



GENERAL CATALOGUE 2014

Modular Devices
Industrial Circuit Breakers
Controls and Power Electronics
General Purpose Enclosures

AEG

General Catalogue

Miniature circuit breakers **A**

Residual current circuit breakers **B**

Busbar systems **C**

Comfort functions/Energy control **D**

Residential enclosures **E**

Contactors/Soft starters/Speed drives **F**

Overload relays **G**

Control and signalling units **H**

Manual motor starters **I**

Moulded case circuit breakers **J**

Air circuit breakers **K**

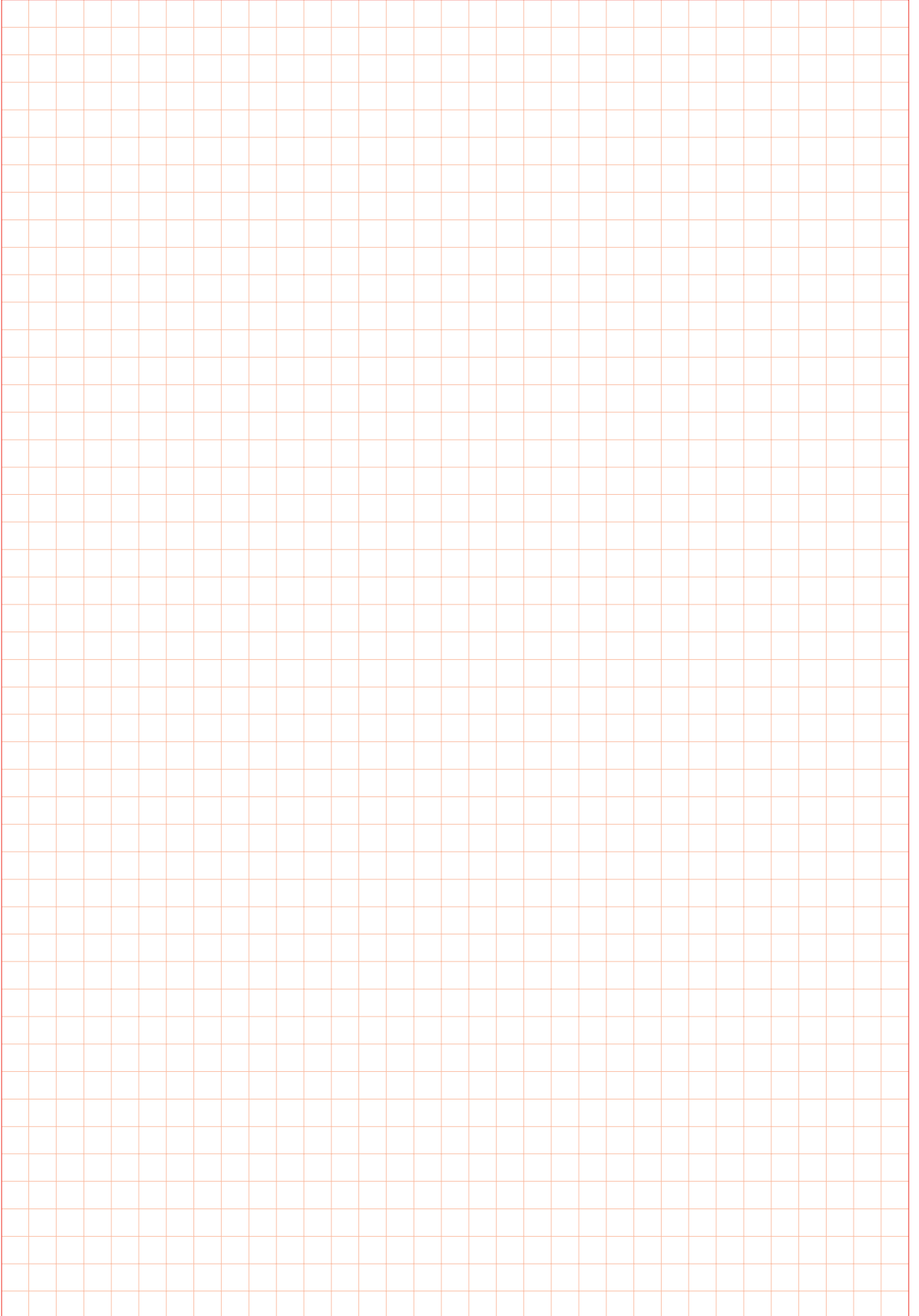
Fuse systems/Loadbreak disconnectors **L**

General purpose enclosures **M**

System enclosures **N**

Numerical index **X**

Notes



Miniature circuit breakers **A**

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Residual current circuit breakers **B**

Busbar systems **C**

Comfort functions/Energy control **D**

Residential enclosures **E**

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Five good reasons to appreciate the AEG miniature circuit breakers: Line protection



1. Total protection

AEG Low Voltage MCBs provide the best answer to the obligation of circuit protection. They give comprehensive protection to circuits against:

- Overload currents (0.5A to 125A)
- Short-circuit currents (3000 up to 50000 A)
- Earth fault currents (30mA up to 1000mA) - combined with RCDs
- The handle being sealable or equipped with padlock bracket avoids dangerous operation changes (ON / OFF)
- The handle provides a clear indication of the contact position
- Top and bottom protection caps give safe installation facilities
- Sealing accessories for top and bottom connections allow protection of original wiring
- Adequate printing of all data on the front provides long-term identification



2. Total quality

- The MCBs are able to accomplish the line protection for more than 10.000 times, by a simple manual, or motor operated reset
- The quality of the shells can cope with the hardest ambient circumstances (-25°C to +55°C)
- All MCBs are current limiting MCBs, the let-through energy being reduced far below the standard limits. Energy limiting class: 3
- The low let-through peak-currents ensure the long life-time of the contacts of isolators or loadbreak switches upstream
- The emission of ionised gases are limited to the severest restrictions (35 mm grid distance)



3. A wide range

AEG Low Voltage offers:

- MCBs for household in accordance with: IEC 60898-1 - B, C and D tripping characteristics
- MCBs for industry in accordance with: IEC 60947-2 - instantaneous tripping 3-5 In, 5-10 In, 10-20 In
- MCBs in accordance with: IEC 1009 - BS 4293



4. Stock reducing system

The residential and industrial markets are covered by five appropriate series of MCBs: Series E.

Their external advantages allow the consumer to extend the MCB at any time with:

- A wide range of RCDs / people protection
- Five types of display contacts
- Shunt trip releases
- Accessories



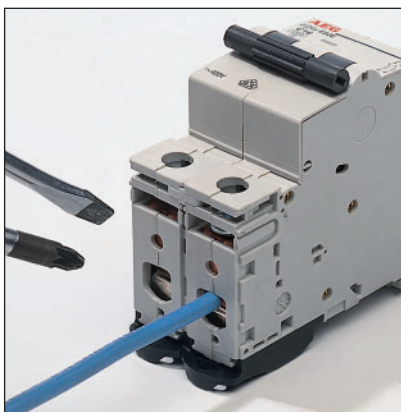
5. Time saving connections

Insulated or non insulated busbar systems with maximum connection possibilities, can be very fast put on the top or bottom terminals of the MCBs.

Benefits of the MCBs Series E90



Safety terminal:
 - easy wiring
 - no wrong fixing
 - protection degree IP20



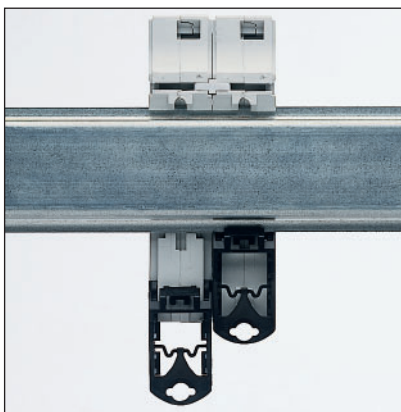
Pozidriv and slot screw head.
 Torque up to 4.5 Nm.



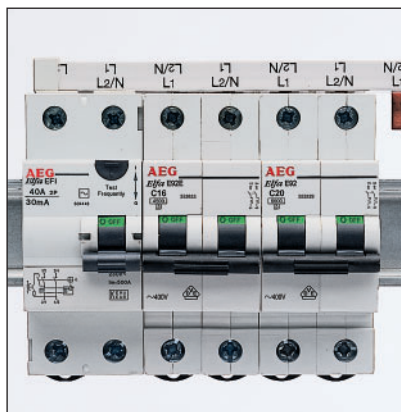
Incoming/outgoing terminal capacity
 up to 35 mm² or 2 x 16 mm².



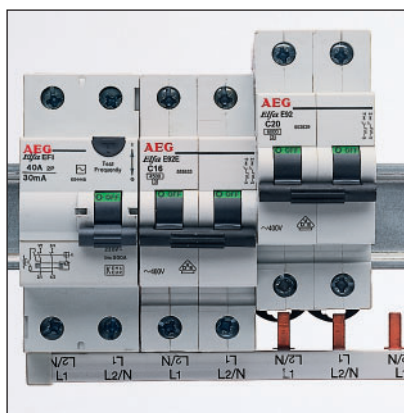
Terminal side for fork busbar is
 isolated between the poles.



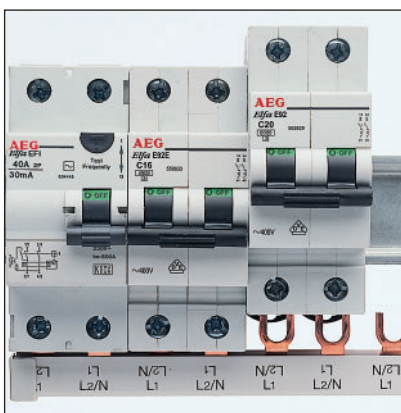
Two positions of the DIN-rail clip.
 Easy installation.



MCBs and RCCBs can be connected
 with PIN type busbar at the top
 terminals.



MCBs and RCCBs can be connected
 with PIN type busbar at the bottom
 terminals, with easy DIN-rail
 extraction.

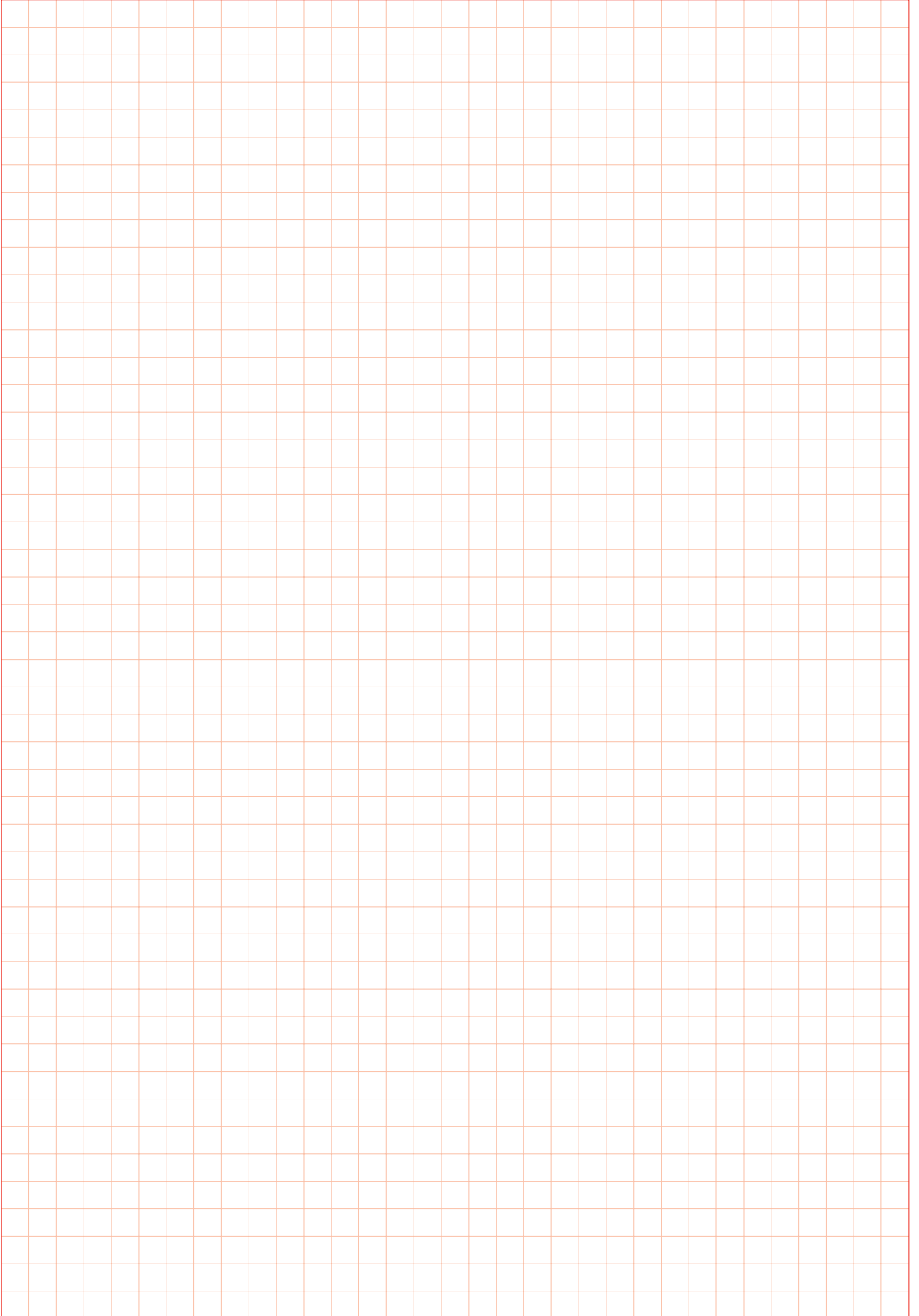


MCBs and RCCBs can be connected
 with FORK type busbar at the bottom
 terminals, with easy DIN-rail
 extraction.



Auxiliary contacts can be added on
 the left hand side of the MCB.

Notes



Selection table of MCBs

Page no.	Series	Applications	Poles	Add-on Tripping devices characteristic	Rating current (A)	Short-circuit capacity (kA)
A.6	E90N		1, 2, 3, 4	yes B	6-40	3 5 10
				yes C	2-40	3 5 10
A.8	E90E		1, 1+N, 2, 3, 3+N, 4	yes B	6-40	4.5 6 14
				yes C	2-40	4.5 6 14
A.10	E90		1, 1+N, 2, 3, 3+N, 4	yes B	6-63	6 10 20
				yes C	0.5-63	6 10 20
				yes D	0.5-63	6 10 20
				yes K	0.5-63	6 10 20
A.12	E90S		1, 1+N, 2, 3, 3+N, 4	yes B	6-63	10 15 30
				yes C	0.5-63	10 15 30
				yes D	0.5-63	10 15 30
A.14	E90X		1, 2, 3, 4	yes B	6-63	15 20 25
				yes C	0.5-63	15 20 25
				yes D	0.5-63	15 20 25
A.16	E90S UC		1, 2	yes B	6-63	6 10
				yes C	0.5-63	6 10
A.18	E880		1, 2, 3, 4	yes B	80-125	6 10
				yes C	80-125	6 10
				yes D	80-125	6 10
A.20	E880S		1, 2, 3, 4	yes B	80-125	10 15
				yes C	80-125	10 15
				yes D	80-125	10 15
A.22	S90		1, 3x1, 3, 1+N, 3+N	(1) Cs	10-100	25
			1, 3x1	(1) E	10-100	25
			1, 3x1	(1) F	10-100	25

(1) on request

- domestic
- commercial
- industrial

- B : 3-5 In
- C : 5-10 In
- D : 10-20 In

- IEC 60898-1
- IEC 60947-2
- NEMA AB1

Compact MCBs

- 1P+N in 1 module
- 2P in 1 module
- 3P in 2 modules
- 4P in 2 modules

Series EC, page A.33-A.49

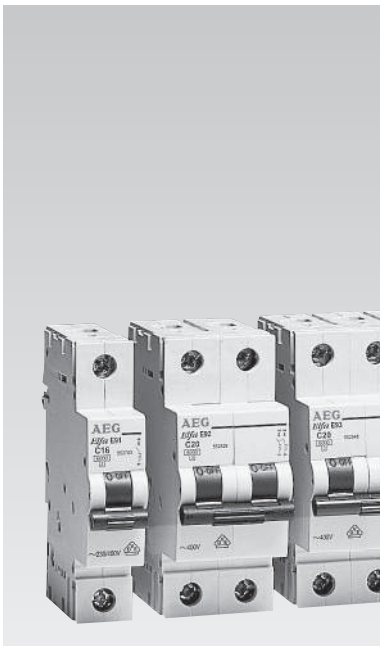
Screwless MCBs

- 6 kA
- 10 kA

Series E...P, page A.51-A.63

Miniature circuit breakers

Series E90N



DIN VDE 0641 **3kA**

EN/IEC 60898-1 3000
3

EN/IEC 60947-2 **5kA**

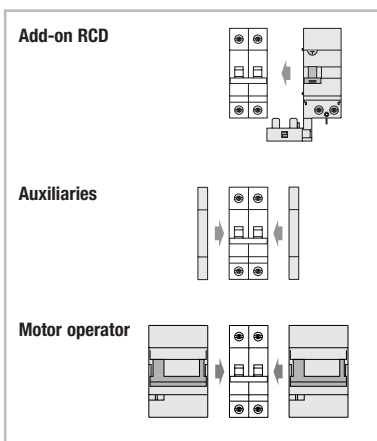
Applications



Approval/Marking



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (I_n)	(A)	2-40
Rated voltage AC (U_n)	(V)	240/415
Minimum operating voltage U_{B min}	(V)	12
Tripping characteristics		B-C
Selectivity class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 2, 3, 4
Weight	(g/pole)	120
Thermal operating limit		(1.13 - 1.45) x I _n
Magnetic operating		B: (3 - 5) x I _n C: (5 - 10) x I _n

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	I _{cn} /I _{cs} (kA)
1-4	230/400	3

AC acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA)
1	240	5
	127	-
	240	10
2	415	5
	240	10
3, 4	415	5

Series E90N - 3kA - AC MCBs



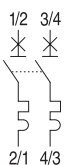
1P
1 mod.



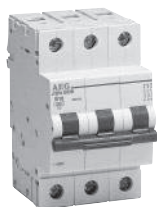
Pole width	Rated current [A]	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
18mm	2	-	-	E91N C02	552466	12
	4	-	-	E91N C04	552468	12
	6	E91N B06	552405	E91N C06	552469	12
	10	E91N B10	552407	E91N C10	552471	12
	16	E91N B16	552409	E91N C16	552473	12
	20	E91N B20	552410	E91N C20	552474	12
	25	E91N B25	552411	E91N C25	552475	12
	32	E91N B32	552412	E91N C32	552476	12
	40	E91N B40	552413	E91N C40	552477	12



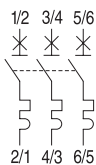
2P
2 mod.



18mm	2	-	-	E92N C02	552482	6
	4	-	-	E92N C04	552484	6
	6	E92N B06	552421	E92N C06	552485	6
	10	E92N B10	552423	E92N C10	552487	6
	16	E92N B16	552425	E92N C16	552489	6
	20	E92N B20	552426	E92N C20	552490	6
	25	E92N B25	552427	E92N C25	552491	6
	32	E92N B32	552428	E92N C32	552492	6
	40	E92N B40	552429	E92N C40	552493	6



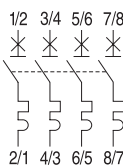
3P
3 mod.



18mm	2	-	-	E93N C02	552498	4
	4	-	-	E93N C04	552500	4
	6	E93N B06	552437	E93N C06	552501	4
	10	E93N B10	552439	E93N C10	552503	4
	16	E93N B16	552441	E93N C16	552505	4
	20	E93N B20	552442	E93N C20	552506	4
	25	E93N B25	552443	E93N C25	552507	4
	32	E93N B32	552444	E93N C32	552508	4
	40	E93N B40	552445	E93N C40	552509	4

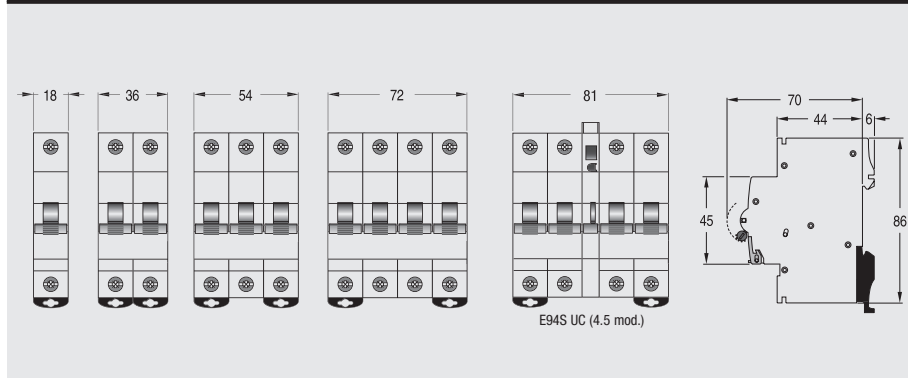


4P
4 mod.



