>C22-DR-X-K11-P5</b>	181090
	0.5	Without button plate	-	2 N/O	<b>C22-D-X-K20-P3</b>	181609	<b>C22-DR-X-K20-P3</b>	181618
	1	Without button plate	-	2 N/O	<b>C22-D-X-K20-P5</b>	181053	<b>C22-DR-X-K20-P5</b>	181091
	0.5	Without button plate	2 NC ⊖	-	<b>C22-D-X-K02-P3</b>	181606	<b>C22-DR-X-K02-P3</b>	181615
	1	Without button plate	2 NC ⊖	-	<b>C22-D-X-K02-P5</b>	181050	<b>C22-DR-X-K02-P5</b>	181088
<b>Illuminated pushbutton actuators</b>								
Rated operational voltage LED: 24 V AC/DC								
	0.5		-	1 N/O	<b>C22-DL-B-K10-24-P3</b>	181624	<b>C22-DRL-B-K10-24-P3</b>	181628
	1		-	1 N/O	<b>C22-DL-B-K10-24-P5</b>	181298	<b>C22-DRL-B-K10-24-P5</b>	181364
	0.5		-	1 N/O	<b>C22-DL-G-K10-24-P3</b>	181625	<b>C22-DRL-G-K10-24-P3</b>	181629
	1		-	1 N/O	<b>C22-DL-G-K10-24-P5</b>	181300	<b>C22-DRL-G-K10-24-P5</b>	181366
	0.5		-	1 N/O	<b>C22-DL-W-K10-24-P3</b>	181627	<b>C22-DRL-W-K10-24-P3</b>	181631
	1		-	1 N/O	<b>C22-DL-W-K10-24-P5</b>	181307	<b>C22-DRL-W-K10-24-P5</b>	181370
	0.5		1 NC ⊖	-	<b>C22-DL-R-K01-24-P3</b>	181626	<b>C22-DRL-R-K01-24-P3</b>	181630
	1		1 NC ⊖	-	<b>C22-DL-R-K01-24-P5</b>	181303	<b>C22-DRL-R-K01-24-P5</b>	181368
	Cable Length m	Lens						
<b>Indicator lights</b>								
Rated operational voltage LED: 24 V AC/DC								
	0.5		-	-	<b>C22-L-B-24-P3</b>	181619		
	1		-	-	<b>C22-L-B-24-P5</b>	181137		
	0.5		-	-	<b>C22-L-G-24-P3</b>	181620		
	1		-	-	<b>C22-L-G-24-P5</b>	181139		
	0.5		-	-	<b>C22-L-R-24-P3</b>	181621		
	1		-	-	<b>C22-L-R-24-P5</b>	181141		
	0.5		-	-	<b>C22-L-W-24-P3</b>	181622		
	1		-	-	<b>C22-L-W-24-P5</b>	181059		
	0.5		-	-	<b>C22-L-Y-24-P3</b>	181623		
	1		-	-	<b>C22-L-Y-24-P5</b>	181061		

**Notes**

<sup>1)</sup> ⊖ = safety function, by positive opening to IEC/EN 60947-5-1

- 1 - 4 Operator only with button
- 5 Contact elements
- 6 BA9s base
- 7 Enclosure base
- 8 Indicator light (optional)

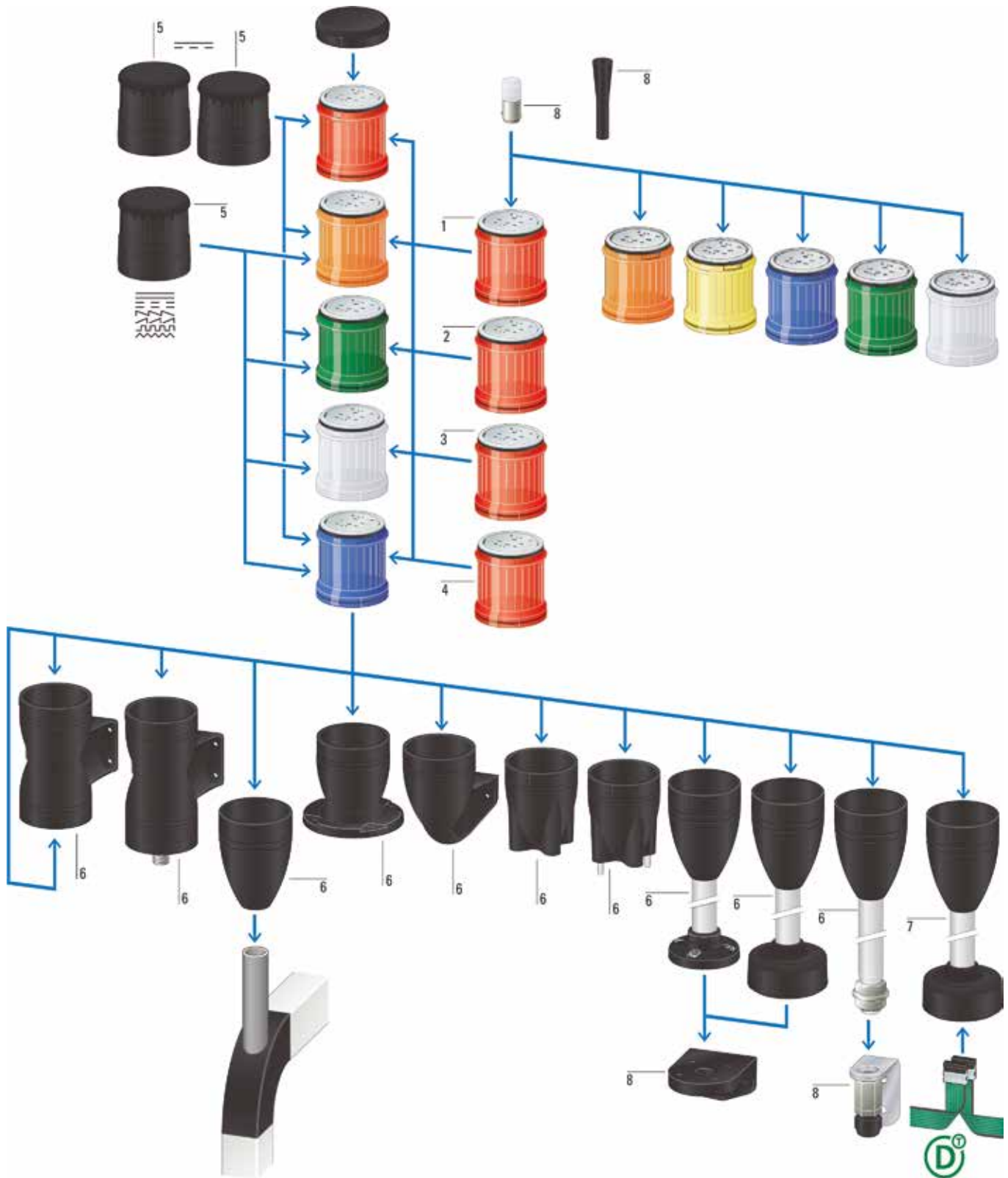


	Function	Colour			Contacts		Part no. Article no.
		Button	Enclosure top	Enclosure base	N/O = Normally open	N/C = Normally closed	
<b>Foot and palm switches, IP67, IP69K</b>							
	Momentary	●	●	●	1 N/O	1 NC ⊕	<b>FAK-S/KC11/I</b> 229749
	Momentary	●	●	●	1 N/O	1 NC ⊕	<b>FAK-R/KC11/I</b> 229746
	Maintained	●	●	●	-	1 NC ⊕	<b>FAK-R/V/KC01/IY</b> 229747
		●	●	●	1 N/O	1 NC ⊕	<b>FAK-R/V/KC11/IY</b> 229748
		●	●	●	-	2 NC ⊕	<b>FAK-R/V/KC02/IY</b> 256790





# Signal towers SL7, SL4













## System overview



- 1 Card for filament lamp, continuous light
- 2 Module with LED/high power LED, continuous light
- 3 Card with LED, flashing light
- 4 Module with LED/high power LED, strobe light

- 5 Acoustic module
- 6 Base module
- 7 Base module with SWD connection
- 8 Accessory consideration

Rated operational voltage $U_e$ V	Number of modules	Colour	Module width 70 mm	Module width 40 mm
			Part no. Article no.	Part no. Article no.
<b>IP66 complete units</b>				
Continuous light, LED, IP66, Base module with foot and 100 mm tube				
24 V AC/DC	2		<b>SL7-100-L-RG-24LED</b> 171424	<b>SL4-100-L-RG-24LED</b> 171295
	3		<b>SL7-100-L-RYG-24LED</b> 171425	<b>SL4-100-L-RYG-24LED</b> 171296
<b>Customised complete unit</b>				
Order on request			<b>SL7-COMBINATION</b> 2011955	<b>SL4-COMBINATION</b> 2011956





















Rated operational voltage <sup>1)</sup> $U_e$ V	Colour	Continuous light	Flashing light 2 Hz	Strobe light 1.4 Hz	
		Part no. Article no.	Part no. Article no.	Part no. Article no.	
<b>Module with LED, IP66</b>					
24 V AC/DC		<b>SL7-L24-B</b> 171461	<b>SL7-BL24-B</b> 171439	<b>SL7-FL24-B</b> 171402	
		<b>SL7-L24-G</b> 171462	<b>SL7-BL24-G</b> 171440	<b>SL7-FL24-G</b> 171403	
		<b>SL7-L24-R</b> 171463	<b>SL7-BL24-R</b> 171441	<b>SL7-FL24-R</b> 171404	
		<b>SL7-L24-W</b> 171464	<b>SL7-BL24-W</b> 171442	<b>SL7-FL24-W</b> 171405	
		<b>SL7-L24-Y</b> 171465	<b>SL7-BL24-Y</b> 171388	<b>SL7-FL24-Y</b> 171406	
		<b>SL7-L24-A</b> 171466	<b>SL7-BL24-A</b> 171389	<b>SL7-FL24-A</b> 171407	
	230/240 V AC		<b>SL7-L230-B</b> 171473	<b>SL7-BL230-B</b> 171396	<b>SL7-FL230-B</b> 171414
			<b>SL7-L230-G</b> 171474	<b>SL7-BL230-G</b> 171397	<b>SL7-FL230-G</b> 171415
		<b>SL7-L230-R</b> 171475	<b>SL7-BL230-R</b> 171398	<b>SL7-FL230-R</b> 171416	
		<b>SL7-L230-W</b> 171476	<b>SL7-BL230-W</b> 171399	<b>SL7-FL230-W</b> 171417	
		<b>SL7-L230-Y</b> 171477	<b>SL7-BL230-Y</b> 171400	<b>SL7-FL230-Y</b> 171418	
		<b>SL7-L230-A</b> 171426	<b>SL7-BL230-A</b> 171401	<b>SL7-FL230-A</b> 171419	

**Notes**








<sup>1)</sup> 110/120 V AC → Online Catalog












# Signal towers

## Light modules



Rated operational voltage <sup>1)</sup> U <sub>e</sub> V	Colour	Continuous light	Flashing light 2 Hz	Strobe light 1.4 Hz	Multistrobe light 1 - 2.6 Hz	
		Part no. Article no.	Part no. Article no.	Part no. Article no.	Part no. Article no.	
<b>Card with high power LED, IP66</b>						
 24 V AC/DC		<b>SL7-L24-B-HP</b> 171427	-	<b>SL7-FL24-B-HP</b> 171420	<b>SL7-FL24-B-HPM</b> 171275	
		<b>SL7-L24-G-HP</b> 171428	-	<b>SL7-FL24-G-HP</b> 171421	<b>SL7-FL24-G-HPM</b> 171276	
		<b>SL7-L24-R-HP</b> 171429	-	<b>SL7-FL24-R-HP</b> 171422	<b>SL7-FL24-R-HPM</b> 171277	
		<b>SL7-L24-W-HP</b> 171430	-	<b>SL7-FL24-W-HP</b> 171423	<b>SL7-FL24-W-HPM</b> 171278	
		<b>SL7-L24-Y-HP</b> 171431	-	<b>SL7-FL24-Y-HP</b> 171273	<b>SL7-FL24-Y-HPM</b> 171279	
		<b>SL7-L24-A-HP</b> 171432	-	<b>SL7-FL24-A-HP</b> 171274	<b>SL7-FL24-A-HPM</b> 171280	
	<b>Module with LED, IP66</b>					
 24 V AC/DC		<b>SL4-L24-B</b> 171313	<b>SL4-BL24-B</b> 171337	<b>SL4-FL24-B</b> 171355	<b>SL4-FL24-B-M</b> 171373	
		<b>SL4-L24-G</b> 171314	<b>SL4-BL24-G</b> 171338	<b>SL4-FL24-G</b> 171356	<b>SL4-FL24-G-M</b> 171374	
		<b>SL4-L24-R</b> 171315	<b>SL4-BL24-R</b> 171339	<b>SL4-FL24-R</b> 171357	<b>SL4-FL24-R-M</b> 171375	
		<b>SL4-L24-W</b> 171316	<b>SL4-BL24-W</b> 171340	<b>SL4-FL24-W</b> 171358	<b>SL4-FL24-W-M</b> 171376	
		<b>SL4-L24-Y</b> 171317	<b>SL4-BL24-Y</b> 171341	<b>SL4-FL24-Y</b> 171359	<b>SL4-FL24-Y-M</b> 171377	
		<b>SL4-L24-A</b> 171318	<b>SL4-BL24-A</b> 171342	<b>SL4-FL24-A</b> 171360	<b>SL4-FL24-A-M</b> 171378	
	230/240 V AC		<b>SL4-L230-B</b> 171325	<b>SL4-BL230-B</b> 171349	<b>SL4-FL230-B</b> 171367	-
			<b>SL4-L230-G</b> 171326	<b>SL4-BL230-G</b> 171350	<b>SL4-FL230-G</b> 171368	-
			<b>SL4-L230-R</b> 171327	<b>SL4-BL230-R</b> 171351	<b>SL4-FL230-R</b> 171369	-
			<b>SL4-L230-W</b> 171328	<b>SL4-BL230-W</b> 171352	<b>SL4-FL230-W</b> 171370	-
			<b>SL4-L230-Y</b> 171329	<b>SL4-BL230-Y</b> 171353	<b>SL4-FL230-Y</b> 171371	-
			<b>SL4-L230-A</b> 171330	<b>SL4-BL230-A</b> 171354	<b>SL4-FL230-A</b> 171372	-

**Notes** <sup>1)</sup> 110/120 V AC → Online Catalog

Rated operational voltage U <sub>e</sub> V	Colour	Continuous light Filament lamp max. 7 W	Continuous light Filament lamp max. 4 W
		Part no. Article no.	Part no. Article no.
<b>Card for filament lamp, IP66</b>			
 Without light elements, Filament bulbs → Accessories < 250 V AC/DC		<b>SL7-L-B</b> 171433	<b>SL4-L-B</b> 171331
		<b>SL7-L-G</b> 171434	<b>SL4-L-G</b> 171332
		<b>SL7-L-R</b> 171435	<b>SL4-L-R</b> 171333
		<b>SL7-L-W</b> 171436	<b>SL4-L-W</b> 171334
		<b>SL7-L-Y</b> 171437	<b>SL4-L-Y</b> 171335
		<b>SL7-L-A</b> 171438	<b>SL4-L-A</b> 171336

Description	Rated operational voltage <sup>1)</sup> U <sub>e</sub>	Rated operational current I <sub>e</sub>	Colour	Sound type	Part no. Article no.	
	V	mA				
<b>Acoustic modules, IP66</b>						
Place only at the highest position on a pole						
	Continuous tone or pulsed tone, adjustable with internal dip switches. Sound pressure 100 db, adjustable with internal potentiometer. f = 2800 Hz	24 V AC/DC	max. 92			<b>SL7-AP24</b> 171281
		230/240 V AC	max. 43			<b>SL7-AP230</b> 171283
	Continuous tone or pulsed tone, external actuation. Assigned two inputs (2 modules). Sound pressure 100 db, adjustable with internal potentiometer. f = 2800 Hz	24 V AC/DC	max. 92			<b>SL7-AP24-E</b> 171284
		230/240 V AC	max. 43			<b>SL7-AP230-E</b> 171286
	Multi-tone; 8 tones, adjustable with internal dip switch. Sound pressure 100 db, adjustable with internal potentiometer. f = 500 - 2700 Hz	24 V AC/DC	max. 115			<b>SL7-AP24-M</b> 171287
		230/240 V AC	max. 43			<b>SL7-AP230-M</b> 171289
	Continuous tone or pulsed tone, adjustable with internal dip switches. Sound pressure 80 dB. f = 4000 Hz	24 V AC/DC	max. 39			<b>SL4-AP24</b> 171379
		230/240 V AC	max. 21			<b>SL4-AP230</b> 171381

Notes <sup>1)</sup> 110/120 V AC → Online Catalog

Description	Tube length	For use with	Part no. Article no.	For use with	Part no. Article no.		
<b>Basic modules</b>							
For horizontal mounting Including cover Max. 5 modules							
	Base with aluminium tube and plastic foot	100 mm	SL7-L-... SL7-BL-...	<b>Spring-loaded terminals</b> <b>SL7-CB-100</b> 171443	<b>Push in terminals</b> <b>SL4-PIB-100</b> 171297		
		250 mm	SL7-FL-... SL7-AP-...			<b>SL7-CB-250</b> 171444	<b>SL4-PIB-250</b> 171298
		400 mm				<b>SL7-CB-400</b> 171445	<b>SL4-PIB-400</b> 171299
		800 mm				<b>SL7-CB-800</b> 177312	<b>SL4-PIB-800</b> 177313
	Base with aluminum tube and banjo bolt	100 mm		<b>SL7-CB-T-100</b> 171452	<b>SL4-PIB-T-100</b> 171305		
		250 mm		<b>SL7-CB-T-250</b> 171453	<b>SL4-PIB-T-250</b> 171306		
		400 mm		<b>SL7-CB-T-400</b> 171454	<b>SL4-PIB-T-400</b> 171307		
		800 mm		<b>SL7-CB-T-800</b> 178460	<b>SL4-PIB-T-800</b> 178461		

# Signal towers

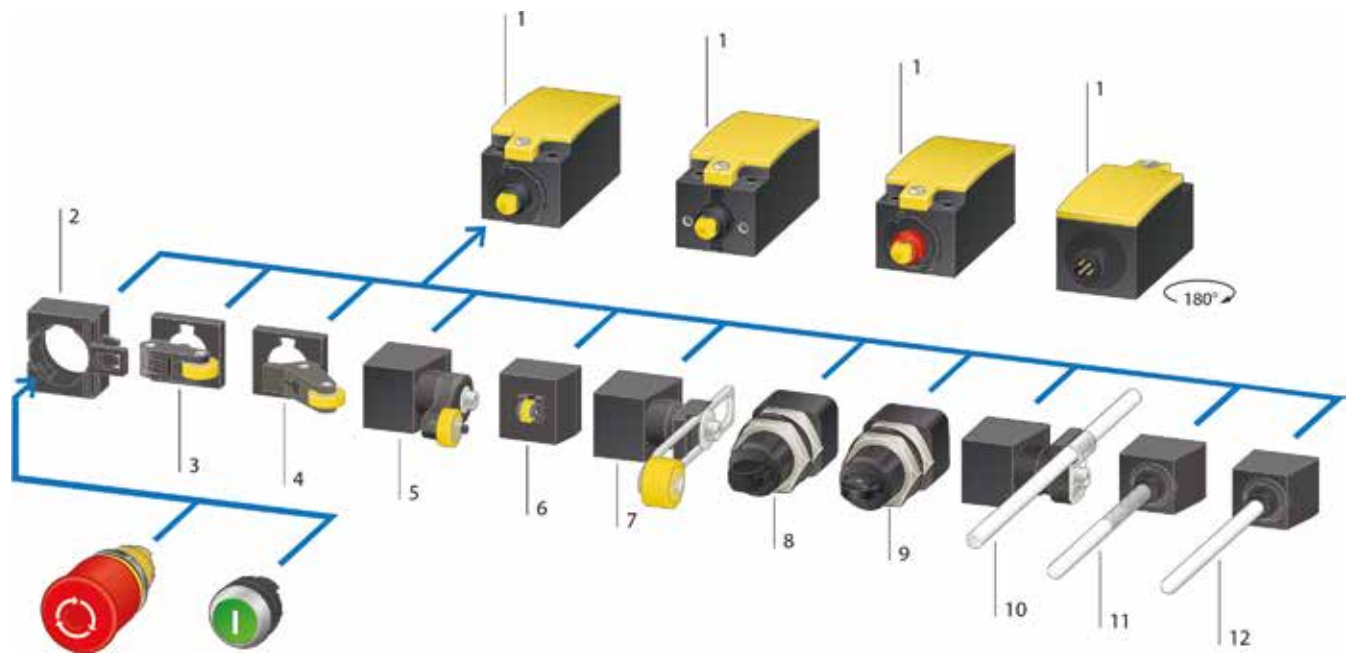
## Basic modules

Description	Tube length	For use with	Part no. Article no.	For use with	Part no. Article no.
<b>Basic modules</b>					
For horizontal mounting Including cover Max. 5 modules			<b>Spring-loaded terminals</b>		<b>Push in terminals</b>
	Base with internal (on the inside) fixing holes	-	SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-CB-IMH</b> 171447	SL4-L-... SL4-BL-... SL4-FL-... SL4-AP-...
	Base with built-in (pre-assembled) fixing screws	-		<b>SL7-CB-IMS</b> 171448	<b>SL4-PIB-IMS</b> 171301
	Base with external fixing holes	-		<b>SL7-CB-EMH</b> 171449	<b>SL4-PIB-EMH</b> 171302
	Base: Can hold tubes with a diameter of 25 mm (±0.5)	-		<b>SL7-CB-TM</b> 179987	<b>SL4-PIB-TM</b> 179986
	Base with base adapter for slipping onto place (rapid mounting and wiring system)	100 mm		<b>Screw terminals</b> <b>SL7-FMS-100</b> 171456	<b>Screw terminals</b> <b>SL4-FMS-100</b> 171308
		250 mm		<b>SL7-FMS-250</b> 171457	<b>SL4-FMS-250</b> 171309
		400 mm		<b>SL7-FMS-400</b> 171458	<b>SL4-FMS-400</b> 171310
		800 mm		<b>SL7-FMS-800</b> 178462	<b>SL4-FMS-800</b> 178463
					<b>Blade terminal</b> <b>SWD4-8MF2</b>
Base with base adapter for slipping onto place (rapid mounting and wiring system) Max. 0.3 A per module External power supply connectable (24 V DC) Configurable with SWD-Assist (planning and ordering help)	100 mm			<b>SL7-SWD</b> 171459	<b>SL4-SWD</b> 171311
					
For vertical mounting Including cover				<b>Spring-loaded terminals</b>	<b>Push in terminals</b>
	One-sided base with bracket Max. 5 modules		SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-CB-FW</b> 171450	SL4-L-... SL4-BL-... SL4-FL-... SL4-AP-...
For vertical mounting on both sides Including cover				<b>Spring-loaded terminals</b>	<b>Push in terminals</b>
	Base with external fixing holes Max. 2 x 5 modules		SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-CB-D</b> 171451	SL4-L-... SL4-BL-... SL4-FL-... SL4-AP-...
For vertical mounting on one sides Including cover				<b>M12 plug, 4 pole</b>	
	Base with external fixing holes Max. 3 modules		SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-CB-D-M12A4</b> 177351	

	Lifespan h	Rated operational voltage $U_e$ V	Power	For use with	Part no. Article no.
<b>Magnetic base including M20 cable gland</b>					
For vertical mounting, Metal and plastic					
	–	–	–	SL4-PIB-100(250)(400) SL7-CB-100(250)(400)	<b>SL7/4-MMS</b> 172954
<b>Mounting brackets</b>					
For vertical mounting, Plastic					
	–	–	–	SL4-PIB-100(250)(400) SL4-FMS...	<b>SL7/4-FW</b> 171446
<b>Including mounting bracket M20 cable gland</b>					
For vertical mounting, Metal					
	–	–	–	SL4-PIB-T... SL7-CB-T...	<b>SL7/4-FW-T</b> 171455
<b>Tool for replacing filament lamp</b>					
	–	–	–	–	<b>SL7/4-BET</b> 171294
<b>Filament bulbs</b>					
Mounting: Ba15d					
	> 3000	12 V	5 W	SL7-L-...	<b>SL7-L12</b> 171290
		24 V	6.5 W		<b>SL7-L24</b> 171291
		120 V	7 W		<b>SL7-L120</b> 171292
		230 V	6.5 W		<b>SL7-L230</b> 171293
	> 3000	12 V	4 W	SL4-L-...	<b>SL4-L12</b> 171382
		24 V			<b>SL4-L24</b> 171383
		120 V			<b>SL4-L120</b> 171384
		230 V			<b>SL4-L230</b> 171385


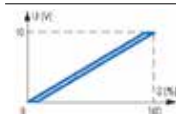















# Position switches

## Safety position switches LS-Titan



- 1 Basic device LS, LSM
- 2 Mounting clamp
- 3 Roller lever
- 4 Angled roller lever
- 5 Rotary lever
- 6 Roller plunger

- 7 Adjustable roller lever
- 8 Rounded plunger, centre fixing
- 9 Roller plunger, centre fixing
- 10 Actuating rod
- 11 Spring-rod actuator
- 12 Actuating rod

	Contacts	Contact travel	Housing	Cage Clamp <sup>1)</sup>	Screw terminal	
	⊕ Positive opening safety function according to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed	■ = Contact closed □ = Contact open Contact sequence		Part no. Article no.	Part no. Article no.	
<b>Basic device, expandable</b>						
Operating heads → Page 129						
<b>IP66, IP67 analog electronic position switches</b>						
Visual status indication Q1 = analog output Q2 = diagnostics output 			Insulated material	<b>LSE-AU</b> 274096		
<b>IP66, IP67 operating point electronically adjustable</b>						
Visual status indication, comparable with positive opening function Partly short-circuit proof, Restart after reset 	1 N/O	1 NC		Insulated material	<b>LSE-11</b> 266121	
	–	2 NC		Insulated material	<b>LSE-02</b> 266122	
<b>Rounded plunger, IP66, IP67</b>						
	–	2 NC ⊕		Insulated material	<b>LS-02</b> 266107	<b>LS-S02</b> 106729
	–	2 NC ⊕		Metal	<b>LSM-02</b> 266142	
	–	2 NC ⊕		Insulated material	<b>LS-02A</b> 116702	<b>LS-S02A</b> 116703
	1 N/O	1 NC ⊕		Insulated material	<b>LS-11</b> 266109	<b>LS-S11</b> 106783
	1 N/O	1 NC ⊕		Metal	<b>LSM-11</b> 266144	
	1 N/O	1 NC ⊕		Insulated material	<b>LS-11A</b> 116704	<b>LS-S11A</b> 116705
	1 N/O	1 NC ⊕		Insulated material	<b>LS-11D</b> 266114	<b>LS-S11D</b> 106791
	1 N/O	1 NC ⊕		Metal	<b>LSM-11D</b> 266149	
	1 N/O	1 NC ⊕		Insulated material	<b>LS-11DA</b> 292361	<b>LS-S11DA</b> 106795
	1 N/O	1 NC ⊕		Metal	<b>LSM-11DA</b> 292363	
	1 N/O	1 NC ⊕		Insulated material	<b>LS-11S</b> 266105	<b>LS-S11S</b> 106798
	1 N/O	1 NC ⊕		Metal	<b>LSM-11S</b> 266140	
	2 N/O	–		Insulated material	<b>LS-20</b> 266120	<b>LS-S20</b> 106808
	2 N/O	–		Metal	<b>LSM-20</b> 266155	
	2 N/O	–		Insulated material	<b>LS-20A</b> 292362	<b>LS-S20A</b> 106810
	2 N/O	–		Metal	<b>LSM-20A</b> 100051	
	2 N/O	–		Insulated material	<b>LS-20B</b> 116706	