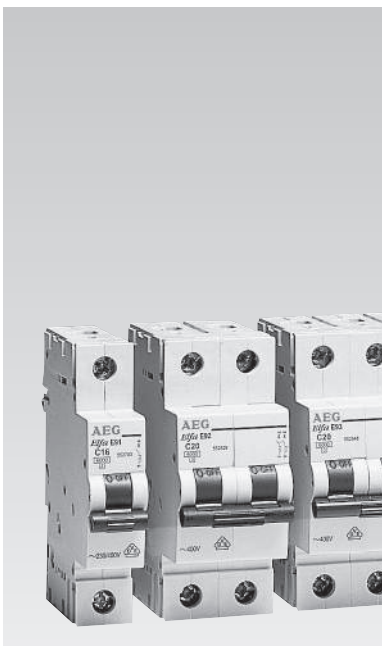
18mm	2	-	-	E94N C02	552514	3
	4	-	-	E94N C04	552516	3
	6	E94N B06	552453	E94N C06	552517	3
	10	E94N B10	552455	E94N C10	552519	3
	16	E94N B16	552457	E94N C16	552521	3
	20	E94N B20	552458	E94N C20	552522	3
	25	E94N B25	552459	E94N C25	552523	3
	32	E94N B32	552460	E94N C32	552524	3
	40	E94N B40	552461	E94N C40	552525	3

Dimensions - Series E90N, E90E, E90, E90S, E90S UC, E90X



Miniature circuit breakers

Series E90E



DIN VDE 0641 **4.5kA**

EN/IEC 60898-1 4500
3

EN/IEC 60947-2 **6kA**

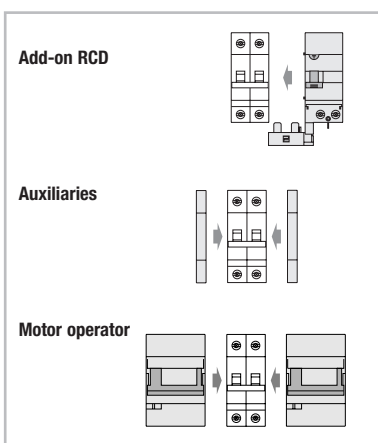
Applications



Approval/Marking



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (I_n)	(A)	2-40
Rated voltage AC (U_n)	(V)	240/415
Minimum operating voltage U_{B min}	(V)	12
Tripping characteristics		B-C
Selectivity class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 1+N, 2, 3, 3+N, 4
Weight	(g/pole)	120
Thermal operating limit		(1.13 - 1.45) x I _n
Magnetic operating		B: (3 - 5) x I _n C: (5 - 10) x I _n

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	I _{cn} /I _{cs} (kA)
1-4	230/400	4.5

AC acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA)
1	240	6
2	127	15
	240	10
3, 4	415	6
	240	10
	415	6

Series E90E - 4.5kA - AC MCBs



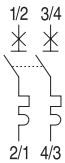
**1P
1 mod.**



Pole width	Rated current [A]	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
18mm	2	E91 B02	688494	E91E C02	552610	12
	4	E91 B04	688495	E91E C04	552612	12
	6	E91E B06	552533	E91E C06	552613	12
	10	E91E B10	552535	E91E C10	552615	12
	16	E91E B16	552537	E91E C16	552617	12
	20	E91E B20	552538	E91E C20	552618	12
	25	E91E B25	552539	E91E C25	552619	12
	32	E91E B32	552540	E91E C32	552620	12
	40	E91E B40	552541	E91E C40	552621	12



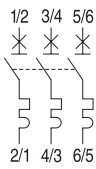
**2P
2 mod.**



18mm	2	-	-	E92E C02	552626	6
	4	-	-	E92E C04	552628	6
	6	E92E B06	552549	E92E C06	552629	6
	10	E92E B10	552551	E92E C10	552631	6
	16	E92E B16	552553	E92E C16	552633	6
	20	E92E B20	552554	E92E C20	552634	6
	25	E92E B25	552555	E92E C25	552635	6
	32	E92E B32	552556	E92E C32	552636	6
	40	E92E B40	552557	E92E C40	552637	6



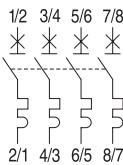
**3P
3 mod.**



18mm	2	-	-	E93E C02	552642	4
	4	-	-	E93E C04	552644	4
	6	E93E B06	552565	E93E C06	552645	4
	10	E93E B10	552567	E93E C10	552647	4
	16	E93E B16	552569	E93E C16	552649	4
	20	E93E B20	552570	E93E C20	552650	4
	25	E93E B25	552571	E93E C25	552651	4
	32	E93E B32	552572	E93E C32	552652	4
	40	E93E B40	552573	E93E C40	552653	4



**4P
4 mod.**



18mm	2	-	-	E94E C02	552658	3
	4	-	-	E94E C04	552660	3
	6	E94E B06	552581	E94E C06	552661	3
	10	E94E B10	552583	E94E C10	552663	3
	16	E94E B16	552585	E94E C16	552665	3
	20	E94E B20	552586	E94E C20	552666	3
	25	E94E B25	552587	E94E C25	552667	3
	32	E94E B32	552588	E94E C32	552668	3
	40	E94E B40	552589	E94E C40	552669	3



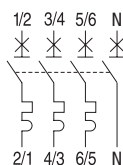
**1P+N
2 mod.**



18mm	2	-	-	E91E C02 N	552672	6
	4	-	-	E91E C04 N	552673	6
	6	E91E B06 N	552592	E91E C06 N	552674	6
	10	E91E B10 N	552593	E91E C10 N	552675	6
	13	E91E B13 N	552594	E91E C13 N	552676	6
	16	E91E B16 N	552595	E91E C16 N	552677	6
	20	E91E B20 N	552596	E91E C20 N	552678	6
	25	E91E B25 N	552597	E91E C25 N	552679	6
	32	E91E B32 N	552598	E91E C32 N	552680	6
40	E91E B40 N	552599	E91E C40 N	552681	6	



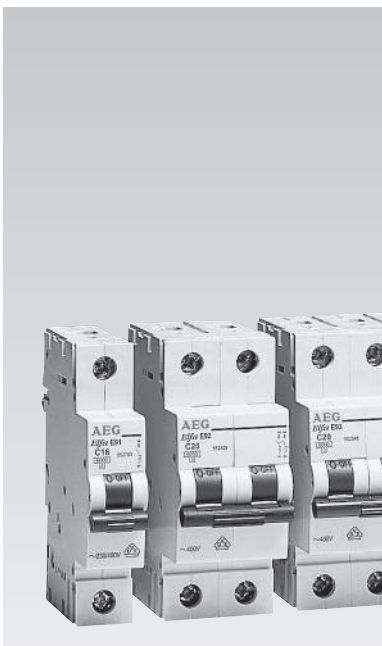
**3P+N
4 mod.**



18mm	2	-	-	E93E C02 N	552682	3
	4	-	-	E93E C04 N	552683	3
	6	E93E B06 N	552600	E93E C06 N	552684	3
	10	E93E B10 N	552601	E93E C10 N	552685	3
	13	E93E B13 N	552602	E93E C13 N	552686	3
	16	E93E B16 N	552603	E93E C16 N	552687	3
	20	E93E B20 N	552604	E93E C20 N	552688	3
	25	E93E B25 N	552605	E93E C25 N	552689	3
	32	E93E B32 N	552606	E93E C32 N	552690	3
	40	E93E B40 N	552607	E93E C40 N	552691	3

Miniature circuit breakers

Series E90



DIN VDE 0641 **6kA**

EN/IEC 60898-1 **6000**
3

EN/IEC 60947-2 **10kA**

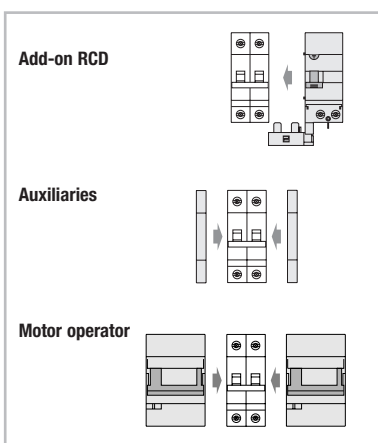
Applications



Approval/Marking



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (I_n)	(A)	0.5-63
Rated voltage AC (U_n)	(V)	240/415
Minimum operating voltage U_{B min}	(V)	12
Tripping characteristics		B-C-D-K
Selectivity class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 1+N, 2, 3, 3+N, 4
Weight	(g/pole)	120
Thermal operating limit		(1.13 - 1.45) x I _n
Magnetic operating		B: (3 - 5) x I _n C: (5 - 10) x I _n D: (10 - 20) x I _n K: (8 - 12) x I _n

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	I _{cn} /I _{cs} (kA)
1-4	230/400	6

AC acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA) ⁽¹⁾
1	240	10
1+N.2	127	30
	240	20
2	415	10
3, 4	240	20
	415	10




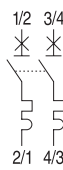

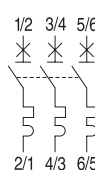

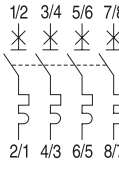



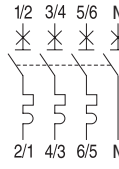
DC acc. to EN/IEC 60947-2⁽²⁾

Poles	V	I _{cu} /I _{cs} (kA)
1	60	20
2	125	25

(1) I_{cs} = 75% I_{cu}

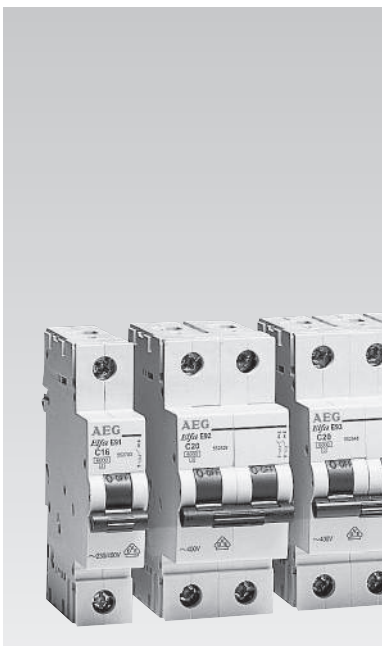
(2) Nominal and maximum VDC in page A.26-A.29

Series E90 - 6kA - AC MCBs

	Rated Pole width	Rated current [A]	B		C		D		K		Pack.	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
1P 1 mod.  	18mm	0.5	-	-	E91 C0.5	552784	E91 D0.5	552876	E91K0.5	691174	12	
		1	-	-	E91 C01	552785	E91 D01	552877	E91K01	691175	12	
		1.6	-	-	-	-	-	-	E91K1,6	691181	12	
		2	E91 B02	688494	E91 C02	552786	E91 D02	552878	E91K02	691176	12	
		3	-	-	E91 C03	552787	E91 D03	552879	E91K03	691177	12	
		4	E91 B04	688495	E91 C04	552788	E91 D04	552880	E91K04	691178	12	
		6	E91 B06	552697	E91 C06	552789	E91 D06	552881	E91K06	691179	12	
		10	E91 B10	552699	E91 C10	552791	E91 D10	552883	E91K08	691180	12	
		13	E91 B13	552700	E91 C13	552792	E91 D13	552884	E91K10	691182	12	
		16	E91 B16	552701	E91 C16	552793	E91 D16	552885	E91K16	691183	12	
		20	E91 B20	552702	E91 C20	552794	E91 D20	552886	E91K20	691184	12	
		25	E91 B25	552703	E91 C25	552795	E91 D25	552887	E91K25	691185	12	
		32	E91 B32	552704	E91 C32	552796	E91 D32	552888	E91K32	691186	12	
		40	E91 B40	552705	E91 C40	552797	E91 D40	552889	E91K40	691187	12	
		50	E91 B50	552706	E91 C50	552798	E91 D50	552890	E91K50	691188	12	
63	E91 B63	552707	E91 C63	552799	E91 D63	552891	E91K63	691189	12			
2P 2 mod.  	18mm	0.5	-	-	E92 C0.5	552819	E92 D0.5	552911	E92K0,5	691610	6	
		1	-	-	E92 C01	552820	E92 D01	552912	E92K01	691611	6	
		1.6	-	-	-	-	-	-	E92K1,6	691612	6	
		2	-	-	E92 C02	552821	E92 D02	552913	E92K02	691613	6	
		3	-	-	E92 C03	552822	E92 D03	552914	E92K03	691614	6	
		4	-	-	E92 C04	552823	E92 D04	552915	E92K04	691615	6	
		6	E92 B06	552732	E92 C06	552824	E92 D06	552916	E92K06	691616	6	
		10	E92 B10	552734	E92 C10	552826	E92 D10	552918	E92K08	691617	6	
		13	E92 B13	552735	E92 C13	552827	E92 D13	552919	E92K10	691618	6	
		16	E92 B16	552736	E92 C16	552828	E92 D16	552920	E92K16	691619	6	
		20	E92 B20	552737	E92 C20	552829	E92 D20	552921	E92K20	691620	6	
		25	E92 B25	552738	E92 C25	552830	E92 D25	552922	E92K25	691621	6	
		32	E92 B32	552739	E92 C32	552831	E92 D32	552923	E92K32	691622	6	
		40	E92 B40	552740	E92 C40	552832	E92 D40	552924	E92K40	691623	6	
		50	E92 B50	552741	E92 C50	552833	E92 D50	552925	E92K50	691624	6	
63	E92 B63	552742	E92 C63	552834	E92 D63	552926	E92K63	691625	6			
3P 3 mod.  	18mm	0.5	-	-	E93 C0.5	552838	E93 D0.5	552930	E93K0,5	691190	4	
		1	-	-	E93 C01	552839	E93 D01	552931	E93K01	691191	4	
		1.6	-	-	-	-	-	-	E93K1,6	691197	4	
		2	-	-	E93 C02	552840	E93 D02	552932	E93K02	691192	4	
		3	-	-	E93 C03	552841	E93 D03	552933	E93K03	691193	4	
		4	-	-	E93 C04	552842	E93 D04	552934	E93K04	691194	4	
		6	E93 B06	552751	E93 C06	552843	E93 D06	552935	E93K06	691195	4	
		10	E93 B10	552753	E93 C10	552845	E93 D10	552937	E93K08	691196	4	
		13	E93 B13	552754	E93 C13	552846	E93 D13	552938	E93K10	691198	4	
		16	E93 B16	552755	E93 C16	552847	E93 D16	552939	E93K16	691199	4	
		20	E93 B20	552756	E93 C20	552848	E93 D20	552940	E93K20	691200	4	
		25	E93 B25	552757	E93 C25	552849	E93 D25	552941	E93K25	691201	4	
		32	E93 B32	552758	E93 C32	552850	E93 D32	552942	E93K32	691202	4	
		40	E93 B40	552759	E93 C40	552851	E93 D40	552943	E93K40	691203	4	
		50	E93 B50	552760	E93 C50	552852	E93 D50	552944	E93K50	691204	4	
63	E93 B63	552761	E93 C63	552853	E93 D63	552945	E93K63	691205	4			
4P 4 mod.  	18mm	0.5	-	-	E94 C0.5	552857	E94 D0.5	552949	-	-	3	
		1	-	-	E94 C01	552858	E94 D01	552950	-	-	-	3
		2	-	-	E94 C02	552859	E94 D02	552951	-	-	-	3
		3	-	-	E94 C03	552860	E94 D03	552952	-	-	-	3
		4	-	-	E94 C04	552861	E94 D04	552953	-	-	-	3
		6	E94 B06	552770	E94 C06	552862	E94 D06	552954	-	-	-	3
		10	E94 B10	552772	E94 C10	552864	E94 D10	552956	-	-	-	3
		13	E94 B13	552773	E94 C13	552865	E94 D13	552957	-	-	-	3
		16	E94 B16	552774	E94 C16	552866	E94 D16	552958	-	-	-	3
		20	E94 B20	552775	E94 C20	552867	E94 D20	552959	-	-	-	3
		25	E94 B25	552776	E94 C25	552868	E94 D25	552960	-	-	-	3
		32	E94 B32	552777	E94 C32	552869	E94 D32	552961	-	-	-	3
		40	E94 B40	552778	E94 C40	552870	E94 D40	552962	-	-	-	3
		50	E94 B50	552779	E94 C50	552871	E94 D50	552963	-	-	-	3
		63	E94 B63	552780	E94 C63	552872	E94 D63	552964	-	-	-	3
1P+N 2 mod.  	18mm	0.5	-	-	E91 C0.5 N	552803	E91 D0.5 N	552895	-	-	6	
		1	-	-	E91 C01 N	552804	E91 D01 N	552896	-	-	-	6
		2	-	-	E91 C02 N	552805	E91 D02 N	552897	-	-	-	6
		3	-	-	E91 C03 N	552806	E91 D03 N	552898	-	-	-	6
		4	-	-	E91 C04 N	552807	E91 D04 N	552899	-	-	-	6
		6	E91 B06 N	552716	E91 C06 N	552808	E91 D06 N	552900	-	-	-	6
		10	E91 B10 N	552718	E91 C10 N	552810	E91 D10 N	552902	-	-	-	6
		13	E91 B13 N	552719	E91 C13 N	552811	E91 D13 N	552903	-	-	-	6
		16	E91 B16 N	552720	E91 C16 N	552812	E91 D16 N	552904	-	-	-	6
		20	E91 B20 N	552721	E91 C20 N	552813	E91 D20 N	552905	-	-	-	6
		25	E91 B25 N	552722	E91 C25 N	552814	E91 D25 N	552906	-	-	-	6
		32	E91 B32 N	552723	E91 C32 N	552815	E91 D32 N	552907	-	-	-	6
		40	E91 B40 N	552724	E91 C40 N	552816	E91 D40 N	552908	-	-	-	6
		50	E91 B50 N	552725	E91 C50 N	552817	E91 D50 N	552909	-	-	-	6
		63	E91 B63 N	552726	E91 C63 N	552818	E91 D63 N	552910	-	-	-	6
3P+N 4 mod.  	18mm	0.5	-	-	E93 C0.5 N	681192	E93 D0.5 N	681208	-	-	3	
		1	-	-	E93 C01 N	681193	E93 D01 N	681209	-	-	-	3
		2	-	-	E93 C02 N	681194	E93 D02 N	681210	-	-	-	3
		3	-	-	E93 C03 N	681195	E93 D03 N	681211	-	-	-	3
		4	-	-	E93 C04 N	681196	E93 D04 N	681212	-	-	-	3
		6	E93 B06 N	681181	E93 C06 N	681197	E93 D06 N	681213	-	-	-	3
		10	E93 B10 N	681183	E93 C10 N	681199	E93 D10 N	681215	-	-	-	3
		13	E93 B13 N	681184	E93 C13 N	681200	E93 D13 N	681216	-	-	-	3
		16	E93 B16 N	681185	E93 C16 N	681201	E93 D16 N	681217	-	-	-	3
		20	E93 B20 N	681186	E93 C20 N	681202	E93 D20 N	681218	-	-	-	3
		25	E93 B25 N	681187	E93 C25 N	681203	E93 D25 N	681219	-	-	-	3
		32	E93 B32 N	681188	E93 C32 N	681204	E93 D32 N	681220	-	-	-	3
		40	E93 B40 N	681189	E93 C40 N	681205	E93 D40 N	681221	-	-	-	3
		50	E93 B50 N	681190	E93 C50 N	681206	E93 D50 N	681222	-	-	-	3
		63	E93 B63 N	681191	E93 C63 N	681207	E93 D63 N	681223	-	-	-	3

Miniature circuit breakers

Series E90S



DIN VDE 0641 **10kA**

EN/IEC 60898-1 10000
3

EN/IEC 60947-2 **15kA**

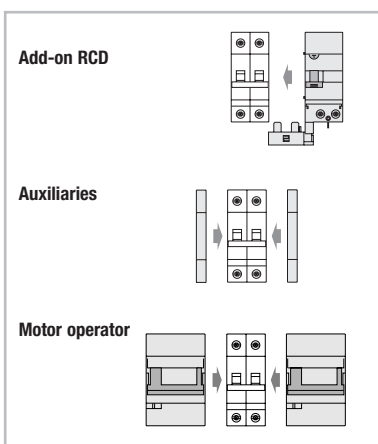
Applications



Approval/Marking



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (I_n)	(A)	0.5-63
Rated voltage AC (U_n)	(V)	240/415
Minimum operating voltage U_{B min}	(V)	12
Tripping characteristics		B-C-D
Selectivity class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 1+N, 2, 3, 3+N, 4
Weight	(g/pole)	120
Thermal operating limit		(1.13 - 1.45) x I _n
Magnetic operating		B: (3 - 5) x I _n C: (5 - 10) x I _n D: (10 - 20) x I _n

Short-circuit capacity

AC acc. to EN/IEC 60898-1

Poles	V	I _{cn} (kA) ⁽¹⁾
1-4	230/400	10

AC acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA) ⁽²⁾
1	240	15
1+N.2	127	40
	240	30
2	415	15
3, 4	240	30
	415	15

DC acc. to EN/IEC 60947-2⁽³⁾






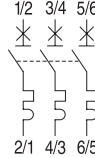
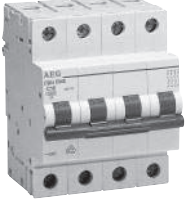
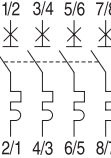



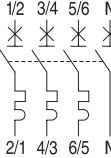
Poles	V	I _{cu} /I _{cs} (kA)
1	60	25
2	125	30

(1) I_{cs} = 75% I_{cn}

(2) I_{cs} = 50% I_{cu}

(3) Nominal and maximum VDC in page A.26-A.29

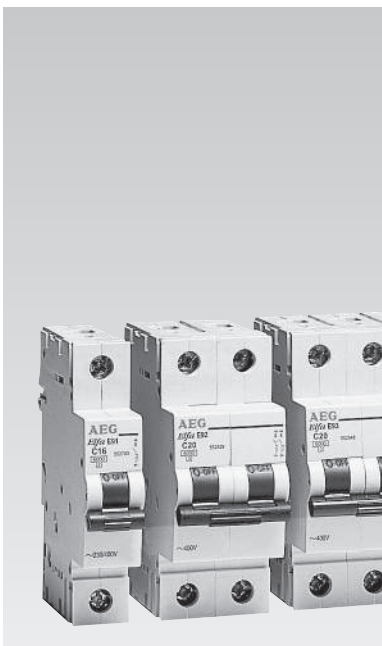
Series E90S - 10kA - AC MCBs

		Rated Pole width	Rated current [A]	B		C		D		Pack.
				Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 1P 1 mod. 	18mm	0.5	-	-	-	E91S C0.5	553044	E91S D0.5	553120	12
		1	-	-	-	E91S C01	553045	E91S D01	553121	12
		2	-	-	-	E91S C02	553046	E91S D02	553122	12
		3	-	-	-	E91S C03	553047	E91S D03	553123	12
		4	-	-	-	E91S C04	553048	E91S D04	553124	12
		6	E91S B06	552973	E91S C06	553049	E91S D06	553125	12	
		10	E91S B10	552975	E91S C10	553051	E91S D10	553127	12	
		13	E91S B13	552976	E91S C13	553052	E91S D13	553128	12	
		16	E91S B16	552977	E91S C16	553053	E91S D16	553129	12	
		20	E91S B20	552978	E91S C20	553054	E91S D20	553130	12	
		25	E91S B25	552979	E91S C25	553055	E91S D25	553131	12	
		32	E91S B32	552980	E91S C32	553056	E91S D32	553132	12	
		40	E91S B40	552981	E91S C40	553057	E91S D40	553132	12	
		50	E91S B50	552982	E91S C50	553058	E91S D50	553134	12	
63	E91S B63	552983	E91S C63	553059	E91S D63	553135	12			
 2P 2 mod. 	18mm	0.5	-	-	-	E92S C0.5	553063	E92S D0.5	553139	6
		1	-	-	-	E92S C01	553064	E92S D01	553140	6
		2	-	-	-	E92S C02	553065	E92S D02	553141	6
		3	-	-	-	E92S C03	553066	E92S D03	553142	6
		4	-	-	-	E92S C04	553067	E92S D04	553143	6
		6	E92S B06	552992	E92S C06	553068	E92S D06	553144	6	
		10	E92S B10	552994	E92S C10	553070	E92S D10	553146	6	
		13	E92S B13	552995	E92S C13	553071	E92S D13	553147	6	
		16	E92S B16	552996	E92S C16	553072	E92S D16	553148	6	
		20	E92S B20	552997	E92S C20	553073	E92S D20	553149	6	
		25	E92S B25	552998	E92S C25	553074	E92S D25	553150	6	
		32	E92S B32	552999	E92S C32	553075	E92S D32	553151	6	
		40	E92S B40	553000	E92S C40	553076	E92S D40	553152	6	
		50	E92S B50	553001	E92S C50	553077	E92S D50	553153	6	
63	E92S B63	553002	E92S C63	553078	E92S D63	553154	6			
 3P 3 mod. 	18mm	0.5	-	-	-	E93S C0.5	553082	E93S D0.5	553158	4
		1	-	-	-	E93S C01	553083	E93S D01	553159	4
		2	-	-	-	E93S C02	553084	E93S D02	553160	4
		3	-	-	-	E93S C03	553085	E93S D03	553161	4
		4	-	-	-	E93S C04	553086	E93S D04	553162	4
		6	E93S B06	553011	E93S C06	553087	E93S D06	553163	4	
		10	E93S B10	553013	E93S C10	553089	E93S D10	553165	4	
		13	E93S B13	553014	E93S C13	553090	E93S D13	553166	4	
		16	E93S B16	553015	E93S C16	553091	E93S D16	553167	4	
		20	E93S B20	553016	E93S C20	553092	E93S D20	553168	4	
		25	E93S B25	553017	E93S C25	553093	E93S D25	553169	4	
		32	E93S B32	553018	E93S C32	553094	E93S D32	553170	4	
		40	E93S B40	553019	E93S C40	553095	E93S D40	553171	4	
		50	E93S B50	553020	E93S C50	553096	E93S D50	553172	4	
63	E93S B63	553021	E93S C63	553097	E93S D63	553173	4			
 4P 4 mod. 	18mm	0.5	-	-	-	E94S C0.5	553101	-	-	3
		1	-	-	-	E94S C01	553102	E94S D01	553178	3
		2	-	-	-	E94S C02	553103	E94S D02	553179	3
		3	-	-	-	E94S C03	553104	E94S D03	553180	3
		4	-	-	-	E94S C04	553105	E94S D04	553181	3
		6	E94S B06	553030	E94S C06	553106	E94S D06	553182	3	
		10	E94S B10	553032	E94S C10	553108	E94S D10	553184	3	
		13	E94S B13	553033	E94S C13	553109	E94S D13	553185	3	
		16	E94S B16	553034	E94S C16	553110	E94S D16	553186	3	
		20	E94S B20	553035	E94S C20	553111	E94S D20	553187	3	
		25	E94S B25	553036	E94S C25	553112	E94S D25	553188	3	
		32	E94S B32	553037	E94S C32	553113	E94S D32	553189	3	
		40	E94S B40	553038	E94S C40	553114	E94S D40	553190	3	
		50	E94S B50	553039	E94S C50	553115	E94S D50	553191	3	
63	E94S B63	553040	E94S C63	553116	E94S D63	553192	3			
 1P+N 2 mod. 	18mm	0.5	-	-	-	E91S C0.5 N	681064	E91S D0.5 N	681080	6
		1	-	-	-	E91S C01 N	681065	E91S D01 N	681081	6
		2	-	-	-	E91S C02 N	681066	E91S D02 N	681082	6
		3	-	-	-	E91S C03 N	681067	E91S D03 N	681083	6
		4	-	-	-	E91S C04 N	681068	E91S D04 N	681084	6
		6	E91S B06 N	681053	E91S C06 N	681069	E91S D06 N	681085	6	
		10	E91S B10 N	681055	E91S C10 N	681071	E91S D10 N	681087	6	
		13	E91S B13 N	681056	E91S C13 N	681072	E91S D13 N	681088	6	
		16	E91S B16 N	681057	E91S C16 N	681073	E91S D16 N	681089	6	
		20	E91S B20 N	681058	E91S C20 N	681074	E91S D20 N	681090	6	
		25	E91S B25 N	681059	E91S C25 N	681075	E91S D25 N	681091	6	
		32	E91S B32 N	681060	E91S C32 N	681076	E91S D32 N	681092	6	
		40	E91S B40 N	681061	E91S C40 N	681077	E91S D40 N	681093	6	
		50	E91S B50 N	681062	E91S C50 N	681078	E91S D50 N	681094	6	
63	E91S B63 N	681063	E91S C63 N	681079	E91S D63 N	681095	6			
 3P+N 4 mod. 	18mm	0.5	-	-	-	E93S C0.5 N	681144	E93S D0.5 N	681160	3
		1	-	-	-	E93S C01 N	681145	E93S D01 N	681161	3
		2	-	-	-	E93S C02 N	681146	E93S D02 N	681162	3
		3	-	-	-	E93S C03 N	681147	E93S D03 N	681163	3
		4	-	-	-	E93S C04 N	681148	E93S D04 N	681164	3
		6	E93S B06 N	681133	E93S C06 N	681149	E93S D06 N	681165	3	
		10	E93S B10 N	681135	E93S C10 N	681151	E93S D10 N	681167	3	
		13	E93S B13 N	681136	E93S C13 N	681152	E93S D13 N	681168	3	
		16	E93S B16 N	681137	E93S C16 N	681153	E93S D16 N	681169	3	
		20	E93S B20 N	681138	E93S C20 N	681154	E93S D20 N	681170	3	
		25	E93S B25 N	681139	E93S C25 N	681155	E93S D25 N	681171	3	
		32	E93S B32 N	681140	E93S C32 N	681156	E93S D32 N	681172	3	
		40	E93S B40 N	681141	E93S C40 N	681157	E93S D40 N	681173	3	
		50	E93S B50 N	681142	E93S C50 N	681158	E93S D50 N	681174	3	
63	E93S B63 N	681143	E93S C63 N	681159	E93S D63 N	681175	3			