**Notes**

<sup>1)</sup> Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.  
 Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402





# Position switches

## Safety position switches LS-Titan

		Contacts	Housing	Snap-action contact	Connection type <sup>1)</sup>		Screw terminal	
		⊖ Positive opening safety function according to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed			Part no.	Article no.	Part no.	Article no.
<b>Complete devices</b>								
Roller plungers, IP66, IP67								
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/P</b>	266112	<b>LS-S11/P</b>	106788
	1 N/O	1 NC ⊖	Metal	–	<b>LSM-11/P</b>	266147		
	1 N/O	1 NC ⊖	Insulated material	Yes	<b>LS-11S/P</b>	266118	<b>LS-S11S/P</b>	106801
	1 N/O	1 NC ⊖	Metal	Yes	<b>LSM-11S/P</b>	266153		
Spring-rod actuator IP66, IP67								
Not to be used as a safety position switch								
	1 N/O	1 NC	Insulated material	Yes	<b>LS-11S/S</b>	266104	<b>LS-S11S/S</b>	106805
	1 N/O	1 NC	Metal	Yes	<b>LSM-11S/S</b>	266139		
Roller lever IP66, IP67								
Long								
	–	2 NC ⊖	Insulated material	–	<b>LS-02/L</b>	266108	<b>LS-S02/L</b>	106781
	–	2 NC ⊖	Metal	–	<b>LSM-02/L</b>	266143		
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/L</b>	266110	<b>LS-S11/L</b>	106785
	1 N/O	1 NC ⊖	Metal	–	<b>LSM-11/L</b>	266145		
	1 N/O	1 NC ⊖	Insulated material	Yes	<b>LS-11S/L</b>	266116	<b>LS-S11S/L</b>	106800
	1 N/O	1 NC ⊖	Metal	Yes	<b>LSM-11S/L</b>	266151		
Short								
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/LS</b>	290173	<b>LS-S11/LS</b>	106787
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11D/LS</b>	290174	<b>LS-S11D/LS</b>	106794
Large								
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/LB</b>	290175	<b>LS-S11/LB</b>	106786
Rotary lever, IP66, IP67								
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/RL</b>	266111	<b>LS-S11/RL</b>	106789
	1 N/O	1 NC ⊖	Metal	–	<b>LSM-11/RL</b>	266146		
	1 N/O	1 NC ⊖	Insulated material	Yes	<b>LS-11S/RL</b>	266117	<b>LS-S11S/RL</b>	106802
	1 N/O	1 NC ⊖	Metal	Yes	<b>LSM-11S/RL</b>	266152		
Adjustable roller levers, IP66, IP67								
	1 N/O	1 NC ⊖	Insulated material	–	<b>LS-11/RLA</b>	266113	<b>LS-S11/RLA</b>	106790
	1 N/O	1 NC ⊖	Metal	–	<b>LSM-11/RLA</b>	266148		
	1 N/O	1 NC ⊖	Insulated material	Yes	<b>LS-11S/RLA</b>	266119	<b>LS-S11S/RLA</b>	106803
	1 N/O	1 NC ⊖	Metal	Yes	<b>LSM-11S/RLA</b>	266154		
IP66, IP67 actuating rod								
	1 N/O	1 NC ⊖	Insulated material	Yes	<b>LS-11S/RR</b>	266106	<b>LS-S11S/RR</b>	106804
	1 N/O	1 NC ⊖	Metal	Yes	<b>LSM-11S/RR</b>	266141		

### Notes

<sup>1)</sup> Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.  
Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402


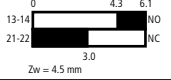
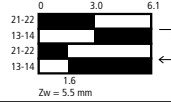



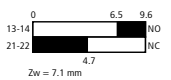
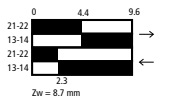

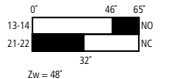
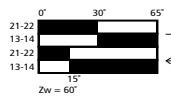

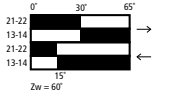

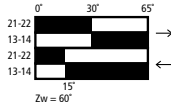
		Contacts	Snap-action contact	Contact travel	Cage Clamp <sup>1)</sup>	Screwed terminal
		☉ = safety function, by positive opening to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed		■ = Contact closed □ = Contact open Contact diagram	Part no. Article no.	Part no. Article no.
<b>Basic device, expandable</b>						
-40 - +70, IP65, Insulated material						
	Rounded plunger	–	2 NC ☉	–	LS-02-CC 176880	LS-S02-CC 176890
		–	2 NC ☉	–	LS-02A-CC 176886	LS-S02A-CC 176895
		1 N/O	1 NC ☉	–	LS-11-CC 176879	LS-S11-CC 176889
		1 N/O	1 NC ☉	–	LS-11A-CC 176887	LS-S11A-CC 176896
		1 N/O	1 NC ☉	–	LS-11D-CC 176882	LS-S11D-CC 176891
		1 N/O	1 NC ☉	–	LS-11DA-CC 176884	LS-S11DA-CC 176893
		1 N/O	1 NC ☉	–	LS-11S-CC 176881	LS-S11S-CC 144118
		2 N/O	–	–	LS-20-CC 176883	LS-S20-CC 176892
		2 N/O	–	–	LS-20A-CC 176885	LS-S20A-CC 176894
		2 N/O	–	–	LS-20B-CC 176888	LS-S20B-CC 176897
<b>Basic device, expandable</b>						
With M12 connector, IP66						
	Rounded plunger	–	2 NC ☉	–	LS-02-M12A 178128	
		1 N/O	1 NC ☉	–	LS-11-M12A 178129	
		1 N/O	1 NC ☉	–	LS-11D-M12A 178130	
		1 N/O	1 NC ☉	–	LS-11DA-M12A 178131	
		1 N/O	1 NC ☉	–	LS-11S-M12A 178132	
		2 N/O	–	–	LS-20-M12A 178133	
		2 N/O	–	–	LS-20A-M12A 178134	
		2 N/O	–	–	LS-20B-M12A 178135	

**Notes**

<sup>1)</sup> Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.  
Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402

# Position switches

## Safety position switches LS-Titan

	Contacts ⊕ = safety function, by positive opening to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed	Contacts ⊕ = safety function, by positive opening to IEC/EN 60947-5-1 N/O = Normally open N/C = Normally closed	Snap-action Contact	Contact travel ■ = Contact closed □ = Contact open Contact diagram	Cage Clamp <sup>1)</sup> Part no.	Article no.
<b>Complete device</b>						
<b>With M12 connector, IP66</b>						
<b>Roller plunger</b> 	1 N/O	1 NC ⊕	-		<b>LS-11/P-M12A</b>	178137
	1 N/O	1 NC ⊕	Yes		<b>LS-11S/P-M12A</b>	178141
<b>Spring-rod actuator</b> Not to be used as a safety position switch 	1 N/O	1 NC	Yes		<b>LS-11S/S-M12A</b>	178145
<b>Roller lever</b> 	1 N/O	1 NC ⊕	-		<b>LS-11/L-M12A</b>	178136
	1 N/O	1 NC ⊕	Yes		<b>LS-11S/L-M12A</b>	178140
<b>Rotary lever</b> 	1 N/O	1 NC ⊕	-		<b>LS-11/RL-M12A</b>	178138
	1 N/O	1 NC ⊕	Yes		<b>LS-11S/RL-M12A</b>	178142
<b>Adjustable roller lever</b> 	1 N/O	1 NC ⊕	-		<b>LS-11/RLA-M12A</b>	178139
	1 N/O	1 NC ⊕	Yes		<b>LS-11S/RLA-M12A</b>	178143
<b>Actuating rod</b> 	1 N/O	1 NC ⊕	Yes		<b>LS-11S/RR-M12A</b>	178144

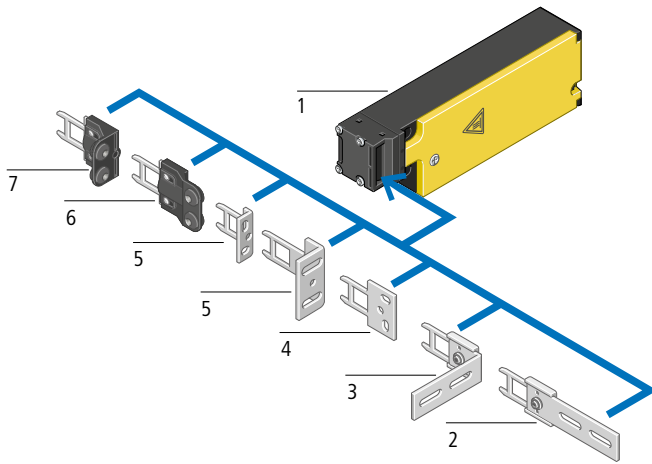
### Notes

<sup>1)</sup> Cage-Clamp is a registered trademark of Wago Kontakttechnik, 32432 Minden, Germany.  
Accessories for the Cage-Clamp terminals from Wago: power comb, gray, Wago Article No. 264-402

		insulated material Part no. Article no.	Metel Part no. Article no.	Notes
<b>Roundet plunger, centre fixing</b>				
	For mounting in enclosure wall or mounting plate drilling M18 x 1	<b>LS-XZS</b> 114024		The operating head can be rotated at 90° intervals to adapt to the specified approach direction.
<b>Roller plunger, centre fixing</b>				
	For mounting in enclosure wall or mounting plate drilling M18 x 1	<b>LS-XZRS</b> 114025		
<b>Roller plungers</b>				
	-	<b>LS-XP</b> 266125	<b>LSM-XP</b> 266158	
<b>Roller lever</b>				
	Large	<b>LS-XLB</b> 290178		
	Short	<b>LS-XLS</b> 290177		
	Long	<b>LS-XL</b> 266123	<b>LSM-XL</b> 266156	
<b>Angled roller lever</b>				
	-	<b>LS-XLA</b> 266124	<b>LSM-XLA</b> 266157	
<b>Rotary lever</b>				
	-	<b>LS-XRL</b> 266126	<b>LSM-XRL</b> 266159	
<b>Adjustable roller levers</b>				
	∅ 18 mm	<b>LS-XRLA</b> 266127	<b>LSM-XRLA</b> 266160	
	∅ 30 mm	<b>LS-XRLA30</b> 266128		
	∅ 40 mm Roller: Rubber	<b>LS-XRLA40R</b> 266130		
	∅ 40 mm	<b>LS-XRLA40</b> 266129		
<b>Actuating rods</b>				
	Bar: Insulated material	<b>LS-XRR</b> 266131	<b>LSM-XRR</b> 266161	
	Bar: Metal	<b>LS-XRRM</b> 266132	<b>LSM-XRRM</b> 266162	
<b>Spring-rod</b>				
	Not to be used as a safety position switch Only permissible with snap-action contact	<b>LS-XS</b> 266133	<b>LSM-XS</b> 266163	
<b>Actuating rod</b>				
	-	<b>LS-XOR</b> 290190		







# Position switches










## Safety position switch LS-ZBZ






- 1 Basic device
- 2 Flat flexible actuator
- 3 Angled flexible actuator
- 4 Flat actuator
- 5 Angled actuator
- 6 Flat compensating actuator
- 7 Angled compensating actuator

Order actuators separately → online catalog








	Contacts ☉ Positive opening safety function according to IEC/EN 60947-5-1 N/O = Normally open    N/C = Normally closed	Rated control voltage for magnetic drive $U_s$  V	Part no. Article no.	Notes	
<b>Basic units with spring-powered interlock (closed-circuit principle) IP65</b>					
  	1 N/O	1 NC ☉	24 V DC	<b>LS-S11-24DFT-ZBZ/X</b> 106829	Switch must never be used as a mechanical stop! The operating head can be rotated manually in 90° steps without tools to suit the specified level of actuation. With the actuator inserted, the N/O contact is open and the N/C contact is closed. For degree of protection IP65, use V-M20 (206910) cable glands with connecting thread of max. 9 mm length. In the event of power failure (e.g., during commissioning), the device can be released with a screwdriver. The auxiliary release mechanism must be sealed! → Instructional leaflet IL 05208005Z
	-	2 NC ☉	24 V DC	<b>LS-S02-24DFT-ZBZ/X</b> 106823	
	1 N/O	1 NC ☉	120 V 50/60 Hz	<b>LS-S11-120AFT-ZBZ/X</b> 106825	
	-	2 NC ☉	120 V 50/60 Hz	<b>LS-S02-120AFT-ZBZ/X</b> 106778	
	1 N/O	1 NC ☉	230 V 50/60 Hz	<b>LS-S11-230AFT-ZBZ/X</b> 106827	
	-	2 NC ☉	230 V 50/60 Hz	<b>LS-S02-230AFT-ZBZ/X</b> 106821	
<b>Basic devices with magnet-powered interlock (open-circuit principle) IP65</b>					
  	1 N/O	1 NC ☉	24 V DC	<b>LS-S11-24DMT-ZBZ/X</b> 106830	Switch must never be used as a mechanical stop! The operating head can be rotated manually in 90° steps without tools to suit the specified level of actuation. With the actuator inserted, the N/O contact is open and the N/C contact is closed. For degree of protection IP65, use V-M20 (206910) cable glands with connecting thread of max. 9 mm length.
	-	2 NC ☉	24 V DC	<b>LS-S02-24DMT-ZBZ/X</b> 106824	
	1 N/O	1 NC ☉	120 V 50/60 Hz	<b>LS-S11-120AMT-ZBZ/X</b> 106826	
	-	2 NC ☉	120 V 50/60 Hz	<b>LS-S02-120AMT-ZBZ/X</b> 106820	
	1 N/O	1 NC ☉	230 V 50/60 Hz	<b>LS-S11-230AMT-ZBZ/X</b> 106828	
	-	2 NC ☉	230 V 50/60 Hz	<b>LS-S02-230AMT-ZBZ/X</b> 106822	

Contacts		Approval	Connection type	Part no. Article no.	Notes
⊕ Positive opening safety function according to IEC/EN 60947-5-1 N/O = Normally open    N/C = Normally closed					
<b>Safety door flap switch LSR-.../TKG. IP65</b>					
	-	2 NC ⊕		Screw terminal	
	1 N/O	1 NC ⊕			
				<b>LSR-S02-1-I/TKG</b> 106848	
				<b>LSR-S11-1-I/TKG</b> 106847	
<b>Hinge-operated safety switch LSR-.../TS, IP65</b>					
	-	2 NC ⊕		Screw terminal	
	1 N/O	1 NC ⊕			
				<b>LSR-S02-1-I/TS</b> 106852	
				<b>LSR-S11-1-I/TS</b> 106851	
<b>Safety position switches LS...-ZB, IP65</b>					
	-	2 NC ⊕		Cage Clamp	
	-	2 NC ⊕		Screw terminal	
	1 N/O	1 NC ⊕		Cage Clamp	
	1 N/O	1 NC ⊕		Screw terminal	
	1 N/O	1 NC ⊕		Cage Clamp	
	1 N/O	1 NC ⊕		Screw terminal	
				<b>LS-02-ZB</b> 106817	Switch must never be used as a mechanical stop! Actuator can be repositioned for horizontal or vertical mounting. The operating heads can be turned manually in 90° steps to suit the specified level of actuation. With the actuator inserted, the N/O contact is open and the N/C contact is closed. For degree of protection IP65, use V-M20 (206910) cable glands with connecting thread of max. 9 mm length.
				<b>LS-S02-ZB</b> 106874	
				<b>LS-11-ZB</b> 106819	
				<b>LS-S11-ZB</b> 106876	
				<b>LS-11S-ZB</b> 106870	
				<b>LS-S11S-ZB</b> 106877	
<b>Safety/ position switch LS4.../ZB, IP65</b>					
	1 N/O	1 NC ⊕	 	Screw terminal	
	1 N/O	1 NC ⊕			
	1 N/O	2 NC ⊕			
					<b>LS4/S11-1/I/ZB</b> 106857
					<b>LS4/S11-1/IA/ZB</b> 106858
					<b>LS4/S12-7/IB/ZB</b> 106859

Contacts			Part no.	Article no.	Part no.	Article no.
N/O = Normally open    N/C = Normally closed						
<b>Non-contacting safety switch</b>						
IP67, IP69K Reed contacts						
	-	2 NC	<b>3 m connection cable</b>		<b>Plug-in connection M12 x 1</b>	
	1 N/O	1 NC	<b>RS2-02-C3</b>	177286	<b>RS2-02-Q4</b>	177289
	1 N/O	2 NC	<b>RS2-11-C3</b>	177287	<b>RS2-11-Q4</b>	177290
			<b>RS2-12-C3</b>	177288	<b>RS2-12-Q6</b>	177291
	-	2 NC	<b>RS2R-02-C3</b>	177292	<b>RS2R-02-Q4</b>	177295
	1 N/O	1 NC	<b>RS2R-11-C3</b>	177293	<b>RS2R-11-Q4</b>	177296
	1 N/O	2 NC	<b>RS2R-12-C3</b>	177294	<b>RS2R-12-Q6</b>	177297
	-	2 NC	<b>10 m connection cable</b>			
	1 N/O	1 NC	<b>RS2-02-C10</b>	177300		
	1 N/O	2 NC	<b>RS2-11-C10</b>	177301		
	-	2 NC	<b>RS2-12-C10</b>	177302		
	1 N/O	1 NC	<b>RS2R-02-C10</b>	177303		
	1 N/O	2 NC	<b>RS2R-11-C10</b>	177304		
			<b>RS2R-12-C10</b>	177305		

# Sensors

## Inductive Sensors






	Design (outer dimensions) mm	Rated switching distance $S_n$ mm	Type of mounting	Contacts		Degree of Protection	Part no.	Article no.
				N/C = Normally closed	N/O = Normally open			
<b>E52 Cube Series</b>								
2 LEDs for current and output status Housing adapter, 4-wire, Plug-in connection M12 x 1, Rated operational voltage $U_e$ 10 – 48 V DC Switching type: NPN, PNP Zinc/Insulated material								
	40 x 40 x 40	15	Flush	1NC	1N/O	IP67	<b>E52Q-DL15SAD01</b>	135804
		15	Non-flush				<b>E52Q-DL15UAD01</b>	135805
		20	Flush				<b>E52Q-DL20SAD01</b>	135806
		20	Non-flush				<b>E52Q-DL20UAD01</b>	135807
		25					<b>E52Q-DL25UAD01</b>	135808
		30					<b>E52Q-DL30UAD01</b>	135809
		35					<b>E52Q-DL35UAD01</b>	135810
		40					<b>E52Q-DL40UAD01</b>	135811
<b>E56 Pancake Series</b>								
2 LEDs for current and output status 4-wire, Plug-in connection M12 x 1, Rated operational voltage $U_e$ 10 – 48 V DC Switching type: NPN, PNP Insulated material								
	79 x 79 x 39	40	Flush	1 NC	1 N/O	IP67	<b>E56ADL40SAD01</b>	136234
	79 x 79 x 39	40	Non-flush				<b>E56ADL40UAD01</b>	136235
	109 x 110 x 41	70	Non-flush			<b>E56BDL70UAD01</b>	136236	
	171.5 x 171.5 x 67.4	100	Non-flush			<b>E56CDL100UAD01</b>	136237	
<b>E57 Global Series</b>								
LED for output status 3-wire, Plug-in connection M12 x 1, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: PNP Metal								
	M8 x 1	1	Flush	-	1 N/O	IP67, IP69K	<b>E57-08GS01-GDB</b>	135862
		2	Non-flush	-			<b>E57-08GU02-GDB</b>	135866
		3	Flush	-			<b>E57-08GE03-GDB</b>	135854
		6	Non-flush	-			<b>E57-08GE06-GDB</b>	135858
	M12 x 1	2	Flush	-			<b>E57-12GS02-GDB</b>	135886
		4	Non-flush	-			<b>E57-12GU04-GDB</b>	135895
		5	Flush	-			<b>E57-12GE05-GDB</b>	135870
	M18 x 1	8	Flush	-			<b>E57-18GS05-GDB</b>	135932
		8	Non-flush	-			<b>E57-18GE08-GDB</b>	135915
		18	Non-flush	-			<b>E57-18GU08-GDB</b>	135940
	M30 x 1.5	10	Flush	-			<b>E57-30GS10-GDB</b>	135978
		15	Flush	-			<b>E57-30GE15-GDB</b>	135960
		15	Non-flush	-			<b>E57-30GU15-GDB</b>	135986
		29	Non-flush	-			<b>E57-30GE29-GDB</b>	135968



















	Design (outer dimensions) mm	Rated switching distance $S_n$ mm	Type of mounting	Contacts		Degree of Protection	Part no.	Article no.
				N/C = Normally closed	N/O = Normally open			
<b>E57 miniature series (inductive)</b>								
3-wire, 2 m connection cable, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: PNP Stainless steel								
	M5 x 1	0.8	Flush	-	1 N/O	IP67	<b>E57EAL5T111SP</b>	136241
	∅ 4	0.8	Flush	-			<b>E57EAL4T111SP</b>	136239
	∅ 6,5	1	Flush	-			<b>E57EAL6T111SP</b>	136245
	∅ 6,5	2	Non-flush	-			<b>E57EAL6T111EP</b>	136244
<b>iProx Series (inductive)</b>								
3-wire, Plug-in connection M12 x 1, Rated operational voltage $U_e$ 6 - 48 V DC Switching type: NPN, PNP Stainless steel								
	M12 x 1	4	Flush	-	1 N/O	IP67, IP69K	<b>E59-M12A105D01-D1</b>	136207
	M18 x 1	8	Flush	-			<b>E59-M18A108D01-D1</b>	136215
	M18 x 1	18	Non-flush	-			<b>E59-M18C116D01-D1</b>	136219
	M30 x 1.5	15	Flush	-			<b>E59-M30A115D01-D1</b>	136223
<b>Programming cable</b>								
For use with iProx								
	-	-	-	-	-	-	<b>E59RP1</b>	136229
<b>Programming software</b>								
For use with iProx								
	-	-	-	-	-	-	<b>E59SW1</b>	136230
<b>E53 Serie (capacitive)</b>								
4-wire Plug-in connection M12 x 1 Rated operational voltage: $U_e$ 10 – 48 V DC Switching type: NPN, PNP Zinc/Insulated material								
	M18 x 1	8	Flush	1 NC	-	IP65	<b>E53KBL18T111SD</b>	134802
		8	Flush	-	1 N/O		<b>E53KAL18T111SD</b>	134768
		15	Non-flush	1 NC	-		<b>E53KBL18T111ED</b>	134801
		15	Non-flush	-	1 N/O		<b>E53KAL18T111ED</b>	134767
	M30 x 1.5	20	Flush	1 NC	-	<b>E53KBL30T111SD</b>	134814	
		20	Flush	-	1 N/O	<b>E53KAL30T111SD</b>	134780	
		25	Non-flush	1 NC	-	<b>E53KBL30T111ED</b>	134813	
		25	Non-flush	-	1 N/O	<b>E53KAL30T111ED</b>	134779	
	34 ∅	25	Flush	1 NC	-	<b>E53KBL34T111SD</b>	134824	
		25	Flush	-	1 N/O	<b>E53KAL34T111SD</b>	134790	
		35	Non-flush	1 NC	-	<b>E53KBL34T111ED</b>	134823	
		35	Non-flush	-	1 N/O	<b>E53KAL34T111ED</b>	134789	



# Sensors

## Optical sensors

	Function	Description	Rated switching distance $S_n$ mm	Type of light	Switching principle	Part no.	Article no.
<b>Comet Series</b>							
4-wire, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: NPN, PNP Insulated material Plug-in connection M12 x 1 Degree of Protection IP67							
	Reflected-light beam	Beam: straight With background suppression (Perfect Prox)	50	Visible red	Adjustable bright/dark switching	<b>13104AQD07</b>	135605
		Beam: straight Can be expanded with fiber optic cable→Accessories	200	Infra-red		<b>13106AQD07</b>	135621
		Beam: straight With background suppression (Perfect Prox)	225			<b>13103AQD07</b>	135597
		Beam: straight Can be expanded with fiber optic cable→Accessories	610			<b>13100AQD07</b>	135581
	Reflex photoelectric sensor	For combination with reflector Non-polarized Beam: straight	7600	Visible red		<b>14102AQD07</b>	135657
	Thru-beam photoelectric sensor	Detector (for combination with source) Beam: straight	24000			<b>12102AQD07</b>	135577
Source (for combination with detector) Beam: straight		24000		-	<b>11102AQD07</b>	135565	
<b>E58 Harsh Duty Series</b>							
4-wire, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: NPN, PNP Stainless steel Plug-in connection M12 x 1 Degree of Protection IP69K							
	Reflected-light beam	With background suppression (Perfect Prox)	50	Visible red	Light switching	<b>E58-18DP50-HLP</b>	135673
			50		Dark switching	<b>E58-18DP50-HDP</b>	135671
			100		Light switching	<b>E58-18DP100-HLP</b>	135667
			100		Dark switching	<b>E58-18DP100-HDP</b>	135665
				280	Dark switching	<b>E58-30DPS280-HDP</b>	135681
				280	Light switching	<b>E58-30DPS280-HLP</b>	135683
	Reflex photoelectric sensor	For combination with reflector	18000	Dark switching	<b>E58-30RS18-HDP</b>	135689	
			18000	Light switching	<b>E58-30RS18-HLP</b>	135691	
	Thru-beam photoelectric sensor	Source (for combination with detector)	250000	Visible red	-	<b>E58-30TS250-HAP</b>	135697
		Detector (for combination with source)	250000		Dark switching	<b>E58-30TD250-HDP</b>	135693
		250000	Light switching		<b>E58-30TD250-HLP</b>	135695	
<b>E67 Long Range Series</b>							
4-wire, Rated operational voltage $U_e$ 18 - 30 V DC Switching type: NPN Plug-in connection M12 x 1, PNP Degree of Protection IP67							
	Reflected-light beam	with background suppression (Perfect Prox)	1000	Infra-red	Light switching	<b>E67-LRDP100-HLD</b>	100548
		with background suppression (Perfect Prox)	1000		Dark switching	<b>E67-LRDP100-HDD</b>	100547