Miniature circuit breakers

Series E90X

EN/IEC 60947-2 **100kA**
25kA
20kA
15kA



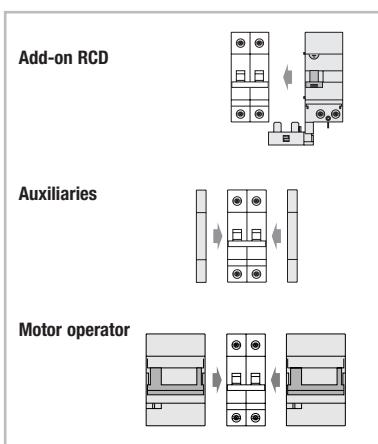
Applications



Marking



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (In)	(A)	0.5-63
Rated voltage AC (Un)	(V)	240/415
Minimum operating voltage $U_{B \min}$	(V)	12
Tripping characteristics		(3 - 5) In (B) (5 - 10) In (C) (10 - 20) In (D)
Selectivity class		3
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles		1, 2, 3, 4
Weight	(g/pole)	120
Thermal operating limit		(1.05 - 1.30) x In
Magnetic operating		(3 - 5) In (B) (5 - 10) In (C) (10 - 20) In (D)

Short-circuit capacity

Acc. to EN/IEC 60947-2

In(A)	Poles	V	Icu (kA) ⁽¹⁾
0.5-4	1	240	100
	2-4	415	100
6-25	1	240	25
		415	25
	2-4	240	50
		415	25
32-40	1	240	20
		415	20
	2-4	240	40
		415	20
50-63	1	240	15
		415	15
	2-4	240	30
		415	15

DC acc. to EN/IEC 60947-2⁽²⁾

Poles	V	Icu/Ics (kA)
1	60	20
2	125	25

(1) Ics = 50% Icu

(2) Nominal and maximum VDC in page A.26-A.29

Series E90X - 25kA - AC MCBs⁽¹⁾



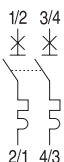
1P
1 mod.



Pole width	Rated current [A]	B		C		D		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
18mm	0.5	-	-	E91X C0.5	553400	E91X D0.5	553464	12
	1	-	-	E91X C01	553401	E91X D01	553465	12
	2	-	-	E91X C02	553402	E91X D02	553466	12
	3	-	-	E91X C03	553403	E91X D03	553467	12
	4	-	-	E91X C04	553404	E91X D04	553468	12
	6	E91X B06	553341	E91X C06	553405	E91X D06	553469	12
	10	E91X B10	553343	E91X C10	553407	E91X D10	553471	12
	13	E91X B13	553344	E91X C13	553408	E91X D13	553472	12
	16	E91X B16	553345	E91X C16	553409	E91X D16	553473	12
	20	E91X B20	553346	E91X C20	553410	E91X D20	553474	12
	25	E91X B25	553347	E91X C25	553411	E91X D25	553475	12
	32	E91X B32	553348	E91X C32	553412	E91X D32	553476	12
	40	E91X B40	553349	E91X C40	553413	E91X D40	553477	12
	50	E91X B50	553350	E91X C50	553414	E91X D50	553478	12
	63	E91X B63	553351	E91X C63	553415	E91X D63	553479	12



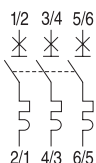
2P
2 mod.



18mm	0.5	-	-	E92X C0.5	553416	E92X D0.5	553480	6
	1	-	-	E92X C01	553417	E92X D01	553481	6
	2	-	-	E92X C02	553418	E92X D02	553482	6
	3	-	-	E92X C03	553419	E92X D03	553483	6
	4	-	-	E92X C04	553420	E92X D04	553484	6
	6	E92X B06	553357	E92X C06	553421	E92X D06	553485	6
	10	E92X B10	553359	E92X C10	553423	E92X D10	553487	6
	13	E92X B13	553360	E92X C13	553424	E92X D13	553488	6
	16	E92X B16	553361	E92X C16	553425	E92X D16	553489	6
	20	E92X B20	553362	E92X C20	553426	E92X D20	553490	6
	25	E92X B25	553363	E92X C25	553427	E92X D25	553491	6
	32	E92X B32	553364	E92X C32	553428	E92X D32	553492	6
	40	E92X B40	553365	E92X C40	553429	E92X D40	553493	6
	50	E92X B50	553366	E92X C50	553430	E92X D50	553494	6
	63	E92X B63	553367	E92X C63	553431	E92X D63	553495	6



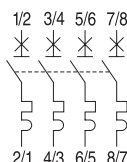
3P
3 mod.



18mm	0.5	-	-	E93X C0.5	553432	E93X D0.5	553496	4
	1	-	-	E93X C01	553433	E93X D01	553497	4
	2	-	-	E93X C02	553434	E93X D02	553498	4
	3	-	-	E93X C03	553435	E93X D03	553499	4
	4	-	-	E93X C04	553436	E93X D04	553500	4
	6	E93X B06	553373	E93X C06	553437	E93X D06	553501	4
	10	E93X B10	553375	E93X C10	553439	E93X D10	553503	4
	13	E93X B13	553376	E93X C13	553440	E93X D13	553504	4
	16	E93X B16	553377	E93X C16	553441	E93X D16	553505	4
	20	E93X B20	553378	E93X C20	553442	E93X D20	553506	4
	25	E93X B25	553379	E93X C25	553443	E93X D25	553507	4
	32	E93X B32	553380	E93X C32	553444	E93X D32	553508	4
	40	E93X B40	553381	E93X C40	553445	E93X D40	553509	4
	50	E93X B50	553382	E93X C50	553446	E93X D50	553510	4
	63	E93X B63	553383	E93X C63	553447	E93X D63	553511	4



4P
4 mod.



18mm	0.5	-	-	E94X C0.5	553448	E94X D0.5	553512	3
	1	-	-	E94X C01	553449	E94X D01	553513	3
	2	-	-	E94X C02	553450	E94X D02	553514	3
	3	-	-	E94X C03	553451	E94X D03	553515	3
	4	-	-	E94X C04	553452	E94X D04	553516	3
	6	E94X B06	553389	E94X C06	553453	E94X D06	553517	3
	10	E94X B10	553391	E94X C10	553455	E94X D10	553519	3
	13	E94X B13	553392	E94X C13	553456	E94X D13	553520	3
	16	E94X B16	553393	E94X C16	553457	E94X D16	553521	3
	20	E94X B20	553394	E94X C20	553458	E94X D20	553522	3
	25	E94X B25	553395	E94X C25	553459	E94X D25	553523	3
	32	E94X B32	553396	E94X C32	553460	E94X D32	553524	3
	40	E94X B40	553397	E94X C40	553461	E94X D40	553525	3
	50	E94X B50	553398	E94X C50	553462	E94X D50	553526	3
	63	E94X B63	553399	E94X C63	553463	E94X D63	553527	3

(1) 1P, 240V:
 0.5 ≤ I_n ≤ 4A I_{cu} = 100kA
 4A < I_n ≤ 25A I_{cu} = 25kA
 25A < I_n ≤ 40A I_{cu} = 20kA
 40A < I_n ≤ 63A I_{cu} = 15kA



Miniature circuit breakers for universal current

Series E90S UC

EN/IEC 60898-2 6000 T15
DIN VDE 0641

EN/IEC 60947-2 10kA

Applications

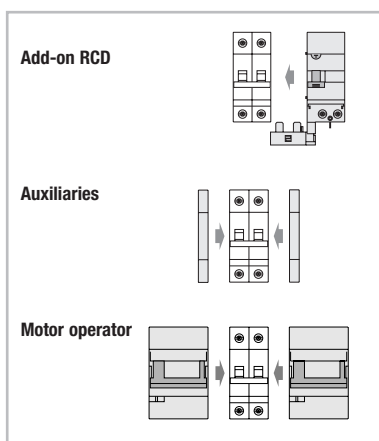


Standards/Marking

EN/IEC 60898-2
DIN VDE 0641



Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Motor operator ● pg A.24

- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.7

Performance

Thermal setting (In)	(A)	0.5-63
Rated voltage AC (Un)	(V)	230/400 250/500/880 ⁽¹⁾ ≡
Minimum operating voltage UB min	(V)	12 12 ≡
Tripping characteristics		B-C
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity flexible/rigid cable	(mm ²)	25-35
Poles ⁽¹⁾		1, 2, 4
Weight	(g/pole)	125
Thermal operating limit		(1.13 - 1.45) x In
Magnetic operating		B: (3 - 5) x In C: (5 - 10) x In

Short-circuit capacity

AC/DC acc. to IEC 60898-2⁽²⁾

Poles	V	Icn=Ics (kA) ⁽³⁾
1	125 DC	10
	220 DC	6
	230/400 AC	6
2	250 DC	10
	440 DC	6
	400 AC	6
4	880 DC	6

AC/DC acc. to IEC 60947-2

Poles	V	Icu (kA)
1	125 DC	20 ⁽⁴⁾
	220 DC	10 ⁽⁴⁾
2	440 DC	10 ⁽⁴⁾
1	230 AC	6 ⁽⁵⁾
1	440 AC	6 ⁽⁵⁾

- (1) For 4P execution open circuit voltage $U_{00} = 1000V \equiv$
- (2) After a switching of the net with more than 6kA in AC, is use in DC impossible
- (3) Polarity labeling to be respected due to the permanent magnet in the MCB
- (4) T = 4ms
- (5) 4.5kA for 50A & 63A

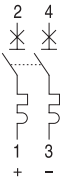
Series E90S UC - 10kA - AC/DC MCBs



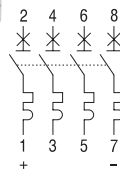
1P
1 mod.



2P
2 mod.



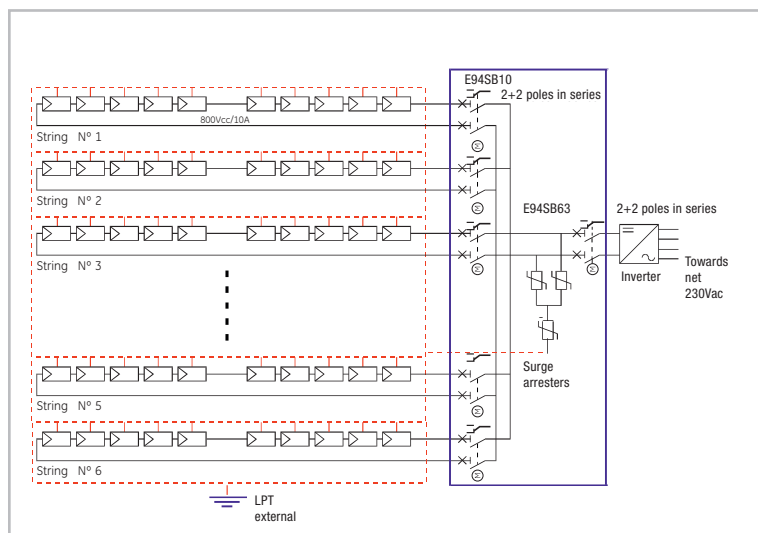
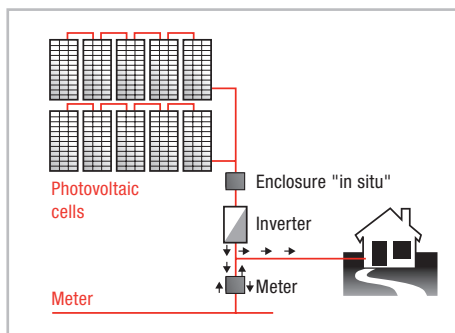
4P
4.5 mod.⁽¹⁾



Pole width	Rated current [A]	B		C		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
1P 1 mod.	0.5	-	-	E91S UC C0.5	553304	12
	1	-	-	E91S UC C01	553305	12
	2	-	-	E91S UC C02	553306	12
	3	-	-	E91S UC C03	553307	12
	4	-	-	E91S UC C04	553308	12
	6	E91S UC B06	553271	E91S UC C06	553309	12
	8	E91S UC B08	553272	E91S UC C08	553310	12
	10	E91S UC B10	553273	E91S UC C10	553311	12
	13	E91S UC B13	553274	E91S UC C13	553312	12
	16	E91S UC B16	553275	E91S UC C16	553313	12
	20	E91S UC B20	553276	E91S UC C20	553314	12
	25	E91S UC B25	553277	E91S UC C25	553315	12
	32	E91S UC B32	553278	E91S UC C32	553316	12
	40	E91S UC B40	553279	E91S UC C40	553317	12
50	E91S UC B50	553280	E91S UC C50	553318	12	
63	E91S UC B63	553281	E91S UC C63	553319	12	
2P 2 mod.	0.5	-	-	E92S UC C0.5	553320	6
	1	-	-	E92S UC C01	553321	6
	2	-	-	E92S UC C02	553322	6
	3	-	-	E92S UC C03	553323	6
	4	-	-	E92S UC C04	553324	6
	6	E92S UC B06	553290	E92S UC C06	553325	6
	8	E92S UC B08	553291	E92S UC C08	553326	6
	10	E92S UC B10	553292	E92S UC C10	553327	6
	13	E92S UC B13	553293	E92S UC C13	553328	6
	16	E92S UC B16	553294	E92S UC C16	553329	6
	20	E92S UC B20	553295	E92S UC C20	553330	6
	25	E92S UC B25	553296	E92S UC C25	553331	6
	32	E92S UC B32	553297	E92S UC C32	553332	6
	40	E92S UC B40	553298	E92S UC C40	553333	6
50	E92S UC B50	553299	E92S UC C50	553334	6	
63	E92S UC B63	553300	E92S UC C63	553335	6	
4P 4.5 mod. ⁽¹⁾	10	E94S UC B10	691213	-	-	3
	16	E94S UC B16	691214	-	-	3
	20	E94S UC B20	691215	-	-	3
	32	E94S UC B32	691600	-	-	3
	40	E94S UC B40	691216	-	-	3
63	E94S UC B63	691217	-	-	3	

(1) Including auxiliary contact CAH (central half module)
Line to be connected to bottom terminals 1, 7 load to 3, 5.

Example of wiring in a photovoltaic application



Example of installation in enclosure "in situ"

Miniature circuit breakers

Series E880

EN/IEC 60947-2 6kA



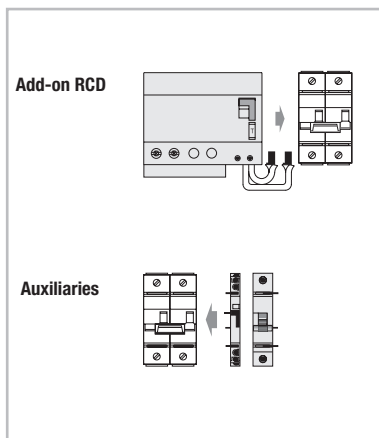
Applications



Standard/Marking

EN/IEC 60947-2

Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24

Dimensions ● pg A.19

Performance

Thermal setting (In)	(A)	80-100-125
Rated voltage AC (Un)	(V)	240/415
Tripping characteristics		B-C-D
Mechanical/electrical endurance		10000/4000
Operating temperature	(°C)	-25 up to 55
Terminal capacity flexible/rigid cable	(mm ²)	70
Poles		1, 2, 3, 4
Weight	(g/pole)	210
Thermal operating limit		(1.05 - 1.30) x In
Magnetic operating		B: (3 - 5) x In C: (5 - 10) x In D: (10 - 20) x In

Short-circuit capacity

Acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
1	230/400	6
2	230	10
3, 4	230	10
	400	6

Series E880 - 6kA - AC MCBs



1P
1.5 mod.



Pole width	Rated current [A]	B		C		D		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
27mm	80	E881 B080	676600	E881 C080	676612	E881 D080	676624	8
	100	E881 B100	676601	E881 C100	676613	E881 D100	676625	1
	125	E881 B125	676602	E881 C125	676614	E881 D125	676626	1



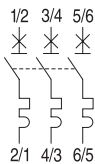
3P
3 mod.



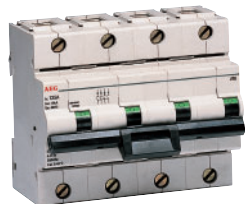
27mm	80	E882 B080	676603	E882 C080	676615	E882 D080	676627	4
	100	E882 B100	676604	E882 C100	676616	E882 D100	676628	1
	125	E882 B125	676605	E882 C125	676617	E882 D125	676629	1



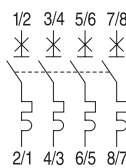
3P
4.5 mod.



27mm	80	E883 B080	676606	E883 C080	676618	E883 D080	676630	1
	100	E883 B100	676607	E883 C100	676619	E883 D100	676631	1
	125	E883 B125	676608	E883 C125	676620	E883 D125	676632	1

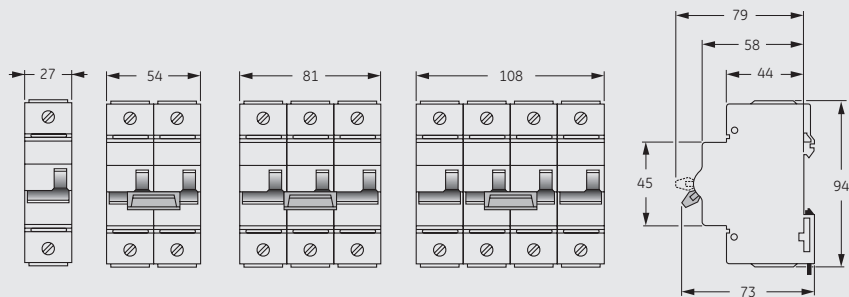


4P
6 mod.



27mm	80	E884 B080	676609	E884 C080	676621	E884 D080	676633	1
	100	E884 B100	676610	E884 C100	676622	E884 D100	676634	1
	125	E884 B125	676611	E884 C125	676623	E884 D125	676635	1

Dimensions - Series E880, E880S



Miniature circuit breakers

Series E880S

EN/IEC 60947-2 10kA



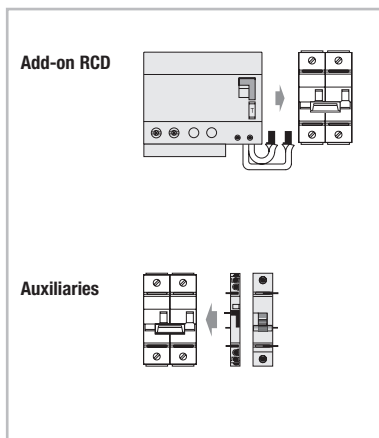
Applications



Standard/Marking

EN/IEC 60947-2

Add-on devices



- Add-on RCD ● pg B.15
- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24

Dimensions ● pg A.19

Performance

Thermal setting (In)	(A)	80-100-125
Rated voltage AC (Un)	(V)	240/415
Tripping characteristics		B-C-D
Mechanical/electrical endurance		10000/4000
Operating temperature	(°C)	-25 up to 55
Terminal capacity flexible/rigid cable	(mm ²)	70
Poles		1, 2, 3, 4
Weight	(g/pole)	210
Thermal operating limit		(1.05 - 1.30) x In
Magnetic operating		B: (3 - 5) x In C: (5 - 10) x In D: (10 - 20) x In

Short-circuit capacity

Acc. to EN/IEC 60947-2 (B-C)

Poles	V	Icu (kA) ⁽¹⁾
1	230	10 ⁽²⁾
2	230	15 ⁽³⁾
3, 4	230	15 ⁽³⁾
	400	10 ⁽²⁾

- (1) Only for B and C
- (2) 7.5kA for D
- (3) 10kA for D

Series E880S - 10kA - AC MCBs



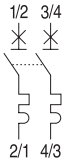
1P
1.5 mod.



Pole width	Rated current [A]	B		C		D ⁽¹⁾		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
27mm	80	E881S B080	676636	E881S C080	676648	E881S D080	676660	
	100	E881S B100	676637	E881S C100	676649	E881S D100	676661	
	125	E881S B125	676638	E881S C125	676650	E881S D125	676662	



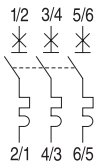
3P
3 mod.



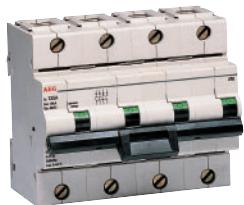
27mm	80	E882S B080	676639	E882S C080	676651	E882S D080	676663	
	100	E882S B100	676640	E882S C100	676652	E882S D100	676664	
	125	E882S B125	676641	E882S C125	676653	E882S D125	676665	



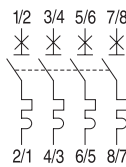
3P
4.5 mod.