Function	Description	Rated switching distance $S_n$ mm	Type of light	Switching principle	Part no.	Article no.																																																																
<b>E65 SM Series</b>																																																																						
4-wire, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: NPN, PNP Insulated material Plug-in connection M12 x 1 Degree of Protection IP68, IP69K																																																																						
	33 x 41 x 37 Reflected-light beam	With background suppression (Perfect Prox)	100	-	Light switching	<b>E65-SMPP100-HLD</b>	135713																																																															
		With background suppression (Perfect Prox)	100	-	Dark switching	<b>E65-SMPP100-HDD</b>	135711																																																															
	Thru-beam photoelectric sensor	Source (for combination with detector)	15000	-	Light switching	<b>E65-SMTD15-HLD</b>	135733																																																															
		Detector (for combination with source)	15000	-	Dark switching	<b>E65-SMTD15-HDD</b>	135731																																																															
		Source (for combination with detector)	15000	-	-	<b>E65-SMTS15-HAD</b>	135735																																																															
<b>E71 NanoView Series</b>																																																																						
4-wire, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: PNP Insulated material Rectangular (20 x 12 x 32) Degree of Protection IP66/IP67																																																																						
	Plug-in connection M8 x 1 Reflected-light beam	Beam: focused, forward viewing	100	Visible red	Adjustable bright/dark switching	<b>E71-FFDP-M8</b>	100518																																																															
		Beam: straight	350	Infra-red		<b>E71-SDP-M8</b>	100530																																																															
	2 m connection cable Thru-beam photoelectric sensor	For combination with reflector Detection of transparent objects	800	Visible red	<b>E71-COP-M8</b>	100428																																																																
		Source (for combination with detector)	1500	Infra-red	<b>E71-NTBS-CA</b>	100521																																																																
	Plug-in connection M8 x 1 Reflex photoelectric sensor	Polarized light	2500	Visible red	<b>E71-PRP-M8</b>	100526																																																																
		Thru-beam photoelectric sensor	Detector (for combination with source)	6000	Infra-red	<b>E71-TBRP-M8</b>	100534																																																															
<b>E76 IntelliView Series</b>																																																																						
8 conductor, Rated operational voltage $U_e$ 10 - 30 V DC Switching type: PNP Plug-in connection M12 x 1 Degree of Protection IP67																																																																						
	Rectangular (50 x 50 x 25) Reflected-light beam	Color sensing 3 NO PNP outputs	450	Infra-red	-	<b>E76-CLRMKP-M12</b>	166927																																																															
<table border="1"> <thead> <tr> <th>Style output side</th> <th>Style input side</th> <th>Length mm</th> <th>For use with</th> <th>Part no.</th> <th>Article no.</th> </tr> </thead> <tbody> <tr> <td colspan="6"><b>Connecting cables</b></td> </tr> <tr> <td rowspan="3"></td> <td rowspan="3">Cable end, open</td> <td rowspan="3">Coupling, straight</td> <td>2000</td> <td rowspan="3">DC sensors, 4 pole, 2, 3 or 4-wire connection, M12</td> <td><b>CSDS4A4CY2202</b></td> <td>136292</td> </tr> <tr> <td>5000</td> <td><b>CSDS4A4CY2205</b></td> <td>136294</td> </tr> <tr> <td>10000</td> <td><b>CSDS4A4CY2210</b></td> <td>136296</td> </tr> <tr> <td rowspan="3"></td> <td rowspan="3"></td> <td rowspan="3">Coupling, angled</td> <td>2000</td> <td rowspan="3"></td> <td><b>CSDR4A4CY2202</b></td> <td>136279</td> </tr> <tr> <td>5000</td> <td><b>CSDR4A4CY2205</b></td> <td>136282</td> </tr> <tr> <td>10000</td> <td><b>CSDR4A4CY2210</b></td> <td>136284</td> </tr> <tr> <td rowspan="3"></td> <td rowspan="3">Plug, straight</td> <td rowspan="3">Coupling, straight</td> <td>1500</td> <td rowspan="3"></td> <td><b>CSDS4A4CY2201.5-D</b></td> <td>136316</td> </tr> <tr> <td>3000</td> <td><b>CSDS4A4CY2203-D</b></td> <td>136293</td> </tr> <tr> <td>5000</td> <td><b>CSDS4A4CY2205-D</b></td> <td>136295</td> </tr> <tr> <td rowspan="3"></td> <td rowspan="3">Plug, angled</td> <td rowspan="3"></td> <td>1500</td> <td rowspan="3"></td> <td><b>CSDR4A4CY2201.5-D</b></td> <td>136313</td> </tr> <tr> <td>3000</td> <td><b>CSDR4A4CY2203-D</b></td> <td>136315</td> </tr> <tr> <td>5000</td> <td><b>CSDR4A4CY2205-D</b></td> <td>136283</td> </tr> </tbody> </table>							Style output side	Style input side	Length mm	For use with	Part no.	Article no.	<b>Connecting cables</b>							Cable end, open	Coupling, straight	2000	DC sensors, 4 pole, 2, 3 or 4-wire connection, M12	<b>CSDS4A4CY2202</b>	136292	5000	<b>CSDS4A4CY2205</b>	136294	10000	<b>CSDS4A4CY2210</b>	136296			Coupling, angled	2000		<b>CSDR4A4CY2202</b>	136279	5000	<b>CSDR4A4CY2205</b>	136282	10000	<b>CSDR4A4CY2210</b>	136284		Plug, straight	Coupling, straight	1500		<b>CSDS4A4CY2201.5-D</b>	136316	3000	<b>CSDS4A4CY2203-D</b>	136293	5000	<b>CSDS4A4CY2205-D</b>	136295		Plug, angled		1500		<b>CSDR4A4CY2201.5-D</b>	136313	3000	<b>CSDR4A4CY2203-D</b>	136315	5000	<b>CSDR4A4CY2205-D</b>	136283
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# Sensors

## Optical sensors

	Description	Rated of operational voltage $U_e$	Switching principle	Rated switching distance $S_n$ mm	Switching type	For connection of:	Type light	Part no. Article No.
<b>E71-Serie NanoView</b> 4-wire								
<b>Thru-beam</b>  	Source (for Infra-photoelectric sensor red with detector)	10 - 30 V DC	Light/dark combination switching adjustable	1500	9999999	Plug-in connection	M8 x 1	<b>E71-NTBS-M8<sup>1)</sup></b> 100522
					9999999	2 m connection cable		<b>E71-NTBS-CA<sup>1)</sup></b> 100521
				6000	9999999	Plug-in connection	M8 x 1	<b>E71-TBS-M8<sup>1)</sup></b> 100536
					9999999	2 m connection cable		<b>E71-TBS-CA<sup>1)</sup></b> 100535
	Detector (for Infra-combination red with source)	10 - 30 V DC	Light/dark switching adjustable	6000	NPN	Plug-in connection	M8 x 1	<b>E71-TBRN-M8<sup>1)</sup></b> 100532
					NPN	2 m connection cable		<b>E71-TBRN-CA<sup>1)</sup></b> 100531
					PNP	Plug-in connection	M8 x 1	<b>E71-TBRP-M8<sup>1)</sup></b> 100534
					PNP	2 m connection cable		<b>E71-TBRP-CA<sup>1)</sup></b> 100533
<b>Reflex photoelectric</b>  	for combination Visible sensor with reflector red Detecting transparent objects	10 - 30 V DC	Light/dark switching adjustable	800	NPN	Plug-in connection	M8 x 1	<b>E71-CON-M8<sup>2)</sup></b> 100426
					NPN	2 m connection cable		<b>E71-CON-CA<sup>2)</sup></b> 100069
					PNP	Plug-in connection	M8 x 1	<b>E71-COP-M8<sup>2)</sup></b> 100428
					PNP	2 m connection cable		<b>E71-COP-CA<sup>2)</sup></b> 100427
	for combination Visible with reflector red (polarized light)	10 - 30 V DC	Light/dark switching adjustable	2500	PNP	Plug-in connection	M8 x 1	<b>E71-PRP-M8<sup>2)</sup></b> 100526
					PNP	2 m connection cable		<b>E71-PRP-CA<sup>2)</sup></b> 100525
					NPN	Plug-in connection	M8 x 1	<b>E71-PRN-M8<sup>2)</sup></b> 100524
					NPN	2 m connection cable		<b>E71-PRN-CA<sup>2)</sup></b> 100523
<b>Reflected-light beam</b>  	Beam: focused, Visible forward red viewing	10 - 30 V DC	Light/dark switching adjustable	100	NPN	Plug-in connection	M8 x 1	<b>E71-FFDN-M8<sup>1)</sup></b> 100511
					NPN	2 m connection cable		<b>E71-FFDN-CA<sup>1)</sup></b> 100429
					PNP	2 m connection cable		<b>E71-FFDP-CA<sup>1)</sup></b> 100517
					PNP	Plug-in connection	M8 x 1	<b>E71-FFDP-M8<sup>1)</sup></b> 100518
	Beam: straight Infra-red	10 - 30 V DC	Light/dark switching adjustable	350	NPN	Plug-in connection	M8 x 1	<b>E71-SDN-M8<sup>2)</sup></b> 100528
					NPN	2 m connection cable		<b>E71-SDN-CA<sup>2)</sup></b> 100527
					PNP	Plug-in connection	M8 x 1	<b>E71-SDP-M8<sup>2)</sup></b> 100530
					PNP	2 m connection cable		<b>E71-SDP-CA<sup>2)</sup></b> 100529

# Build it in.



## Safe monitoring and processing



Machines and plants contain potentially dangerous motion sequences that require a technical solution to make them safe. Safety devices such as emergency-stop pushbuttons, guard doors, light curtains and operating elements for safe setting must be controlled and monitored, and the installation may have to be switched to a safe state. For these tasks, Eaton is offering two safety logic series, the ESR5 electronic safety relay and the easySafety control relay.





Whether on a simple or complex machine, the required protection of personnel and process can be ensured using these Eaton safety products that have been approved by TÜV Rheinland:

- Performance Level PL e to EN ISO 13849-1
- Safety Integrity Level SILCL 3 according to IEC 62061

# Functional safety

## Monitoring and Processing

	Stopping in the event of an emergency	Protective door	OSSD input	Contact expansion module	Feedback circuit	Reset button monitoring	Single-channel	Dual-channel	Non-delayed enable current paths	Delayed enable current paths	Delayed signal current path	Non-delayed signal current path	PL / Category according to EN ISO 13849-1	SILCL in accordance with 62061	Part no. Article no.
<b>ESR5</b>															
Overall width: 22.5 mm or 45 mm															
	✓	✓	-	-	✓	-	✓	✓	2	-	1	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NO-21-24VAC-DC</b> 118700
	✓	✓	-	-	✓	-	✓	✓	2	-	1	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NO-31-24VAC-DC</b> 118702
	✓	✓	-	-	✓	✓	✓	✓	3	-	1	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NO-31-230VAC</b> 119380
	✓	✓	-	-	✓	✓	✓	✓	3	-	1	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NO-31-AC-DC</b> 118704
	✓	✓	-	-	✓	-	✓	-	4	-	1	-	PL c / Kat. 1	SILCL 1	<b>ESR5-NO-41-24VAC-DC</b> 118701
	✓	✓	-	-	✓	-	✓	-	3	-	1	-	PL c / Kat. 1	SILCL 1	<b>ESR5-NOS-31-230VAC</b> 153152
	✓	✓	✓	-	✓	✓	✓	✓	2	2	-	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NV3-30</b> 118705
	✓	✓	✓	-	-	-	✓	✓	3	2	-	1	PL e / Kat. 4	SILCL 3	<b>ESR5-NV3-300</b> 171858
	-	✓	-	-	✓	-	-	✓	2	-	-	1	PL e / Kat. 4	SILCL 3	<b>ESR5-NZ-21-24VAC-DC</b> 118703
	-	-	-	✓	-	-	✓	-	5	-	1	-	PL e / Kat. 4	SILCL 3	<b>ESR5-NE-51-24VAC-DC</b> 118707
	-	-	-	✓	-	-	✓	-	-	4	1	-	PL d / Kat. 3	SILCL 3	<b>ESR5-VE3-42</b> 118706
With light curtain functionality															
	✓	✓	-	-	✓	✓	-	-	3	-	-	1	PL e / Kat. 4	SILCL 3	<b>ESR5-BWS-31-24VAC-DC</b> 180413

	Transistor outputs	Relay outputs	Display & keypad	Part no. Article no.
<b>ES4P</b>				
<ul style="list-style-type: none"> <li>- Stopping in the event of an emergency</li> <li>- Protective door</li> <li>- ESPE with muting function</li> <li>- Two-hand control</li> <li>- Highest speed monitoring</li> <li>- Zero speed monitoring</li> <li>- Safety timing relay</li> <li>- Mode selection</li> <li>- Enabling switch</li> <li>- Feedback circuit</li> <li>- Mounting width: 107.5 mm</li> <li>- 14 Inputs (safety) 24 V DC</li> <li>- Rated operational voltage: 24 V DC</li> </ul>				
Safety related characteristics				
<ul style="list-style-type: none"> <li>- Performance level according to EN ISO 13849-1 PL e / Cat. 4</li> <li>- Safety integrity level claim limit in accordance with 62061 SILCL 3</li> </ul>				
	4	1 (redundant)	✓	<b>ES4P-221-DMXD1</b> 111017
	-	4	✓	<b>ES4P-221-DRXD1</b> 111019
	4	1 (redundant)	-	<b>ES4P-221-DMXX1</b> 111016
	-	4	-	<b>ES4P-221-DRXX1</b> 111018
Description				Part no. Article no.
<b>ES4P add-on functions</b>				
Programming Software				
	easySoft-Safety Menu selection in German, English, French, and Italian Operating systems: Windows XP SP3, Windows 7 (32 bit + 64 bit), Windows 8 (32 bit + 64 bit)			<b>ESP-SOFT</b> 111460
Memory card				
	256-kB module			<b>ES4A-MEM-CARD1</b> 111461
Function	Description	Length m	Part no. Article no.	
<b>Programming cable</b>				
	For downloading the user program from PC to device For use with easy800, MFD-...-CP8, MFD-...-CP10, ES4P	SUB-D, 9 pole, serial	2	<b>EASY800-PC-CAB</b> 256277
	For downloading the user program from PC to device For use with easy800, MFD-...-CP8, MFD-...-CP10, EC4P, ES4P	USB	2	<b>EASY800-USB-CAB</b> 106408

# Build it in.





## Safe and reliable: Timing relay, measuring relay and monitoring relay



The range of electronic timing relay incorporates two different construction designs, which are adapted for differing application fields. All timing relays are mounted on DIN top-hat rails. The measuring and monitoring relay EMR range is approved for worldwide use. Most of the relays feature multi-voltage coils.

They cover a wide range of applications:






- Current monitors for universal use
- Phase monitors for monitoring damage protection for individual system sections
- Phase sequence relays monitoring the rotating field
- Unbalance relays for reliable phase loss detection
- Multifunctional three-phase monitors for space-saving monitoring of a rotating field
- Level monitoring relays for monitoring fill levels
- Earth leakage monitors for enhanced operational safety.






		Function										Time range	Number of change-over contacts	Width mm	24 - 240 V AC, 50/60 Hz 24 - 240 V DC Part no. Article no.	400 V AC, 50/60 Hz Part no. Article no.		
		On-delayed	Multi-functional	Off-delayed	Fleeting contact on energization	Fleeting contact on de-energization	Flashing, pulse initiating	On- and Off-delayed	Pulse forming	Pulse generating	Star-delta switching	Flashing, pause initiating						
<b>ETR4 timing relays</b>																		
	Changeover contact with a changeover time of 50 ms	-	-	-	-	-	-	-	-	-	✓	-	3 - 60 s	1	22.5	ETR4-51-A 031884	ETR4-51-W 031885	
	Fixed timing function	✓	-	-	-	-	-	-	-	-	-	-	0.05 s - 100 h			ETR4-11-A 031882	ETR4-11-W 031883	
	Adjustable timing functions	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-				ETR4-69-A 031891	ETR4-69-W 031887	
	With connection for potentiometer Changeover contact can be converted to 2 timed contacts or 1 non-delayed contact and 1 timed contact	✓	✓	✓	✓	✓	✓	✓	✓	✓	-	-		2		ETR4-70-A 031888	-	
															12 - 240 V AC, 50/60 Hz 12 - 240 V DC	24 - 240 V AC, 50/60 Hz 24 - 48 V DC		
<b>ETR2 timing relays</b>																		
	Fixed timing function	✓	-	-	-	-	-	-	-	-	-	-	0.05 s - 100 h	1	17.5	-	ETR2-11 262684	
		✓	-	-	-	-	-	-	-	-	-	-		2		-	ETR2-11-D 119426	
		-	-	✓	-	-	-	-	-	-	-	-	-		1		-	ETR2-12 262686
		-	-	✓	-	-	-	-	-	-	-	-	-		2		-	ETR2-12-D 119427
		-	-	-	✓	-	-	-	-	-	-	-	-		1		-	ETR2-21 262687
		-	-	-	-	-	✓	-	-	-	-	-	-				-	ETR2-42 262688
	Pulse and pause times independently adjustable	-	-	-	-	-	✓	-	-	-	-	✓				-	ETR2-44 262730	
	Adjustable timing functions	✓	✓	✓	✓	✓	✓	-	✓	-	-	✓				-	ETR2-69 262689	
✓		✓	✓	✓	✓	✓	-	✓	-	-	✓		2		ETR2-69-D 119428	-		



# Timing relay

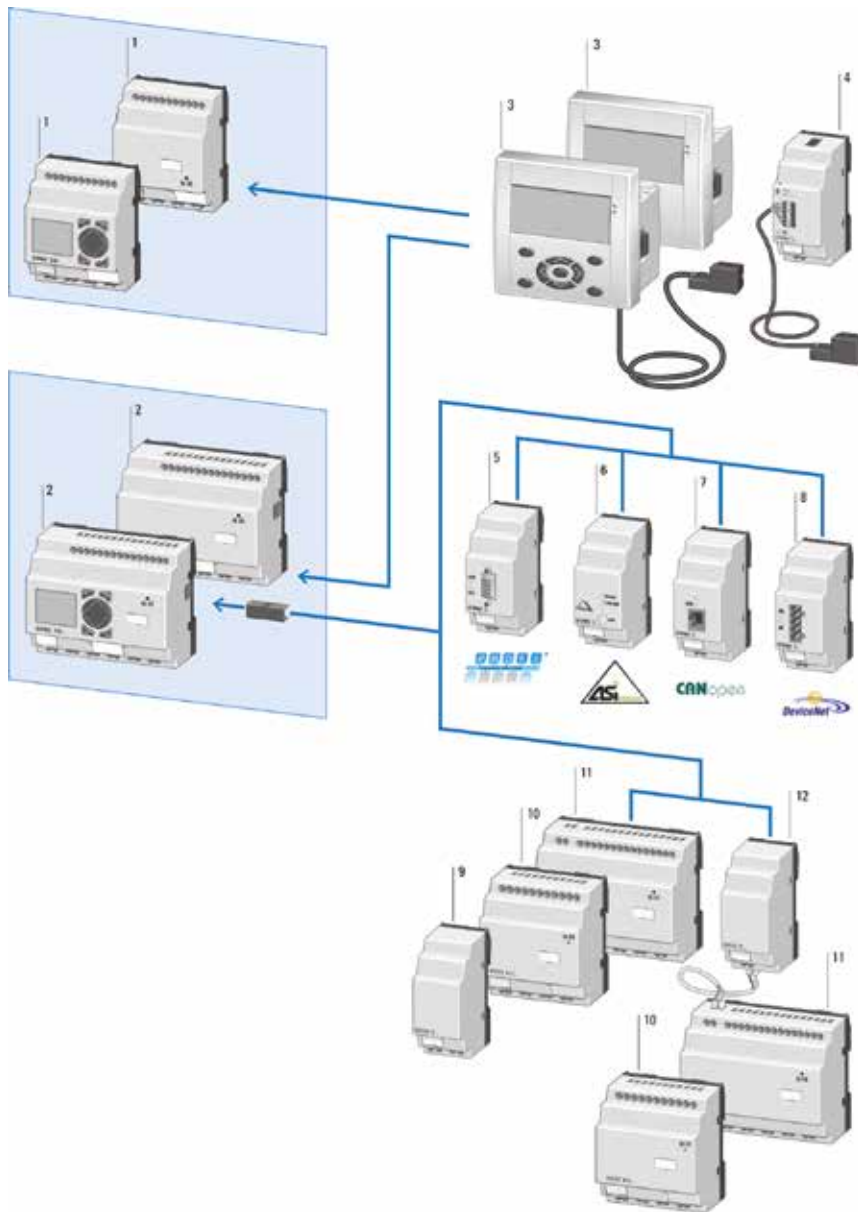
## EMR Measuring and monitoring relays

		Monitoring of						Monitoring voltage per phase	Adjustable threshold values			Threshold value	Supply voltage	Part no. Article no.
		Phase sequence	Phase failure	Imbalance	Overvoltage	Undervoltage	Neutral cable break	$U_N$ V AC	Imbalance	Overvoltage	Undervoltage			
<b>Phase sequence relays</b>														
	Monitoring of three-phase networks Phase failure detection at $< 0.6 \times U_e$ Power supply from the measuring circuit	✓	✓	-	-	-	-	200 - 500 V AC, 50/60 Hz	-	-	-	-	200 - 500 V AC, 50/60 Hz	<b>EMR4-F500-2</b> 221784
<b>Phase imbalance monitoring relays</b>														
	Power supply from the measuring circuit On delay: None = 0 or adjustable from 0.1 to 30 s Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages	✓	✓	✓	-	-	-	160 - 300 V AC, 50/60 Hz	✓	-	-	-	160 - 300 V AC, 50/60 Hz	<b>EMR5-A300-1-C</b> 134230
		✓	✓	✓	-	-	-	300 - 500 V AC, 50/60 Hz	✓	-	-	-	300 - 500 V AC, 50/60 Hz	<b>EMR5-A400-1</b> 134222
<b>Phase monitoring relays</b>														
Multi-functional Power supply from the measuring circuit On-delay/off-delay: none = 0 or adjustable between 0.1 - 30 s Imbalance threshold values adjustable 2 - 25 % of mean value of phase voltages														
		✓	✓	✓	✓	✓	✓	90 - 170 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 120 - 170 V AC $U_{min}$ 90 - 130 V AC	90 - 170 V AC, 50/60 Hz	<b>EMR5-AWN170-1-E</b> 134225
		✓	✓	✓	✓	✓	-	160 - 300 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 220 - 300 V AC $U_{min}$ 160 - 230 V AC	160 - 300 V AC, 50/60 Hz	<b>EMR5-AWN300-1-C</b> 134223
		✓	✓	✓	✓	✓	✓	180 - 280 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 240 - 280 V AC $U_{min}$ 180 - 220 V AC	180 - 280 V AC, 50/60 Hz	<b>EMR5-AWN280-1-F</b> 134226
22.5 mm	Automatic phase sequence correction	✓	✓	✓	✓	✓	✓	180 - 280 V AC, 50/60/400 Hz	✓	✓	✓	$U_{max}$ 240 - 280 V AC $U_{min}$ 180 - 220 V AC	180 - 280 V AC, 50/60/400 Hz	<b>EMR5-AWN280-1</b> 134233
		✓	✓	✓	✓	✓	-	300 - 500 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 420 - 500 V AC $U_{min}$ 300 - 380 V AC	300 - 500 V AC, 50/60 Hz	<b>EMR5-AW500-1-D</b> 134224
		✓	✓	✓	✓	✓	-	300 - 500 V AC, 50/60/400 Hz	✓	✓	✓	$U_{max}$ 420 - 500 V AC $U_{min}$ 300 - 380 V AC	300 - 500 V AC, 50/60/400 Hz	<b>EMR5-AWN500-1</b> 134234
	Automatic phase sequence correction	✓	✓	✓	✓	✓	-	350 - 580 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 480 - 580 V AC $U_{min}$ 350 - 460 V AC	350 - 580 V AC, 50/60 Hz	<b>EMR5-AWM580-2</b> 134235
		✓	✓	✓	✓	✓	-	450 - 720 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 600 - 720 V AC $U_{min}$ 450 - 570 V AC	450 - 720 V AC, 50/60 Hz	<b>EMR5-AWM720-2</b> 134236
		✓	✓	✓	✓	✓	-	530 - 820 V AC, 50/60 Hz	✓	✓	✓	$U_{max}$ 690 - 820 V AC $U_{min}$ 530 - 660 V AC	530 - 820 V AC, 50/60 Hz	<b>EMR5-AWM820-2</b> 134237
45 mm														
<b>On- and Off-delayed</b>														
	Power supply from the measuring circuit On-delay/off-delay: none = 0 or adjustable between 0.1 - 30 s	✓	✓	-	✓	✓	-	160 - 300 V AC, 50/60 Hz	-	✓	✓	$U_{max}$ 220 - 300 V AC $U_{min}$ 160 - 230 V AC	160 - 300 V AC, 50/60 Hz	<b>EMR5-W300-1-C</b> 134227
		✓	✓	-	✓	✓	-	300 - 500 V AC, 50/60 Hz	-	✓	✓	$U_{max}$ 420 - 500 V AC $U_{min}$ 300 - 380 V AC	300 - 500 V AC, 50/60 Hz	<b>EMR5-W500-1-D</b> 134221
		✓	✓	-	✓	✓	-	380 V AC, 50/60 Hz	-	-	-	$U_{max}$ 418 V AC, fixed $U_{min}$ 342 V AC, fixed	380 V AC, 50/60 Hz	<b>EMR5-W380-1</b> 134228
		✓	✓	-	✓	✓	-	400 V AC, 50/60 Hz	-	-	-	$U_{max}$ 440 V AC, fixed $U_{min}$ 360 V AC, fixed	400 V AC, 50/60 Hz	<b>EMR5-W400-1</b> 134229

	Monitoring of	Adjustable pick-up time	Supply voltage	Width mm	Part no. Article no.	
<b>Level monitoring relays</b>						
	Selectable: protection against running dry or overflowing	Fill level of conductive liquids	5 - 100 kΩ	220 - 240 V AC, 50/60 Hz	22.5	<b>EMR4-N100-1-B</b> 221789
	On-delay/off-delay: adjustable between 0.1 - 10 s	Fill level of conductive liquids	250 Ω - 500 kΩ	24 - 240 V AC, 50/60 Hz	45	<b>EMR4-N500-2-A</b> 221791
Mixture ratio of conductive liquids		250 Ω - 500 kΩ	220 - 240 V AC, 50/60 Hz	45	<b>EMR4-N500-2-B</b> 221790	
	-	-	5 - 100 kΩ	220 - 240 V AC, 50/60 Hz	22.5	<b>EMR5-N80-1-B</b> 134232
<b>Insulation monitoring relays</b>						
	Status indication via LEDs Open-circuit principle Test or reset with button on device or with control input Configurable fault memory/memory function Configurable non-volatile fault memory	Insulation resistance in non-earthed AC supply systems (two-phase, three-phase, four-phase systems) Insulation resistance in non-earthed DC supply systems (two-phase, three-phase systems)	1 - 110 kΩ	24 - 240 V AC, 13,5 - 400 Hz 24 - 240 V DC	22.5	<b>EMR5-R250-1-A</b> 153442
	Status indication via LEDs Open-circuit principle Test or reset with button on device or with control input Configurable fault memory/memory function Configurable non-volatile fault memory	Insulation resistance in non-earthed AC supply systems (two-phase, three-phase, four-phase systems)	1 - 110 kΩ	24 - 240 V AC, 13,5 - 400 Hz 24 - 240 V DC	22.5	<b>EMR5-R400-1-A</b> 153443
	Status indication via LEDs Open-circuit principle Test or reset with button on device or with control input Configurable fault memory/memory function Configurable non-volatile fault memory Wire break detection	Insulation resistance in non-earthed AC supply systems (three-phase, four-phase systems) insulation resistance in non-earthed DC supply systems (three-phase systems)	1 - 110 kΩ 2 - 200 kΩ Activation by dip switch	24 - 240 V AC, 13,5 - 400 Hz 24 - 240 V DC	45	<b>EMR5-R400-2-A</b> 153444
	Coupling module Expands the rated voltage range for the EMR5-400-2-A to 690 V AC or 1000 V DC no supply voltage required	-	-	-	45	<b>EMR5-RC690</b> 153445
<b>Current monitoring relays</b>						
	Monitoring of single-phase DC and AC networks Switching hysteresis adjustable from 3 – 30 % On delay: None = 0 or adjustable from 0.1 to 30 s Extension of the measurement range possible with current transformers	3 - 30 mA 10 - 100 mA 0.1 - 1 A	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	22.5	<b>EMR4-I11-1-A</b> 106942	
		0.3 - 1.5 A 1 - 5 A 3 - 15 A	24 - 240 V AC, 50/60 Hz 24 - 240 V DC	22.5	<b>EMR4-I15-1-A</b> 106943	
		0.3 - 1.5 A 1 - 5 A 3 - 15 A	220 - 240 V AC, 50/60 Hz	22.5	<b>EMR4-I15-1-B</b> 106944	