27mm	80	E883S B080	676642	E883S C080	676654	E883S D080	676666	
	100	E883S B100	676643	E883S C100	676655	E883S D100	676667	
	125	E883S B125	676644	E883S C125	676656	E883S D125	676668	

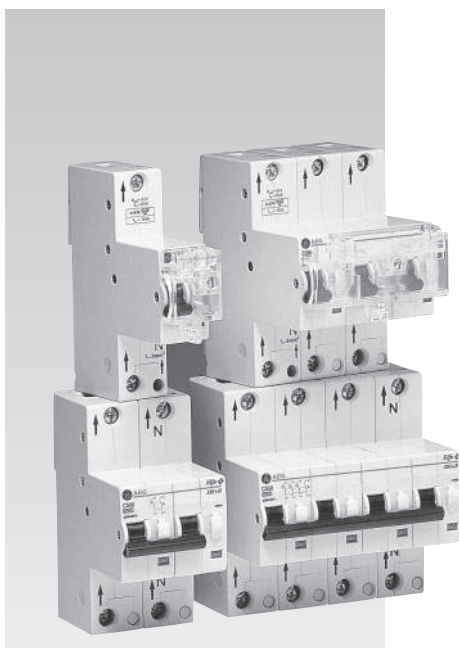


4P
6 mod.



27mm	80	E884S B080	676645	E884S C080	676657	E884S D080	676669	
	100	E884S B100	676646	E884S C100	676658	E884S D100	676670	
	125	E884S B125	676647	E884S C125	676659	E884S D125	676671	

(1) Rated breaking capacity see footnotes (2) and (3) on page A.20



Miniature circuit breakers

Series S90

EN 60898-1 25000

EN 60947-2 **25kA**

Applications



Marking

CE

Performance

Thermal setting (In)	(A)	10-100
Rated voltage AC (Un)	(V)	230/400
Minimum operating voltage AC $U_{B \min}$	(V)	207
Tripping characteristics		E, F, C
Selectivity class		3
Electrical endurance		4000
Tropicalisation acc.to IEC 60068-2		95%RH at 55°C
Terminal capacity	(mm ²)	2.5-50 (1.5-35)
Poles		1, 1+N, 3, 3+N, 3x1
Weight	(g/pole)	350
Thermal operating limit		Cs: (1.13 - 1.45) x In E: (1.05 - 1.2) x In F: (1.05 - 1.3) x In
Magnetic operating		Cs: (6.5 - 10) x In E: (5 - 6.5) x In F: (6.5 - 10) x In

Short-circuit capacity

AC/DC acc. to EN/IEC 60898-1

Poles	V	Icn (kA)
1, 3, 3+N	230/400	25

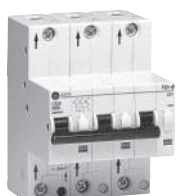
- Accessories ● pg A.25
- Busbars ● chapter C
- Dimensions ● pg A.23

Series S90 - 25kA - AC MCBs



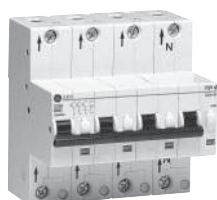
**1P+N
3 mod.**

Pole width	Rated current [A]	C ⁽¹⁾		E		F ⁽¹⁾		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
27mm	20	S91+N CS020	672540	-	-	-	-	2
	25	S91+N CS025	672541	-	-	-	-	2
	32	S91+N CS032	672542	-	-	-	-	2
	35	S91+N CS035	672543	-	-	-	-	2
	40	S91+N CS040	672544	-	-	-	-	2
	50	S91+N CS050	672545	-	-	-	-	2
	63	S91+N CS063	672546	-	-	-	-	2
	80	S91+N CS080	672547	-	-	-	-	2
100	S91+N CS100	672548	-	-	-	-	2	



**3P
4.5 mod.**

27mm	20	S93 CS020	672549	-	-	-	-	1
	25	S93 CS025	672550	-	-	-	-	1
	32	S93 CS032	672551	-	-	-	-	1
	35	S93 CS035	672552	-	-	-	-	1
	40	S93 CS040	672553	-	-	-	-	1
	50	S93 CS050	672554	-	-	-	-	1
	63	S93 CS063	672555	-	-	-	-	1
	80	S93 CS080	672556	-	-	-	-	1
100	S93 CS100	672557	-	-	-	-	1	



**3P+N
6 mod.**

27mm	20	S93+N CS020	672558	-	-	-	-	1
	25	S93+N CS025	672559	-	-	-	-	1
	32	S93+N CS032	672560	-	-	-	-	1
	35	S93+N CS035	672561	-	-	-	-	1
	40	S93+N CS040	672562	-	-	-	-	1
	50	S93+N CS050	672563	-	-	-	-	1
	63	S93+N CS063	672564	-	-	-	-	1
	80	S93+N CS080	672565	-	-	-	-	1
100	S93+N CS100	672566	-	-	-	-	1	



**1P
1.5 mod.**

27mm	10	-	-	S91 E010	672500	S91 F010	672520	3
	16	-	-	S91 E016	672501	S91 F016	672521	3
	20	S91 CS020	672482	S91 E020	672502	S91 F020	672522	3
	25	S91 CS025	672483	S91 E025	672503	S91 F025	672523	3
	32	S91 CS032	672484	S91 E032	672504	S91 F032	672524	3
	35	S91 CS035	672485	S91 E035	672505	S91 F035	672525	3
	40	S91 CS040	672486	S91 E040	672506	S91 F040	672526	3
	50	S91 CS050	672487	S91 E050	672507	S91 F050	672527	3
	63	S91 CS063	672488	S91 E063	672508	S91 F063	672528	3
	80	S91 CS080	672489	S91 E080	672509	S91 F080	672529	3
	100	S91 CS100	672490	S91 E100	672510	S91 F100	672530	3

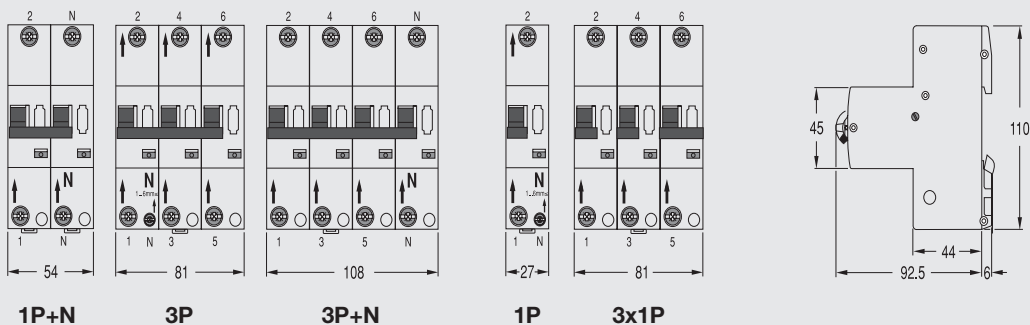


**3 x 1P
6 mod.**


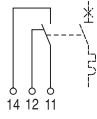
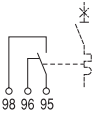


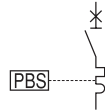

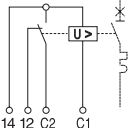

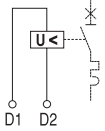

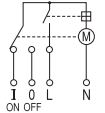
27mm	20	S91.3 CS020	672491	S91.3 E020	672511	S91.3 F020	672531	1
	25	S91.3 CS025	672492	S91.3 E025	672512	S91.3 F025	672532	1
	32	S91.3 CS032	672493	S91.3 E032	672513	S91.3 F032	672533	1
	35	S91.3 CS035	672494	S91.3 E035	672514	S91.3 F035	672534	1
	40	S91.3 CS040	672495	S91.3 E040	672515	S91.3 F040	672535	1
	50	S91.3 CS050	672496	S91.3 E050	672516	S91.3 F050	672536	1
	63	S91.3 CS063	672497	S91.3 E063	672517	S91.3 F063	672537	1
	80	S91.3 CS080	672498	S91.3 E080	672518	S91.3 F080	672538	1
	100	S91.3 CS100	672499	S91.3 E100	672519	S91.3 F100	672539	1

(1) Curves C and F under consult

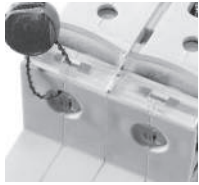
Dimensions - Series S90



Add-on devices

		Description	Width (mm)	Cat. No.	Ref. No.	Pack.			
 <p>Auxiliary contact block 1/2 mod.</p>  <p>14 12 11</p>	<p>To be coupled to Series E90, E90P EFI, EHFI, D/HD90</p>	1C0	9	H	676034	10			
		 <p>Tripping-signal or auxiliary contact block 1/2 mod.</p> <p>98 96 95</p>	<p>To be coupled to Series E880</p>	1C0	9	H	671597	10	
				 <p>Tripping-signal switch with reset button 1/2 mod.</p>	<p>To be coupled to Series E880</p>	1C0	9	S/H	671599
		<p>To be coupled to Series E90, E90P</p>	2C0			9	SRH/HH	676035 567819	10 10
			1C0			9	SR	671602	10
 <p>Miniature circuit breakers interlock 1/2 mod.</p>  <p>PBS</p>	<p>Panelboard switch</p>	9	NLVS	676038	10				
 <p>Remote release 1 mod.</p>  <p>14 12 C2 C1</p>	<p>To be coupled to Series E90, EC90, EC91, E90P EFI, EHFI, D/HD90</p>	AC 24 - 60V, DC 24 - 48V	18	NF4	567820	10			
		AC 110 - 415V, DC 110 - 125V	18	NF5	567821	10			
		<p>To be coupled to Series E880</p>	AC 24 - 60V, DC 24 - 48V	18		546532			
			AC 110 - 415V, DC 110 - 125V	18		546533	1		
 <p>Undervoltage trip 1 mod.</p>  <p>D1 D2</p>	<p>To be coupled to Series E90, EC90, EC91, E90P EFI, EHFI, D/HD90 can be subsequently fitted to both sides of miniature circuit breakers</p>	AC 230V	18	NUVR 230	676039	1			
		AC/DC 12V	18	NUVR 12	676040	1			
		AC/DC 24V	18	NUVR 24	676041	1			
		AC/DC 48V	18	NUVR 48	676042	1			
		 <p>Remote drive 3 mod.</p>  <p>I 0 L N ON OFF</p>	<p>To be coupled to Series E90, EC90, EC91, E90P EFI, EHFI, D/HD90</p>		54	NFA	676043	1	

Accessories



For Series E90

Description	Cat. No.	Ref. No.	Pack.
Padlocking bracket for E90 + S90	KS	624929	2
Sealing plate for 4 poles	EPP	669486	10



For Series S90

Disconnect inhibitor for series S90, 3-pole to lock the mcb from disconnecting	AST	555681	10
Busbar adapter for S90 1-pole (up to 63A)	SAV 91	546292	10

Technical data of MCBs

Series			E90N	E90E	E90	
Standards			EN/IEC 60898-1	EN/IEC 60898-1	EN/IEC 60898-1	
Tripping characteristics			B, C	B, C	B, C, D, K	
Nominal current	A		2-40	2-40	B 6-63, C/D/K 0.5-63	
Calibration temperature	°C		30	30	30	
Number of poles			1/2/3/4	1/2/3/4	1/2/3/4, 1+N, 3+N	
Neutral pole protected			-	-	yes	
Nominal voltage Un	AC	1P	V	240/415	240/415	
		1P+N	V	-	240	
		2P	V	415	415	
	DC	3P/3P+N/4P	V	415	415	
		1P ⁽¹⁾	VDC	-	-	48
		2P (in series) ⁽¹⁾	VDC	-	-	110
Frequency			Hz	50/60	50/60	
			Hz	-	-	
			Hz	400: magn.trip +50%	400: magn.trip +50%	DC: magn.trip +40% 400: magn.trip +50%
Maximum service voltage U _{max} between two wires	V		250/440	250/440	250/440; 53/120 =	
Minimum service voltage U _{min}	V		12	12	12; 12 =	
Selectivity class (IEC 60898-1)			3	3	3	
Isolator application	IEC 60947-2		yes	yes	yes	
Rated insulation voltage	Pollution degree 2		V	500	500	
	Pollution degree 3		V	440	440	
Impulse withstand test voltage	kV		6	6	6	
Insulation resistance	MΩ		10.000	10.000	10.000	
Dielectric rigidity	kV		2.5	2.5	2.5	
Vibrations resistance in x, y, z direction (IEC 77/16.3)			3g	3g	3g	
Endurance	electrical at Un, In		# op.	10.000	10.000	
	mechanical		# op.	20.000	20.000	
Utilisation category (IEC 60947-2)			A	A	A	
Mounting position (for all devices): any except upside down			any	any	any	
Incoming top or bottom			yes	yes	yes	
Protection degree (outside / inside enclosure with door)			IP20/IP40	IP20/IP40	IP20/IP40	
Self-extinguish degree (according to UL94)			V2	V2	V2	
Tropicalisation (according to EN/IEC 60068-2 / DIN 40046)	°C/RH		+55/95%	+55/95%	+55/95%	
Operating temperature	°C		-25/+55	-25/+55	-25/+55	
Storage temperature	°C		-55/+55	-55/+55	-55/+55	
Terminal capacity	Rigid cable min/max (top)		mm ²	1/35	1/35	
	Flexible cable min*/max (top)		mm ²	0.75/25	0.75/25	
	Rigid cable min/max (bottom)		mm ²	1/35	1/35	
	Flexible cable min*/max (bottom)		mm ²	0.75/25	0.75/25	
	(*Flexible cable 0.75/1/1.5 mm ² with cable lug)					
	Torque		Nm	4.5	4.5	
Add-on devices (side add-on)	Auxiliary contacts		yes	yes	yes	
	Remote release NF		yes	yes	yes	
	Undervoltage trip NUVR		yes	yes	yes	
	Remote drive NFA		yes	yes	yes	
	Panel board switch NLVS		yes	yes	yes	
Busbar systems	Pin	(top/bottom)	yes/yes	yes/yes	yes	
	Fork	(top/bottom)	-/yes	-/yes	-/yes	
Accessories			yes	yes	yes	
Width per mod.	(mm)		18	18	18	
Weight per mod.	(gr)		120	120	125	
Package	# mod.		12	12	12	
Approvals			VDE	VDE	VDE	
CE-marking			yes	yes	yes	
Page			A.6	A.8	A.10	

(1) Preferred values of rated control supply voltage (IEC 60947-2): 24V, 48V, 110V, 125V, 220V, 250V

E90S	E90X	E90S UC	E880/E880-S	S90
EN/IEC 60898-1	EN/IEC 60947-2	(2)	EN/IEC 60947-2	EN/IEC 60898-1, E DIN VDE 0645
B, C, D	3-5In/5-10In/10-20In	B, C	3-5In/5-10In/10-20In	F, Cs, E
B 6-63, C/D 0.5-63	B 6-63, C/D 0.5-63	B 6-63, C 0.5-63	80 upto 125	F, E 10/100 and Cs 20/100
30	50	30	40	E 20°C, F and Cs 30°C
1/2/3/4, 1+N, 3+N	1/2/3/4	1/2	1/2/3/4	1, 3x1, 1+N, 3, 3+N
yes	-	-	-	no
240/415	240/415	240/415	240/415	230
240	-	-	-	230
415	415	415	415	-
415	415	-	415	400
48	48	220	48	-
110	110	440	110	-
50/60	50/60	50/60 and DC	50/60	50/60
DC: magn.trip +40%	DC: magn.trip +40%	DC: magn.trip +40%	DC: magn.trip +40%	-
400: magn.trip +50%	400: magn.trip +50%	400: magn.trip +50%	400: magn.trip +50%	-
250/440; 53/120 ==	250/440; 53/120 ==	250/440; 250/440 ==	250/440; 53/120 ==	250/440 ~
12; 12 ==	12; 12 ==	12; 12 ==	12; 12 ==	207 ~
3	3	3	-	-
yes	yes	yes	yes	-
500	500	500	500	-
440	440	440	440	-
6	6	6	6	6
10.000	10.000	10.000	10.000	10.000
2.5	2.5	2.5	2.5	-
3g	3g	5g	3g	3g
10.000	10.000	1000	4000	4.000
20.000	20.000	20.000	10.000	4.000
A	A	A	A	B
any	any	any	any	any
yes	yes	follow polarity	yes	bottom only
IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
V2	V2	V2	V2	V0
+55/95%	+55/95%	+55/95%	+55/95%	-
-25/+55	-25/+55	-25/+55	-25/+55	-25/+55
-55/+55	-55/+55	-55/+55	-55/+55	-55/+55
1/35	1/35	1/35	70	1.5/35
0.75/35	0.75/35	0.75/25	-	-
1/35	1/35	1/35	70	2.5/50
0.75/35	0.75/35	0.75/25	-	-
4.5	4.5	4.5	5	4
yes	yes	yes	yes	yes
yes	yes	yes	-	-
yes	yes	yes	yes	-
yes	yes	yes	-	-
yes	yes	yes	-	-
yes/yes	yes/yes	yes/yes	-	-
-/yes	-/yes	-/yes	-	-
yes	yes	yes	yes	-
18	18	18	27	27
120	120	125	210	350
12	12	12	8	8
VDE	-	-	-	VDE for E-char.
yes	yes	yes	yes	yes
A.12	A.14	A.16	A.18/A.20	A.22

(2) EN/IEC 60898-2 and VDE0641-2/3

Short-circuit capacity of MCBs

Series			E90N	E90E	E90		
Short-circuit capacity AC (kA)							
IEC 60898-1	Icn	1P	230/400V	3	4.5	6	
		1P+N	230V	3	4.5	6	
		2P	230/400V	3	4.5	6	
		3P/3P+N/4P	230/400V	3	4.5	6	
Ics (service)			100% Icn	100% Icn	100% Icn		
IEC 60947-2	Icu (ultimate) 1P	127V		-	-	20	
		240V		5	6	10	
		415V		3	3	3	
		1P+N/2P	127V		-	15	30
		240V		10	10	20	
		2P	415V		5	6	10
		3P, 4P	240V		10	10	20
		415V		5	6	10	
	440V		-	-	6		
Ics (service)			75% Icu	75% Icu	75% Icu		
NEMA AB1 (120/240V)			10	14	20		
Short-circuit capacity DC (kA)							
IEC 60947-2	Icu (ultimate) 1P	≤ 60V $\overline{=}$		-	-	20	
		≤ 220V $\overline{=}$		-	-	-	
		2P	≤ 125V $\overline{=}$		-	-	25
		≤ 440V $\overline{=}$		-	-	-	
Ics (service)			-	-	100% Icu		
Page			A.6	A.8	A.10		

E90S	E90X	E90SUC	E880	E880S	S90
10	-	6 (220VDC) ⁽²⁾	-	-	25
10	-	-	-	-	25
10	-	6 (440VDC) ⁽³⁾	-	-	25
10	-	-	-	-	25
75% Icn	-	100% Icn	-	-	-
30	50	-	-	-	-
15	50/25/20/15 ⁽¹⁾	6 ⁽⁵⁾	6	10; D7.5	-
4	-	-	6	4.5	-
40	-	-	10	-	-
30	50/50/40/30 ⁽¹⁾	-	10	B/C 15	-
15	50/25/20/15 ⁽¹⁾	6 ⁽⁵⁾	6	B/C 10; D7.5	-
30	50/50/40/30 ⁽¹⁾	-	10	B/C 15	-
15	50/25/20/15 ⁽¹⁾	-	6	B/C 10; D7.5	-
10	50/20/15/10 ⁽¹⁾	-	-	-	-
50% Icu	50% Icu	-	100% Icu	100% Icu	-
30	-	-	-	-	-
25	25	-	-	-	-
-	-	-	-	-	-
30	30	10 ⁽⁴⁾	-	-	-
-	-	-	-	-	-
100% Icu	100% Icu	10 ⁽⁴⁾	100% Icu	100% Icu	-
A.10	A.12	A.16	A.18	A.20	A.22

(1) 0.5-4A/6-25A/32-40A/50-63A

(2) 10 (125VDC)

(3) 10 (250VDC)

(4) T=4ms

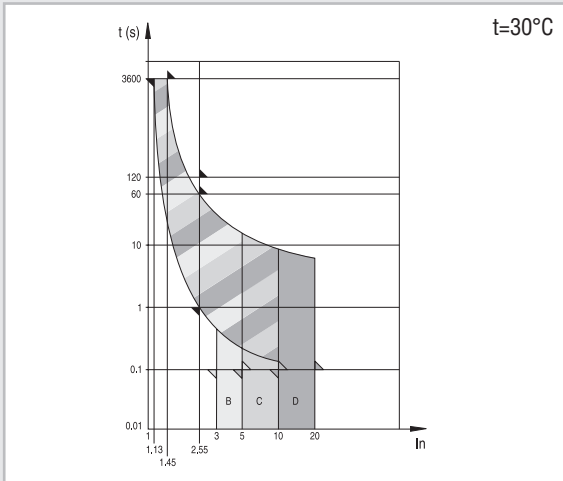
(5) 4.5kA for 50A & 63A

EN/IEC 60898-1 standard

Circuit breakers are intended for the protection against overcurrents of wiring installations in buildings and similar applications:

They are designed for use by un instructed people and for not being maintained.

Tripping characteristic curves



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of short circuit. The IEC 60898-1 distinguishes three different types, following the current for instantaneous release: type B, C, D.

	Test current	Tripping time	Applications
B	3 In	0.1 < t < 45s (In ≤ 32A)	Only for resistive loads such as: - electrical heating - water heater - stoves
	5 In	0.1 < t < 90s (In ≤ 32A) t < 0.1s	
C	5 In	0.1 < t < 15s (In ≤ 32A)	Usual loads such as: - lighting - socket outlets - small motors
	10 In	0.1 < t < 30s (In ≤ 32A) t < 0.1s	
D	10 In	0.1 < t < 4s ⁽¹⁾ (In ≤ 32A)	Control and protection of circuits having important transient inrush currents (large motors)
	20 In	0.1 < t < 8s (In ≤ 32A) t < 0.1s	

⁽¹⁾if In ≤ 10A, t < 8s

Thermal release

The release is initiated by a bimetal strip in case of overload.

The standard defines the range of release for specific overload values.

Reference ambient temperature is 30°C

Test current	Tripping time
1.13 In	t ≥ 1h (In ≤ 63A) t ≥ 2h (In > 63A)
1.45 In	t < 1h (In ≤ 63A) t < 2h (In > 63A)
2.55 In	1s < t < 60s (In ≤ 32A) 1s < t < 120s (In > 32A)

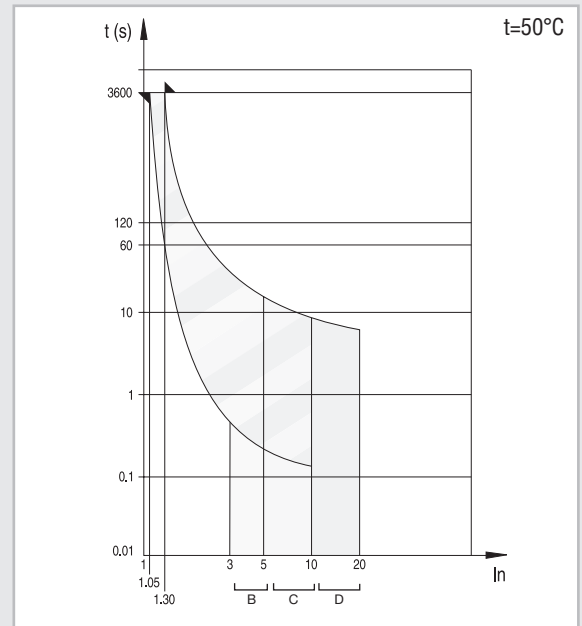
EN/IEC 60947-2 standard

Low voltage switchgear and controlgear Part 2: circuit breakers

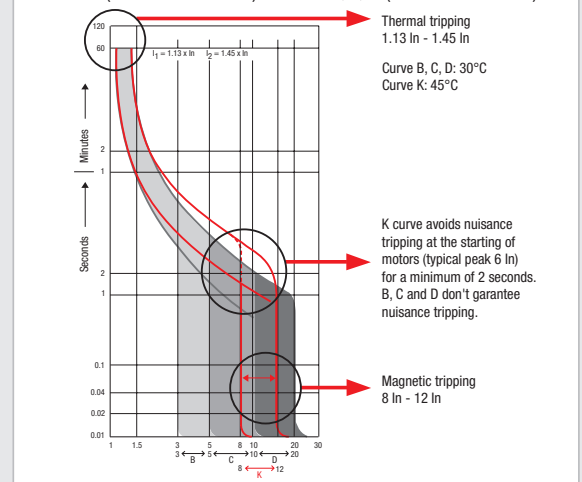
This standard applies to circuit breakers, the main contacts of which are intended to be connected to circuits, the rated voltage of which does not exceed 1000V ac or 1500V dc.

Circuit breakers for use in industrial environments (for use by instructed people).

Tripping characteristic curves



Curve K (EN/IEC 60947-2) versus B,C,D (EN/IEC 60898-1)



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in case of short circuit.

The standard leaves the calibration of magnetic release to manufacturers decision.

AEG Low Voltage offers instantaneous tripping ranges

- release B: 4 In
- release C: 8.5 In (7.5 In for 63A)
- release D: 14 In
- release K: 10 In (6 In > 2 s)

Thermal release

The release is initiated by a bimetal strip in case of overload.

The standard defines the range of release for two special overload values. Reference ambient temperature is 50°C, except K: 45°C

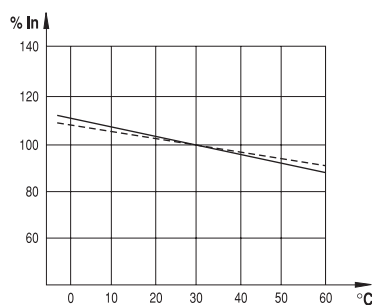
Test current	Tripping time
1.05 In	t ≥ 1h (In ≤ 63A) t ≥ 2h (In > 63A)
1.30 In	t < 1h (In ≤ 63A) t < 2h (In > 63A)

Influence of ambient temperature (according EN/IEC 60898-1)

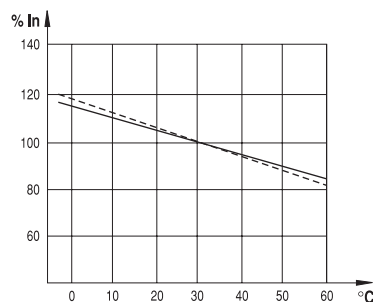
The thermal calibration of the MCBs was carried out at an ambient temperature of 30°C. Ambient temperatures different from 30°C influence the bimetal and this results in earlier or later thermal tripping (see curve).

Voltage drop and energy loss

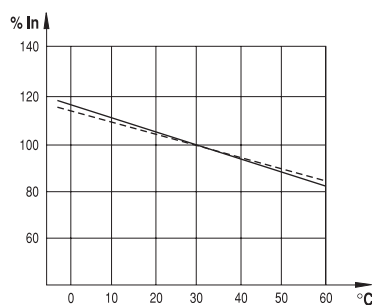
0.5 - 6A



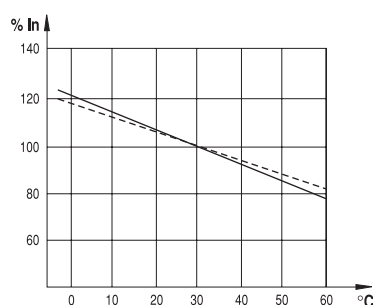
50 - 63A



16 - 40A



10A



— : 1P (single pole)
- - : mP (multipole)

In (A)	Voltage drop (V)	Energy loss (W)	Inner resistant (mΩ)
0.5	2.230	1.115	4458.0
1	1.270	1.272	1272.0
2	0.620	1.240	310.0
3	0.520	1.557	173.0
4	0.370	1.488	93.0
6	0.260	1.570	43.6
8	0.160	1.242	19.4
10	0.160	1.560	15.6
13	0.155	2.011	11.9
16	0.162	2.586	10.1
20	0.138	2.760	6.9
25	0.128	3.188	5.1
32	0.096	3.072	3.0
40	0.100	4.000	2.5
50	0.090	4.500	1.8
63	0.082	5.160	1.3
80	0.075	6.000	0.9
100	0.075	7.500	0.75
125	0.076	9.500	0.6

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.

Unibis™ - Compact miniature circuit breakers

- A.34 Benefits
- A.36 **Series EC 91E NR** - Miniature circuit breakers 1P+N - 4.5 kA
- A.37 **Series EC 91 NR** - Miniature circuit breakers 6 kA
- A.38 **Series EC 911** - Miniature circuit breakers 1P+1P - 6 kA
- A.40 **Series EC 90E** - Miniature circuit breakers 4.5 kA
- A.42 **Series EC 90** - Miniature circuit breakers 6 kA
- A.44 **Series DA 41N** - Miniature circuit breakers 1P+N - 4.5 kA
- A.45 **Series CA UN** - Unibis™ Interface auxiliary
- A.46 Technical data
- A.39 Dimensions

Quick overview

Page no.	Series	Applications	Poles	Add-on devices	Tripping curve	Rating current (A)	Short-circuit capacity (kA)
A.36	EC 91E NR		1+N (1 mod.)	yes	B-C	2 - 40	4.5 → 6
A.37	EC 91 NR		1+N (1 mod.)	yes	B-C	2 - 40	6 → 10 ⁽¹⁾
A.38	EC 911		1P+1P (1 mod.)	yes	B-C	2+2 - 20+20	6 → 6
A.40	EC 90E		2, 3, 4	yes	B-C	6 - 32	4.5 → 6
A.42	EC 90		2	yes	B-C	2 - 40	6 → 10 ⁽²⁾
			3, 4	yes	B-C	2 - 32	6 → 6
A.44	DA 41N		1+N (1 mod.)	yes	C	6 - 40	4.5 →

domestic
 commercial

B: 3-5 In
 C: 5-10 In

EN/IEC 60898-1
 EN/IEC 60947-2

(1) 8000 for 32 and 40A
 (2) At Un = 240Vac

A

B

C

D

E

F

G

H

I

J

K

L

M

X

Benefits of the compact Unibis™ MCBs

- 2 circuits in 1 module
- Unibis™: the solution for space problems

Unibis™ MCBs are one of the latest introductions in the AEG MCBs range and are developed to reduce the size of the distribution board to the minimum. The performances are upgraded to 10kA.



**1P+1P
in
1 mod.**

**1P+N⁽¹⁾
in
1 mod.**

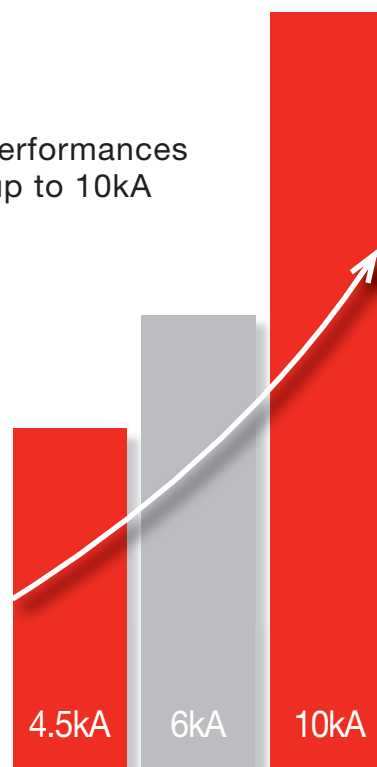
**2P
in
1 mod.**

**3P
in
2 mod.**

**4P
in
2 mod.**

- ✓ Brandnew design:
 - 2P in 1 module,
 - 3P and 4P in 2 modules
- ✓ Complete range: from 4.5–6–10kA⁽²⁾,
2–40 Amps, B and C curves
- ✓ 100% compatible with all AEG
MCBs auxiliaries and accessories
- ✓ 100% Series E90 quality and reliability
- ✓ VDE certified

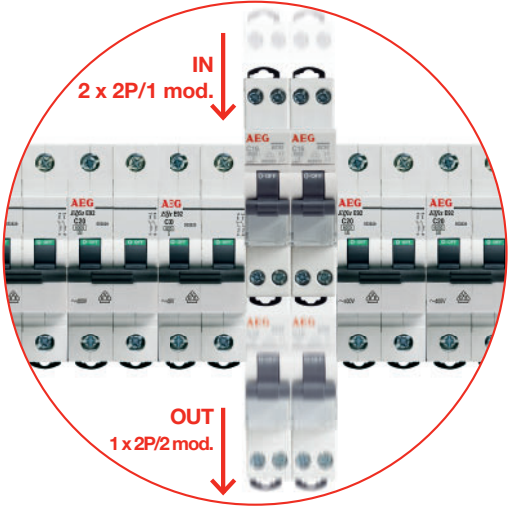
3 performances
up to 10kA



(1) Neutral left or right available
(2) 1P+N and 2P according IEC 60749-2

Saving up to 50% space in distribution boards!

**Replacing standard
MCBs by compact
Unibis™ MCBs**



Unibis™

A

Quality and reliability guaranteed

	<p>High performance clips To fix the MCB to the DIN-rail.</p>		<p>High performance torque Up to 3Nm.</p>
<p>Easy to replace Double clips make it easy to replace the MCBs, especially when a busbar is installed.</p>		<p>Userfriendly All screws are on the same level to work fast and easy.</p>	
	<p>Green or red flag on toggle with isolation applications Correct information about the real position. Minimum 5mm distance between open contacts is ensured.</p>		<p>Part of the family Unibis™ MCBs fit perfectly in the AEG MCBs range.</p>
<p>Safety terminals IP20 The capacity of Unibis™ terminals has been doubled. Connection possibilities: (2 x 4mm²) or (1 x 4mm²) + (1 x 6mm²).</p>		<p>Full functionality A small auxiliary contact is the interface to the complete functionality of the AEG MCBs auxiliaries and accessories.</p>	



Compact MCBs Unibis™

Series EC 91E NR

EN/IEC 60898-1

4500

3

EN/IEC 60947-2

6kA

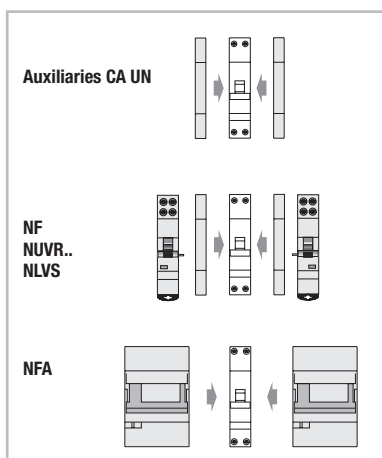
Applications



Approvals / Marking



Add-on devices



When coupling an add-on device (remote release NF, undervoltage trip NUVR..., panel-board switch NLVS) to the MCB, a CA UN auxiliary has to be coupled first as interface. Not needed with remote drive NFA.

Auxiliary contacts CA ● pg. A.45
 Auxiliary contacts ● pg. A.24
 Other auxiliaries ● pg. A.24

Busbars ● pg. C.10
 Dimensions ● pg. A.39

Performance

Thermal setting (I _n)	(A) 2-40
Rated voltage AC (U _n)	(V) 230
Minimum operating voltage U _{Bmin}	(V) 12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽²⁾
Poles	1P+N (1 mod)
Weight	(g) 125

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	I _{cn} /I _{cs} (kA)
1P+N	230	4.5

Acc. to EN/IEC 60947-2

Poles	V	I _{cu} (kA)
1P+N	230	6

Attention: do not use on IT net configuration

Series EC 91E NR - 4.5kA - characteristics B-C

In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	EC91E B06NR	692876	EC91E C06NR	692858	12
10	EC91E B10NR	692877	EC91E C10NR	692859	12
16	EC91E B16NR	692878	EC91E C16NR	692860	12
20	EC91E B20NR	692879	EC91E C20NR	692861	12
25	EC91E B25NR	692880	EC91E C25NR	692862	12
32	EC91E B32NR	692881	EC91E C32NR	692863	12



(1) 8000 for 32 and 40A

(2) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)

Compact MCBs Unibis™

Series EC 91 NR



EN/IEC 60898-1

6000

3

EN/IEC 60947-2

10kA

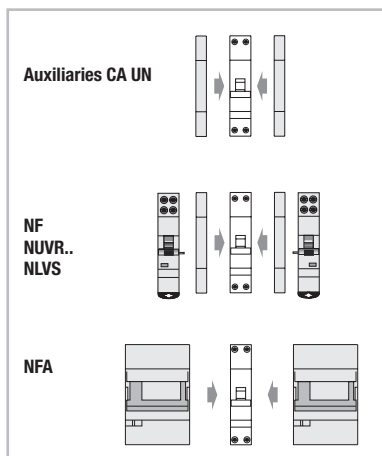
Applications



Approvals / Marking



Add-on devices



When coupling an add-on device (remote release NF, undervoltage trip NUVR..., panel-board switch NLVS) to the MCB, a CA UN auxiliary has to be coupled first as interface. Not needed with remote drive NFA.

- Auxiliary contacts CA ● pg. A.45
- Auxiliary contacts ● pg. A.24
- Other auxiliaries ● pg. A.24

- Busbars ● pg. C.10
- Dimensions ● pg. A.39

Performance

Thermal setting (In)	(A) 2-40
Rated voltage AC (Un)	(V) 230
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable (mm ²)	10-16 ⁽²⁾
Poles	1P+N (1 mod)
Weight	(g) 125

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	Icn/lcs (kA)
1P+N	230	6

Acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
1P+N	230	10

Attention: do not use on IT net configuration

Series EC 91 NR - 6kA - characteristics B-C

In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2	EC91 B02NR	692883	EC91 C02NR	692865	12
4	EC91 B04NR	692884	EC91 C04NR	692866	12
6	EC91 B06NR	692885	EC91 C06NR	692867	12
10	EC91 B10NR	692886	EC91 C10NR	692868	12
13	EC91 B13NR	692602	EC91 C13NR	692601	12
16	EC91 B16NR	692887	EC91 C16NR	692869	12
20	EC91 B20NR	692888	EC91 C20NR	692870	12
25	EC91 B25NR	692889	EC91 C25NR	692871	12
32	EC91 B32NR	692890	EC91 C32NR	692872	12
40	EC91 B40NR	692891	EC91 C40NR	692873	12

(1) 8000 for 32 and 40A

(2) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)



Compact MCBs Unibis™

Two independent circuits in one module!

Series EC 911

EN/IEC 60898-1

6000

3

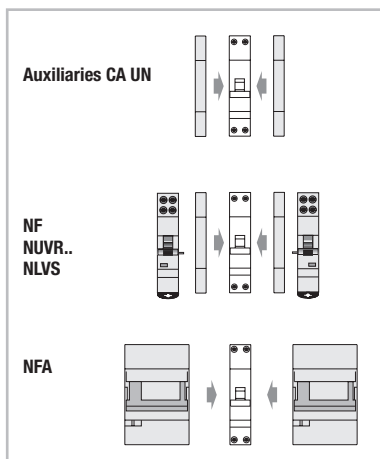
Applications



Approval / Marking



Add-on devices



When coupling an add-on device (remote release NF, undervoltage trip NUVR..., panel-board switch NLVS) to the MCB, a CA UN auxiliary has to be coupled first as interface. Not needed with remote drive NFA.

- Auxiliary contacts CA ● pg. A.45
- Auxiliary contacts ● pg. A.24
- Other auxiliaries ● pg. A.24

- Busbars ● pg. C.10
- Dimensions ● pg. A.39

Performance

Thermal setting (In)	(A) 2-40
Rated voltage AC (Un)	(V) 240 ⁽¹⁾
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽²⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable (mm ²)	10-16 ⁽³⁾
Poles	1P+1P (1 mod)
Weight	(g) 125

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	Icn/lcs (kA)
1+1	240	6

Series EC 911- 6kA - characteristics B-C

In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2	EC 911 B02B02	692581	EC 911 C02C02	692591	12
4	EC 911 B04B04	692582	EC 911 C04C04	692592	12
6	EC 911 B06B06	692583	EC 911 C06C06	692593	12
10	EC 911 B10B10	692584	EC 911 C10C10	692594	12
13	EC 911 B13B13	692585	EC 911 C13C13	692595	12
16	EC 911 B16B16	692586	EC 911 C16C16	692596	12
20	EC 911 B20B20	692587	EC 911 C20C20	692597	12

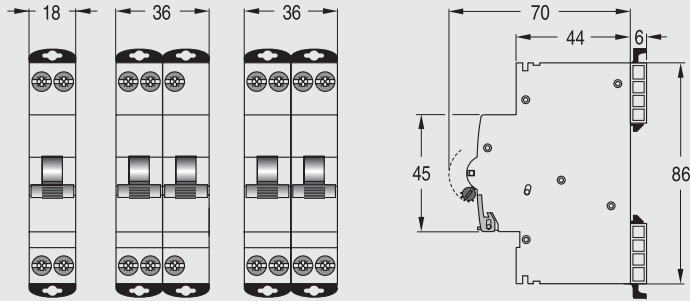
(1) Single phase supply or same phase in 3Ph supply

(2) 8000 for 32 and 40A

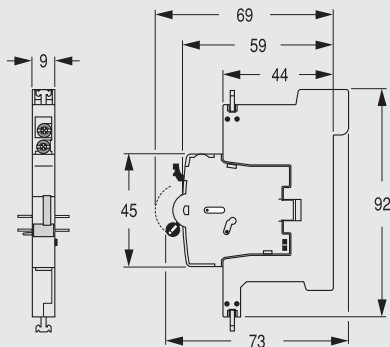
(3) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)

Dimensional drawings

Miniature Circuit Breakers - Series EC 91E NR, EC 91 NR, EC 911 + EC 90



Auxiliary interface - Series CA UN





Compact MCBs Unibis™

Series EC 90E

EN/IEC 60898-1

4500

3

EN/IEC 60947-2

6kA

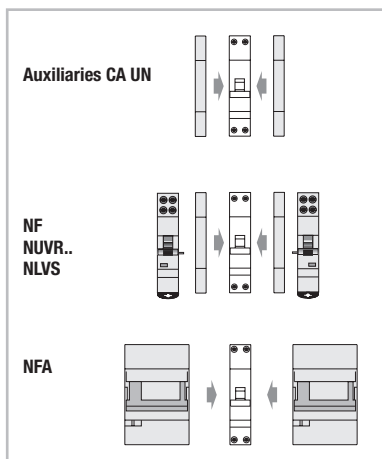
Applications



Approvals / Marking



Add-on devices



When coupling an add-on device (remote release NF, undervoltage trip NUVR..., panel-board switch NLVS) to the MCB, a CA UN auxiliary has to be coupled first as interface. Not needed with remote drive NFA.

- Auxiliary contacts CA ● pg. A.45
- Auxiliary contacts ● pg. A.24
- Other auxiliaries ● pg. A.24

- Busbars ● pg. C.10
- Dimensions ● pg. A.39

Performance

Thermal setting (In)	(A) 2-40 ⁽¹⁾
Rated voltage AC (Un)	(V) 240/415
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽²⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable	(mm ²) 10-16 ⁽³⁾
Poles	2, 3, 4
Weight	(g) 160

(1) 8000 for 32 and 40A

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	Icn/lcs (kA)
2P	415	4.5
3P	415	4.5
4P	415	4.5

Acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
2P	240	6
3P	415	6
4P	415	6

(1) 32A, 3P & 4P in progress

(2) 8000 for 32 and 40A

(3) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)

EC 90E- 4.5kA - characteristics B-C



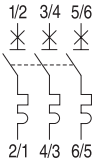
**2P
1 mod.**



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	EC 92 E B06	692975	EC 92 E C06	692894	12
10	EC 92 E B10	692976	EC 92 E C10	692895	12
16	EC 92 E B16	692977	EC 92 E C16	692896	12
20	EC 92 E B20	692978	EC 92 E C20	692897	12
25	EC 92 E B25	692979	EC 92 E C25	692898	12
32	EC 92 E B32	692980	EC 92 E C32	692899	12



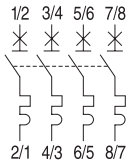
**3P(1)
1 mod.**



6	EC 93 E B06	692984 ⁽¹⁾	EC 93 E C06	692903 ⁽¹⁾	6
10	EC 93 E B10	692985 ⁽¹⁾	EC 93 E C10	692904 ⁽¹⁾	6
16	EC 93 E B16	692986 ⁽¹⁾	EC 93 E C16	692905 ⁽¹⁾	6
20	EC 93 E B20	692987 ⁽¹⁾	EC 93 E C20	692906 ⁽¹⁾	6
25	EC 93 E B25	692988 ⁽¹⁾	EC 93 E C25	692907 ⁽¹⁾	6
32	EC 93 E B32	692989 ⁽¹⁾	EC 93 E C32	692908 ⁽¹⁾	6



**4P
2 mod.**



6	EC 94 E B06	692993	EC 94 E C06	692912	6
10	EC 94 E B10	692994	EC 94 E C10	692913	6
16	EC 94 E B16	692995	EC 94 E C16	692914	6
20	EC 94 E B20	692996	EC 94 E C20	692915	6
25	EC 94 E B25	692997	EC 94 E C25	692916	6
32 ⁽²⁾	EC 94 E B32	692998	EC 94 E C32	692917	6

(1) The auxiliary contact CA UN must be placed only on the **left side** of the 3P MCBS



Compact MCBs Unibis™

Series EC 90

EN/IEC 60898-1

6000

3

EN/IEC 60947-2

10kA⁽¹⁾

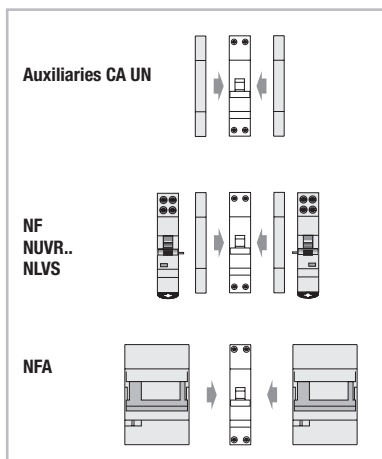
Applications



Approvals / Marking



Add-on devices



When coupling an add-on device (remote release NF, undervoltage trip NUVR..., panel-board switch NLVS) to the MCB, a CA UN auxiliary has to be coupled first as interface. Not needed with remote drive NFA.