# easy500, easy700






## System overview





- 1 Control relay easy500
- 2 easy700 control relay
- 3 Remote text display: display/operating unit MFD-80(-B) + power supply unit/communication module with connection cable MFD-(AC)-CP4-500
- 4 Ethernet gateway EASY209-SE + connection cable MFD-CP4-500-CAB5
- 5 PROFIBUS-DP bus module-DP EASY204-DP
- 6 ASi EASY205-ASI bus module
- 7 CANopen® bus module EASY221-CO
- 8 DeviceNet bus module EASY222-DN
- 9 EASY202-RE output expansion
- 10 EASY410... I/O expansion, digital
- 11 EASY6... I/O expansion, digital
- 12 EASY200-EASY Coupling module

### Functions


- 16 counting relays (0 to 32000, up and down counting)
- 2 frequency counters (max. 1 kHz)
- 2 high-speed counters (max. 1 kHz)
- 4 hours-run counters (the operating hours value is super retentive, i.e. also retained with program change)
- 8 weekly timers (4 channels per time switch, 1 on/off point per channel)
- 8 year time switches
- 16 timing relays (0.01 s – 99 h 59 min, on-delayed and/or off-delayed (optional random switching), pulse shaping, flashing)
- 8 jump function blocks
- 3 master reset function blocks
- 16 analog value comparators
- 16 comparators
- 16 text displays (4 x 12 characters, editable via programming software)
- Value entry (counter values, setpoints, ...)
- Value display (actual values, ...)
- Date and time entry
- Date and time display





	Inputs		Outputs		Additional features		Supply voltage	Part no. Article no.
	Digital	Of which can be used as analog	Relay 10 A (UL)	Transistor	Real time clock	Display & keypad		
<b>easy500</b>								
Stand alone								
Customized laser inscription or delivery with user program possible with EASY-COMBINATION-* product (article No. 2010781)								
	8	2	4	-	✓	✓	24 V AC	<b>EASY512-AB-RC</b> 274101
	8	2	4	-	✓	-	24 V AC	<b>EASY512-AB-RCX</b> 274102
	8	-	4	-	-	✓	100 - 240 V AC	<b>EASY512-AC-R</b> 274103
	8	-	4	-	✓	✓	100 - 240 V AC	<b>EASY512-AC-RC</b> 274104
	8	-	4	-	✓	-	100 - 240 V AC	<b>EASY512-AC-RCX</b> 274105
	8	2	4	-	✓	✓	12 V DC	<b>EASY512-DA-RC</b> 274106
	8	2	4	-	✓	-	12 V DC	<b>EASY512-DA-RCX</b> 274107
	8	2	4	-	-	✓	24 V DC	<b>EASY512-DC-R</b> 274108
	8	2	4	-	✓	✓	24 V DC	<b>EASY512-DC-RC</b> 274109
	8	2	4	-	✓	-	24 V DC	<b>EASY512-DC-RCX</b> 274110
	8	2	-	4	✓	✓	24 V DC	<b>EASY512-DC-TC</b> 274111
	8	2	-	4	✓	-	24 V DC	<b>EASY512-DC-TCX</b> 274112
<b>easy700</b>								
Expandable: Digital inputs/outputs, bus systems AS-Interface, PROFIBUS-DP, CANopen®, DeviceNet								
Customized laser inscription or delivery with user program possible with EASY-COMBINATION-* product (article No. 2010781)								
	12	4	6	-	✓	✓	24 V AC	<b>EASY719-AB-RC</b> 274113
	12	4	6	-	✓	-	24 V AC	<b>EASY719-AB-RCX</b> 274114
	12	-	6	-	✓	✓	100 - 240 V AC	<b>EASY719-AC-RC</b> 274115
	12	-	6	-	✓	-	100 - 240 V AC	<b>EASY719-AC-RCX</b> 274116
	12	4	6	-	✓	✓	12 V DC	<b>EASY719-DA-RC</b> 274117
	12	4	6	-	✓	-	12 V DC	<b>EASY719-DA-RCX</b> 274118
	12	4	6	-	✓	✓	24 V DC	<b>EASY719-DC-RC</b> 274119
	12	4	6	-	✓	-	24 V DC	<b>EASY719-DC-RCX</b> 274120
	12	4	-	8	✓	✓	24 V DC	<b>EASY721-DC-TC</b> 274121
	12	4	-	8	✓	-	24 V DC	<b>EASY721-DC-TCX</b> 274122
<b>Programming and visualization software</b>								
	13 installation languages Operating systems: Windows XP SP3, Windows Vista (32 bit), Windows 7 (32 bit + 64 bit), Windows 8 (32 bit + 64 bit) For use with easy400/500/600/700							<b>EASY-SOFT-BASIC</b> 284545
	13 installation languages Operating systems: Windows XP SP3, Windows Vista (32 bit), Windows 7 (32 bit + 64 bit), Windows 8 (32 bit + 64 bit) For use with easy400/500/600/700/800/MFD-...-CP8/CP10							<b>EASY-SOFT-PRO</b> 266040
	Function	Description					Length	
<b>Programming cable</b>								
	For downloading the user program from PC to device For use with easy500, easy700				SUB-D, 9 pole, serial		2m	<b>EASY-PC-CAB</b> 202409
	For downloading the user program from PC to device For use with easy500, easy700				USB		2m	<b>EASY-USB-CAB</b> 107926

	Inputs		Outputs			Additional features		Supply voltage	Part no. Article no.
	Digital	Of which can be used as analog	Relay 10 A (UL)	Transistor	Analog	Real time clock	Display & keypad		
<b>easy800</b>									
Expandable: Digital/analog inputs/outputs and AS-Interface, PROFIBUS-DP, CANopen®, DeviceNet bus systems Bus system easyNet on board Customized laser inscription or delivery with user program possible with EASY-COMBINATION-* product (article No. 2010781)									
	12	4	6	-	-	✓	✓	24 V DC	<b>EASY819-DC-RC</b> 256269
	12	4	6	-	-	✓	-	24 V DC	<b>EASY819-DC-RCX</b> 256270
	12	4	6	-	1	✓	✓	24 V DC	<b>EASY820-DC-RC</b> 256271
	12	4	6	-	1	✓	-	24 V DC	<b>EASY820-DC-RCX</b> 256272
	12	4	-	8	-	✓	✓	24 V DC	<b>EASY821-DC-TC</b> 256273
	12	4	-	8	-	✓	-	24 V DC	<b>EASY821-DC-TCX</b> 256274
	12	4	-	8	1	✓	✓	24 V DC	<b>EASY822-DC-TC</b> 256275
	12	4	-	8	1	✓	-	24 V DC	<b>EASY822-DC-TCX</b> 256276
	12	-	6	-	-	✓	✓	100 - 240 V AC	<b>EASY819-AC-RCX</b> 256267
	12	-	6	-	-	✓	-	100 - 240 V AC	<b>EASY819-AC-RCX</b> 256268


	Inputs		SmartWire-DT	Outputs		Additional features		Supply voltage	Part no. Article no.
	Digital	Of which can be used as outputs		Transistor	SmartWire-DT	Real time clock	Display & keypad		
<b>easy800 with SmartWire-DT</b>									
Combines the functionality of an easy800 with direct connection to SmartWire-DT communication system Up to 99 SmartWire-DT modules with a total of up to 166 digital inputs/outputs and/or up to 128 analog inputs/outputs can be connected via a SmartWire-DT line									
	-	-	83	-	88	✓	-	24 V DC	<b>EASY802-DC-SWD</b> 152901
	4	2	83	2	88	✓	-	24 V DC	<b>EASY806-DC-SWD</b> 152902





Programming and visualization software

	13 installation languages Operating systems: Windows XP SP3, Windows Vista (32 bit), Windows 7 (32 bit + 64 bit), Windows 8 (32 bit + 64 bit) For use with easy400/500/600/700/800/MFD-...-CP8/CP10								<b>EASY-SOFT-PRO</b> 266040
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	Function	Description	Length m	Part no. Article no.
<b>Programming cable</b>				
	For downloading the user program from PC to device For use with easy800, MFD-...-CP8, MFD-...-CP10, ES4P	SUB-D, 9 pole, serial	2	<b>EASY800-PC-CAB</b> 256277
	For downloading the user program from PC to device For use with easy800, MFD-...-CP8, MFD-...-CP10, EC4P, ES4P	USB	2	<b>EASY800-USB-CAB</b> 106408
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks For use with EC4P, XC100, XC200, XC121, easy800-SWD, EU5C	SUB-D, 9 pole, serial	2	<b>EU4A-RJ45-CAB1</b> 106726
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks For use with EC4P, XC100, XC200, XC121, easy800-SWD, EU5C	USB	2	<b>EU4A-RJ45-USB-CAB1</b> 115735



Bluetooth adapter





	For secure radio connection between control relay and PC (programming and online communication)/Android smartphone and tablet (easyRemote display app, easyParameter app) For use with easy81..., easy82..., MFD-CP8, MFD-CP10 ≥ V. 3.0, EC4P								<b>EASY800-BLT-ADP</b> 167651
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Description		Part no. Article no.	
<b>Display/keypad</b>			
Monochrome display 132 × 64 pixels with switchable backlight, removable Titan front frame, Custom laser inscriptions possible with MFD-COMBINATION (article no. 2010801) product IP65			
	With keypad, with Eaton company logotype NEMA type 3R; NEMA type 12; NEMA type 4x together with MFD-XM-80 protective diaphragm	<b>MFD-80-B</b> 265251	
	With keypad, without Eaton company logotype NEMA type 3R; NEMA type 12; NEMA type 4x together with MFD-XM-80 protective diaphragm	<b>MFD-80-B-X</b> 284905	
	Without keypad, with Eaton company logotype NEMA type 3R, NEMA type 12, NEMA type 4x	<b>MFD-80</b> 265250	
	Without keypad, without Eaton company logotype NEMA type 3R, NEMA type 12, NEMA type 4x	<b>MFD-80-X</b> 284904	
Supply voltage	Description	Part no. Article no.	
<b>Power supply unit/CPU modules</b>			
Can be combined with display/operating unit MFD-80-.. and I/O module, Expandable: Digital/analog inputs/outputs and AS-Interface, PROFIBUS-DP, CANopen®, DeviceNet bus systems, Bussystem easyNet optional on board, Program and screen memory, Delivery with user program possible with MFD-COMBINATION product (Article no. 201801) IP20, Spring-cage terminals			
	100 - 240 V AC Program and screen memory	<b>MFD-AC-CP8-ME</b> 274091	
	100 - 240 V AC Program and screen memory, with easyNet	<b>MFD-AC-CP8-NT</b> 274092	
	24 V DC Program and screen memory	<b>MFD-CP8-ME</b> 267164	
	24 V DC Program and screen memory, with easyNet	<b>MFD-CP8-NT</b> 265253	
	24 V DC Double program and screen memory like MFD-CP8...	<b>MFD-CP10-ME</b> 133801	
	24 V DC Double program and screen memory, as MFD-CP8..., with easyNet	<b>MFD-CP10-NT</b> 133800	
Supply voltage	Description	For use with	Part no. Article no.
<b>Power supply unit/communication module</b>			
Degree of protection IP20 Can be combined with display/operating unit MFD-80...as stand-alone text display			
	24 V DC With connection cable (5 m, can be cut to length)	easy500 easy700	<b>MFD-CP4-500</b> 274094
	24 V DC With connection cable (5 m, can be cut to length)	easy800 ES4P	<b>MFD-CP4-800</b> 274095
	100 - 240 V AC With connection cable (5 m, can be cut to length)	easy500 easy700	<b>MFD-AC-CP4-500</b> 286823
	100 - 240 V AC With connection cable (5 m, can be cut to length)	easy800 ES4P	<b>MFD-AC-CP4-800</b> 286824
	24 V DC Without connection cable	MFD-80...	<b>MFD-CP4</b> 280888
	100 - 240 V AC Without connection cable	MFD-80...	<b>MFD-AC-CP4</b> 286822

# MFD-Titan

Multi-function display

	Supply voltage	For use with	Inputs Digital	Of which can be used as analog	Pt100	Outputs Relay 10 A (UL)	Transistor	Analog	Temperature range	Part no. Article no.
<b>I/O modules</b>										
	24 V DC	MFD-CP8.. MFD-CP10..	12	4	-	4	-	-	-	<b>MFD-R16</b> 265254
	24 V DC		12	4	-	-	4	-	-	<b>MFD-T16</b> 265255
	24 V DC		12	4	-	4	-	1	-	<b>MFD-RA17</b> 265364
	24 V DC		12	4	-	-	4	1	-	<b>MFD-TA17</b> 265256
	100 - 240 V AC	MFD-AC-CP8...	12	-	-	4	-	-	-	<b>MFD-AC-R16</b> 274093
<b>I/O modules with temperature measuring</b>										
	24 V DC	MFD-CP8... from device version 08 MFD-CP10..	6	2	2	-	4	-	-40...+90 °C 0...+250 °C	<b>MFD-TP12-PT-A</b> 106042
	24 V DC		6	2	2	-	4	1	0...+400 °C	<b>MFD-TAP13-PT-A</b> 106045
	24 V DC		6	2	2	-	4	-	-200...+200 °C 0...+850 °C	<b>MFD-TP12-PT-B</b> 106043
	24 V DC		6	2	2	-	4	1		<b>MFD-TAP13-PT-B</b> 106046
	24 V DC		6	2	-	-	4	-	-40...+90 °C 0...+250 °C	<b>MFD-TP12-NI-A</b> 106044
	24 V DC		6	2	-	-	4	1		<b>MFD-TAP13-NI-A</b> 106047

	Inputs			Outputs		Supply voltage	Part no.	Article no.
	Digital	Relay 10 A (UL)	Transistor	Relay 10 A (UL)	Transistor			
<b>I/O expansions, digital</b>								
Can be used through easyLink								
	12	6	-	100 - 240 V AC	<b>EASY618-AC-RE</b>	212314		
	12	-	8	24 V DC	<b>EASY620-DC-TE</b>	212313		
	12	6	-	24 V DC	<b>EASY618-DC-RE</b>	232112		
	-	2	-	24 V DC	<b>EASY202-RE<sup>1)</sup></b>	232186		
	6	4	-	24 V DC	<b>EASY410-DC-RE</b>	114293		
	6	-	4	24 V DC	<b>EASY410-DC-TE</b>	114294		
	For remote connection of a digital I/O extension up to 30 m.					<b>EASY200-EASY</b>	212315	

	Inputs			Outputs			Supply voltage	Part no.	Article no.
	Digital	Analog	Of which usable as digital inputs	Relay 10 A (UL)	Transistor	Analog			
<b>I/O expansions, analog</b>									
Can be used through easyLink									
	1	2 <sup>2)</sup>	2	-	2	1	24 V DC	<b>EASY406-DC-ME</b>	114295
	1	6 <sup>3)</sup>	2	-	2	2	24 V DC	<b>EASY411-DC-ME</b>	116567






### Notes

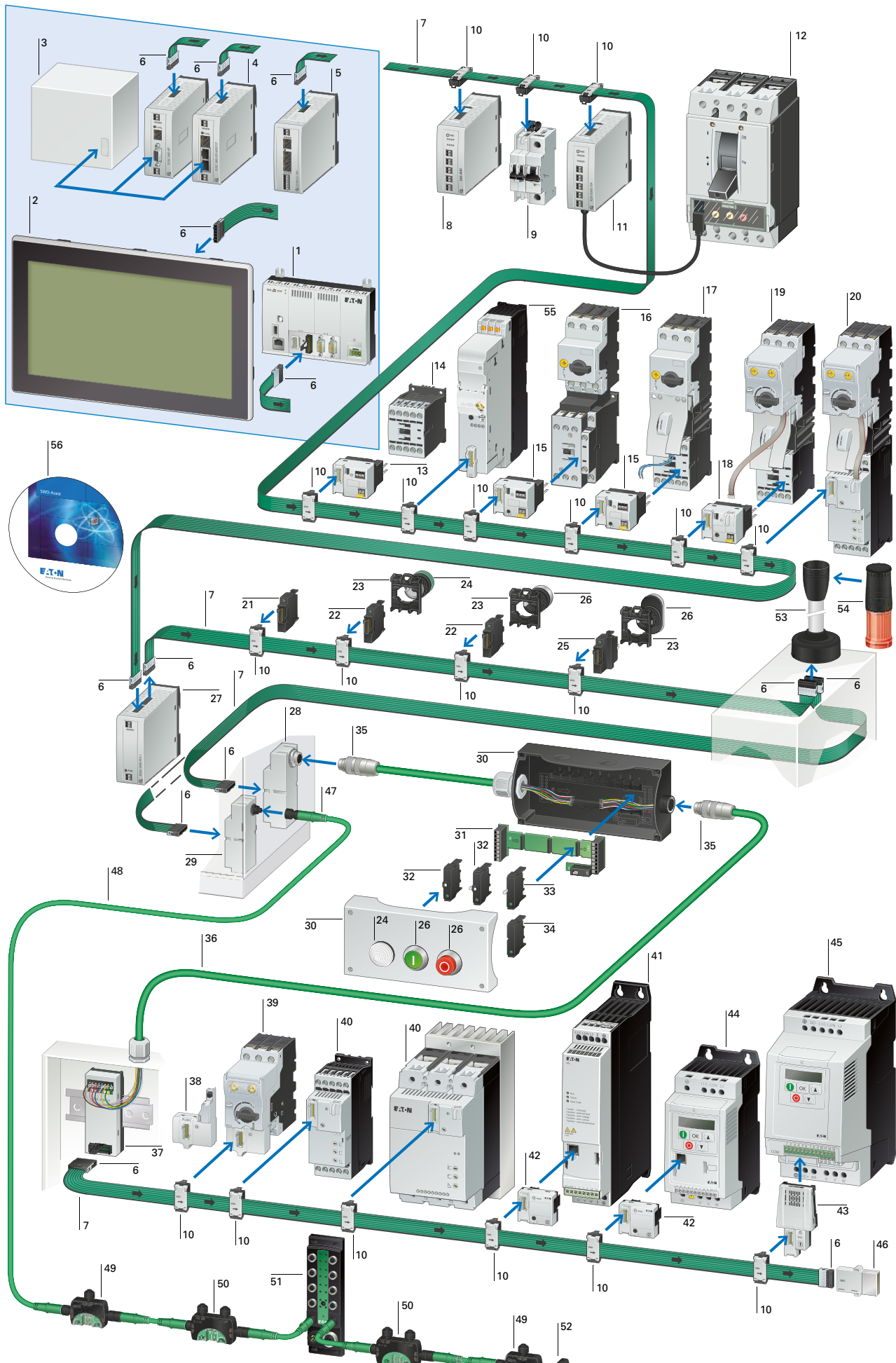
- <sup>1)</sup> Not for use in combination with EASY719-DA-... basic devices  
Cannot be used on the EASY200-EASY coupling module
- <sup>2)</sup> 2 x 0 - 10 V or 2 x 0 - 20 mA or 2 x RTD (2/3-wire connection);  
Voltage inputs (0 -10 V), optionally usable as digital inputs
- <sup>3)</sup> 2 x 0 - 10 V and 2 x 0 - 20 mA and 2 x RTD (2/3-wire connection);  
Voltage inputs (0 -10 V), optionally usable as digital inputs



# Accessories

## Expansions

Inputs		Supply voltage	Part no. Article no.
<b>Bus modules</b>			
Can be used through easyLink			
	AS-Interface	Slave 4 inputs 4 outputs 4 parameter bits Addresses available: 0 - 31	-
	PROFIBUS-DP	Slave Addresses available: 1 - 126	24 V DC
	CANopen®	Addresses available: 1 - 127	24 V DC
	DeviceNet	Addresses available: 0 - 63	24 V DC
	Serial interface easyRelay or MFD-...CP8/CP10... to Ethernet for connection to easyOPC server, easySoft, or easyCom	24 V DC	
			<b>EASY205-ASI</b> 221598
			<b>EASY204-DP</b> 212316
			<b>EASY221-CO</b> 233539
			<b>EASY222-DN</b> 233540
			<b>EASY209-SE</b> 101520



1	Compact PLC	17	MSC motor starters	31	SWD card for function elements, base fixing	45	DA1 variable frequency drives
2	Touch panel	18	SWD PKE module (motor starter)	32	SWD LED elements for base fixing	46	SWD bus termination resistor for 8 pole flat band conductor
3	PLC with field bus interface	19	Motor starters with PKE electronic motor protection	33	SWD function elements for base fixing	47	M12 plug connector, 5 pole
4	Gateways	20	DS7 soft starters with PKE electronic motor protection	34	SWD universal modules, base fixing	48	Round cable, 5-pole
5	Control relays	21	SWD universal module, front mount	35	SWD plug-in connector, 8 pole	49	SWD I/O module IP67, 2 I/O
6	SWD blade terminal, 8 pole	22	SWD LED element, front mount	36	SWD round cable, 8 pole	50	SWD I/O module IP67, 4 I/O
7	SWD ribbon cable, 8 pole	23	RMQ-Titan mounting clamps for flush mounting plates	37	SWD adapter for flat/round cable for top-hat rail mounting	51	SWD I/O module IP67, max. 16 I/O
8	SWD I/O module	24	RMQ-Titan indicator lights	38	SWD PKE module (motor-protective circuit-breaker)	52	SWD bus termination resistor IP67 for 5 pole round cable, M12
9	SWD module for circuit-breakers and residual current circuit-breakers	25	SWD function elements for front mount	39	PKE motor-protective circuit-breakers	53	Base module signal tower SL4/SL7
10	SWD external device plug, 8 pole	26	SWD operating elements	40	Soft Starter DS7	54	Signal towers SL4 /SL7
11	SWD interface for NZM	27	SWD power feeder module	41	DE1 Variable speed starter	55	Electronic Motor Starter EMS
12	NZM circuit-breakers	28	SWD control panel bushing ribbon cable to 8 pole round cable, M20	42	SWD function element for DC1 variable frequency drive, DE1 variable speed starter	56	SmartWire-DT planning and ordering aid (SWD-Assist)
13	SWD contactor module	29	SWD control panel bushing ribbon cable to 5 pole round cable, M12	43	SWD function element for DA1 variable frequency drive		
14	DILM contactor	30	Surface mounting enclosure RMQ-Titan	44	DC1 variable frequency drives		
15	SWD contactor module with manual 0 automatic switch						
16	Motor-protective circuit-breakers						

## Features

### SmartWire-DT coordinators

#### Touch panel

With SWD master switch and PLC function  
3.5", 5.7", 7" or 10" TFT-LCD screen, additional field bus interfaces, Ethernet, WEB server

#### Compact controller

With SWD master switch  
Additional fieldbus interfaces, Ethernet, WEB server

#### Control relay

With SWD master switch

#### Gateways

Connection of SmartWire-DT to fieldbus (e.g. CANopen, Profibus, Profinet ...)

Supply voltage for the SmartWire-DT modules

Feeder unit for the control voltage for the motor starter or contactor

Support of up to 99 SmartWire-DT modules

### SmartWire-DT module

I/O modules to connect digital and analog input/output signals in IP20, IP67 degree of protection

DS7 Soft starter with integrated connection

Function element to connect to:

- Pilot devices RMQ-Titan
- SL4/7 signal tower
- Contactor DILM
- Motor-protective circuit-breaker PKZ/PKE
- PKE32,65 circuit-breaker
- NZM2,3,4 circuit-breakers
- Miniature circuit breaker (MCB)
- DE1 Variable speed starter
- DC1, DA1 variable frequency drives








### SmartWire-DT-Assist (SWD-Assist)

Easily create SmartWire-DT networks integrated validity check

Generate order lists.