- Auxiliary contacts CA ● pg. A.45
- Auxiliary contacts ● pg. A.24
- Other auxiliaries ● pg. A.24

- Busbars ● pg. C.10
- Dimensions ● pg. A.39

Performance

Thermal setting (In)	(A) 2-40 ⁽²⁾
Rated voltage AC (Un)	(V) 240/415
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	B-C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽³⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable (mm ²)	10-16 ⁽⁴⁾
Poles	2, 3, 4
Weight	(g) 160

(1) 8000 for 32 and 40A

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	Icn/lcs (kA)
2P	415	6
3P	415	6
4P	415	6

Acc. to EN/IEC 60947-2

Poles	V	Icu (kA)
2P	240	10
2P	415	6
3P	415	6
4P	415	6

(1) 6kA at 415V

(2) 32A, 3P & 4P

(3) 8000 for 32 and 40A

(4) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)

EC 90- 6kA - characteristics B-C



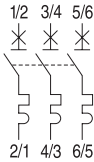
**2P
1 mod.**



In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2	EC 92 B02	693000	EC 92 C02	692919	12
4	EC 92 B04	693001	EC 92 C04	692920	12
6	EC 92 B06	693002	EC 92 C06	692921	12
10	EC 92 B10	693003	EC 92 C10	692922	12
16	EC 92 B16	693004	EC 92 C16	692923	12
20	EC 92 B20	693005	EC 92 C20	692924	12
25	EC 92 B25	693006	EC 92 C25	692925	12
32	EC 92 B32	693007	EC 92 C32	692926	12
40	EC 92 B40	693008	EC 92 C40	692927	12



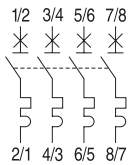
**3P(1)
1 mod.**



2	EC 93 B02	693009 ⁽¹⁾	EC 93 C02	692928 ⁽¹⁾	6
4	EC 93 B04	693010 ⁽¹⁾	EC 93 C04	692929 ⁽¹⁾	6
6	EC 93 B06	693011 ⁽¹⁾	EC 93 C06	692930 ⁽¹⁾	6
10	EC 93 B10	693012 ⁽¹⁾	EC 93 C10	692931 ⁽¹⁾	6
16	EC 93 B16	693013 ⁽¹⁾	EC 93 C16	692932 ⁽¹⁾	6
20	EC 93 B20	693014 ⁽¹⁾	EC 93 C20	692933 ⁽¹⁾	6
25	EC 93 B25	693015 ⁽¹⁾	EC 93 C25	692934 ⁽¹⁾	6
32 ⁽²⁾	EC 93 B32	693016 ⁽¹⁾	EC 93 C32	692935 ⁽¹⁾	6



**4P
2 mod.**



2	EC 94 B02	693018	EC 94 C02	692937	6
4	EC 94 B04	693019	EC 94 C04	692938	6
6	EC 94 B06	693020	EC 94 C06	692939	6
10	EC 94 B10	693021	EC 94 C10	692940	6
16	EC 94 B16	693022	EC 94 C16	692941	6
20	EC 94 B20	693023	EC 94 C20	692942	6
25	EC 94 B25	693024	EC 94 C25	692943	6
32	EC 94 B32	693025	EC 94 C32	692944	6

(1) The auxiliary contact CA UN must be placed only on the left side of the 3P MCBS



Compact MCBs Unibis™

Series DA 41 N

EN/IEC 60898-1

4500

3

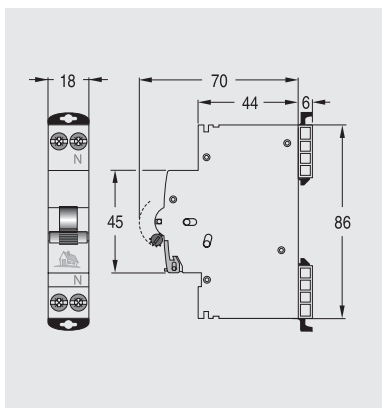
Applications



Approval / Marking



Dimensional drawings



Performance

Thermal setting (In)	(A) 2-40
Rated voltage AC (Un)	(V) 230
Minimum operating voltage UBmin	(V) 12
Tripping characteristics	C
Selectivity class	3
Mechanical/electrical endurance	20000/10000 ⁽¹⁾
Tropicalisation acc. to EN/IEC 60068-2	55°C at 95% RH
Terminal capacity flexible/rigid cable (mm ²)	10-16 ⁽²⁾
Poles	1P+N (1 mod)
Weight	(g) 125

Short-circuit capacity

Acc. to EN/IEC 60898-1

Poles	V	Icn/lcs (kA)
1P+N	230	4.5

Series DA 41 N- 4.5kA - characteristics B-C

	In (A)	C		Pack.
		Cat. No.	Ref. No.	
1P + N 1 mod.	6	DA 41 N C06	693079	12
	10	DA 41 N C10	693080	12
	16	DA 41 N C16	693081	12
	20	DA 41 N C20	693082	12
1/2 N 	25	DA 41 N C25	693083	12
	32	DA 41 N C32	693084	12
2/1 N 				

Busbars ● pg. C.10

(1) 8000 for 32 and 40A

(2) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)



Auxiliary

Series CA UN - Series EC Interface EN/IEC 62019

- Especially designed for MCBs Series EC, however also valid for all modular protection devices: MCBs and RCBOs up to 63 A, RCCBs up to 100A and mains disconnect switches type ASTER (ASTM).
- Can be coupled on both sides of MCBs⁽¹⁾ and modular switches type ASTM.
- Version with golden contacts, available for low current as well as low voltage applications.
- Stack-on left or right up to 4 CA UN units.
- Permits the pass-through of busbars, pin & fork, top and bottom, just changing the position of the base of the auxiliaries.

Performance

Change-over contacts	1
Rated current (In)	(A) 5
Rated voltage AC (Un)	(V) 240
Electrical endurance	10000
Terminal capacity flexible/rigid cable	(mm ²) 2.5
Weight	(g) 70
Torque	(Nm) 0.8

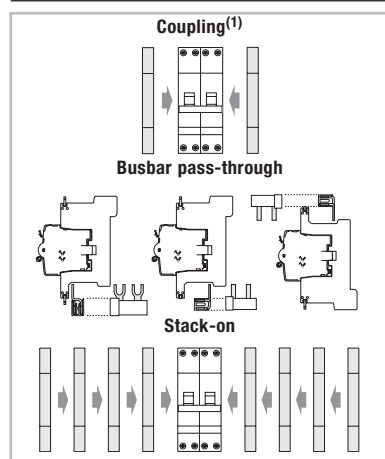
Applications



Approvals / Marking



Add-on devices



(1) 3P Series EC MCBs accept CA UN only on the left side

Application

The auxiliary contact CA UN has a double function:

1. The standard function as auxiliary monitoring contact for which it has been developed.
2. The interface function, which allows the use of all auxiliaries in combination with the Series EC MCB range.

Example: to couple the undervoltage release NUVR to a Series EC MCB, the CA UN H 672977 has to be added in between the MCB and the NUVR as interface.

The auxiliary contacts are units to be added on to protection devices. They allow information to be monitored from a distance about the protection devices.

Auxiliary contact CA UN H (function H)

Provides the status of the protection device, OPEN/CLOSED.

Signal or auxiliary contact CA UN S/H (function S/H)

This auxiliary can act as an auxiliary contact (function H) or as a signal contact (function S).

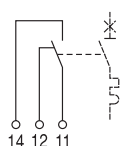
The user can change the function at the moment of installation.

Used as signal contact (function S) it provides the information about the automatic tripping of the protection devices: overload or short-circuit for MCBs, earth leakage tripping for RCDs.

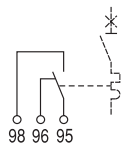
- The device has a test button on the front to simulate the function (acting as a function H or S)
- Reset button for the contacts (function S)
- Tripping signal on the front (function S)

Series CA UN - interface auxiliary contact

Function	Cat. No.	Ref. No.	Pack.
H	CA UN H	672977	1/40
S/H	CA UN S/H	672978	1/40



H



S

1/2 mod.

Technical data of compact MCBs - Unibis™

Series			EC 91E NR	EC 91 NR
Standards			EN/IEC 60898-1	EN/IEC 60898-1
Tripping characteristics			B,C	B,C
Nominal current (In)			2-40	2-40
Calibration temperature (°C)			30	30
Number of poles (# mod)			1+N (1 mod)	1+N (1 mod)
Neutral pole protected			-	-
Nominal voltage Un AC			230	230
1P+N (V)			-	-
1P+1P (V)			-	-
2P (V)			-	-
3P (V)			-	-
4P (V)			-	-
Nominal voltage Un DC (V=)			-	-
2P (V=)			-	-
Frequency (Hz)			50/60	50/60
in DC			Thresh. magn. + 40%	Thresh. magn. + 40%
for 400 Hz			Thresh. magn. + 50%	Thresh. magn. + 50%
Maximum service voltage Ub max (V)			250	250
Minimum service voltage Ub min (V)			12	12
Selectivity class (EN 60898-1)			3	3
Rated insulation voltage			500	500
Pollution degree 2 (V)			400	400
Pollution degree 3 (V)			6	6
Impulse withstand test voltage (kV)			1000	1000
Insulation resistance (MΩ)			2.5	2.5
Dielectric rigidity (kV)			3	3
Vibration resistance in x,y,z direction (IEC 77/16.3) (g)			10000 ⁽²⁾	10000 ⁽²⁾
Endurance			20000	20000
Electrical at Un,In (# op.)			A	A
Mechanical (# op.)			any	any
Utilisation category (EN 60947-2)			yes	yes
Mounting position: vertical/horizontal			IP20/IP40	IP20/IP40
Incoming top or bottom			V2	V2
Protection degree (outside/inside enclosure with door)			+55°C/95%RH	+55°C/95%RH
Selfextinguish degree (acc. UL 94)			-25/+55	-25/+55
Tropicalisation (acc. EN 60068-2/DIN 40046)			-55/+55	-55/+55
Operating temperature (°C)			1/16 ⁽³⁾	1/16 ⁽³⁾
Storage temperature (°C)			1/10 ⁽³⁾	1/10 ⁽³⁾
Terminal capacity			1/16 ⁽³⁾	1/16 ⁽³⁾
Rigid cable min/max (top) (mm ²)			1/10 ⁽³⁾	1/10 ⁽³⁾
Flexible cable min/max (top) (mm ²)			1/16 ⁽³⁾	1/16 ⁽³⁾
Rigid cable min/max (bottom) (mm ²)			1/10 ⁽³⁾	1/10 ⁽³⁾
Flexible cable min/max (bottom) (mm ²)			3	3
Torque (Nm)			yes	yes
Add-on devices			yes ⁽⁴⁾	yes ⁽⁴⁾
Auxiliary contacts			yes ⁽⁴⁾	yes ⁽⁴⁾
Under voltage trip NUVR			yes ⁽⁴⁾	yes ⁽⁴⁾
Remote release NF			yes ⁽⁴⁾	yes ⁽⁴⁾
Panelboard switch NLVS			yes	yes
Remote drive NFA			yes/yes	yes/yes
Busbar systems			no/no	no/no
Pin (top/bottom)			yes	yes
Fork (top/bottom)			18	18
Accessories			125	125
Width per mod. (mm)			12	12
Weight per mod. (gr)			KEMA, IMQ	VDE, KEMA, IMQ
Package (# mod.)			yes	yes
Approvals			A.36	A.37
CE-marking				
Page				

Short-circuit capacity of compact MCBs

Series			EC 91E NR	EC 91 NR
Short-circuit capacity AC			(kA)	(kA)
EN/IEC 60898-1 <i>Icn</i>			4.5	6
1P+N 230 V			-	-
1P+1P 230 V			-	-
2P 400 V			-	-
3P 400 V			-	-
4P 400 V			-	-
EN 60947-2 <i>Icu</i>			6	10
1P+N 230 V			-	-
1P+1P 230 V			-	-
2P 230 V			-	-
2P 415 V			-	-
3P 415 V			-	-
4P 415 V			-	-
Short-circuit capacity DC				
EN 60947-2 <i>Icu</i>			-	-
2P 96 V=				

EC 911	EC 90E	EC 90	DA 41N
EN/IEC 60898-1	EN/IEC 60898-1	EN/IEC 60898-1	EN/IEC 60898-1
B,C	B,C	B,C	C
2-20	6-32 ⁽¹⁾	2-40 ⁽¹⁾	2-40
30	30	30	30
1P+1P (1 mod)	2 (1 mod), 3&4 (2 mod)	2 (1 mod), 3&4 (2 mod)	1+N (1 mod)
-	-	-	-
230 ⁽⁵⁾	-	-	230
-	400	400	-
-	400	400	-
-	400	400	-
-	96	96	-
50/60	50/60	50/60	50/60
Thresh. magn. + 40%	Thresh. magn. + 40%	Thresh. magn. + 40%	Thresh. magn. + 40%
Thresh. magn. + 50%	Thresh. magn. + 50%	Thresh. magn. + 50%	Thresh. magn. + 50%
250/440	250/440	250/440	250
12	12	12	12
3	3	3	3
500	500	500	500
400	400	400	400
6	6	6	6
1000	10000	10000	1000
2.5	2.5	2.5	2.5
3	3	3	3
10000 ⁽²⁾	10000 ⁽²⁾	10000 ⁽²⁾	10000 ⁽²⁾
20000	20000	20000	20000
A	A	A	A
any	any	any	any
yes	yes	yes	yes
IP20/IP40	IP20/IP40	IP20/IP40	IP20/IP40
V2	V2	V2	V2
+55°C/95%RH	+55°C/95%RH	+55°C/95%RH	+55°C/95%RH
-25/+55	-25/+55	-25/+55	-25/+55
-55/+55	-55/+55	-55/+55	-55/+55
1/16 ⁽³⁾	1/16 ⁽³⁾	1/16 ⁽³⁾	1/16 ⁽³⁾
1/10 ⁽³⁾	1/10 ⁽³⁾	1/10 ⁽³⁾	1/10 ⁽³⁾
1/16 ⁽³⁾	1/16 ⁽³⁾	1/16 ⁽³⁾	1/16 ⁽³⁾
1/10 ⁽³⁾	1/10 ⁽³⁾	1/10 ⁽³⁾	1/10 ⁽³⁾
3	3	3	3
yes	yes	yes	no
yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
yes ⁽⁴⁾	yes ⁽⁴⁾	yes ⁽⁴⁾	no
yes	yes	yes	no
yes/yes	yes/yes	yes/yes	yes/yes
no/no	no/no	no/no	no/no
yes	yes	yes	yes
18	18/36	18/36	18
160	160/320	160/320	125
12/6	12/6	12/6	12
VDE, IMQ	IMQ, NF	VDE, IMQ, NF, CEBC	IMQ, KEMA
yes	yes	yes	yes
A.39	A.40	A.42	A.44

EC 911	EC 90E	EC 90	DA 41N
(kA)	(kA)	(kA)	(kA)
-	-	-	4.5
6	-	-	-
-	4.5	6	-
-	4.5	6	-
-	4.5	6	-
-	-	-	-
6	-	-	-
-	-	10	-
-	6	6	-
-	6	6	-
-	6	6	-
-	6	6	-
-	4.5	6	-

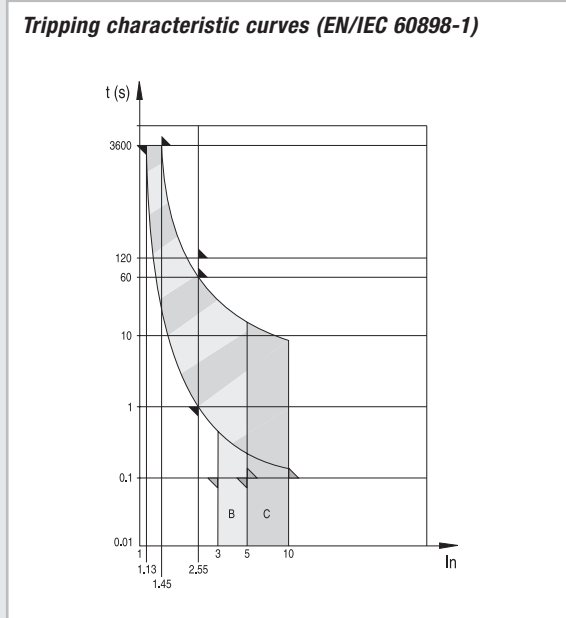
(1) 32A, 3P & 4P
(2) 8000 for 32 and 40 A

(3) Also accepting (2x4mm²) or (1x4mm²)+(1x6mm²)
(4) Requires CA auxiliary contact as interface

(5) Single phase supply or same phase in 3Ph supply

Characteristics according to IEC/EN 60898-1

Miniature Circuit Breakers (MCBs) are intended for the protection of wiring installations against both overloads and short-circuits in domestic or commercial wiring installations where operation is possible by uninstructed people.



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard distinguishes two different types, following the current for instantaneous release: type B and C.

Icn	Test current	Tripping time	Applications
B	3 x In	0.1 < t < 45s (In ≤ 32A) 0.1 < t < 90s (In > 32A)	Only for resistive loads such as: - electrical heating - water heater - stoves
	5 x In	t < 0.1s	
C	5 x In	0.1 < t < 15s (In ≤ 32A) 0.1 < t < 30s (In > 32A)	Usual loads such as: - lighting - socket-outlets - small motors
	10 x In	t < 0.1s	

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for specific overload values.

Reference ambient temperature is 30°C.

Test current	Tripping time
1.13 x In	t ≥ 1h (In ≤ 63A) t ≥ 2h (In > 63A)
1.45 x In	t < 1h (In ≤ 63A) t < 2h (In > 63A)
2.55 x In	1s < t < 60s (In ≤ 32A) 1s < t < 120s (In > 32A)

Influence of ambient air temperature on the rated current

The maximum value of the current which can flow through an MCB depends of the nominal current of the MCB, the conductor cross-section as well as of the ambient air temperature.

The values shown in the diagram below are for devices in free air.

For devices installed with other modular devices in the same switchboard a correction factor (K) shall be applied relative to the mounting situation of the MCB, the ambient temperature and the number of main circuits in the installation (EN 60439-1):

No. of rows in enclosure	K
2 or 3	0.9
4 or 5	0.8
6 to 9	0.7
> 10	0.6

Calculation example

Within a distribution panel consisting of eight rows each 6 of 2 pole C16 with an operating ambient temperature of 45°C, which is the highest temperature at which the MCB can operate without unwanted tripping.

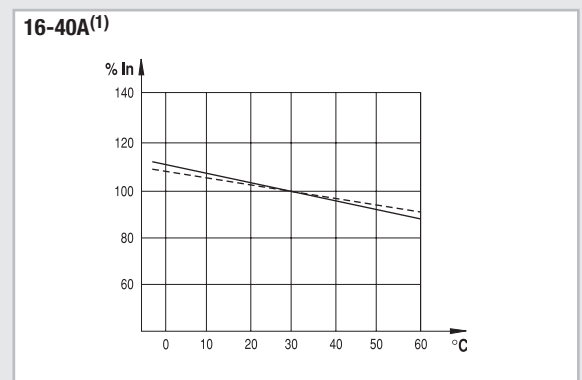
Calculation

The correction factor K=0.7, for use in an eight rows installation: 16A x 0.7= 11.2A

As the MCB is working at 45°C, another factor shall be applied (90% = 0.9):

In at 45°C = In at 30°C x 0.9 = 11.2A x 0.9 = 10.1A

The thermal calibration of the MCBs was carried out at an ambient temperature of 30°C. Ambient temperatures different from 30°C influence the bimetal and this results in earlier or later thermal tripping.



(1) Other ratings see page A.31

Tripping current as a function of the frequency

All MCBs are designed to work at frequencies of 50-60 Hz, therefore to work at different values, consideration must be given to the variation of the tripping characteristics.

The thermal tripping does not change with variation of the frequency but the magnetic tripping values can be up to 50% higher than the ones at 50-60 Hz. For DC current magnetic tripping is 50% higher.

Tripping current variations

60Hz	100Hz	200Hz	300Hz	400Hz
1	1.1	1.2	1.4	1.5

Power losses

The power losses are calculated by measuring the voltage drop between the incoming and the outgoing terminals of the device at rated current.

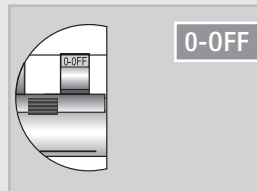
Power losses per pole

In (A)	Voltage drop (V)	Energy loss Pw (W)	Resistance Z (mOhm)
2	0.55	1.1	275.00
4	0.34	1.35	84.38
6	0.25	1.52	42.22
10	0.16	1.64	16.40
16	0.13	2.1	8.20
20	0.13	2.52	6.30
25	0.12	3.1	4.96
32	0.12	3.8	3.71
40	0.11	4.46	2.79

Toggle⁽¹⁾

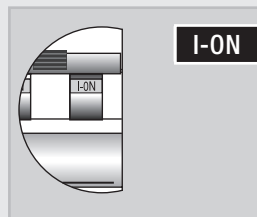
The toggle permits to switch the MCB ON or OFF

Printing on the toggle provides information of the real contact position.



0-OFF

Contacts in open position. Ensures a distance between contacts > 5mm in the Unibus™ range.



I-ON

Contacts in closed position. Ensures continuity in the main circuit.

(1) Not applicable for Series DA41N

Note: Series DCC has got ON-OFF indication on the shell.

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.

Fixwell™ - Screwless Miniature circuit breakers A

- A.54 Benefits
- A.56 **Series E90P** - Miniature circuit breakers 6kA
- A.58 **Series E90SP** - Miniature circuit breakers 10kA
- A.58 Technical data
- A.59 Short-circuit capacity
- A.59 Dimensions
- A.60 Terminal capacity
- A.61 Magnetic release - Thermal release
- A.61 Influence of ambient temperature

Screwless & Plug-in Fixwell™ MCBs and RCCBs



Screwless contact

At the top all Fixwell™ MCBs are equipped with 2 screwless contacts per pole, up to 2 x 4mm².

Terminal contact stability guaranteed

No tightening needed later on.



Easy to disconnect

Plug-in the cable to connect, release by pressing the push-button. Tightening and releasing by screws is history!

- ✓ 100% screwless top cable connection up to 16A
- ✓ 100% screwless bottom plug-in connection for pin busbars up to 63A
- ✓ 100% toolfree installation
- ✓ 100% reliable & safe

Plug-in connection with standard pin busbars

Click and unclick a standard busbar with a simple operation



Standard pin busbars as used for all modular products

Terminal contact stability guaranteed

No tightening needed later on.

All Fixwell™ MCBs and RCCBs are equipped with plug-in busbar contacts.

Fixwell™ **MCBs** and **RCCBs** are the most recent extension of the AEG range and are developed **to reduce time of installation to the absolute minimum.**

A toolfree installation with guaranteed reliability from the very first moment by **plug & play**. A 100% compatibility with all AEG MCBs accessories and auxiliaries are the keys of success of this innovative range of MCBs and RCCBs.



1 hour becomes 30 min.

- > 50% time reduction using manual screwdriver
- > 30% time reduction using electrical screwdriver

MCBs and RCCBs are installed without tools within seconds

Fixwell™

A



Plug-in connection with standard busbars
All Fixwell™ MCBs and RCCBs are equipped at the bottom with screwless plug-in contacts for standard pin busbars. Click and unclick with a simple operation. Time consuming tightening is no longer needed.



Integrated guide
Moulded channels smoothly guide the cables to the terminals in all conditions.

Easy DIN-rail extraction



User-friendly
Determine the perfect length (14mm) of the bare cable using the integrated measurement tool.



Up to 63A



Sure and secure from the first moment
Push down vertically the cable into the contact until the withstand. From that very moment is the cable in perfect position. No additional tightening is required.



Part of the family
Fixwell™ MCBs and RCCBs fit perfectly in the AEG range and are compatible with all AEG MCBs auxiliaries and accessories.

Up to 20A

Rigid and flexible cable
You have the choice: rigid cable or multiwire from 1 up to 4mm². It doesn't matter, our Fixwell™ MCBs are accepting both! No cable crimps needed.



Reliable connection
The unique concept of Fixwell™ screwless contacts guarantees a permanent pull-out force much higher than standards request. The terminal contacts stability along the time is guaranteed. You can rely on Fixwell™.