Online functions:

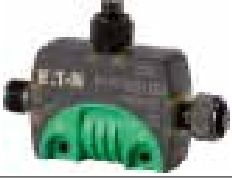




- Configuration check and comparison
  - Display of all input/output data, setting outputs
  - Display of parameters and diagnostics
- Free download at [www.eaton.eu/swd](http://www.eaton.eu/swd)

							Built-in interfaces	Part no.	Article no.						
							1 x Ethernet 10/100 Mbps								
							1 x RS232								
							1 x RS485								
							1 x USB host 2.0								
							1 x CANopen®/easyNet								
							1 x PROFIBUS/MPI								
							1 x SmartWire-DT								
<b>XC compact PLCs</b>															
24 V DC power supply Lot for memory card RUN/STOP switch and LED displays OPC Server Integrated Web server Approvals: CE, cULus Application/marker/retain data 64 MB/4 KB/32 KB KByte Cycle time for 1 k of instructions (Bit, Byte) 0.04 ms															
							✓	✓	-	✓	-	-	✓	<b>XC-152-E3-11</b>	167850
							✓	-	✓	✓	✓	-	✓	<b>XC-152-E6-11</b>	167851
							✓	-	✓	✓	-	✓	✓	<b>XC-152-E8-11</b>	167852
<b>easy800 control relay</b>															
Combines the functionality of an easy800 with direct connection to SmartWire-DT communication system Up to 99 SmartWire-DT modules with a total of up to 166 digital inputs/outputs and/or up to 128 analog inputs/outputs can be connected via a SmartWire-DT line Supply voltage 24 V DC															
Inputs		Of which can be used as outputs		SmartWire-DT	Outputs		SmartWire-DT		Real time clock	Part no.	Article no.				
Digital					Transistor										
															
-	-	-	-	83	-	83			✓	<b>EASY802-DC-SWD</b>	152901				
															
4	2	-	-	83	2	83			✓	<b>EASY802-DC-SWD</b>	152902				
<b>Gateways</b>															
Used to connect the SmartWire-DT communication system to industrial field bus systems. Powers SmartWire-DT modules and switchgear															
							Baud Rates	Number of SmartWire-DT slaves	Part no.	Article no.					
For connection to PROFIBUS-DP field bus Field bus connection via 9 pole SUB-D socket Separate RS232 diagnostics interface (RJ45)							up to 12 MBit/s	Max. 58	<b>EU5C-SWD-CAN</b>	116307					
For connection to CANopen® field bus Field bus connection via 9 pole SUB-D plug Separate RS232 diagnostics interface (RJ45)							up to 1 MBit/s	Max. 99	<b>EU5C-SWD-DP</b>	116308					
							10/100 MBit/s	Max. 99	<b>EU5C-SWD-EIP-MODTCP</b>	153163					
For connection to the Ethernet-IP/MODBUS-TCP field bus Field bus connection via Ethernet Switch Separate RS232 diagnostics interface (RJ45)															
							100 MBit/s	Max. 99	<b>EU5C-SWD-PROFINET</b>	170124					
For connection to field bus PROFINET as PROFINET IO-Device Field bus connection via Ethernet Switch Separate USB diagnostics interface (Mini-USB)															
							100 MBit/s	Max. 99	<b>EU5C-SWD-POWERLINK</b>	171797					
For connection to a POWERLINK field bus as a slave Field bus connection via Ethernet hub Separate USB diagnostics interface (Mini-USB)															
For connection to an EtherCAT fieldbus as a slave Field bus connection via Ethernet Switch Separate USB diagnostics interface (Mini-USB)							100 MBit/s	Max. 99	<b>EU5C-SWD-ETHERCAT</b>	177354					

# SmartWire-DT

## Module, Input/output modules (IP20)


		Inputs		Outputs			Part no.	Article no.
		Digital	Analog	Relay	Transistor	Analog		
<b>Input/output modules (IP20)</b>								
<b>Digital modules IP20</b> For connection of digital I/O signals For use with: ribbon cable, SWD coordinators								
		8	-	-	-	-	<b>EU5E-SWD-8DX</b>	116381
	The outputs are short-circuit proof.	4	-	-	4	-	<b>EU5E-SWD-4D4D</b>	116382
		4	-	2	-	-	<b>EU5E-SWD-4D2R</b>	116383
	The outputs are short-circuit proof.	-	-	-	8	-	<b>EU5E-SWD-X8D</b>	144061
	Inputs with supply for sensor system.	4	-	-	-	-	<b>EU5E-SWD-4DX</b>	144060
<b>Analog modules IP20</b> For connection of analog I/O signals For use with ribbon cable, SWD coordinators								
	Inputs configurable: 0 - 10 V, 0 - 20 mA	-	4	-	-	-	<b>EU5E-SWD-4AX</b>	144062
	Inputs/outputs, configurable: 0 - 10 V, 0 - 20 mA	-	2	-	-	2	<b>EU5E-SWD-2A2A</b>	144063
	Configurable inputs: PT100, PT1000, Ni1000 Temperature range °C : PT100, PT1000: -50 - +200 Ni1000: -50 - +150	-	4	-	-	-	<b>EU5E-SWD-4PT</b>	144064
	Configurable inputs: PT100, PT1000, Ni1000 Temperature range °C : PT100, PT1000: -100 - +400 Ni1000: -50 - +200	-	4	-	-	-	<b>EU5E-SWD-4PT-2</b>	172560



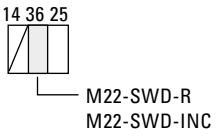


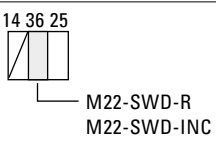
Short Description	Inputs		Outputs		Part no.	Article no.
	Digital	Analog	Transistor	Analog		
<b>Input/output modules (IP67)</b>						
<b>Digital modules IP67</b> For connection of digital I/O signals						
	-	2	-	-	-	<b>EU1E-SWD-2DX</b> 174711
Freely configurable inputs/outputs, max. 2 The outputs are short-circuit proof.	≤ 2	-	≤ 2	-	-	<b>EU1E-SWD-2DD</b> 174715
	-	4	-	-	-	<b>EU2E-SWD-4DX</b> 174726
Freely configurable inputs/outputs, max. 4 The outputs are short-circuit proof.	≤ 4	-	≤ 4	-	-	<b>EU2E-SWD-4DD</b> 174732
<b>Analog modules IP67</b> For connection of analog I/O signals						
	Input: 0 - 10 V	-	1	-	-	<b>EU1E-SWD-1AX-1</b> 174717
	Input: 0 - 20 mA	-	1	-	-	<b>EU1E-SWD-1AX-2</b> 174718
	Output: 0 - 10 V	-	-	-	1	<b>EU1E-SWD-1XA-1</b> 174719
	Output: 0 - 20 mA	-	-	-	1	<b>EU1E-SWD-1XA-2</b> 174720
	Configurable inputs: PT100, PT1000, Ni1000 Temperature range °C : PT100, PT1000: -100 - +400 Ni1000: -50 - +200	-	2	-	-	<b>EU2E-SWD-2PT</b> 174733
<b>Counter module IP67</b> For connecting a meter						
	Meter/incremental encoder 24 V DC, max. 30 kHz	-	-	-	-	<b>EU1E-SWD-1CX</b> 174721

# SmartWire-DT






Module, Control and Indication

Contacts	Colour	Front fixing Part no.	Article no.	Base fixing Part no.	Article no.
<b>SmartWire-DT RMQ connections</b>					
For combination with RMQ-Titan operating elements M22-...					
Function elements					
	1 changeover contact	without LED	<b>M22-SWD-K11</b>	115964	<b>M22-SWD-KC11</b> 115995
	2 changeover contact	without LED	<b>M22-SWD-K22</b>	115965	<b>M22-SWD-KC22</b> 115996
	1 changeover contact	○	<b>M22-SWD-K11LED-W</b>	115972	<b>M22-SWD-K11LEDC-W</b> 116003
		●	<b>M22-SWD-K11LED-B</b>	115973	<b>M22-SWD-K11LEDC-B</b> 116004
		●	<b>M22-SWD-K11LED-G</b>	115974	<b>M22-SWD-K11LEDC-G</b> 116005
		●	<b>M22-SWD-K11LED-R</b>	115975	<b>M22-SWD-K11LEDC-R</b> 116006
	2 changeover contact	○	<b>M22-SWD-K22LED-W</b>	115978	<b>M22-SWD-K22LEDC-W</b> 116009
		●	<b>M22-SWD-K22LED-B</b>	115979	<b>M22-SWD-K22LEDC-B</b> 116010
		●	<b>M22-SWD-K22LED-G</b>	115980	<b>M22-SWD-K22LEDC-G</b> 116011
		●	<b>M22-SWD-K22LED-R</b>	115981	<b>M22-SWD-K22LEDC-R</b> 116012
LED elements					
	-	○	<b>M22-SWD-LED-W</b>	115966	<b>M22-SWD-LEDC-W</b> 115997
	-	●	<b>M22-SWD-LED-B</b>	115967	<b>M22-SWD-LEDC-B</b> 115998
	-	●	<b>M22-SWD-LED-G</b>	115968	<b>M22-SWD-LEDC-G</b> 115999
	-	●	<b>M22-SWD-LED-R</b>	115969	<b>M22-SWD-LEDC-R</b> 116000

Description	Tube length	For use with	Part no.	Article no.
<b>Signal towers Basic modules</b>				
For horizontal mounting, including cover, max. 5 modules,				
	100 mm	SL4-L-... SL4-BL-... SL4-FL-... SL4-AP-...	<b>SL4-SWD</b>	171311
	100 mm	SL7-L-... SL7-BL-... SL7-FL-... SL7-AP-...	<b>SL7-SWD</b>	171459

Description	Configuration	Part no.	Article no.
<b>Potentiometer</b>			
 Front element SmartWire-DT potentiometer Only in conjunction with M22-SWD-R function element		<b>M22-R-SWD</b>	179292
 Function element SmartWire-DT potentiometer Only in conjunction with M22-R-SWD front element	 M22-SWD-R M22-SWD-INC	<b>M22-SWD-R</b>	179293
<b>Encoder</b>			
 Front element SmartWire-DT encoder With actuation function Only in conjunction with M22-SWD-INC function element		<b>M22-INC-SWD</b>	179981
 Function element SmartWire-DT encoder Only in conjunction with M22-INC-SWD front element	 M22-SWD-R M22-SWD-INC	<b>M22-SWD-INC</b>	179982






	Description	For use with	Part no. Article no.
<b>Contactor modules<sup>1,2)</sup></b>			
For connecting the contactors to SmartWire-DT Per contactor 1 module necessary.			
	<b>Messages</b> Switch status Contactor, status of the digital inputs 1 and 2 <b>Commands</b> Contactor actuation	DILM(C)7... - DILM(C)32 DILM38 DILA MSC-D(E)-...(24VDC)	<b>DIL-SWD-32-001</b> 118560
	1-0-A switch for manual or automatic operation. <b>Messages</b> Switch status Contactor, status of the digital inputs 1 and 2, 1-0-A switch position <b>Commands</b> Contactor actuation	DILM(C)7... - DILM(C)32 DILM38 DILA MSC-D(E)-...(24VDC)	<b>DIL-SWD-32-002</b> 118561
<b>PKE module (motor-starter combinations)<sup>1)</sup></b>			
For connecting PKE motor-starter combination MSC-DEA... with PKE-XTUA-... trip blocks with a rated motor output of 15 kW/400 V to SmartWire-DT SmartWire-DT module for connection of motor-starter combination, model "Extended" 24 V DC (MSC-DEA-...) up to 15 kW. 1 module per contactor and PKE.			
	Mounting on DILM contactor with 24 V DC control voltage. One module per contactor and PKE necessary Additional SWD contactor module required for actuation of reversing starter. 1 electrical interlock for the surface mounting of reversing starters. 1-0-A switch for manual or automatic operation. Selectable overload relay function (ZMR) for switching off the contactor on overload. Connecting cable between module and trip block PKE-XTUA-... included as standard. <b>Messages</b> Switch position contactor/PKE/1-0-A switch Motor current in % Thermal motor image in % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set time lag (CLASS) Part no. of trip block <b>Commands</b> Contactor actuation Activation Overload relay function (ZMR)	DILM(C)7... - DILM(C)32 MSC-DEA	<b>PKE-SWD-32</b> 126895
<b>PKE module (motor-protective circuit-breaker)</b>			
For connecting the motor-protective circuit-breaker with PKE-XTU(W)A-... trip blocks(motor protection) to SmartWire-DT			
	Fitted on PKE motor-protective circuit-breaker <b>Messages</b> Contactor state PKE Motor current in % Thermal motor image in % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set time lag (CLASS) Part no. of trip block <b>Commands</b> Remote disconnection of motor-protective circuit-breaker	PKE12 PKE32 PKE65	<b>PKE-SWD-SP</b> 150614
<b>PKE module (circuit-breaker)</b>			
For connecting the PKE circuit-breaker with PKE-XTU(W)ACP-... trip blocks(motor protection) to SmartWire-DT for 2 function elements M22-SWD-K22...			
	For attachment to PKE circuit-breakers <b>Messages</b> Contactor state PKE All phase currents in % Thermal load as a % Trip indications (Overload, Short-circuit,...) Set value of overload releases Set short-circuit release value Part no. of trip block <b>Commands</b> Remote circuit-breaker de-energization	PKE32 PKE65	<b>PKE-SWD-CP</b> 172735








**Notes**






- For current consumption of the contactor coils > 3 A (UL: 2 A) use additional power feed module.  
 A2 connections must not be bridged.  
 Wiring sets DILM 12-XRL and PKZM0-XRM12 cannot be used.
- Connection terminals for electrical interlocking are not suitable for safety technology.













Description	Setting range of overload releases $I_r$ $A_x$ 	Part no.	Article no.
<b>Electronic motor starter</b>			
For connecting to SmartWire-DT for expanded diagnostics.			
	DOL starters (complete devices)	0,18 - 2,4	<b>EMS-DO-T-2,4-SWD</b> 170106
		1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DO-T-9-SWD</b> 170107
	Reversing starters (complete devices)	0,18 - 2,4	<b>EMS-RO-T-2,4-SWD</b> 170108
		1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-RO-T-9-SWD</b> 170109
	DOL starters (complete devices)	0,18 - 2,4	<b>EMS-DOS-T-2,4-SWD</b> 170110
		1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-DOS-T-9-SWD</b> 170111
	Reversing starters (complete devices)	0,18 - 2,4	<b>EMS-ROS-T-2,4-SWD</b> 170112
		1,5 - 7 (AC-53a) 9 (AC-51)	<b>EMS-ROS-T-9-SWD</b> 169790

	Rated operational current device (AC-53) $I_e$ A	Assigned motor rating		Part no. Article no.
		at 400 V, 50 Hz P kW	at 460 V, 60 Hz P HP	
<b>Soft starters</b>				
Soft starters for three-phase loads, Mains supply voltage (50/60 Hz) $U_{LN}$ 200 - 480 V AC Control voltage $U_c$ = 24 V DC, Supply voltage $U_s$ = 24 V DC				
	4	1.5	2	<b>DS7-34DSX004N0-D</b> 134943
	7	3	5	<b>DS7-34DSX007N0-D</b> 134945
	9	4	5	<b>DS7-34DSX009N0-D</b> 134946
	12	5.5	10	<b>DS7-34DSX012N0-D</b> 134947
	16	7.5	10	<b>DS7-34DSX016N0-D</b> 134948
	24	11	15	<b>DS7-34DSX024N0-D</b> 134949
	32	15	25	<b>DS7-34DSX032N0-D</b> 134950
	41	22	30	<b>DS7-34DSX041N0-D</b> 134952
	55	30	40	<b>DS7-34DSX055N0-D</b> 134953
	70	37	50	<b>DS7-34DSX070N0-D</b> 134954
	81	45	60	<b>DS7-34DSX081N0-D</b> 134955
	100	55	75	<b>DS7-34DSX100N0-D</b> 134956
	135	75	100	<b>DS7-34DSX135N0-D</b> 134957
	160	90	125	<b>DS7-34DSX160N0-D</b> 134958
	200	110	150	<b>DS7-34DSX200N0-D</b> 134959

Connection technique	For use with	Part no. Article no.
<b>Power XL™ variable frequency drives</b>		
Fieldbus connection (optional)		
	For connecting DA1 variable frequency drives (IP20/IP55) to SmartWire-DT Plug-in module with slot for SWD4-8SF2-5 external device plug	DA1 (IP20, IP55) <b>DX-NET-SWD1</b> 169129
	For connecting DE1 variable speed starter and DC1 variable frequency drives (IP20) to SmartWire-DT Plug-in module (front) with slot for SWD4-8SF2-5 external device plug	DE1, DE11, DC1 (IP20) <b>DX-NET-SWD3</b> 169131
Description		Part no. Article no.
<b>NZM compact circuit breakers</b>		
SmartWire-DT interface for NZM The module implements the data connection between the NZM2/3/4 with electronic release and the SmartWire-DT.		
	A switch with a remote operator can also be remotely operated with the module. Two digital inputs for the switch status 2 transistor outputs for remote switching Retentive memory for energy data (kWh) Energy data is transmitted through digital input (S0) from an external energy measuring module NZN...-XMC-S0. A connection cable (1.90 m) for the circuit-breaker and two NZM auxiliary contacts (1 x NO, 1 x NC) are included as standard.	<b>NZM-XSWD-704</b> 135530
Short Description	Side mounting	Part no. Article no.
<b>Safety switching devices XEffect</b>		
The module establishes the connection to miniature circuit-breakers, residual current circuit-breakers, and residual current operated circuit-breakers with overcurrent protection		
	Fuse auxiliary contact Accessories for combined residual-current/power circuit-breakers Accessories for residual current circuit breakers Accessories for miniature circuit breaker	for fitting on left to: FI for fitting on right to: LS, FI/LS <b>MCB-HK-SWD</b> 177175
Description		Part no. Article no.
<b>Power feeder module</b>		
	For feeding control voltage in order to connect additional motor starters and contactors to the SmartWire-DT ribbon cable For the formation of emergency switching off groups for motor starters and contactors	<b>EU5C-SWD-PF1-1</b> 116309
	For feeding supply voltage in order to connect additional SmartWire-DT modules to the SmartWire-DT ribbon cable For additional control voltage feeder for the motor starter and contactors For the formation of emergency switching off groups for motor starters and contactors	<b>EU5C-SWD-PF2-1</b> 116380
	For feeding supply voltage in order to connect additional SmartWire-DT modules (IP 67) and connected sensors/actuators	<b>EU1S-SWD-PF1-2</b> 174724

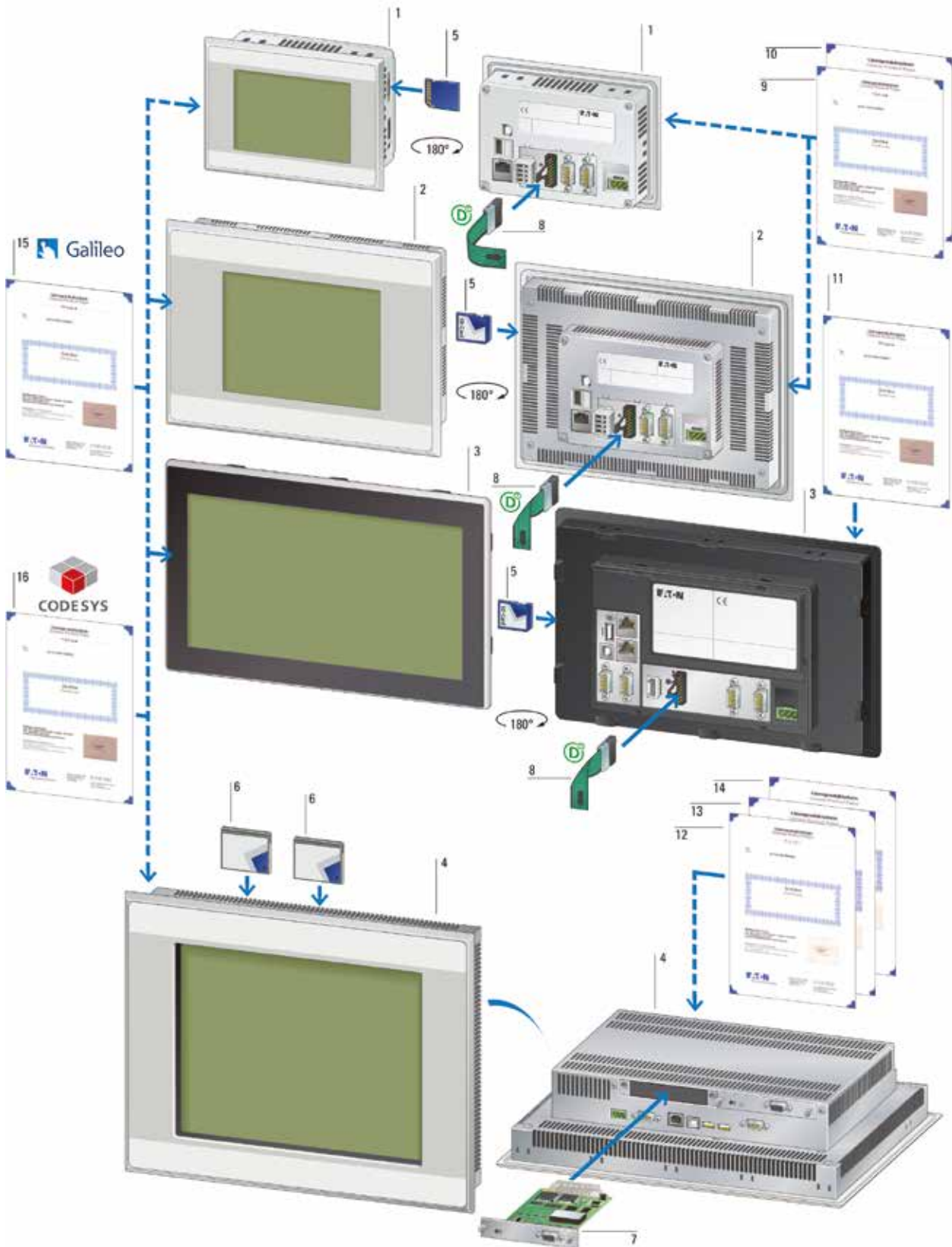
Description	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.	
<b>SWD Connection cables</b>				
<b>SWD ribbon cable</b> For connecting the SmartWire-DT modules within the control panel				
	8 pole Not ready-assembled	IP20	100	<b>SWD4-100LF8-24</b> 116026
	8 pole Prefabricated with two blade terminals SWD4-8MF2	IP20	10	<b>SWD4-10LF8-24-2S</b> 116029
		IP20	3	<b>SWD4-3LF8-24-2S</b> 116027
		IP20	5	<b>SWD4-5LF8-24-2S</b> 116028
<b>SWD round cable</b> For connecting pilot devices in CI surface mounting enclosures				
	8 pole HK-S0-Li2YY, 8 mm diameter	IP67	50	<b>SWD4-50LR8-24</b> 116030
		IP67	250	<b>SWD4-250LR8-24</b> 144878
<b>SWD round cable</b> For connecting peripheral SmartWire-DT cards				
	5 pole Prefabricated with M12 socket and M12 plug, A-keyed	IP67	0.1	<b>SWD4-M1LR5-2S</b> 174760
		IP67	0.3	<b>SWD4-M3LR5-2S</b> 174761
		IP67	0.6	<b>SWD4-M6LR5-2S</b> 174762
		IP67	1	<b>SWD4-1LR5-2S</b> 174763
		IP67	1.5	<b>SWD4-1M5LR5-2S</b> 174764
		IP67	2	<b>SWD4-2LR5-2S</b> 174765
		IP67	3	<b>SWD4-3LR5-2S</b> 174766
		IP67	4	<b>SWD4-4LR5-2S</b> 174767
		IP67	5	<b>SWD4-5LR5-2S</b> 174768
		IP67	10	<b>SWD4-10LR5-2S</b> 174769
	IP67	20	<b>SWD4-20LR5-2S</b> 174770	
<b>I/O round cable</b> For directly connecting sensors/actuators to IP67 SWD modules				
	5 pole prefabricated on one side with M12 plug, A-keyed	IP67	0.3	<b>SWD4-M3LR5-1-2S</b> 179543
		IP67	0.6	<b>SWD4-M6LR5-1-2S</b> 179544
		IP67	1	<b>SWD4-1LR5-1-2S</b> 179545
		IP67	2	<b>SWD4-2LR5-1-2S</b> 179546
<b>I/O round cable</b> For directly connecting sensors/actuators to IP67 SWD modules				
	5 pole Prefabricated with M12 socket and M12 plug, A-keyed	IP67	0.3	<b>SWD4-M3LR5-1-2S</b> 179543
		IP67	0.6	<b>SWD4-M6LR5-1-2S</b> 179544
		IP67	1	<b>SWD4-1LR5-1-2S</b> 179545
		IP67	2	<b>SWD4-2LR5-1-2S</b> 179546

	Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Length m	Part no. Article no.
<b>SWD enclosure and control panel cable gland</b>					
	8 pole M20 socket 8 prefabricated cables for connection to PCB M22-SWD-I...	For flush mounting in M22-I... surface mounting enclosure	IP67	0.15	<b>SWD4-SF8-20</b> 116031
	8 pole M20 plug 8 prefabricated cables for connection to PCB M22-SWD-I...		IP67	0.15	<b>SWD4-SM8-20</b> 116032
	Connection round cable via socket Connection of ribbon cable with blade terminal SWD4-8MF2 8 pole Double conductor run pluggable Additional control voltage feeder for the motor starter and contactors.	For transition from SWD ribbon cable to SWD round cable SWD4-...LR8-24	IP67	-	<b>SWD4-SFL8-20</b> 121380
	Connection round cable via plug Connection of ribbon cable with blade terminal SWD4-8MF2 8 pole Double conductor run pluggable Additional control voltage feeder for the motor starter and contactors.		IP67	-	<b>SWD4-SML8-20</b> 121381
	SmartWire-DT control panel bushing for 8-conductor ribbon cable to 5-conductor round cable, separate 24 VDC 4 A power supply for round cable	For transition from SWD round cable to SWD ribbon cable SWD4-...LR5-2S	IP67	-	<b>SWD4-SFL8-12</b> 174756
	From IP67 to IP20, from 5-conductor round cable to 8-conductor ribbon cable, integrated 15 VDC 180 mA power supply unit for SmartWire-DT modules on the ribbon cable	For transition from SWD round cable SWD4-...LR5-2S to SWD ribbon cable	IP67	-	<b>SWD4-SML8-12</b> 174755
	Control panel cable gland for 5-conductor SWD4-...LR8-24 M12 SmartWire-DT round cable, M12 plug/socket	For flush mounting in an enclosure	IP67	-	<b>SWD4-SML5-12</b> 174757
	5 pole M12 socket, A-coded 5 prefabricated cables	For flush mounting in an enclosure	IP67	1	<b>SWD4-PRF5-1-S</b> 174758
	5 pole M12 plug, A-coded 5 prefabricated cables	For flush mounting in an enclosure	IP67	1	<b>SWD4-PRM5-1-S</b> 174759
	5 pole M12 socket, A-coded 5 prefabricated cables	For flush mounting in an enclosure	IP67	0.15	<b>SWD4-PRF5-2-S</b> 179541
	5 pole M12 plug, A-coded 5 prefabricated cables	For flush mounting in an enclosure	IP67	0.15	<b>SWD4-PRM5-2-S</b> 179542
	Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)		Part no. Article no.
<b>SWD plugs and plug-in connections</b>					
	8-pin SmartWire-DT external device plug that can be connected at any point on the ribbon cable. External device plugs can be used to connect the function elements of any SmartWire-DT module in a control panel.	For connecting the ribbon cable to SmartWire-DT modules in the control panel	IP20		<b>SWD4-8SF2-5</b> 116022
	8-pin SmartWire-DT blade terminal that can be installed at both ends of the SmartWire-DT ribbon cable. The following components can be connected: SmartWire-DT coordinators such as easy800-SWD / SmartWire-DT gateway, SmartWire-DT power feeder module, SmartWire-DT coupling, SmartWire-DT bus termination resistor, SmartWire-DT control panel bushings	For connecting the ribbon cable to the gateway, power feeder module, coupling, SWD4-RC8-10 bus termination resistor	IP20		<b>SWD4-8MF2</b> 116023
	Cap with monitoring function for M12 bushings on SWD connector (IP67)	Cover cap with monitoring function for M12 socket	IP67		<b>SWD4-ACAP-10</b> 174751
	Cap for M12 sockets on SWD connector (IP67)	Cap for M12 socket	IP67		<b>SWD4-PCAP-F</b> 174752
	Cap for M12 plugs on SWD connector (IP67)	Cover cap for M12 plug	IP67		<b>SWD4-PCAP-M</b> 174753

	Description	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.
<b>SWD plugs and plug-in connections</b>				
	8 pole socket Straight Soldering connection	Plug connector for 8-pole SWD4-...LR8-24 round cables	IP67	<b>SWD4-SF8-67</b> 116033
	8-pin plug connector Straight Soldering connection		IP67	<b>SWD4-SM8-67</b> 116034
	Splitter with IP67 degree of protection, M12 plug into two M12 sockets with I/O signal on pin 4	For splitting an M12 I/O connection's I/O signals	IP67	<b>SWD4-SP-4124</b> 174703
	Splitter with IP67 degree of protection, M12 plug into two M12 sockets with I/O signal on pin 2		IP67	<b>SWD4-SP-4122</b> 174704
	Splitter with IP67 degree of protection, M12 plug into two 4 pole M8 sockets with I/O signal on pin 2		IP67	<b>SWD4-SP-4084</b> 174705
	Splitter with IP67 degree of protection, M12 plug into two 4 pole M8 sockets with I/O signal on pin 4		IP67	<b>SWD4-SP-4082</b> 174706
	Splitter with IP67 degree of protection, M12 plug into two 3 pole M8 sockets		IP67	<b>SWD4-SP-3084</b> 174707
	5 pole socket Straight Screw connection	Plug connector for 5 pole SWD4-...LR5-... round cables	IP67	<b>SWD4-SF5-67</b> 179547
	5 pole plug Straight Screw connection	Plug connector for 5 pole SWD4-...LR5-... round cables	IP67	<b>SWD4-SM5-67</b> 179548
<b>SWD coupling</b>				
	Coupling via two 8-pin blade terminals	To connect SWD ribbon cables over SWD4-8MF2 blade terminals	IP20	<b>SWD4-8SFF2-5</b> 116024
<b>SWD cable adapters</b>				
	For connection flat cable (plug) on round cable (terminal)	SWD cable adapters	IP20	<b>SWD4-8FRF-10</b> 121377
	SWD power supply module for modules (IP20) on a local SWD segment	SWD power supply module	IP20	<b>SWD4-FFR-PF1-1</b> 168880
	SmartWire-DT cable adapter for putting together a local SmartWire-DT segment	SWD cable adapters	IP20	<b>SWD4-FFR-ST1-1</b> 168881
	To set up a local SWD network with SWD modules (IP67)	Local SmartWire-DT branch	IP67	<b>EU2A-SWD-PBWN</b> 174734
<b>SWD bus termination resistor</b>				
	SmartWire-DT bus termination resistor; plugged onto SWD4-8MF2 blade terminal at the end of the SmartWire-DT ribbon cable	For the SmartWire-DT bus termination resistor on the SmartWire-DT ribbon cable	IP20	<b>SWD4-RC8-10</b> 116020
	SmartWire-DT bus termination resistor with IP67 degree of protection, connected to 5-conductor SWD4-..LR5.. round cable or directly to SmartWire-DT T-Connectors (IP67 I/O modules)	For IP67, M12 SWD bus termination resistor	IP67	<b>SWD4-RC5-10</b> 174754



	Function	Protection type (IEC/EN 60529, EN50178, VBG 4)	Part no. Article no.
<b>Link</b>			
	For bridging open mounting locations for SWD4-8SF2-5 external device plugs	-	<b>SWD4-SEL8-10</b> 116021
<b>RMQ</b>			
	For 2 function elements M22-SWD-K22... For two M22-SWD-NOP universal modules	-	<b>M22-SWD-A4</b> 116016
	For mounting 1 base function element	-	<b>M22-SWD-I1-LP01</b> 115990
	For mounting 2 base function elements	-	<b>M22-SWD-I2-LP01</b> 115991
	For mounting 3 base function elements	-	<b>M22-SWD-I3-LP01</b> 115992
	For mounting 4 base function elements	-	<b>M22-SWD-I4-LP01</b> 115993
	For mounting 6 base function elements	-	<b>M22-SWD-I6-LP01</b> 115994
	For bridging of open mounting locations on card	-	<b>M22-SWD-SEL8-10</b> 116698
<b>Universal module</b>			
	For configured but not yet installed SWD modules connected to the SWD ribbon cable	IP20	<b>M22-SWD-NOP</b> 147637
	For configured but not yet installed SWD modules on the M22-SWD-I... card	IP20	<b>M22-SWD-NOPC</b> 147638
	For configured but not yet installed SWD modules connected to the SWD ribbon cable SWD4-..LR5-2S	IP67	<b>EU1M-SWD-NOP</b> 174716
<b>Tools for plugs</b>			
	Crimping tool for joining external device plugs and ribbon cable	-	<b>SWD4-CRP-1</b> 116025
	Crimping tool for making contacts with blade terminals and ribbon cables	-	<b>SWD4-CRP-2</b> 116699
<b>Programming accessories</b>			
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks	-	<b>EU4A-RJ45-CAB1</b> 106726
	For transferring the user program to the PLC or for diagnosing SmartWire-DT networks	-	<b>EU4A-RJ45-USB-CAB1</b> 115735
	Programming and visualisation software	-	<b>EASY-SOFT-PRO</b> 266040







- 1 XV-102/XV-112 touch display with PLC, resistive touch technology 3.5" 5.7" and 7.0" widescreen
- 2 XV-152 touch display with PLC, resistive touch technology 5.7" 8.4" and 10.4"
- 3 XV-3x3 touch display with PLC, capacitive multi-touch technology, 7.0" or 10.1" widescreen
- 4 XV(S)-400 touch display with PLC, infrared or resistive touch technology, 5.7", 8.4", 10.4", 12.1", or 15"
- 5 SD memory card
- 6 Compact flash memory card
- 7 Communication module for XV-400

- 8 SmartWire-DT
- 9 License product certificate PLC for XV-1x2
- 10 License product certificate for communication expansion for XV-1x2
- 11 License product certificate PLC for XV-3x3
- 12 License product certificate PLC for XV(S)-400
- 13 License product certificate for communication expansion for XV(S)-400
- 14 License product certificate for Windows CE5
- 15 License product certificate GALILEO
- 16 License product certificate XSOFT-CODESYS-2/3










	Screen diagonal Inch	PLC-licence	Built-in interfaces					Part no.	Article no.
			1 x RS232	1 x RS485	1 x USB host 2.0	1 x CANopen® easyNet	1 x PROFIBUS/MP		
<b>XV100 without PLC</b>									
Resistive-Touch Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 1 x Ethernet 10/100 Mbps 1 x USB device									
Number of colours: 32 grey levels									
	3.5	No PLC function possible	-	-	-	-	-	<b>XV-102-A0-35MQR-10</b> 141759	
			-	-	-	-	✓	<b>XV-102-A2-35MQR-10</b> 141820	
			✓	-	-	-	-	<b>XV-102-A3-35MQR-10</b> 141821	
			-	✓	-	-	-	<b>XV-102-A4-35MQR-10</b> 141822	
			✓	-	-	✓	-	<b>XV-102-A5-35MQR-10</b> 141823	
Number of colours: 64 k Colours									
	3.5	No PLC function possible	✓	-	-	-	-	<b>XV-102-H3-35TQRL-10</b> 171158	
			-	✓	-	-	-	<b>XV-102-H4-35TQRL-10</b> 171159	
	5.7		✓	-	✓	-	-	<b>XV-102-H3-57TVRL-10</b> 171160	
			-	✓	✓	-	-	<b>XV-102-H4-57TVRL-10</b> 171161	
	7		✓	-	✓	-	-	<b>XV-102-H3-70TWRL-10</b> 171162	
			-	✓	✓	-	-	<b>XV-102-H4-70TWRL-10</b> 171163	










	PLC-licence	Built-in interfaces					Part no.	Article no.
			1 x RS232	1 x RS485	1 x CANopen®/ easyNet	1 x PROFIBUS/MPI	1 x SmartWire-DT	
<b>XV100 3.5"</b>								
Resistive-Touch, QVGA 320 x 240 Pixel Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 1 x Ethernet 10/100 Mbps 1 x USB device								
Number of colours: 32 grey levels								
	Including		-	-	-	-	-	<b>XV-102-B0-35MQR-10-PLC</b> 140012
			✓	-	-	-	-	<b>XV-102-B3-35MQR-10-PLC</b> 140013
			✓	-	✓	-	-	<b>XV-102-B5-35MQR-10-PLC</b> 140015
			-	✓	✓	-	-	<b>XV-102-B6-35MQR-10-PLC</b> 140016
			-	✓	-	✓	-	<b>XV-102-B8-35MQR-10-PLC</b> 140017
Number of colours: 64 k Colours								
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT		-	-	-	-	-	<b>XV-102-B0-35TQR-10</b> 140007
			-	-	-	✓	-	<b>XV-102-B2-35TQR-10</b> 140008
			✓	-	-	-	-	<b>XV-102-B3-35TQR-10</b> 140009
			-	✓	-	-	-	<b>XV-102-B4-35TQR-10</b> 140010
			✓	-	✓	-	-	<b>XV-102-B5-35TQR-10</b> 140011
	Including		-	-	-	-	-	<b>XV-102-B0-35TQR-10-PLC</b> 140018
			✓	-	-	-	-	<b>XV-102-B3-35TQR-10-PLC</b> 140019
			-	✓	-	-	-	<b>XV-102-B4-35TQR-10-PLC</b> 140020
			✓	-	✓	-	-	<b>XV-102-B5-35TQR-10-PLC</b> 140021
			-	✓	✓	-	-	<b>XV-102-B6-35TQR-10-PLC</b> 140022
			-	✓	-	✓	-	<b>XV-102-B8-35TQR-10-PLC</b> 140023
			-	-	-	-	✓	<b>XV-102-BE-35TQRC-10</b> 153524



# XV100













HMI-PLC touch display with PLC





PLC-licence		Built-in interfaces							Part no.	Article no.
		1 x RS232	1 x RS485	1 x CANopen@/easyNet	2 x CANopen@/easyNet (electrically isolated)	1 x USB host 2.0	1 x PROFIBUS/MPI	1 x SmartWire-DT		
<b>XV100 5.7"</b>										
Resistive-Touch, VGA 800 x 480 Pixel Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 Number of colours: 64 k Colours 1 x Ethernet 10/100 Mbps 1 x USB device										
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT	✓	-	-	-	✓	-	-	<b>XV-102-D0-57TVR-10</b>	142530
		✓	✓	-	-	✓	-	-	<b>XV-102-D4-57TVR-10</b>	150620
		✓	✓	✓	-	✓	-	-	<b>XV-102-D6-57TVR-10</b>	142531
		✓	✓	-	-	✓	✓	-	<b>XV-102-D8-57TVR-10</b>	142532
Including	✓	✓	✓	-	✓	-	-	<b>XV-102-D6-57TVRC-10</b>	142533	
	✓	✓	-	-	✓	✓	-	<b>XV-102-D8-57TVRC-10</b>	142534	
	-	✓	✓	-	✓	-	✓	<b>XV-102-E6-57TVRC-10</b> 	153525	
	-	✓	-	-	✓	✓	✓	<b>XV-102-E8-57TVRC-10</b> 	153526	
Without front plate Rear mounting	Including	✓	✓	✓	-	✓	-	-	<b>XV-112-D6-57TVRC-00</b>	153469
										
<b>XV100 7"</b>										
Resistive-Touch, WVGA 800 x 480 Pixel Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 Number of colours: 64 k Colours 1 x Ethernet 10/100 Mbps 1 x USB device										
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT	✓	-	-	-	✓	-	-	<b>XV-102-D0-70TWR-10</b>	142535
		✓	✓	-	-	✓	-	-	<b>XV-102-D4-70TWR-10</b>	150621
		✓	✓	✓	-	✓	-	-	<b>XV-102-D6-70TWR-10</b>	142536
		✓	✓	-	-	✓	✓	-	<b>XV-102-D8-70TWR-10</b>	142537
Including	✓	✓	✓	-	✓	-	-	<b>XV-102-D6-70TWRC-10</b>	142538	
	✓	✓	-	-	✓	✓	-	<b>XV-102-D8-70TWRC-10</b> 	142539	
	-	✓	✓	-	✓	-	✓	<b>XV-102-E6-70TWRC-10</b> 	153527	
	-	✓	-	-	✓	✓	✓	<b>XV-102-E8-70TWRC-10</b>	153528	
Without front plate Rear mounting	Including	✓	-	-	✓	✓	-	-	<b>XV-112-DB-70TWRC-00</b>	153470
										
Without front plate Rear mounting Shipping classification GL, LR, DNV, BV	Including	✓	-	-	✓	✓	-	-	<b>XV-112-DB-70TWRC-70</b>	172909
										

	PLC-licence	Built-in interfaces					Part no.	Article no.
		1 x RS232	1 x RS485	1 x CANopen®/ easyNet	1 x PROFIBUS/MPI	1 x SmartWire-DT		
<b>XV150 5.7"</b>								
Resistive-Touch, VGA 640 x 480 Pixel, Recommended flush mounting cutout 198 x 142 MM Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 Number of colours: 64 k Colours 1 x Ethernet 10/100 Mbps 1 x USB host 2.0 1 x USB device								
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT	✓	-	-	-	-	<b>XV-152-D0-57TVR-10</b>	150525
		✓	✓	-	-	-	<b>XV-152-D4-57TVR-10</b>	150526
		✓	✓	✓	-	-	<b>XV-152-D6-57TVR-10</b>	150527
		✓	✓	-	✓	-	<b>XV-152-D8-57TVR-10</b>	150528
	Including	✓	✓	✓	-	-	<b>XV-152-D6-57TVRC-10</b>	150529
		✓	✓	-	✓	-	<b>XV-152-D8-57TVRC-10</b>	150600
		-	✓	✓	-	✓	<b>XV-152-E6-57TVRC-10</b>	166700 
		-	✓	-	✓	✓	<b>XV-152-E8-57TVRC-10</b>	166701 
<b>XV150 8.4"</b>								
Resistive-Touch, VGA 640 x 480 Pixel, Recommended flush mounting cutout 261 x 194 MM Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 Number of colours: 64 k Colours 1 x Ethernet 10/100 Mbps 1 x USB host 2.0 1 x USB device								
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT	✓	-	-	-	-	<b>XV-152-D0-84TVR-10</b>	150601
		✓	✓	-	-	-	<b>XV-152-D4-84TVR-10</b>	150602
		✓	✓	✓	-	-	<b>XV-152-D6-84TVR-10</b>	150603
		✓	✓	-	✓	-	<b>XV-152-D8-84TVR-10</b>	150604
	Including	✓	✓	✓	-	-	<b>XV-152-D6-84TVRC-10</b>	150605
		✓	✓	-	✓	-	<b>XV-152-D8-84TVRC-10</b>	150606
		-	✓	✓	-	✓	<b>XV-152-E6-84TVRC-10</b>	166702 
		-	✓	-	✓	✓	<b>XV-152-E8-84TVRC-10</b>	166703 
<b>XV150 10.4"</b>								
Resistive-Touch, VGA 640 x 480 Pixel, Recommended flush mounting cutout 329 x 238 MM Windows CE 5.0 (licence incl.), Approvals cUL (UL508) Slots for SD card: 1 Number of colours: 64 k Colours 1 x Ethernet 10/100 Mbps 1 x USB host 2.0 1 x USB device								
	Can be fitted by user with article no. 142581 LIC-PLC-MXP-COMPACT	✓	-	-	-	-	<b>XV-152-D0-10TVR-10</b>	150607
		✓	✓	-	-	-	<b>XV-152-D4-10TVR-10</b>	150608
		✓	✓	✓	-	-	<b>XV-152-D6-10TVR-10</b>	150609
		✓	✓	-	✓	-	<b>XV-152-D8-10TVR-10</b>	150610
	Including	✓	✓	✓	-	-	<b>XV-152-D6-10TVRC-10</b>	150611
		✓	✓	-	✓	-	<b>XV-152-D8-10TVRC-10</b>	150612
		-	✓	✓	-	✓	<b>XV-152-E6-10TVRC-10</b>	166704 
		-	✓	-	✓	✓	<b>XV-152-E8-10TVRC-10</b>	166705 

# XV150


HMI-PLC touch display with PLC


PLC-licence		Built-in interfaces									Part no.	Article no.	
		1 x Ethernet 10/100 Mbps	2 x Ethernet 10/100 Mbps	1 x RS232	1 x RS485	1 x USB host 2.0	1 x USB device	1 x CANopen®/easyNet	1 x PROFIBUS/MPI	1 x SmartWire-DT			
<b>XV-303 Front installation</b>													
Windows Embedded Compact 7 Pro, Approvals: cUL 61010-2-201 Slots for SD card: 1 Resolution: WSVGA 1024 x 600 Pixel Capacitive multi-touch technology (PCT), Number of colours: 16 mil. Front type: Anti-glare tempered glass in plastic bezel													
<b>7"</b>													
	Can be fitted by user with article no. 181585 LIC-PLC-A	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-B00-A00-1B</b>	179647	
		-	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-C00-A00-1B</b>	179648	
		✓	-	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-B02-A00-1B</b>	179651
		-	✓	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-C02-A00-1B</b>	179652
	PLC licence inclusive	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-B00-A00-1C</b>	179649	
		-	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-70-C00-A00-1C</b>	179650	
		✓	-	✓	✓	✓	✓	✓	✓	-	<b>XV-303-70-B02-A00-1C</b>	179653	
		-	✓	✓	✓	✓	✓	✓	✓	-	<b>XV-303-70-C02-A00-1C</b>	179654	
		✓	-	✓	✓	✓	✓	✓	-	✓	<b>XV-303-70-BE0-A00-1C</b>	 179655	
		-	✓	✓	✓	✓	✓	✓	-	✓	<b>XV-303-70-CE0-A00-1C</b>	 179656	
✓	-	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-70-BE2-A00-1C</b>	 179657			
-	✓	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-70-CE2-A00-1C</b>	 179658			
<b>10.1"</b>													
	Can be fitted by user with article no. 181585 LIC-PLC-A	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-303-10-B00-A00-1B</b>	179659	
		-	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-10-C00-A00-1B</b>	179660	
		✓	-	✓	✓	✓	✓	✓	✓	-	<b>XV-303-10-B02-A00-1B</b>	179663	
		-	✓	✓	✓	✓	✓	✓	✓	-	<b>XV-303-10-C02-A00-1B</b>	179664	
	PLC licence inclusive	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-303-10-B00-A00-1C</b>	179661	
		-	✓	✓	✓	✓	✓	✓	-	-	<b>XV-303-10-C00-A00-1C</b>	179662	
		✓	-	✓	✓	✓	✓	✓	✓	-	<b>XV-303-10-B02-A00-1C</b>	179665	
		-	✓	✓	✓	✓	✓	✓	✓	-	<b>XV-303-10-C02-A00-1C</b>	179666	
		✓	-	✓	✓	✓	✓	✓	-	✓	<b>XV-303-10-BE0-A00-1C</b>	 179667	
		-	✓	✓	✓	✓	✓	✓	-	✓	<b>XV-303-10-CE0-A00-1C</b>	 179668	
✓	-	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-10-BE2-A00-1C</b>	 179669			
-	✓	✓	✓	✓	✓	✓	✓	✓	<b>XV-303-10-CE2-A00-1C</b>	 179670			
<b>XV-313 Rear flush mounting</b>													
Windows Embedded Compact 7 Pro, Approvals: cUL 61010-2-201 Slots: for SD card: 1 Resolution: WSVGA 1024 x 600 Pixel Capacitive multi-touch technology (PCT) Number of colours: 16 mil. Front type: Anti-glare tempered glass without bezel													
<b>7"</b>													
	PLC licence inclusive	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-313-70-B00-A00-1C</b>	179671	
<b>10.1"</b>													
	PLC licence inclusive	✓	-	✓	✓	✓	✓	✓	-	-	<b>XV-313-10-B00-A00-1C</b>	179672	



PLC-licence	Touch-technology		Front type			Part no.	Article no.
	Infra-red touch	Resistive-Touch	Satin-finish brushed stainless steel	Standard front with standard membrane	Laminated safety glass, non-reflective		
<b>XV400</b>							
Built-in interfaces - 1 x CAN - 1 x Ethernet 100base-TX/10base-T - 1 x RS232 - 1 x USB device Number of colours: Adjustable: 65536 or 256 colours Windows CE (license required), CompactFlash card required, Approvals cUL (UL508)							
<b>XV400 5.7"</b>							
Slots - for Compact-Flash™ Cards: 1 - for communication modules: 1 1 x USB host VGA 320 x 240 Pixel, Recommended flush mounting cutout 198 x 142 MM							
	Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL	✓	-	-	✓	✓	<b>XV-460-57TQB-1-10</b> 139897
		✓	-	✓	-	✓	<b>XV-460-57TQB-1-50</b> 139898
		-	✓	-	✓	-	<b>XV-450-57TQB-1-10</b> 139899
<b>XV400 8.4"</b>							
Slots - for Compact-Flash™ Cards: 1 - for communication modules: 1 1 x USB host VGA 640 x 480 Pixel, Recommended flush mounting cutout 261 x 194 MM							
	Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL	✓	-	-	✓	✓	<b>XV-460-84TVB-1-10</b> 139900
<b>XV400 10.4"</b>							
Slots - for Compact-Flash™ Cards: 2 - for communication modules: 2 2 x USB host VGA 640 x 480 Pixel, Recommended flush mounting cutout 329 x 238 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM	-	✓	-	✓	-	<b>XV-430-10TVB-1-10</b> 139902
		✓	-	-	✓	✓	<b>XV-440-10TVB-1-10</b> 139904
		✓	-	✓	-	✓	<b>XV-440-10TVB-1-50</b> 139908
<b>XV400 12.1"</b>							
Slots - for Compact-Flash™ Cards: 2 - for communication modules: 2 2 x USB host SVGA 800 x 600 Pixel, Recommended flush mounting cutout 344 x 262 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM	-	✓	-	✓	-	<b>XV-430-12TSB-1-10</b> 139909
		✓	-	-	✓	✓	<b>XV-440-12TSB-1-10</b> 139911
		✓	-	-	✓	✓	<b>XV-460-12TSB-1-10</b> 169824
		✓	-	✓	-	✓	<b>XV-440-12TSB-1-50</b> 139915













# XV400

HMI/HMI-PLC touch display with PLC, Visualisation solutions

PLC-licence	Touch-technology		Front type			Part no.	Article no.
	Infra-red touch	Resistive-Touch	Satin-finish brushed stainless steel	Standard front with standard membrane	Laminated safety glass, non-reflective		
<b>XV400</b> Built-in interfaces - 1 x CAN - 1 x Ethernet 100base-TX/10base-T - 1 x RS232 - 1 x USB device Number of colours: Adjustable: 65536 or 256 colours Windows CE (license required), CompactFlash card required, Approvals cUL (UL508)							
XV400 15"							
Slots - for Compact-Flash™ Cards: 2 - for communication modules: 2 2 x USB host X VGA 1024 x 768 Pixel, Recommended flush mounting cutout 410 x 315 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP MEDIUM	✓	-	-	✓	✓	<b>XV-460-15TXB-1-10</b> 139916
		✓	-	✓	-	✓	<b>XV-460-15TXB-1-50</b> 139918

Description	Supported protocols	Part no.	Article no.
<b>Communication modules for XV4...</b>			
	Multiple protocol board MPI	Eaton Suconet Siemens MPI Matsushita FP series Mitsubishi A-Series/F-Series Omron C-H-K-Series Telemecanique Unitelway new See manual for other protocols	<b>COM-MPB2-TP</b> 139847
	Multiple protocol board	Eaton Suconet Matsushita FP series Mitsubishi A-Series/F-Series Omron C-H-K-Series Telemecanique Unitelway new See manual for other protocols	<b>COM-MPB1-TP</b> 139850
Log board	Profibus DP-Slave (12 MBaud)	<b>COM-PDP-TP</b>	139849
Log board	Profibus DP-Master (12 MBaud)	<b>COM-DPM-MC2</b>	139853

PLC-licence	Touch-technology		Front type			Part no.	Article no.
	Infra-red touch	Resistive-Touch	Satin-finish brushed stainless steel	Standard front with standard membrane	Laminated safety glass, non-reflective		
<b>XVS400</b>							
Built-in interfaces - 1 x Ethernet 100base-TX/10base-T - 1 x RS232 - 1 x PROFIBUS/MPI - 1 x USB device Number of colours: Adjustable: 65536 or 256 colours Windows CE (license required), CompactFlash card required, Approvals cUL (UL508)							
<b>XVS400 5.7"</b>							
Slots - for Compact-Flash™-Cards: 1 1 x USB host QVGA 320 x 240 Pixel, Recommended flush mounting cutout 198 x 142 MM							
	Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL	-	✓	-	✓	-	<b>XVS-450-57MPI-1-10</b> 139969
		✓	-	-	✓	✓	<b>XVS-460-57MPI-1-10</b> 139970
<b>XVS400 8.4"</b>							
Slots - for Compact-Flash™-Cards: 1 1 x USB host VGA 640 x 480 Pixel, Recommended flush mounting cutout 261 x 194 MM							
	Can be fitted by user with article no. 140389 LIC-PLC-MXP-SMALL	✓	-	-	✓	✓	<b>XVS-460-84MPI-1-10</b> 139971
<b>XVS400 10.4"</b>							
Slots - for Compact-Flash™-Cards: 2 2 x USB host VGA 640 x 480 Pixel, Recommended flush mounting cutout 329 x 238 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM	-	✓	-	✓	-	<b>XVS-430-10MPI-1-10</b> 139972
		✓	-	-	✓	✓	<b>XVS-440-10MPI-1-10</b> 139973
<b>XVS400 12.1"</b>							
Slots - for Compact-Flash™-Cards: 2 2 x USB host SVGA 800 x 600 Pixel, Recommended flush mounting cutout 344 x 262 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM	-	✓	-	✓	-	<b>XVS-430-12MPI-1-10</b> 139974
		✓	-	-	✓	✓	<b>XVS-440-12MPI-1-10</b> 139975
<b>XVS400 15"</b>							
Slots - for Compact-Flash™-Cards: 2 2 x USB host XGA 1024 x 768 Pixel, Recommended flush mounting cutout 410 x 315 MM							
	Can be fitted by user with article no. 140390 LIC-PLC-MXP-MEDIUM	✓	-	-	✓	✓	<b>XVS-460-15MPI-1-10</b> 139976

Description	For use with	Part no.	Article no.
<b>Windows CE licenses</b>			
 License for Windows CE 5.0 Core, incl. license label	XV-4... XVS-4...	<b>LIC-OS-CE50-C</b>	140406
 License for Windows CE 5.0 Professional Plus incl. license label	XV-4... XVS-4...	<b>LIC-OS-CE50-PP</b>	140408
<b>Memory cards</b>			
 SD memory card with min. 1 GB Without operating system	XV-3... XV-1..	<b>MEMORY-SD-A2-S</b>	181638
 SD memory card with min. 256 MByte Without operating system	XV-3... XV-1..	<b>MEMORY-SD-A1-S</b>	139807
 Compact flash with min. 128 MByte Without operating system	XV-4... XVS-4...	<b>MEMORY-CF-A1-S</b>	139528
 Compact flash with min. 128 MByte WINDOWS CE 5.0 CORE preinstalled Windows license, article no. 140406 LIC-OS-CE50-C, required	XV-4... XVS-4...	<b>OS-FLASH-A1-C</b>	140368
<b>XV license product certificates</b>			
 License product certificate for PLC upgrading	XV-3.3-...-1B	<b>LIC-PLC-A</b>	181585
 License product certificate for PLC upgrading with COMPACT license label	XV-1...-B... XV-1...-D...	<b>LIC-PLC-MXP-COMPACT</b>	142581
 License product certificate for PLC upgrading with SMALL license label	XV-4...-57... XV-4...-84... XVS-4...-57... XVS-4...-84...	<b>LIC-PLC-MXP-SMALL</b>	140389
 License product certificate for PLC upgrading with MEDIUM license label	XV-4...-10... XV-4...-12... XV-4...-15... XVS-4...-10... XVS-4...-12... XVS-4...-15...	<b>LIC-PLC-MXP-MEDIUM</b>	140390
 License product certificate 40 points	XV-1... XV-4... XVS-4...	<b>LIC-OPT-1ST-LEVEL</b>	140391
 License product certificate 80 points	XV-1... XV-4... XVS-4...	<b>LIC-OPT-2ND-LEVEL</b>	140392

### Notes

#### Licensing for Panel XV100, XV400 and XVS400

The panels of the device series XV100, XV400 und XVS400 are supplied with license points saved to the device. License points are required to be able to perform certain functions with the device

- XSOFT-CODESYS runtime for the PLC function (not possible with: XV-102-A... and XV-102-H...)
- Galileo runtime for visualization
- Communication (e. g. Ethernet, CANopen, Siemens MPI)

Number of license points supplied with standard devices:  
 - 140 license points: XV100 (without PLC function), XV400, XVS400  
 - 240 license points: XV100 with PLC function

Additional license points must be purchased if the license points of the device are not sufficient for the required functions or if the XV panel is to be upgraded with the PLC function. For this you need one or more license certificates. They are:

- License certificates for the PLC function: The LIC-PLC-MXP license certificates are required to activate the PLC function on XSOFT-CODESYS; they contain an appropriate license sticker for the device type, which must be affixed to the device for licensing reasons.
- License certificates for the extended communication with Galileo (LIC-OPT-...)

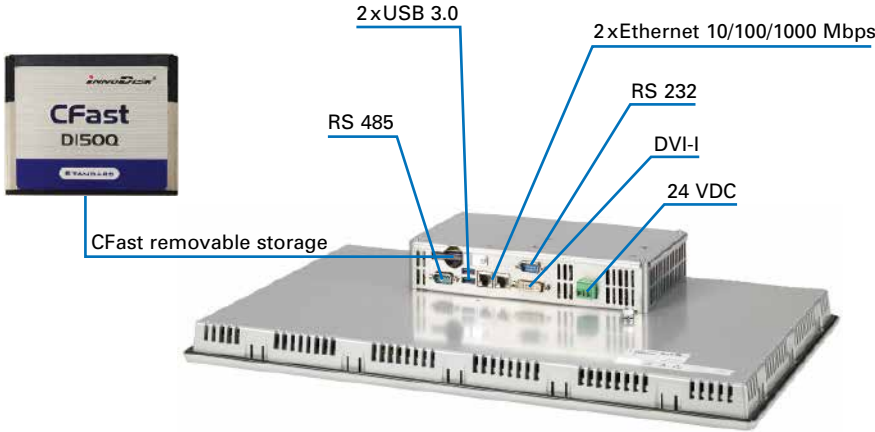
#### Determining required license points

Add the required license points by function for visualization and communication options used. Communication options for several devices with the same protocol only have to be counted once. Deduct from this total the number of points already on the device (e.g. 140 points). The difference is the number of the license points that you have to install using license certificates for the communication options (LIC-OPT-...).