'plug & play'



Screwless MCBs Fixwell™

Series E90P

IEC/EN 60898-1	6000
	3
IEC/EN 60947-2	10 kA

Applications



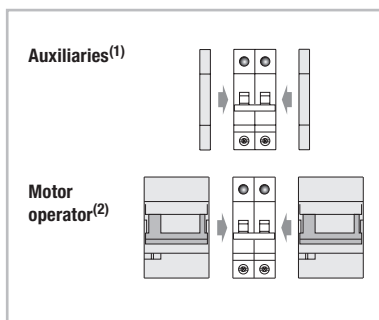
Approval / Marking



Screwless connection



Add-on devices



(1) Series CA - NF - NUVR - NLVS

(2) Only one extension at the extreme end of the pin busbar

Auxiliary contacts CA ● pg. A.24
Other auxiliaries ● pg. A.24

Busbars ● chapter C
Dimensions ● pg. A.59

Performance

Thermal setting (In)	(A) 6-63
Rated voltage AC (Un)	(V) 240/415
Minimum operating voltage UBmin	(V) 12, 12 DC
Tripping characteristics	B,C
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	25-35
Poles	1, 1P+N, 2, 3, 3P+N, 4P
Weight	(g/mod) 125

Short-circuit capacity

AC acc. IEC/EN 60898-1

Poles	V	Icn/Ics (kA) ⁽¹⁾
1	230/400	6

AC acc. IEC/EN 60947-2

Poles	V	Icu (kA)
1	240	10
1+N, 2	127	30
	240	20
2	415	10
3, 3+N, 4	240	20
	415	10

DC acc. IEC/EN 60947-2

Poles	Un (V $\overline{\text{---}}$)	Icu/Ics (kA)
1	≤ 60	20
2	≤ 125	25

(1) Ics= 75% Icn

Screwless & Plug-in

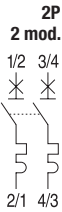
Series E90P - characteristic B and C



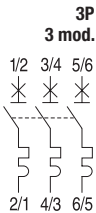
In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	E91PB06	678403	E91PC06	678443	12
10	E91PB10	678404	E91PC10	678444	12
13	E91PB13	678405	E91PC13	678445	12
16	E91PB16	678406	E91PC16	678446	12
20	E91PB20	678407	E91PC20	678447	12
25	E91PB25	678408	E91PC25	678448	12
32	E91PB32	678409	E91PC32	678449	12
40	E91PB40	678410	E91PC40	678450	12
50	E91PB50	678411	E91PC50	678451	12
63	E91PB63	678412	E91PC63	678452	12



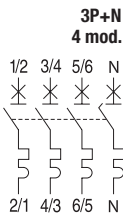
6	-	-	E91PNC06	678453	6
10	-	-	E91PNC10	678454	6
13	-	-	E91PNC13	678455	6
16	-	-	E91PNC16	678456	6
20	-	-	E91PNC20	678457	6
25	-	-	E91PNC25	678458	6
32	-	-	E91PNC32	678459	6
40	-	-	E91PNC40	678460	6
50	-	-	E91PNC50	678461	6
63	-	-	E91PNC63	678462	6



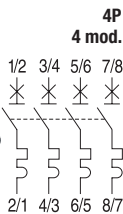
6	E92PB06	678413	E92PC06	678463	6
10	E92PB10	678414	E92PC10	678464	6
13	E92PB13	678415	E92PC13	678465	6
16	E92PB16	678416	E92PC16	678466	6
20	E92PB20	678417	E92PC20	678467	6
25	E92PB25	678418	E92PC25	678468	6
32	E92PB32	678419	E92PC32	678469	6
40	E92PB40	678420	E92PC40	678470	6
50	E92PB50	678421	E92PC50	678471	6
63	E92PB63	678422	E92PC63	678472	6



6	E93PB06	678423	E93PC06	678473	4
10	E93PB10	678424	E93PC10	678474	4
13	E93PB13	678425	E93PC13	678475	4
16	E93PB16	678426	E93PC16	678476	4
20	E93PB20	678427	E93PC20	678477	4
25	E93PB25	678428	E93PC25	678478	4
32	E93PB32	678429	E93PC32	678479	4
40	E93PB40	678430	E93PC40	678480	4
50	E93PB50	678431	E93PC50	678481	4
63	E93PB63	678432	E93PC63	678482	4



6	E93PNB06	678433	E93PNC06	678483	3
10	E93PNB10	678434	E93PNC10	678484	3
13	E93PNB13	678435	E93PNC13	678485	3
16	E93PNB16	678436	E93PNC16	678486	3
20	E93PNB20	678437	E93PNC20	678487	3
25	E93PNB25	678438	E93PNC25	678488	3
32	E93PNB32	678439	E93PNC32	678489	3
40	E93PNB40	678440	E93PNC40	678490	3
50	E93PNB50	678441	E93PNC50	678491	3
63	E93PNB63	678442	E93PNC63	678492	3



6	E94PB06	678749	E94PC06	678759	3
10	E94PB10	678750	E94PC10	678760	3
13	E94PB13	678751	E94PC13	678761	3
16	E94PB16	678752	E94PC16	678762	3
20	E94PB20	678753	E94PC20	678763	3
25	E94PB25	678754	E94PC25	678764	3
32	E94PB32	678755	E94PC32	678765	3
40	E94PB40	678756	E94PC40	678766	3
50	E94PB50	678757	E94PC50	678767	3
63	E94PB63	678758	E94PC63	678768	3



SCREWLESS
top terminals
In=6 to 20A



Screwless MCBs Fixwell™

Series E90SP

IEC/EN 60898-1	10000
	3
IEC/EN 60947-2	15 kA

Applications



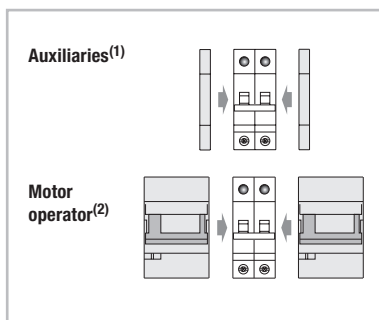
Approval / Marking



Screwless connection



Add-on devices



(1) Series CA - NF - NUVR - NLVS

(2) Only one extension at the extreme end of the pin busbar

Auxiliary contacts CA ● pg. A.24
Other auxiliaries ● pg. A.24

Busbars ● chapter C
Dimensions ● pg. A.59

Performance

Thermal setting In	(A) 6-63
Rated voltage AC Un	(V) 240/415
Minimum operating voltage UBmin	(V) 12, 12 DC
Tripping characteristics	B,C
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to IEC 60068-2	95% RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	25-35
Poles	1, 2, 3, 3P+N, 4P
Weight	(g/mod) 125

Short-circuit capacity

AC acc. IEC/EN 60898-1

Poles	V	Icn (kA) ⁽¹⁾
1-4	230/400	10

AC acc. IEC/EN 60947-2

Poles	V	Icu (kA) ⁽²⁾
1	240	15
1+N, 2	127	40
	240	30
2	415	15
3, 3+N, 4	240	30
	415	15

DC acc. IEC/EN 60947-2

Poles	Un (V =)	Icu/Ics (kA)
1	≤ 60	25
2	≤ 125	30

(1) Ics= 75% Icn

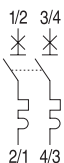
(2) Ics= 50% Icu

Screwless & Plug-in

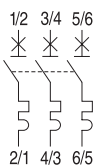
Series E90SP - characteristic B and C



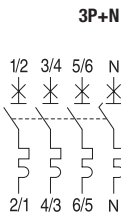
In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	E91SPB06	678493	E91SPC06	678533	12
10	E91SPB10	678494	E91SPC10	678534	12
13	E91SPB13	678495	E91SPC13	678535	12
16	E91SPB16	678496	E91SPC16	678536	12
20	E91SPB20	678497	E91SPC20	678537	12
25	E91SPB25	678498	E91SPC25	678538	12
32	E91SPB32	678499	E91SPC32	678539	12
40	E91SPB40	678500	E91SPC40	678540	12
50	E91SPB50	678501	E91SPC50	678541	12
63	E91SPB63	678502	E91SPC63	678542	12



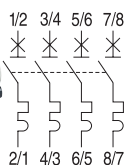
6	E92SPB06	678503	E92SPC06	678543	6
10	E92SPB10	678504	E92SPC10	678544	6
13	E92SPB13	678505	E92SPC13	678545	6
16	E92SPB16	678506	E92SPC16	678546	6
20	E92SPB20	678507	E92SPC20	678547	6
25	E92SPB25	678508	E92SPC25	678548	6
32	E92SPB32	678509	E92SPC32	678549	6
40	E92SPB40	678510	E92SPC40	678550	6
50	E92SPB50	678511	E92SPC50	678551	6
63	E92SPB63	678512	E92SPC63	678552	6



6	E93SPB06	678513	E93SPC06	678553	4
10	E93SPB10	678514	E93SPC10	678554	4
13	E93SPB13	678515	E93SPC13	678555	4
16	E93SPB16	678516	E93SPC16	678556	4
20	E93SPB20	678517	E93SPC20	678557	4
25	E93SPB25	678518	E93SPC25	678558	4
32	E93SPB32	678519	E93SPC32	678559	4
40	E93SPB40	678520	E93SPC40	678560	4
50	E93SPB50	678521	E93SPC50	678561	4
63	E93SPB63	678522	E93SPC63	678562	4



6	E93SPNB06	678523	E93SPNC06	678563	3
10	E93SPNB10	678524	E93SPNC10	678564	3
13	E93SPNB13	678525	E93SPNC13	678565	3
16	E93SPNB16	678526	E93SPNC16	678566	3
20	E93SPNB20	678527	E93SPNC20	678567	3
25	E93SPNB25	678528	E93SPNC25	678568	3
32	E93SPNB32	678529	E93SPNC32	678569	3
40	E93SPNB40	678530	E93SPNC40	678570	3
50	E93SPNB50	678531	E93SPNC50	678571	3
63	E93SPNB63	678532	E93SPNC63	678572	3



6	E94SPB06	678769	E94SPC06	678779	3
10	E94SPB10	678770	E94SPC10	678780	3
13	E94SPB13	678771	E94SPC13	678781	3
16	E94SPB16	678772	E94SPC16	678782	3
20	E94SPB20	678773	E94SPC20	678783	3
25	E94SPB25	678774	E94SPC25	678784	3
32	E94SPB32	678775	E94SPC32	678785	3
40	E94SPB40	678776	E94SPC40	678786	3
50	E94SPB50	678777	E94SPC50	678787	3
63	E94SPB63	678778	E94SPC63	678788	3



Serie E90SP

A

Technical data of screwless MCBs - Fixwell™

Series		E90P	E90SP
Standards		IEC/EN 60898-1	IEC/EN 60898-1
Tripping characteristics		B,C	B,C
Nominal current ⁽¹⁾	(A)	6 - 63	6 - 63
Calibration temperature	(°C)	30	30
Number of poles (# mod)		1/1P+N/2/3/3P+N/4P	1/2/3/3P+N/4P
Neutral pole protected		yes	yes
Clip-on (rapid closing)		yes	yes
Nominal voltage (Un)	AC	1P (V)	240/415
		1P+N (V)	240
		2P (V)	415
	DC	3P/3P+N/4P (V)	415
		1P ⁽²⁾ (VDC)	48
		2P (in series) ⁽²⁾ (VDC)	110
Frequency	(Hz)	50 to 60	50 to 60
Use in DC	(Hz)	DC:	DC:
	(Hz)	magn. trip. +40%	magn. trip. +40%
	(Hz)	400Hz:	400Hz:
Maximum service voltage (U _{bmax}) between two wires	(V)	magn. trip. +50%	magn. trip.+ 50%
Minimum service voltage (U _{bmin})	(V)	250/440; 53/120 DC	250/440; 53/120 DC
Selectivity class (IEC/EN 60898-1)		12; 12 DC	12; 12 DC
Isolator application	EN 60947-2	3	3
Rated insulation voltage	Pollution degree 2 (V)	500	500
	Pollution degree 3 (V)	440	440
Impulse withstand test voltage	(kV)	6	6
Insulation resistance	(MΩ)	10000	10000
Dielectric rigidity	(kV)	2,5	2,5
Vibration resistance in x, y, z direction (IEC 77/16,3)		3g	3g
Endurance	Electrical at Un, In	10000	10000
	Mechanical	20000	20000
Utilisation category (EN 60947-2)		A	A
Protection degree (outside / inside enclosure)		IP20/IP40	IP20/IP40
Self-extinguish degree (UL94)		V2	V2
Tropicalisation (EN 60068-2 / DIN 40046)	(°C/RH)	+55/95%	+55/95%
Operating temperature ⁽³⁾	(°C)	-25/+55	-25/+55
Storage temperature	(°C)	-55/+55	-55/+55
Terminal capacity		see page A.62	see page A.62
Add-on devices (side add-on)	Auxiliary contacts	yes	yes
	Remote release NF ⁽⁴⁾	yes	yes
	Undervoltage trip NUVR ⁽⁴⁾	yes	yes
	Remote drive NFA ⁽⁴⁾	yes	yes
	Panel board switch NLVS ⁽⁴⁾	yes	yes
Busbar system bottom	Busbar system bottom Pin	yes	yes
	Fork	no	no
Accessories		yes	yes
Width per module	(mm)	18	18
Weight per module	(gr)	125	125
Package	mod.	12	12
Approvals ⁽⁵⁾		VDE	VDE
CE-marking		yes	yes

(1) Rating current derating as usual in function of installation conditions.

(2) Preferred values of rated control supply voltage (EN/IEC 60947-2): 24VDC, 48VDC, 110VDC, 125VDC, 220VDC, 250VDC.

(3) With plug-in pin busbar: -25/+50°C

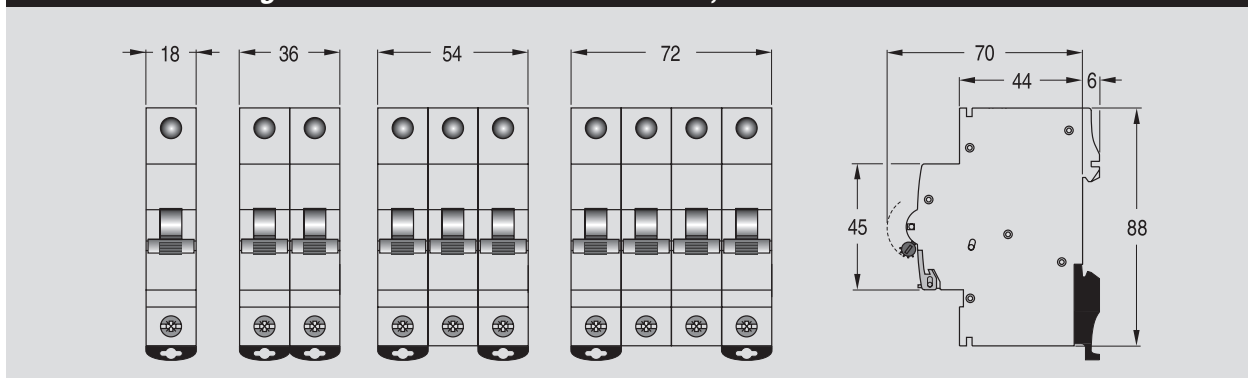
(4) Only at **any extreme side** of the row. No pin busbars let through allowed.

(5) 4P execution approval pending.

Short-circuit capacity of screwless MCBs - Fixwell™

Series			E90P	E90SP	
Short-circuit capacity AC					
IEC/EN 60898-1	I_{cn}	(kA)			
		1P	230/400V	6	10
		1P+N	230V	6	10
		2P	230/400V	6	10
		3P/3P+N/4P	230/400V	6	10
	I_{cs} (service)		100% I _{cu}	75% I _{cu}	
IEC/EN 60947-2	I_{cu} (max.)	1P	127V	20	30
			240V	10	15
			415V	3	4
		1P+N/2P	127V	30	40
			240V	20	30
			415V	10	15
		2P	240V	20	30
			415V	10	15
		3P/3P+N/4P	240V	20	30
			415V	10	15
	440V	6	10		
	I_{cs} (service)		75% I _{cu}	50% I _{cu}	
Short-circuit capacity DC					
IEC/EN 60947-2	I_{cu} (max.)	(kA)			
		1P	≤60V	20	25
			≤125V	-	-
			≤220V	-	-
		2P	≤125V	25	30
			≤440V	-	-
	I_{cs} (service)		100% I _{cu}	100% I _{cu}	

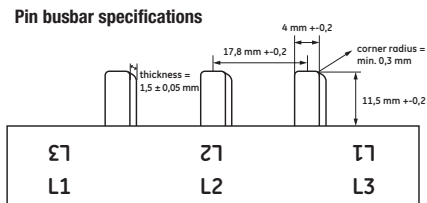
Dimensional drawings of screwless MCBs - Series E90P, E90SP



Terminal capacity of screwless MCBs

Top terminals		Ratings 6A to 20A:	Ratings 25A to 63A:
		Screwless (Max. 2 wires)	Cage terminals
Rigid cable (min/max)	mm ²	2 x (1/4) ⁽³⁾	1/35
Flexible cable (min/max)	mm ²	2 x (1.5/4) ⁽³⁾	0.75/ 25
Recommended torque	Nm	-	2.5
Maximum torque	Nm	-	4.5

Bottom terminals		Ratings 6A to 63A:	Ratings 6A to 63A:
		Bottom cage terminals ⁽¹⁾	Bottom flat plug-in terminals ⁽²⁾
Rigid cable (min/max)	mm ²	1/25	To insert AEG pin busbars, or other brands under following dimensions: Length = 11.5 ± 0.2mm Width = 4 ± 0.2 mm Thickness = 1.5 ± 0.05 mm Corners min. radius = 0.3 mm
Flexible cable (min/max)	mm ²	0.75/16	
Recommended torque	Nm	2.5	
Maximum torque	Nm	4.5	



(1) The top screwless terminal is composed of two separate and parallel terminals. You can connect one rigid or flexible cable into each terminal. The bare cable (insulation removed to the appropriate length) should be pushed into the screwless terminal (Fig 5), the terminals will not accept cables with cable lugs or ferrules. For flexible cables it is recommended to twist wires and insert it into the terminal by pressing the push button. To release the cable press the push-button of the MCB and at the same time gently pull the cable (Fig 6).

(2) Bottom terminals provide a cage terminal to connect also cables to feed other rows /devices limited to rated current of the device.

(3) Plug-in window terminals are only foreseen for pin busbars providing the incoming supply to several devices from the bottom side.

Not intended for any other conductor with or without cable lugs or cable connectors.

How to mount the busbar into devices

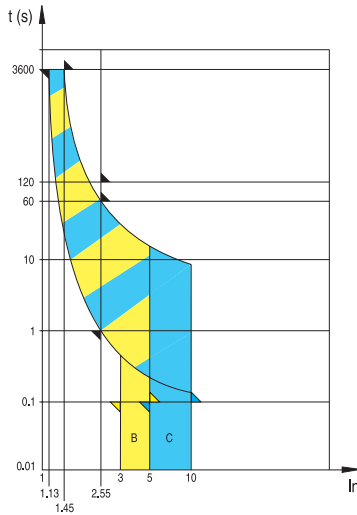
- Mount first 2, 3 or 4 poles devices on the DIN-rail at the extreme **left** side of the row.
- Mount one device at the extreme **right** side on the DIN-rail.
- Fit the pin busbar on both devices.
- Then, mount one by one the rest of poles pulling down the grey clip previously, inserting the pin bars inside the devices and then closing the clip of every device.
- Finally, remove 14mm of plastic from every wire and insert them vertically one by one inside the top screwless terminals.
- For disconnecting the outgoing wires.

Easy to dismount from DIN rail

Characteristics according to IEC/EN 60898-1

Miniature Circuit Breakers (MCB) are intended for the protection of wiring installations against both overloads and short-circuits in domestic or commercial wiring installations where operation is possible by uninstructed people.

Tripping characteristic curves (EN/IEC 60898-1)



Magnetic release

An electromagnet with plunger ensures instantaneous tripping in the event of short-circuit. The standard distinguishes two different types, following the current for instantaneous release: type B and C.

Icn (A)	Test current	Tripping time	Applications
B	3 x In	0.1 < t < 45s (In ≤ 32A) 0.1 < t < 90s (In > 32A)	Only for resistive loads such as: - electrical heating - water heater - stoves
	5 x In	t < 0.1s	
C	5 x In	0.1 < t < 15s (In ≤ 32A) 0.1 < t < 30s (In > 32A)	Usual loads such as: - lighting - socket-outlets - small motors
	10 x In	t < 0.1s	

Thermal release

The release is initiated by a bimetal strip in case of overload. The standard defines the range of releases for specific overload values.

Reference ambient temperature is 30°C.

Test current	Tripping time
1.13 x In	t ≥ 1h (In ≤ 63A) t ≥ 2h (In > 63A)
1.45 x In	t < 1h (In ≤ 63A) t < 2h (In > 63A)
2.55 x In	1s < t < 60s (In ≤ 32A) 1s < t < 120s (In > 32A)

Influence of ambient air temperature on the rated current

The maximum value of the current which can flow through a MCB depends of the nominal current of the MCB, the conductor cross-section as well as of the ambient air temperature.

The values shown in the diagram below are for devices in the free air.

For devices installed with other modular devices in the same switchboard a correction factor (K) shall be applied relative to the mounting situation of the MCB, the ambient temperature and the number of main circuits in the installation (EN 60439-1):

No. of rows in enclosure	K
2 or 3	0.9
4 or 5	0.8
6 to 9	0.7
> 10	0.6

Calculation example

Within a distribution panel consisting of eight rows each 12 of 1 pole C16 with an operating ambient temperature of 45°C, which is the highest temperature the MCB can operate without unwanted tripping.

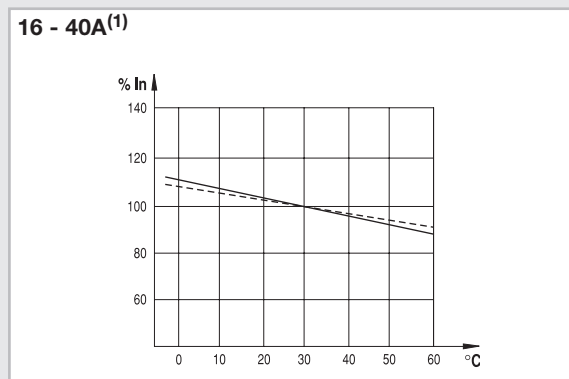
Calculation

The correction factor K=0.7, for use in an eight rows installation: 16A x 0.7= 11.2A

As the MCB is working at 45°C it shall be applied another factor (90% = 0.9):

$$I_n \text{ at } 45^\circ\text{C} = I_n \text{ at } 30^\circ\text{C} \times 0.9 = 11.2\text{A} \times 0.9 = 10.1\text{A}$$

The thermal calibration of the MCBs was carried out at ambient temperature of 30°C. Ambient temperatures different from 30°C influence the bimetal and this results in earlier or later thermal tripping.



(1) Other ratings see page A.31

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.