Detailed information and examples can be obtained at: [www.eaton.eu/XV](http://www.eaton.eu/XV) for XV devices on the "Licensing" tab

#### Licensing for Panel XV300




If you want to add the PLC function to the XV-3.3-...-1B panel, you will need to purchase an additional license. To do this, you will need license product certificate LIC-PLC-A. Due to licensing reasons, the license sticker must be affixed to the device.



**XP-503**

- Elegant, slim design
- Heavy-duty glass front in protective aluminum bezel
- Industrial capacitive multi-touch technology (PCT)
- Widescreen display
- Tempered glass with anti-reflective coating
- Powder-coated diecast aluminum housing for flush mounting
- Passively cooled

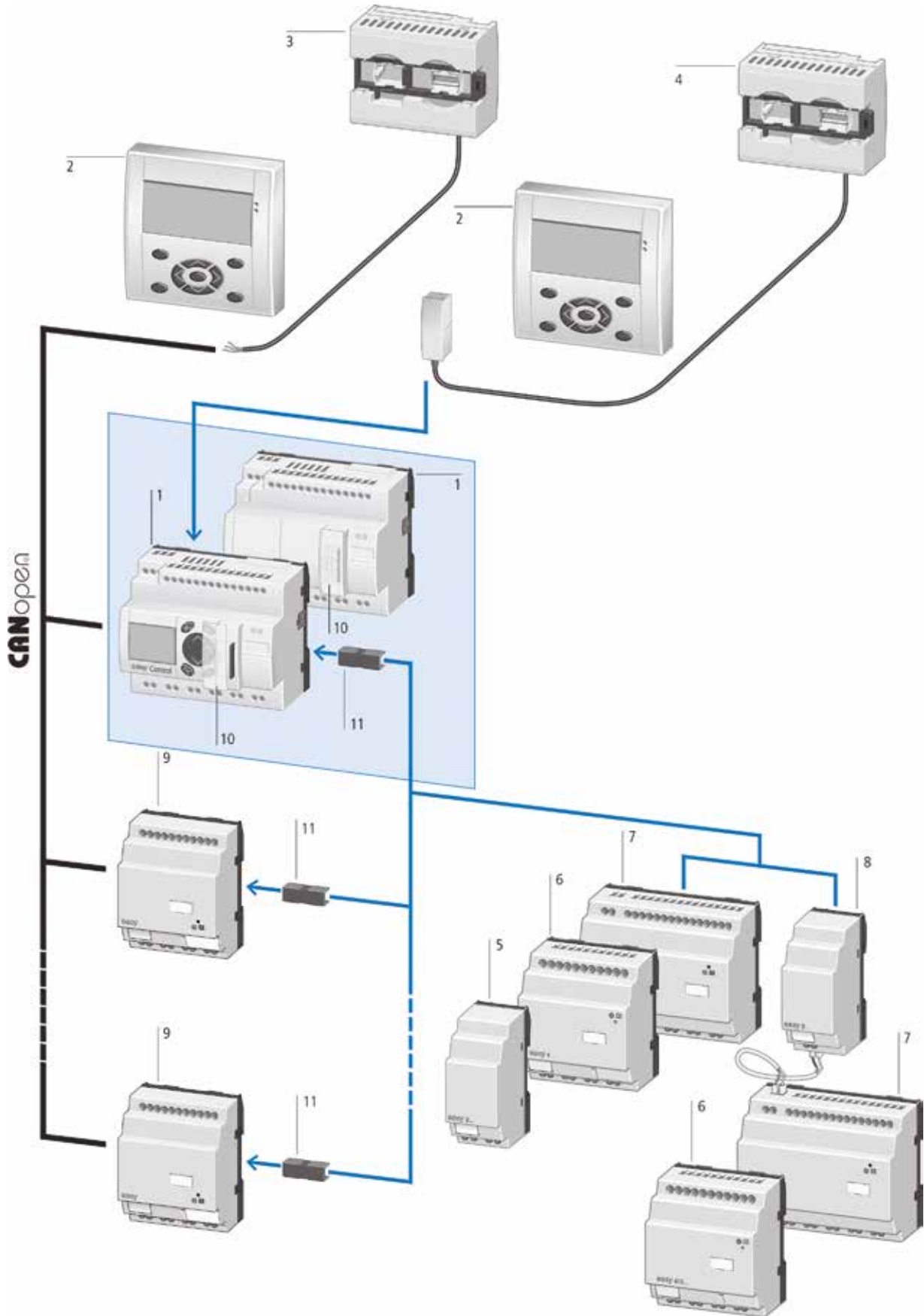
High availability guaranteed by the **Eaton ProtectMode**, even without a UPS. Thanks to the Eaton Protect Mode and two separate mass memory devices, drive C (internal solid-state drive) can be protected against data corruption and other undesirable changes. Process data can be written to the second mass memory device (CFast memory card). All three device sizes are also available with ATEX Zone 22, Cat. 3D certification.

	Display	Resolution	Fitting dimensions	Part no. Article no.
<b>XP-503-xx-A10-</b>				
1.65 GHz dual-core CPU Powerful integrated graphics processor 4GB DDR3-RAM ≥ 32 GB of internal flash memory ≥ 4 GB CFast Removable memory 2x Ethernet 10/100/1000 Mbps 2x USB 3.0 1x RS232 1x RS485 1x DVI-I Windows Embedded Standard 7 GALILEO Open Runtime License CE, cUL508 cUL Class 1 Div 2				
	10.1" widescreen	1024 x 600	261 x 164mm	<b>XP-503-10-A10-A00-1B</b> 174474
	15.6" widescreen	1366 x 768	388 x 239mm	<b>XP-503-15-A10-A00-1B</b> 174475
	21.5" widescreen	1920 x 1080	519 x 313mm	<b>XP-503-21-A10-A00-1B</b> 174476









# Compact PLCs

## System overview








- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li>1 Compact PLC EC4P</li> <li>2 Display/operating unit MFD-80-B</li> <li>3 MFD-CP4-CO CANopen® connection</li> <li>4 Power supply unit/communication module, including connection cable for EC4P</li> <li>5 EASY202-RE output expansion</li> </ul> | <ul style="list-style-type: none"> <li>6 EASY410... I/O expansion, digital</li> <li>7 EASY6... I/O expansion, digital</li> <li>8 EASY200-EASY Coupling module</li> <li>9 CANopen® expansion EC4E-221-...6</li> <li>10 EU4A-MEM-CARD1 memory card</li> <li>11 EASYLINK-DS bus connector plug</li> </ul> |
|---|--|

	Inputs		Outputs			Display & keypad	Part no.	Article no.
	Digital	Of which can be used as analog	Relay 10 A (UL)	Transistor	Analog			
<b>Compact PLC EC4P</b>								
Expandable: Inputs/outputs and bus systems Individual laser inscription possible with EC4-COMBINATION-*								
Supply voltage 24 V DC								
UL/CSA approvals								
DNV, GL, ABS, BV, LR shipping classifications								
easyNet/CANopen® on board								
	12	4	-	8	-	✓	<b>EC4P-221-MTXD1</b>	106391
	12	4	-	8	-	-	<b>EC4P-221-MTXX1</b>	106392
	12	4	6	-	-	✓	<b>EC4P-221-MRXD1</b>	106393
	12	4	6	-	-	-	<b>EC4P-221-MRXX1</b>	106394
	12	4	-	8	1	✓	<b>EC4P-221-MTAD1</b>	106395
	12	4	-	8	1	-	<b>EC4P-221-MTAX1</b>	106396
	12	4	6	-	1	✓	<b>EC4P-221-MRAD1</b>	106397
	12	4	6	-	1	-	<b>EC4P-221-MRAX1</b>	106398
easyNet/CANopen® and Ethernet on board								
	12	4	-	8	-	✓	<b>EC4P-222-MTXD1</b>	106399
	12	4	-	8	-	-	<b>EC4P-222-MTXX1</b>	106400
	12	4	6	-	-	✓	<b>EC4P-222-MRXD1</b>	106401
	12	4	6	-	-	-	<b>EC4P-222-MRXX1</b>	106402
	12	4	-	8	1	✓	<b>EC4P-222-MTAD1</b>	106403
	12	4	-	8	1	-	<b>EC4P-222-MTAX1</b>	106404
	12	4	6	-	1	✓	<b>EC4P-222-MRAD1</b>	106405
	12	4	6	-	1	-	<b>EC4P-222-MRAX1</b>	106406
<b>Memory card</b>								
Adapter with at least 128 MByte memory card							<b>EU4A-MEM-CARD1</b>	106409
<b>Expansions</b>								
usable via CANopen®								
	6	4	-	-	24 V DC		<b>EC4E-221-6D4R1</b>	114296
	6	-	-	4	24 V DC		<b>EC4E-221-6D4T1</b>	114297
More digital and analog expansions → Page 78								
Description							Part no.	Article no.
<b>Remote text display</b>								
Display/operating unit								
Monochrome display 132 × 64 pixels with switchable backlight								
Removable Titan front frame								
Custom laser inscriptions possible with MFD-COMBINATION (article no. 2010801) product								
IP65								
	With keypad With Eaton company logotype NEMA type 3R; NEMA type 12; NEMA type 4x together with MFD-XM-80 protective diaphragm						<b>MFD-80-B</b>	265251
	With keypad Without Eaton company logotype NEMA type 3R; NEMA type 12; NEMA type 4x together with MFD-XM-80 protective diaphragm						<b>MFD-80-B-X</b>	284905
<b>CANopen® connection for multi-function display</b>								
	Communication module with CANopen® interface Automatic baud rate setting up to 1 Mbaud Up to 64 display pages can be saved For use with display/operating unit MFD-80-B(-X) and connection cable EU4A-RJ45-CAB2 Supply voltage 24 V DC						<b>MFD-CP4-CO</b>	115736

# Modular PLCs




XC100, XC200, XC121

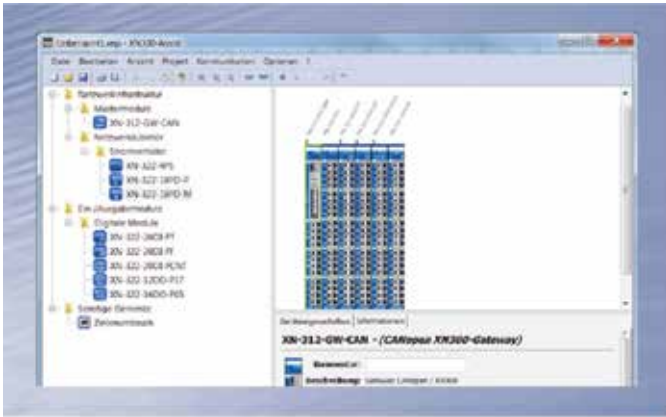
	Digital input count	Quantity of outputs	Built-in interfaces	Cycle time for 1 k of instructions (Bit, Byte) ms	Application/ marker/retain data KByte	Integrated Web server	Part no. Article no.
<p><b>Modular PLCs</b></p> <p>24 V DC power supply            Can be locally expanded with 15 XI/OC modules and remotely extendable            Slot for memory card            RUN/STOP switch and LED displays            UL/CSA approval            The following accessory equipment is required: terminal clamps, module rack, battery</p>							
<b>Modular PLC XC-CPU101</b>							
	Digital: 8; of which usable as interrupt: 4	Transistor: 6	CANopen®/easyNet CANopen® (FO cable) Ethernet 100Base-TX/10Base-T USB Host RS232 RS485/RS232 2 x CANopen®	< 0.5	64 KB/4 KB/4 KB	No	<b>XC-CPU101-C64K-8DI-6DO</b> 262152
				< 0.5	128 KB/8 KB/8 KB	No	<b>XC-CPU101-C128K-8DI-6DO</b> 262146
				< 0.5	128 KB/8 KB/8 KB	No	<b>XC-CPU101-FC128K-8DI-6DO</b> 289169
				< 0.5	256 KB/8 KB/8 KB	No	<b>XC-CPU101-C256K-8DI-6DO</b> 274399
<b>Modular PLC XC-CPU201</b>							
	Digital: 8; of which usable as interrupt: 6	Transistor: 6		< 0.15	256 KB/16 KB/32 KB	No	<b>XC-CPU201-EC256K-8DI-6DO</b> 262155
				< 0.15	256 KB/16 KB/32 KB	Yes	<b>XC-CPU201-EC256K-8DI-6DO-XV</b> 262156
				< 0.15	2 MB/16 KB/32 KB	No	<b>XC-CPU201-EC512K-8DI-6DO</b> 262157
				< 0.15	2 MB/16 KB/32 KB	Yes	<b>XC-CPU201-EC512K-8DI-6DO-XV</b> 262158
<b>Modular PLC XC-CPU202</b>							
	Digital: 8; of which usable as interrupt: 6	Transistor: 6		< 0.03	4 MB/16 KB/32 KB	Yes	<b>XC-CPU202-EC4M-8DI-6DO-XV</b> 134238
<b>Modular PLC XC-CPU121</b>							
	Can be locally expandable with I/O module XIO-EXT-121-1 244 kByte data memory shipping classification: DNV, LR, BV, GL, ABS			< 0.3	256 KB/16 KB/8 KB	No	<b>XC-CPU121-2C256K</b> 290446
<b>I/O Expansion for XC-CPU121</b>							
	Inputs expansion (number) Digital: 10; of which can be used as interrupts: 6; analog: 6 (0 - 10V: 2 or 0 - 20 mA: 2 or Pt100: 2) Digital: An additional 8 (also usable as outputs)						<b>XIO-EXT121-1</b> 290450
	Outputs expansion (number) Digital: 8 (also usable as inputs) Analog: 2 (0 - 10 V)						

Description	Part no.	Article no.
<b>I/O expansions XI/OC</b>		
Compact I/O system for connection to XC100/200 Modular PLCs XC100/200 expandable with up to 15 XI/OC modules Optionally, screw terminals or spring-loaded terminals for digital/analog modules UL/CSA approvals		
<b>Analog modules</b>		
 Inputs 8 Inputs 4 - 20 mA	<b>XIOC-8AI-I2</b>	262549
Inputs 8 voltage input 0 - 10 V	<b>XIOC-8AI-U1</b>	257899
Inputs 8 voltage inputs, ±10 V	<b>XIOC-8AI-U2</b>	257900
Inputs 4 inputs for temperature monitoring, Pt100/1000	<b>XIOC-4T-PT</b>	257901
Inputs 4 inputs for thermocouples Type K, J, B, N, E, R, S, T	<b>XIOC-4AI-T</b>	289933
Outputs 2 outputs, ±10 V	<b>XIOC-2AO-U2</b>	257904
Outputs 2 Outputs 0 - 10 V 2 outputs 4 - 20 mA	<b>XIOC-2AO-U1-2AO-I2</b>	257902
Outputs 4 Outputs 0 - 10 V	<b>XIOC-4AO-U1</b>	257903
Combination modules 2 Inputs and 1 Output 0 - 10 V 1 ms conversion time	<b>XIOC-2AI-1AO-U1</b>	262409
Combination modules 2 Inputs and 1 Output 0 - 10 V, 0 - 20 mA 1 ms conversion time individual changeover	<b>XIOC-2AI-1AO-U1-I1</b>	281545
Combination modules 4 Inputs und 2 Outputs 0 - 10 V 1 ms conversion time	<b>XIOC-4AI-2AO-U1</b>	262405
Combination modules 4 Inputs and 2 Outputs 0 - 10 V, 0 - 20 mA 1 ms conversion time individual changeover	<b>XIOC-4AI-2AO-U1-I1</b>	281544
<b>Digital modules</b>		
 8 inputs, 24 V DC	<b>XIOC-8DI</b>	257891
16 inputs, 24 V DC	<b>XIOC-16DI</b>	257892
32 inputs, 24 V DC	<b>XIOC-32DI</b>	267411
8 outputs, 24 V DC, 0.3 A	<b>XIOC-8DO</b>	257894
12 relay outputs	<b>XIOC-12DO-R</b>	257897
16 outputs, 24 V DC, 0.3 A	<b>XIOC-16DO</b>	257896
16 outputs, 24 V DC, 0.8 A short-circuit proof	<b>XIOC-16DO-S</b>	257895
16 connections, 4 inputs, 12 freely parameterizable as inputs/outputs, 24 V DC outputs 0.5 A	<b>XIOC-16DX</b>	262322
32 outputs, 24 V DC, 0.2 A	<b>XIOC-32DO</b>	267413
<b>Counter modules</b>		
 1 input up to 100 kHz, (24 V DC, 5 V DC) 2 digital transistor outputs Optocoupled, 24 V DC 30 pole connector required for counter module	<b>XIOC-1CNT-100KHZ</b>	257906
2 inputs up to 100 kHz, (24 V DC or 5 V diff), 2 inputs up to 100 kHz, (24 V DC or 5 V diff), 4 digital transistor outputs, optocoupled, 24 V DC, 30 pole connector required for counter module	<b>XIOC-2CNT-100KHZ</b>	257907
2 incremental encoders up to 400 kHz, 5 V DC, 2 analog outputs, ±10 V	<b>XIOC-2CNT-2AO-INC</b>	262417
<b>Communication modules</b>		
 PROFIBUS-DP master module	<b>XIOC-NET-DP-M</b>	257908
PROFIBUS DP slave module	<b>XIOC-NET-DP-S</b>	286419
Suconet K master module	<b>XIOC-NET-SK-M</b>	289982
Serial interface RS232C, RS485, RS422 Modes of operation: Transparent mode MODBUS Master/Slave SUCOM-A Suconet-K slave	<b>XIOC-SER</b>	267191
Serial interface RS232C, RS485, RS422 Modes of operation: Transparent mode MODBUS Master/Slave SUCOM-A DNP3-Protocol	<b>XIOC-TC1</b>	135265

# Accessories

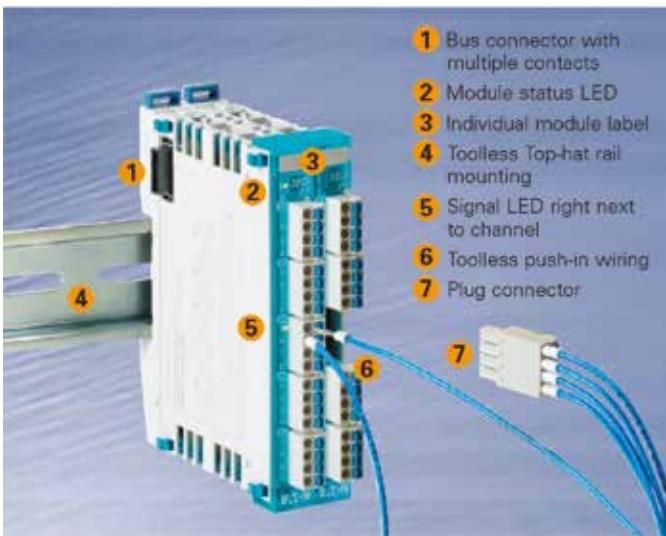
## XI/OC

	Description	For use with	Part no.	Article no.
<b>Terminations</b>				
One 18 pole terminal plug is required for each digital and analog module as well as XC modular PLCs.				
	18 pole terminal connector with spring-cage terminals for digital or analog I/O	-	<b>XIOC-TERM-18T</b>	258104
	18-pin terminal connector with screw terminals for digital or analog I/O	-	<b>XIOC-TERM-18S</b>	258102
	30 pole connector for counter module, with 4 m cable	XIOC-1CNT-100KHZ XIOC-2CNT-100KHZ	<b>XIOC-TERM30-CNT4</b>	262248
	40 pole connector for digital module, with 4 m cable	XIOC-32DI XIOC-32DO	<b>XIOC-TERM32</b>	267414
<b>Racks</b>				
	Basic rack for mounting XC100/200 on top-hat rail, expandable Width: 2 slots for controller	-	<b>XIOC-BP-XC</b>	260792
	Expander rack for mounting XI/OC modules on top-hat rail, expandable Width: 2 slots for controller	-	<b>XIOC-BP-2</b>	260794
	Basic rack for mounting XC100/200 on top-hat rail, expandable Width: 3 slots for controller and one XI/OC module	-	<b>XIOC-BP-XC1</b>	260793
	Expander rack for mounting XI/OC modules on top-hat rail, expandable Width: 3 slots for XI/OC modules	-	<b>XIOC-BP-3</b>	260795
	Expander rack for mounting XI/OC modules on top-hat rail, expandable Width: 3 slots for XI/OC modules Note: Module rack for expansion with up to 15 modules, must be plugged into the 6th slot	-	<b>XIOC-BP-EXT</b>	274291
<b>Add-on functions</b>				
	For storage of programs, data, recipes 512 MByte		<b>XT-MEM-MM512M</b>	138257
	For storage of programs, data, recipes 256 MByte		<b>XT-MEM-MM32M</b>	262731
	For back-up of real-time clock and retentive data		<b>XT-CPU-BAT1</b>	256209
	Empty module to cover free XI/OC slots		<b>XIOC-NOP</b>	288894



## Ideal assistance: XN300 Assist

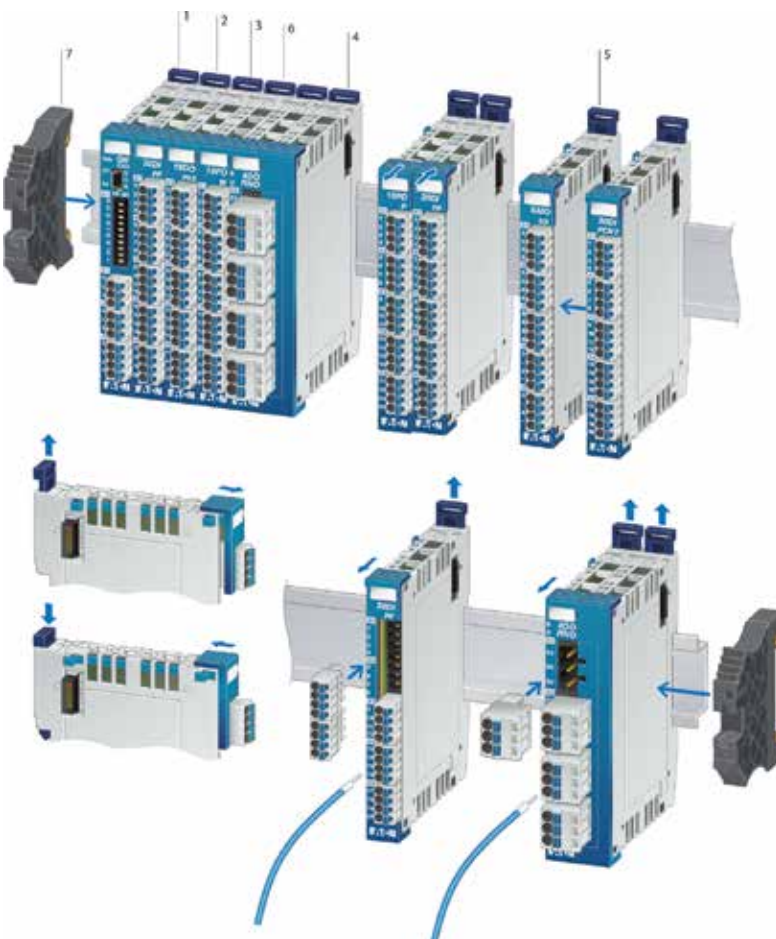
XN300 Assist provides maximum convenience and outstanding ease of use when planning your systems. For example, the tool will run a plausibility check while you are putting together your system configuration, preventing misconfigurations from the get-go. Moreover, XN300 Assist can be used to generate order lists and device description files (e.g., EDS files) even when offline. And in addition to these offline functions, online functions such as „signal state reading and setting“ can prove invaluable during commissioning and installation.



## Simple, quick and intuitive

A plug-in connection system and the ability to conveniently split installation work into two different steps (putting together a block and then installing it on a mounting rail) are just two examples of how the XN300 system is unbeatable when it comes to saving time: In fact, its installation can be broken down into perfectly efficient steps that allow for pre-assembly – and all without the need for any tools!

Moreover, a clear functional layout makes it possible to easily keep track of things despite the modules' high channel density. LEDs are used to show signal states right next to where channels are connected.



- 1 Gateway
- 2 Digital input modules
- 3 Digital output modules
- 4 Relay modules
- 5 Analog input/output modules
- 6 Power distributor
- 7 End bracket









## Other module models








- Digital input/output modules
- Analog input modules
- Analog output modules
- Technology modules
- Power supply modules







# I/O system

## Modular I/O system XN300

Description	Part no. Article no.
<b>XN300 gateway</b>	
 <p>Digital gateway for CANopen field bus in the form of an XN300 I/O system slice module Field bus connection CANopen® Addressing DIP switches Data transfer rate 10, 20, 50, 125, 250, 500, 800, 1000 kBit/s Maximum station configuration 32 modules (XN-322) in slice design System supply 24 V DC Push-in spring-cage terminal Approvals: CE, cULus</p>	<b>XN-312-GW-CAN</b> 178782
<b>XN300 power supply modules</b>	
Push-in spring-cage terminal Approvals: CE, cULus	
<b>Field potential distributor module</b>	
 <p>Power distribution with XN-322 slice module in XN300 I/O system, 18 channels, GND.</p>	<b>XN-322-18PD-M</b> 178769
 <p>Power distribution with XN-322 slice module in XN300 I/O system, 18 channels, VCC.</p>	<b>XN-322-18PD-P</b> 178770
<b>Power supply module</b>	
 <p>The power supply module distributes the supplied power to XN300 system components. The module features nine short-circuit proof outputs (24 VDC/GND) grouped into four power supply groups, with each group being able to handle a max. load of 2 A.</p>	<b>XN-322-4PS-20</b> 178796
<b>XN300 technology modules</b>	
Push-in spring-cage terminal	
<b>Counter module</b>	
 <p>Counter module with RS422/TTL inputs for frequencies of up to 125 kHz and 4 digital inputs and 4 digital outputs with 2 A. These modules are particularly useful for reading counter values used in positioning applications.</p>	<b>XN-322-1CNT-8DIO</b> 178795
<b>Interface module</b>	
 <p>Interface module for interpreting data from two absolute encoders via the RS422 interface, specifically designed with SSI encoders (e.g., absolute linear encoders) in mind. Natural binary and Gray code encoders (Gray code is internally converted to natural binary) are supported. 32-bit / 125 kHz, 250 kHz, 500 kHz, 1 MHz.</p>	<b>XN-322-2SSI</b> 178773
<b>Weigh module</b>	
 <p>Weigh slice module for connecting two Wheatstone bridges (strain gauge load cells). With a 24-bit resolution, readings will be available with an accuracy of <math>\pm 0.035\%</math>.</p>	<b>XN-322-2DMS-WM</b> 178793
<b>Motor driver module</b>	
 <p>Current regulator module for operating a DC motor (brushed motor) with a supply voltage of 12–30 V and a max. motor current of 3.5 A. In addition, this module features two 20 mA / 350 mA (maximum current) LED drivers.</p>	<b>XN-322-1DCD-B35</b> 178794


Short Description	Part no.	Article no.
<b>Digital input cards</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 8 digital inputs 24 V DC each, pulse-switching, 5.0 ms	<b>XN-322-8DI-PD</b>	183172
16 digital inputs 24 V DC each, pulse-switching, 5.0 ms	<b>XN-322-16DI-PD</b>	183173
20 digital inputs 24 V DC each, pulse-switching, 5.0 ms	<b>XN-322-20DI-PD</b>	178786
20 digital inputs 24 V DC each, pulse-switching, 0.5 ms	<b>XN-322-20DI-PF</b>	178768
20 digital inputs 24 V DC each, pulse-switching, 2/4 CNT, 25 kHz	<b>XN-322-20DI-PCNT</b>	178767
20 digital inputs 24 V DC each, negative switching, 5.0 ms	<b>XN-322-20DI-ND</b>	183174
<b>Digital output modules</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 8 digital outputs short-circuit proof 24 V DC/0.5 A each, pulse-switching	<b>XN-322-8DO-P05</b>	183175
16 digital outputs short-circuit proof 24 V DC/0.5 A each, pulse-switching	<b>XN-322-16DO-P05</b>	178787
12 digital outputs short-circuit proof 24 V DC/1.7 A each, pulse-switching	<b>XN-322-12DO-P17</b>	178788
<b>Digital input/output modules</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 4 digital inputs and 4 digital outputs 24 V DC each, pulse-switching	<b>XN-322-8DIO-PD05</b>	183178
8 digital inputs and 8 digital outputs 24 V DC each, pulse-switching	<b>XN-322-16DIO-PD05</b>	183179
8 digital inputs and 8 digital outputs 24 V DC each, pulse-switching, CNT, 25 kHz	<b>XN-322-16DIO-PC05</b>	183180
<b>Relay modules</b>		
Push-in spring-cage terminal		
 4 digital relay outputs, N/O	<b>XN-322-4DO-RNO</b>	178779
<b>Analog input cards</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 4 analog resistance inputs, Pt/Ni/KTY/R with 2-wire or 3-wire connection	<b>XN-322-4AI-PTNI</b>	178772
6 analog inputs, +/-10V, 1 PT/KTY, Uref	<b>XN-322-7AI-U2PT</b>	178789
8 analog current inputs, 0/4 up to 20 mA	<b>XN-322-8AI-I</b>	179288
8 analog thermocouple inputs and two KTY inputs	<b>XN-322-10AI-TEKT</b>	178792
<b>Analog output modules</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 8 analog outputs, +/-10 V	<b>XN-322-8AO-U2</b>	178790
<b>Analog input/output modules</b>		
Push-in spring-cage terminal Approvals: CE, cULus		
 2 analog inputs and 2 analog outputs, +/-10 V, Uref	<b>XN-322-4AIO-U2</b>	183181
4 analog inputs and 4 analog outputs, +/-10 V, Uref	<b>XN-322-8AIO-U2</b>	178791
2 analog inputs and 2 analog outputs, 0/4 to 20 mA	<b>XN-322-4AIO-I</b>	183182
4 analog inputs and 4 analog outputs, 0/4 to 20 mA	<b>XN-322-8AIO-I</b>	178771








	Field bus connection	Data transfer rate	Connection design for field bus	Addressing	Part no. Article no.		
<b>XI/ON ECO Gateways</b>							
Push-In spring-cage terminals System supply 24 /5 V DC Approvals CE, cULus							
	PROFIBUS-DP (DPV0/DPV1 protocol)	9.6 Kbit/s to 12 Mbit/s	Push-In spring-cage terminals	DIP switches	<b>XNE-GWBR-PBDP</b> 140045		
	CANopen®	1000 Kbit/s, 800 Kbit/s, 500 Kbit/s, 250 Kbit/s, 125 kbit/s, 50 Kbit/s, 20 Kbit/s	Push-In spring-cage terminals	DIP switches	<b>XNE-GWBR-CANOPEN</b> 140044		
	Ethernet (Ethernet-IP protocol)	10/100 MBit/s	2 x RJ45 (Ethernet Switch)	DIP switch, BootP, DHCP or PGM	<b>XNE-GWBR-2ETH-IP</b> 140047		
	Ethernet (Modbus-TCP protocol)	10/100 MBit/s	2 x RJ45 (Ethernet Switch)	DIP switch, BootP, DHCP or PGM	<b>XNE-GWBR-2ETH-MB</b> 152279		
	Channels	Rated voltage through supply terminal $U_L$	Input delay $t_{\text{Rising edge}}$ $t_{\text{Falling edge}}$ $\mu\text{s}$	Input voltage High level $U_{eH}$ V	Part no. Article no.		
<b>XI/ON ECO digital input modules</b>							
Integrated base module Approvals CE, cULus							
	8	24 V DC	< 100	< 200	11 - 30 V <b>XNE-8DI-24VDC-P</b> 140035		
	16	24 V DC	< 150	< 300	11 - 30 V <b>XNE-16DI-24VDC-P</b> 140040		
	Channels	Rated voltage through supply terminal $U_L$	Operating frequency at resistive load f Hz	Utilization factor % g	Part no. Article no.		
<b>XI/ON ECO digital output modules</b>							
Integrated base module Can be connected Resistive loads, Inductive loads, Lamp loads Approvals CE, cULus							
	8	24 V DC	100	100	<b>XNE-8DO-24VDC-0.5A-P</b> 140036		
	16	24 V DC	100	50 %, max. 4 A	<b>XNE-16DO-24VDC-0.5A-P</b> 140039		
	Channels	Rated voltage through supply terminal $U_L$	Measured variables <sup>1)</sup>	Measurement ranges	Measured value representation	Limit frequency (-3 db) Hz	Part no. Article no.
<b>XI/ON ECO analog input modules</b>							
Integrated base module Approvals CE, cULus							
	8 (U/I), 4 (PT/NI/R)	24 V DC	Voltage, current, temperature (PT, NI), resistance R	-10/0 to +10 V DC 0/4 - 20 mA PT: -200 - +850 (-328 - +1562)/ -200 - +150 (-328 - +302) °C, (°F) Ni: -60 - +250 (-76 - +482)/ -60 - +150 (-76 - +302) °C, (°F)	16-bit signed integer 12-bit full range, flush left Standard/extended range/PA (NE43)	1.5	<b>XNE-8AI-U/I-4PT/NI</b> 140037



**Notes**


<sup>1)</sup>: Platinum sensors: Pt100, Pt500, Pt1000 (as per IEC 751) Nickel sensors: Ni100, Ni1000 (as per DIN 43760)


	Channels	Rated voltage through supply terminal $U_L$	Measured variables	Measurement ranges	Measured value representation	Part no. Article no.
<b>XI/ON ECO analog output modules</b>						
Integrated base module Approvals CE, cULus						
	4	24 V DC	Voltage, Current	-10/0...+10 V DC 0/4 - 20 mA	16-bit signed integer 12-bit full range, flush left Standard/extended range/PA (NE43)	<b>XNE-4AO-U/I</b> 140034

	Channels	Control mode	Pulse duration	Resolution Bit	Part no. Article no.
<b>XI/ON ECO meter, PWM module</b>					
Integrated base module Rated voltage through supply terminal 24 V DC Signal evaluation A, B: Pulse and direction; single/double/quadruple rotary transducer Approvals CE, cULus PWM (parameters can be defined): 0.01 Hz - 20 kHz Output Number of pulses : 32 Bit Operating modes Pulse output: Once, endless					
	2	Infinite counter, once only count, periodic count	32 Bit/max. 120 s	32	<b>XNE-2CNT-2PWM</b> 140038

	Field bus connection	Data transfer rate	Connection design for field bus	Addressing	Part no. Article no.	
<b>XI/ON standard gateways with integrated power supply module</b>						
Spring-loaded/screw terminal System supply 24/5 V DC Approvals CE, cULus						
	PROFIBUS-DP (DPV1 protocol)	9.6 Kbit/s to 12 Mbit/s	1 x D-SUB socket, 9-pin	2 decimal rotary coding switches	<b>XN-GWBR-DPV1</b> 148561	
	CANopen®	10 Kbit/s, 20 Kbit/s, 50 Kbit/s, 125 kbit/s, 250 Kbit/s, 500 Kbit/s, 800 Kbit/s, 1000 Kbit/s	Open style connector	2 decimal rotary coding switch	<b>XN-GWBR-CANOPEN</b> 140155	
	DeviceNet	125 kbit/s, 250 Kbit/s, 500 Kbit/s	Open style connector	2 decimal rotary coding switch	<b>XN-GWBR-DNET</b> 140156	
	Ethernet (Modbus-TCP protocol)	10/100 MBit/s	RJ45-bus	Decimal rotary coding switch, BootP, DHCP or I/Oassistant	<b>XN-GWBR-MODBUS-TCP</b> 140162	
	CANopen®	adjustable up to 1 Mbit/s	Open style connector	Software	<b>XN-PLC-CANOPEN</b> 140157	
	Field voltage	System supply	Rated current consumption from module bus	Maximum system supply current	Part no. Article no.	
	$U_L$	$U_{sys}$	$I_{MB}$	$I_{MB}$		
		V DC	mA	A		
<b>XI/ON Standard power supply module</b>						
Base module required Number of diagnostic bytes: 4 Approvals CE, cULus						
	24 V DC	24	-	1.5	<b>XN-BR-24VDC-D</b> 140071	
	24 V DC	-	$\leq 28$	-	<b>XN-PF-24VDC-D</b> 140070	
	120/230 V AC	-	$\leq 25$	-	<b>XN-PF-120/230VAC-D</b> 140072	
	Channels	Rated voltage through supply terminal	Input delay		Input voltage High level	Part no. Article no.
		$U_L$	$t_{rising\ edge}$	$t_{falling\ edge}$	$U_{eH}$	
			$\mu s$	$\mu s$	V	
<b>XI/ON standard digital input modules</b>						
Base module required Approvals CE, cULus						
	2	24 V DC	< 200	< 200	11 - 30 V	<b>XN-2DI-24VDC-P</b> 140056
	2	24 V DC	< 200	< 200	0 - 5 V	<b>XN-2DI-24VDC-N</b> 140057
	2	120/230 V AC	< 20000	< 20000	79 - 265 V AC	<b>XN-2DI-120/230VAC</b> 140058
	4	24 V DC	< 200	< 200	15 - 30 V	<b>XN-4DI-24VDC-P</b> 140052
	4	24 V DC	< 200	< 200	0 - 5 V	<b>XN-4DI-24VDC-N</b> 140059
	16	24 V DC	< 200	< 200	15 - 30 V	<b>XN-16DI-24VDC-P</b> 140142
	32	24 V DC	< 200	< 200	15 - 30 V	<b>XN-32DI-24VDC-P</b> 140147


	Channels	Rated voltage through supply terminal $U_L$	Operating frequency at resistive load $f$ Hz	Utilization factor %	Part no. Article no.
<b>XI/ON Standard digital output modules</b>					
Base module required Connectable: Resistive loads, Inductive loads, Lamp loads Approvals CE, cULus					
	2	24 V DC	5000 ( $R_{L0} < 1 \text{ k}\Omega$ )	100	<b>XN-2DO-24VDC-0.5A-P</b> 140053
	2	24 V DC	100 ( $R_{L0} < 1 \text{ kohm}$ )	100	<b>XN-2DO-24VDC-0.5A-N</b> 140060
	2	120/230 V AC (45 - 65 Hz)	-	100 (observe derating)	<b>XN-2DO-120/230VAC-0.5A</b> 140150
	2	24 V DC	5000 ( $R_{L0} < 1 \text{ k}\Omega$ )	100	<b>XN-2DO-24VDC-2A-P</b> 140055
	4	24 V DC	1000 ( $R_{L0} < 1 \text{ k}\Omega$ )	100	<b>XN-4DO-24VDC-0.5A-P</b> 140148
	16	24 V DC	100 ( $R_{L0} < 1 \text{ k}\Omega$ )	100	<b>XN-16DO-24VDC-0.5A-P</b> 140141
	32	24 V DC	100 ( $R_{L0} < 1 \text{ k}\Omega$ )	Max. 10 A (total module current)	<b>XN-32DO-24VDC-0.5A-P</b> 140161


	Channels	Measured variables	Measurement ranges	Measured value representation	Limit frequency (-3 db) Hz	Part no. Article no.
<b>XI/ON Standard analog input modules</b>						
Base module required Rated voltage through supply terminal: 24 V DC Approvals CE, cULus						
	1	Current	0/4 - 20 mA	16-bit signed integer 12-bit full range left-justified	200	<b>XN-1AI-I(0/4...20MA)</b> 140063
	2	Current	0/4 - 20 mA	16-bit signed integer 12-bit full range left-justified	> 50	<b>XN-2AI-I(0/4...20MA)</b> 140144
	1	Voltage	-10/0 to +10 V DC	16-bit signed integer 12-bit signed integer left-justified 12-bit full range left-justified	200	<b>XN-1AI-U(-10/0...+10VDC)</b> 140064
	2	Voltage	-10/0 to +10 V DC	16-bit signed integer 12-bit full range left-justified	> 50	<b>XN-2AI-U(-10/0...+10VDC)</b> 140145
	4	Voltage, Current	-10/0 to +10 V DC	16-bit signed integer 12-bit signed integer, flush-left	20	<b>XN-4AI-U/I</b> 140158


	Channels	Measured variables	Temperature range $^{\circ}\text{C}$ , ( $^{\circ}\text{F}$ )	Measured value representation	Part no. Article no.
<b>XI/ON standard temperature modules</b>					
Base module required Rated voltage through supply terminal: 24 V DC Approvals CE, cULus					
	2	Temperature (Thermocouple) <sup>1)</sup>	Type B: +100 - +1820 (+212 - +3308) Type E: -270 - +1000 (-454 - +1832) Type J: -210 - +1200 (-346 - +2192) Type K: -270 - +1370 (-454 - +2498) Type N: -270 - +1300 (-454 - +2372) Type R: -50 - +1760 (-58 - +3200) Type S: -50 - +1540 (-58 - +2804) Type T: -270 - +400 (-454 - +752)	16-bit signed integer 12-bit full range left-justified	<b>XN-2AI-THERMO-PI</b> 140068
	2	Temperature (PT, NI), resistance R <sup>2)</sup>	PT: -200 - +850 (-328 - +1562)/-200 - +150 (-328 - +302) Ni: -60 - +250 (-76 - +482)/-60 - +150 (-76 - +302)	16-bit signed integer 12-bit full range left-justified	<b>XN-2AI-PT/NI-2/3</b> 140067

**Notes**

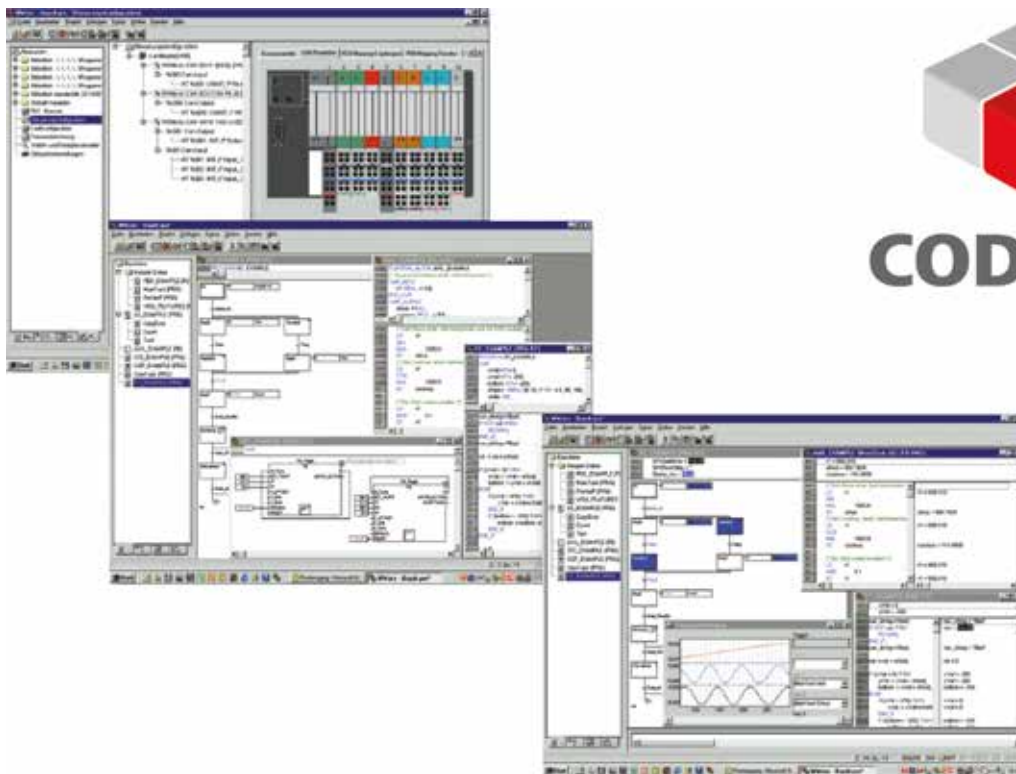
- <sup>1)</sup> According to DIN IEC 584, Class 1, 2, 3  
<sup>2)</sup> Platinum sensors: PT100, PT200, PT500, PT1000 (according to DIN IEC 751)  
 Nickel sensors: Ni100, Ni1000 (according to DIN 43760)

	Channels	Measured variables	Measurement ranges	Measured value representation	Part no. Article no.
<b>XI/ON Standard analogue output modules</b>					
Base module required Rated voltage through supply terminal: 24 V DC Approvals CE, cULus					
	1	Current	0/4 - 20 mA	16-bit signed integer 12-bit full range left-justified	<b>XN-1AO-I(0/4...20MA)</b> 140065
	2	Current	0/4 - 20 mA	16-bit signed integer 12-bit full range left-justified	<b>XN-2AO-I(0/4...20MA)</b> 140146
	2	Voltage	-10/0...+10 V DC	16-bit signed integer 12-bit signed integer left-justified 12-bit full range left-justified	<b>XN-2AO-U(-10/0...+10VDC)</b> 140066

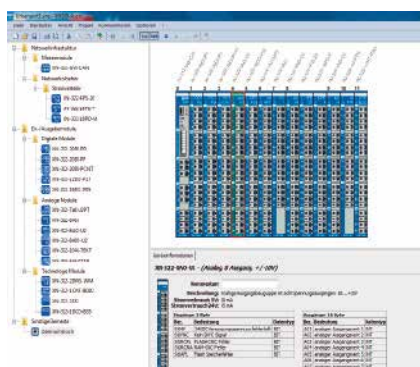
	Contact type art	Rated load voltage	Maximum continuous current, resistive load	Part no. Article no.
<b>XI/ON Standard relay modules</b>				
Base module required Rated voltage through supply terminal: 24 V DC Connectable sensors: Resistive loads, Inductive loads, Lamp loads Approvals CE, cULus				
	2 break contacts	230 V AC, 30 V DC	5 A	<b>XN-2DO-R-NC</b> 140061
	2 make contacts	230 V AC, 30 V DC	5 A	<b>XN-2DO-R-NO</b> 140062
	2 Changeover contact	230 V AC, 30 V DC	5 A	<b>XN-2DO-R-CO</b> 140054

	Type	Transmission channels	Bit transfer rate	Cable length RS232 m	Part no. Article no.
<b>XI/ON Standard interface modules</b>					
Base module required Rated voltage through supply terminal: 24 V DC Approvals CE, cULus					
	RS232	RxD, TxD, RTS, CTS	Max. 115200 bit/s (parameterizable), default setting: 9600 Bit/s, 7 data bits, odd parity, 2 stop bits	max. 15	<b>XN-1RS232</b> 140151
	RS 484/RS 422	RxD, TxD	Max. 115200 bit/s (parameterizable), default setting: 9600 Bit/s, 7 data bits, odd parity, 2 stop bits	max. 30	<b>XN-1RS485/422</b> 140152
	SSI	CL, D	Max. 1 MHz (parameterizable), default settings: 500 kBit/s	max. 30	<b>XN-1SSI</b> 140153

# Build it in.



## XSOFT-CODESYS: PLC programming to international standards



Software tools make both engineering and commissioning easier:

- XN300 Assist
- I/O-Assist
- SWD-Assist

Download free of charge at [www.eaton.eu/software](http://www.eaton.eu/software)

CODESYS is a programming system that is based on 3S' CODESYS standard. And with its sophisticated technical features, ease of use, and popularity as a programming system for automation components from a wide variety of manufacturers, it is no surprise that it has become the system of choice for many a successful company. Eaton offers both **CODESYS Version 2** and **Version 3**, and most XV/XC controllers can be programmed with either version.

CODESYS is the ideal programming tool for applications in which a powerful PLC or HMI PLC with various field bus connections is required. The reason why is its integrated field bus configurators for PROFIBUS, CAN, SmartWire-DT, Modbus TCP/RTU (in Version 3), and EtherNet/IP (in Version 3), which make it possible to quickly, intuitively, and easily connect devices to the field bus of your choice. In short, the software is the ideal programming tool for all machine and process-relevant applications in mechanical and plant engineering environments.



[www.eaton.eu/codesys](http://www.eaton.eu/codesys)



**Easy and intuitive to use and test**

- An intuitive and powerful design environment
- There are no limits on the number of tags and images that can be used by functions
- Project simulations on the development computer reduce design and commissioning times
- Thanks to the full forward compatibility of all your projects, you can rest assured knowing your investment will yield dividends for a long time



**Custom-tailored for international mechanical engineering**

- Pre-defined, language-specific keypad configurations
- Change languages online
- Change units in runtime (e.g., °C to °F or cm to inches)
- Unicode support (also Asian character sets)
- The ability to import text from and export text to Excel makes it possible to quickly create error-free translations
- All devices are UL approved



**Varied communication possibilities**

- Over 100 protocols for almost all current PLCs makes it possible to use GALILEO in conjunction with PLC systems from other makers as well
- Communication to CODESYS-V2 and CODESYS-V3
- Easily import PLC variables in XML format
- Secure, reliable, and easy connection to your control system level and to Office
- Up to eight simultaneous communication processes
- Remote client/server and OPC client
- Remote control via smartphone



**Further Galileo highlights**

- Powerful and easy-to-use design features such as styles, color gradients, semi-transparency, and full transparency
- Gesture-based controls (swipe, scroll, zoom)
- The ability to reuse object groups
- The ability to scroll through subscreens (that cannot be displayed in their entirety) by using a viewing window
- Supports switching between 16:9 and 4:3 panel aspect ratios
- Single-line and multi-line alarm messages with integrated variables
- Variables, objects, bitmaps, and styles can be copied between projects

**Which visualization software for which device?**

	XV-102-A...	XV-102-H...	XV-102-B/-D/-E-...	XV-112...	XV-152...	XV-3x3-...	XV(S)-4...	XC-152-...	XP-503-...-1B
Galileo 8	•	•	•	•	•		•	•	•
Galileo 10		•	• <sup>1</sup>	•	•	•	• <sup>2</sup>	•	•
Galileo 10 Webservice						•			•

<sup>1</sup> Except XV-102 with monochrome 3.5" displays    <sup>2</sup> Except XV(S) devices with 256 colors

Description	Part no. Article no.
<b>GALILEO</b>	
<b>License certificate for visualization software GALILEO</b> MS Windows™-based intelligent and intuitive visualization tool, single-workstation license	<b>SW-GALILEO-S</b> 171500
<b>License certificate for visualization software GALILEO</b> MS Windows™-based intelligent and intuitive visualization tool, multi-workstation license	<b>SW-GALILEO</b> 140379
<b>GALILEOopen license for PC</b> For continuous, unrestricted operation of the GALILEO runtime systems on a standard PC.	<b>LIC-GALILEO-OPEN-PC</b> 140385



	XN300 Assist	I/O-Assist	SMD-Assist	CODESYS-3-Webvisu	CODESYS-3	CODESYS-2-Webvisu	CODESYS-2	
• <sup>3)</sup>				•	•	•	•	XV-102-B/-D/-E-...
• <sup>3)</sup>				•	•	•	•	XV-112...
• <sup>3)</sup>				•	•	•	•	XV-152...
• <sup>3)</sup>				•	•	•	•	XV-3x3-...
• <sup>3)</sup>				•	•	•	•	XV(S)-4...
				•	•	•	•	XC-152-...
				•	•	•	•	XC-CPU202-...
							•	XC-CPU201-...-XV
							•	XC-CPU201-/101-...
							•	XC-CPU121
							•	EC4P-...
	•							• XN-PLC-CANOPEN
		•		•				• XN-312-GW-CAN
		•		•				• XNE-GWBR-...
		•		•				• XN-GWBR-...

<sup>3)</sup> for devices with SmartWire-DT interface

### Maximum flexibility

CODESYS is the programming tool for all Eaton XV/XC controllers. It enables users to program systems as per IEC-1131-3 with the following programming languages: instruction list (IL), ladder diagram (LD), function block diagram (FBD), sequential function chart (SFC), structured text (ST), continuous function chart (CFC).

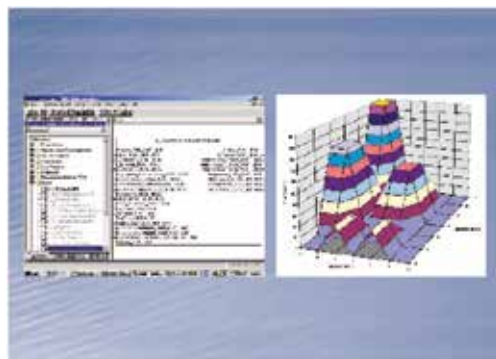
Eaton offers targets for the XV100, XV400, XVS400, XC-152, and XC-CPU202 automation systems both for CODESYS V3 and CODESYS V2, meaning that the same hardware can be used in new (configured with CODESYS 3) and existing (programmed with CODESYS 2) machine generations!

### Multitasking

The structuring of the application into several user-defined runtime programs (multitasking) optimizes your PLC's resources and simplifies the implementation of time-critical requirements. Give high-speed processes priority and slower processes as much processing time as is necessary.

### Web visualization

XSOFT CODESYS can generate an XML description based on visualization information. In CODESYS V2, this description will be stored on the controller together with a Java applet. In CODESYS V3, HTML5-based pages (CODESYS V3) will be generated instead. These pages can then be displayed on a browser via TCP/IP.



### Application libraries



Eaton Automation offers several ready-to-use libraries for programming PLCs with XSOFT-CODESYS for a wide range of applications:

- Control technology toolbox
- Motion control toolbox
- FTP server
- FTP client
- UDP and TCP/IP
- Modbus RTU/TCP master/slave
- OS functions
- File handling



### XSOFT CODESYS Version 3 features:

- a programming tool that can be expanded using plugins to handle customer-specific adaptations
- expanded language options (object-oriented programming)
- Know-how protection for targets and the programming tool
- multiple PLC programs in one project
- New and improved TargetVisu functions
- improved IT safety functions
- Websites based on HTML5
- Field bus configurations: Modbus TCP/RTU, EtherNet/IP
- SAE J1939 protocol

Description	Part no. Article no.
<b>XSOFT-CODESYS-2</b> Programming to IEC 61131-3, supports XV100, XV300, XV(S)400, XC100, XC200, EC4P, XN-PLC	
 Single user license	<b>SW-XSOFT-CODESYS-2-S</b> 142582
Multi-user license	<b>SW-XSOFT-CODESYS-2-M</b> 142583
<b>XSOFT-CODESYS-3</b> Programming to IEC 61131-3, supports XV100, XV300, XV(S)400, XC-152, XC-202	
 Single user license	<b>SW-XSOFT-CODESYS-3-S</b> 171886
Multi-user license	<b>SW-XSOFT-CODESYS-3-M</b> 171887



Eaton is dedicated to ensuring that reliable, efficient and safe power is available when it's needed most. With unparalleled knowledge of electrical power management across industries, experts at Eaton deliver customized, integrated solutions to solve our customers' most critical challenges.

Our focus is on delivering the right solution for the application. But, decision makers demand more than just innovative products. They turn to Eaton for an unwavering commitment to personal support that makes customers success a top priority. For more information, visit [www.eaton.eu](http://www.eaton.eu).

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*Powering Business Worldwide*