- B.3 Selection table
- B.4 Technical data
- B.6 Association
- B.7 Coordination
- B.7 Power losses

B.8 Residual current circuit breakers (RCCBs)

- B.9 EHFI - Type A
- B.9 EFI - Type AC
- B.9 ESHFI - Type S
- B.10 EHFI...i - Type Ai
- B.10 EHSFI...i - Type Si
- B.10 EFI...S - Type AC

B.11 Residual current circuit breakers with overcurrent protection (RCBOs)

- B.11 HD63N
- B.13 HD90 - Type A
- B.13 D90 - Type AC
- B.15 HD90S - Type A
- B.15 D90S - Type AC
- B.17 DE90 - Type AC
- B.17 DE90S - Type AC

Miniature circuit breakers

A

Residual current circuit breakers

B

B.18 Add-on residual current circuit breakers for MCBs Series E90 and E880

- B.19 HD92/93/94/95 - Type A
- B.19 HDS92/93/94/95 - Type A
- B.19 D92/93/94/95 - Type AC
- B.19 DS92/93/94/95 - Type AC

Busbar systems

C

Comfort functions/Energy control

D

B.20 Compact 2P RCBOs - Unibis™

- B.20 HDC90E - Type A
- B.20 DC90E - Type AC
- B.22 HDC90 - Type A
- B.22 DC90 - Type AC
- B.24 HDC90S - Type A
- B.24 DC90S - Type AC
- B.26 Technical data

Residential enclosures

E

Contactors/Soft starters/Speed drives

F

Overload relays

G

Control and signalling units

H

B.28 Screwless RCCBs - Fixwell™

- B.28 EHFIP - Type A
- B.28 ESHFIP - Type S
- B.30 Technical data
- B.31 Terminal capacity

Manual motor starters

I

B.32 TeleREC - Reconnection relays

- B.32 Characteristics
- B.33 TeleREC PLUS
- B.34 TeleREC BASIC
- B.34 TeleREC SOLAR

Moulded case circuit breakers

J

Air circuit breakers

K

Fuse systems/Loadbreak disconnectors

L

General purpose enclosures

M

System enclosures

N

Numerical index

X

Selection table of RCCBs

Page No.	Series	Sensitivity (mA)	Poles	Type	Nominal current (A)						Isolator appl.	Add-on devices	Rated voltage (V)			
					16	25	40	63	80	100						
B.8	FI															
	EH/EFI	10	2P	AC/A									x	x	240	
	EH/EFI	30	2P	AC/A									x	x	240	
	EHFI			Ai									x	x	240	
	EH/EFI		4P	AC/A									x	x	240/415	
	EHFI			Ai									x	x	240/415	
	EH/EFI	100	2P	AC/A/S									x	x	240	
			4P	AC/A/S									x	x	240/415	
	EH/EFI	300	2P	AC/A/S/Si									x	x	240	
			4P	AC/A/S/Si									x	x	240/415	
	EH/EFI	500	2P	AC/A/S									x	x	240	
			4P	AC/A/S									x	x	240/415	

Selection table of RCBs - 6 kA

Page No.	Series	Sensitivity (mA)	Pole	Type	Tripping charact.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage (V)	
						4	6	10	13	16	20	25	32				40
B.11	HD																
	HD63N	30	3P+N	A	C										-	-	400
B.14	D/HD																
	D/HD90	10	1+N	AC/A	B										x	x	230
					C										x	x	230
	D/HD90	30	1+N	AC/A	B										x	x	230
					C										x	x	230
	D/HD90	300	1+N	AC/A	B										x	x	230
					C										x	x	230
B.16	DE																
	DE90	30	1+N	AC	C										x	x	230
	DE90S	30	1+N	AC	C										x	x	230

Selection table of RCBs - 10 kA

Page No.	Series	Sensitivity (mA)	Pole	Type	Tripping charact.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage (V)	
						4	6	10	13	16	20	25	32				40
B.14	D/HD																
	D/HD90S	10	1+N	AC/A	B										x	x	230
					C										x	x	230
	D/HD90S	30	1+N	AC/A	B										x	x	230
					C										x	x	230
	D/HD90S	300	1+N	AC/A	B										x	x	230
					C										x	x	230

Selection table for Add-on RCCBs

Page No.	Series	Sensitivity (mA)	Pole	Type	Nominal current (A)		Rated voltage (V)
					32	63	
B.18							
	HD/D92-94	30	2-3-4	AC/A			240/415
	HD/DS	300	2-3-4	AC/A/S			240/415

Selection table - Compact 2P RCBOs

Page	Series	Sensitivity (mA)	Pole	Type	Tripping char.	Short-circuit cap.	Nominal current (A)								Isolator appl.	Add-on devices	Rated voltage
							6	10	13	16	20	25	32	40			
B.20	HDC/DC90E																
		30	2	AC	C	4500									x	x	230
		300	2	AC	C	4500									x	x	230
		30	2	A	C	4500									x	x	230
		300	2	A	C	4500									x	x	230
B.22	HDC/DC90																
		10	2	AC	C	6000									x	x	230
		30	2	AC	C	6000									x	x	230
		300	2	AC	C	6000									x	x	230
		10	2	A	B	6000									x	x	230
					C	6000									x	x	230
		30	2	A	B	6000									x	x	230
					C	6000									x	x	230
		300	2	A	B	6000									x	x	230
					C	6000									x	x	230
B.24	HDC/DC90S																
		10	2	AC	C	10000									x	x	230
		30	2	AC	C	10000									x	x	230
		300	2	AC	C	10000									x	x	230
		10	2	A	B	10000									x	x	230
					C	10000									x	x	230
		30	2	A	B	10000		*	*	*	*				x	x	230
					C	10000		*	*	*	*				x	x	230
		300	2	A	B	10000									x	x	230
					C	10000									x	x	230

* Special thermal tripping curves for Norway and Paneuropean types

Technical data RCDs

Series			E/EHFI (DFI)	D/HD90
Standards			EN/IEC 61008-1	EN/IEC 61009-1
Magnetic tripping characteristics			-	B-C
Residual tripping characteristic			AC, A, S, Ai, Si	A, AC
Tripping time at $I_{\Delta n}$	Instantaneous	ms	<40	<40
	Selective	ms	>150	-
Rated current			16,25,40,63, 80, 100	4,6,10,13,16,20,25,32,40
Rated residual current $I_{\Delta n}$			10,30,100,300,500	10,30,300
Calibration temperature			30	30
Number of poles versus modules			1	1
Rated voltage U_n	2PAC	V	240	230 (1P+N)
	3P AC	V	-	-
	4P AC	V	415	-
Frequency			50/60	50/60
Maximum service voltage U_{bmax}			2P=265 / 4P=455	255
Minimum service voltage U_{bmin}			2P=117 / 4P=205	117
Power supply			Top/Bottom	Top/Bottom
Selectivity class			-	3
Rated making and breaking capacity (I_m)			500 (or 10x I_n)	-
Residual making and breaking capacity ($I_{\Delta m}$)			500 (or 10x I_n)	6000
Conditional short-circuit capacity (I_{nc})			10000 fuse 100A	-
Conditional residual short-circuit capacity ($I_{\Delta c}$)			10000	-
Rated Short-circuit capacity (I_{cn})			-	6000
Grid distance (safety distance between two devices)			35	35
Isolator application			yes	yes
Insulation degree	Insulation voltage	V (DC)	500	500
	Shock voltage (1.2/50ms)	kV	8	6
	Insulation resistance	(mOhm)	1000	1000
	Dielectric strength	V	2500	2500
Shock resistance (in x, y, z direction)(EN/IEC 60077/16.3)			40g, 18 shocks 5 ms	40g, 18 shocks 5 ms
Vibration resistance (in x, y, z direction; EN/IEC 60068-2-6)			1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz
Endurance	electrical at U_n , I_n		10000	10000
	mechanical at U_n , I_n		20000	20000
Protection degree (outside/inside electrical enclosure)			IP 20 / IP 40	IP 20 / IP 40
Self extinguish degree (according to UL94)			V2	V2
Tropicalisation (according to EN/IEC 60068-2, DIN 40046)			+55/95%	+55/95%
Pollution degree (acc. EN/IEC 60947-1)			3	3
Operating temperature			AC (-5.. +60); A -25.. +60)	-5..+60
Storage temperature			-25..+70	-25..+70
Terminals capacity	Rigid cable min/max (top)	mm ²	1.5/50 [1.5/35]	1/25
	Flexible cable min*/max (top)	mm ²	1.5/35 [1.5/25]	1/16
	Rigid cable min/max (bottom)	mm ²	1.5/50 [1.5/35]	1/35
	Flexible cable min*/max (bottom)	mm ²	1.5/35 [1.5/25]	1/25
	(*Flexible cable 0.75/1/1.5 mm ² with cable lug)			
Torque			5/5	3/4
Add-on devices (side add-on)	Auxiliary contacts		yes	yes
	Remote release NF		yes	yes
	Undervoltage trip NUVR		yes	yes
	Remote drive NFA		yes	yes
	Panel board switch NLVS		yes	yes
Busbars systems	Pin		yes	Bottom
	Fork		yes	Bottom
Accessories			yes	yes
Dimensions, weights, packaging				
# Poles			2-4	1+N
(HxDxW) 86x68xW			36/72	36
Weight/unit			2P=250 / 4P=368	250
Package/unit			2P=1/6 / 4P=1/3	1/6
Approvals			VDE / KEMA	VDE / KEMA
CE-marking			yes	yes
Page			B.8	B.12

D/HD90S	DE90	DE90S	HD63N	D/HD92-94
EN/IEC 61009-1	IEC61009-1	IEC61009-1	IEC 61009-1	EN/IEC 61009-1
B-C	C	C	3P+N=C	-
A, AC	AC	AC	A	AC-A-S
<40	<40	<40	< 40	<40
-	-	-	-	>150
4,6,10,13,16,20,25,32,40	6 ...40	6 ...40	3P+N=10...25	32, 63
10,30,300	30	30, 100	30	30, 300
30	30	30	30	30
1	1	1	3P+N=1	1
240 (1P+N)	240 (1P+N)	240 (1P+N)	230	240/415
-	-	-	-	400
-	-	-	400	400
50/60	50/60	50/60	50/60	50/60
255	265	265	4P=440	2P=265 / 4P=455
117	195	195	4P=180	2P=205 / 4P=205
Top/Bottom	Bottom	Bottom	Top/Bottom	Top
3	3	3	3	3
-	-	-	-	-
6000	6000	10.000	3000	see MCB
-	-	-	-	-
-	-	-	-	-
10.000	6000	10.000	6000	see MCB
35	-	-	35	35
yes	yes	yes	yes	no
500	500 ⁽¹⁾	500 ⁽¹⁾	500	500
6	6 ⁽¹⁾	6 ⁽¹⁾	6	8
1000	1000 ⁽¹⁾	1000 ⁽¹⁾	1.000	1000
2500	2500 ⁽¹⁾	2500 ⁽¹⁾	2000	2500
40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks, 5ms	40g, 18 shocks 5 ms
1.5g, 30 min, 0...80Hz	2g, 30 min, 0...80Hz	2g, 30 min, 0...80Hz	1,5g, 30min, 0....80Hz	5g, 30 min, 0...80Hz
10000	10000	10000	10000	10000
20000	20000	20000	20000	20000
IP 20 / IP 40	IP20 / IP40	IP20 / IP40	IP20 / IP40	IP 20 / IP 40
V2	V2	V2	V0	V2
+55/95%	+55/95%	+55/95%	+55/95%	+55/95%
3	3	3	2	3
-5...+60	-5...+60	-5...+60	- 25° / + 40°	AC (-5...+60); A(-25...+60)
-25...+70	-25...+70	-25...+70	-25° / + 55°	-25...+70
1/25	1/25	1/25	1/35	1/25
1/16	1/16	1/16	1/25	1/16
1/35	1/35	1/35	1/35	1/35
1/25	1/25	1/25	1/25	1/25
3/4	3	3	3	-/4.5
yes	-	-	-	yes (coupled to MCB)
yes	-	-	-	yes (coupled to MCB)
yes	-	-	-	yes (coupled to MCB)
yes	-	-	-	yes (coupled to MCB)
yes	-	-	-	yes (coupled to MCB)
Bottom	Bottom	Bottom	Bottom	-
Bottom	Bottom	Bottom	Bottom	-
yes	yes	yes	no	yes
1+N	1+N	1+N	3+N	2-3-4
36	18	18	4P= 92 x 68 x 70	72/90/108/125/144
250	350	350	4P= 480	2P=250 / 3P=320 / 4P=340
1/6	1	1	1	1
VDE / KEMA	KEMA	KEMA	IMQ	KEMA
yes	yes	yes	yes	yes
B.14	B.16	B.16	B.11	B.18

(1) Making sure that N-L and both flying leads are disconnected.

Association of RCCBs

With MCBs - Back-up protection



		E90N	E90E	E90	E90S	E90X	E880	S90
Series EFI/EHFI 2P 230V	16A	3 kA	4.5 kA	10 kA	20 kA	20 kA	10 kA	25 kA
	25A	3 kA	4.5 kA	10 kA	20 kA	20 kA	10 kA	25 kA
	40A	3 kA	4.5 kA	10 kA	20 kA	20 kA	10 kA	25 kA
	63A	-	-	-	20 kA	20 kA	10 kA	25 kA
	80A	-	-	-	-	-	10 kA	25 kA
	100A	-	-	-	-	-	10 kA	25 kA
Series EFI/EHFI 4P 400V	25A	3 kA	4.5 kA	6 kA	10 kA	10 kA	10 kA	25 kA
	40A	3 kA	4.5 kA	6 kA	10 kA	10 kA	10 kA	25 kA
	63A	-	-	-	10 kA	10 kA	10 kA	25 kA
	80A	-	-	-	-	-	10 kA	25 kA
	100A	-	-	-	-	-	10 kA	25 kA

With fuses gL-gG - Back-up protection

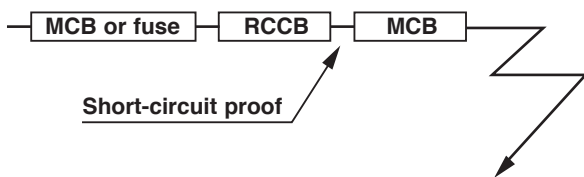


		16A	25A	32A	40A	50A	63A	80A	100A
Series EFI/EHFI 2P 230V	16A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	25A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	40A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	63A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	80A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	100A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
Series EFI/EHFI 4P 400V	25A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	40A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	63A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	80A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA
	100A	100 kA	100 kA	80 kA	50 kA	40 kA	25 kA	16 kA	10 kA

The values indicated in the table are the maximum short-circuit current in kA rms
SCPD: Short-Circuit Protective Device (MCB or fuse)

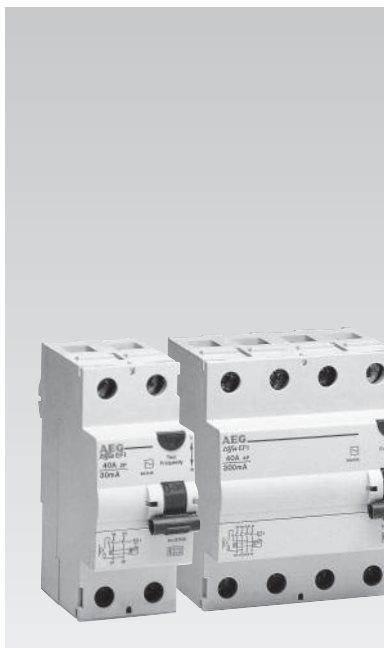
Coordination of RCCBs

		UPSTREAM PROTECTION										
		MCBs						FUSES				
		E90 ≤ 40A	E90S ≤ 40A	E90S > 40A	E90X ≤ 40A	E90X > 40A	E880 80...125A	S90	Fuse 160A	Fuse 250A	Fuse 400A	Fuse 630A
DOWNSTREAM	E90 ≤ 25A	6 kA	10 kA	10 kA	10 kA	10 kA	-	25 kA	-	-	-	-
	E90S ≤ 25A	-	25 kA	25 kA	25 kA	25 kA	10 kA	25 kA	16 kA	10 kA	10 kA	10 kA
	E90 > 25A	-	25 kA	25 kA	25 kA	25 kA	10 kA	25 kA	10 kA	10 kA	10 kA	10 kA
	Fuse 25A	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA
	Fuse 25A	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA	100 kA



Power losses

	D90/HD90		EFI/EHFI		Add on D/HD92			
	Z mOhm	W/pole	Z mOhm	W/pole	Z mOhm	W/pole		
4A	125.00	2.00	16A	9.94	2.55	32/30	1.56	1.59
6A	53.00	1.91	25A	3.75	2.33	32/30	1.73	1.77
10A	16.30	1.63	40A	2.15	3.43	32/300	1.54	1.57
16A	9.80	2.51	63A	1.30	5.15	32/300	1.70	1.74
20A	7.10	2.84	80A	1.30	8.30	63/30	0.63	2.52
25A	5.60	3.50	100A	0.87	8.70	63/30	0.71	2.82
32A	4.70	4.81				63/300	0.62	2.46
40A	3.60	5.76				63/300	0.70	2.78



RCCBs - Residual current circuit breakers

EN/IEC 61008-1

Series EHFI	For pulsating DC and AC fault currents
Series EFI/DFI	For sinusoidal AC fault currents
Series ESHFI	Time delayed trip for pulsating DC and AC fault currents
Series EFI...S	For sinusoidal AC fault currents. Operates at -25°C
Series EHFI...i	High immunity for pulsating DC and AC fault current
Series EHSFI...i	High immunity time delayed trip for pulsating DC and AC fault current

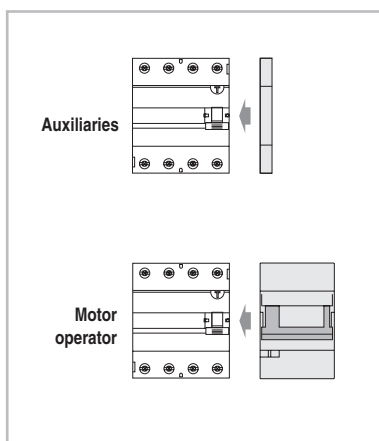
Applications



Approvals / Marking



Add-on devices



- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Panel board switch ● pg A.24
- Motor operator ● pg A.24

- Busbars ● chapter C
- Dimensions ● pg B.10

Performance

Thermal setting I_n	(A)	16, 25, 40, 63, 80, 100
Residual current $I_{\Delta n}$	(mA)	10, 30, 100, 300, 500
Rated voltage AC U_n	(V)	2P: 240 4P: 240/415
Minimum operating voltage U_{Bmin}	(V)	2P: 117 4P: 205
Mechanical/electrical endurance		20000/10000
Tropicalisation acc.to		
EN/IEC 60068-2-28/2-30 and DIN 40046		95%RH at 55°C
Terminal capacity flexible/rigid cable (mm²)		35-50 ⁽¹⁾
Poles		2, 4
Nuisance tripping resistance		Type A, AC: 250A 8/20μs; 200A 0.5μs - 100kHz Type S: 3000A 8/20μs Type Ai: 3000A 8/20μs Type Si: 5000A 8/20μs
Ambient temperature	(°C)	Type AC: -5 upto 40 Type A: -25 upto 40
Weight	(g)	2P: 220 4P: 385

(1) Series DFI: 25-35 mm²

Short-circuit capacity

Acc. to EN/IEC 61008-1

Making and breaking capacity

$I_m = 500A$ from 16 upto 40A
 $I_m = 10I_n$ from 63 upto 100A

Residual making and breaking capacity

$I_{\Delta m} = 500A$ from 16 upto 40A
 $I_{\Delta m} = 10I_n$ from 63 upto 100A

Short-circuit capacity

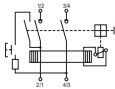
$I_{nc} = 10000A$ at 240/415V
fuse 80A gG

Series EHF1 - EFI - ESHFI

Resistance to surge currents up to 250A

2P

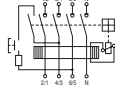
127-230V



Rated current [A]	Rated fault current [mA]	EHFI Type A		EFI Type AC		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
16	10	EHFI16/010-2	604941	EFI16/010-2	604446	6
25	30	EHFI25/030-2	604942	DFI25/030-2	607130	6
40	30	EHFI40/030-2	604943	DFI40/030-2	607131	6
63	30	EHFI63/030-2	604944	EFI63/030-2	604449	6
80	30	EHFI80/030-2	604945	EFI80/030-2	604450	6
100	30	EHFI100/030-2	604946	EFI100/030-2	604451	6
25	100	EHFI25/100-2	604947	EFI25/100-2	604455	6
40	100	EHFI40/100-2	604948	EFI40/100-2	604456	6
63	100	EHFI63/100-2	604949	EFI63/100-2	604457	6
80	100	EHFI80/100-2	604950	EFI80/100-2	604458	6
100	100	EHFI100/100-2	604951	EFI100/100-2	604459	6
25	300	EHFI25/300-2	604416	DFI25/300-2	607132	6
40	300	EHFI40/300-2	604417	DFI40/300-2	607133	6
63	300	EHFI63/300-2	604418	EFI63/300-2	604465	6
80	300	EHFI80/300-2	604419	EFI80/300-2	604466	6
100	300	EHFI100/300-2	604420	EFI100/300-2	604467	6
25	500	EHFI25/500-2	604426	EFI25/500-2	604468	6
40	500	EHFI40/500-2	604427	EFI40/500-2	604469	6
63	500	EHFI63/500-2	604428	EFI63/500-2	604470	6
80	500	EHFI80/500-2	604429	EFI80/500-2	604471	6
100	500	EHFI100/500-2	604430	EFI100/500-2	604472	6

4P

230-400V

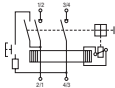


25	30	EHFI25/030-4	604478	EFI25/030-4	604523	3
40	30	EHFI40/030-4	604479	EFI40/030-4	604524	3
63	30	EHFI63/030-4	604480	EFI63/030-4	604525	3
80	30	EHFI80/030-4	604481	EFI80/030-4	604526	3
100	30	EHFI100/030-4	604482	EFI100/030-4	604527	3
25	100	EHFI25/100-4	604483	EFI25/100-4	604531	3
40	100	EHFI40/100-4	604484	EFI40/100-4	604532	3
63	100	EHFI63/100-4	604485	EFI63/100-4	604533	3
80	100	EHFI80/100-4	604486	EFI80/100-4	604534	3
100	100	EHFI100/100-4	604487	EFI100/100-4	604535	3
25	300	EHFI25/300-4	604493	EFI25/300-4	604539	3
40	300	EHFI40/300-4	604494	EFI40/300-4	604540	3
63	300	EHFI63/300-4	604495	EFI63/300-4	604541	3
80	300	EHFI80/300-4	604496	EFI80/300-4	604542	3
100	300	EHFI100/300-4	604497	EFI100/300-4	604543	3
25	500	EHFI25/500-4	604503	EFI25/500-4	604544	3
40	500	EHFI40/500-4	604504	EFI40/500-4	604545	3
63	500	EHFI63/500-4	604505	EFI63/500-4	604546	3
80	500	EHFI80/500-4	604506	EFI80/500-4	604547	3
100	500	EHFI100/500-4	604507	EFI100/500-4	604548	3

Resistance to surge currents up to 500A

2P

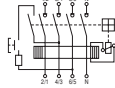
127-230V



		ESHFI Type S				
25	300	ESHFI25/300-2	604421	-	-	6
40	300	ESHFI40/300-2	604422	-	-	6
63	300	ESHFI63/300-2	604423	-	-	6
80	300	ESHFI80/300-2	604424	-	-	6
100	300	ESHFI100/300-2	604425	-	-	6
25	500	ESHFI25/500-2	604431	-	-	6
40	500	ESHFI40/500-2	604432	-	-	6
63	500	ESHFI63/500-2	604433	-	-	6
80	500	ESHFI80/500-2	604434	-	-	6
100	500	ESHFI100/500-2	604435	-	-	6

4P

230-400V



25	300	ESHFI25/300-4	604498	-	-	3
40	300	ESHFI40/300-4	604499	-	-	3
63	300	ESHFI63/300-4	604500	-	-	3
80	300	ESHFI80/300-4	604501	-	-	3
100	300	ESHFI100/300-4	604502	-	-	3
25	500	ESHFI25/500-4	604508	-	-	3
40	500	ESHFI40/500-4	604509	-	-	3
63	500	ESHFI63/500-4	604510	-	-	3
80	500	ESHFI80/500-4	604511	-	-	3
100	500	ESHFI100/500-4	604512	-	-	3

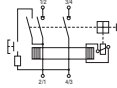
Series EHFI - EFI - ESHFI

High immunity
to surge currents



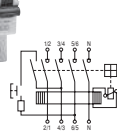
2P

127-240V



4P

240-400V



Rated current [A]	Rated fault current [mA]	EHFI Type Ai		ESHFI Type Si		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
25	30	EHFI 25/030-2i	605120	-	-	6
40	30	EHFI 40/030-2i	605121	-	-	6
63	30	EHFI 63/030-2i	605122	-	-	6
25	300	-	-	ESHFI 25/300-2i	605185	6
40	300	-	-	ESHFI 40/300-2i	605186	6
63	300	-	-	ESHFI 63/300-2i	605187	6
80	300	-	-	ESHFI 80/300-2i	605188	6
100	300	-	-	ESHFI 100/300-2i	605189	6
25	30	EHFI 25/030-4i	605123	-	-	3
40	30	EHFI 40/030-4i	605124	-	-	3
63	30	EHFI 63/030-4i	605125	-	-	3
25	300	-	-	ESHFI 25/300-4i	605205	3
40	300	-	-	ESHFI 40/300-4i	605206	3
63	300	-	-	ESHFI 63/300-4i	605207	3
80	300	-	-	ESHFI 80/300-4i	605208	3
100	300	-	-	ESHFI 100/300-4i	605209	3

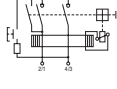
Rated current [A]	Rated fault current [mA]	-		EFI...S Type AC		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
25	30	-	-	DFI25/030-2S	607155	6
40	30	-	-	DFI40/030-2S	607156	6
63	30	-	-	EFI63/030-2S	604567	6
25	300	-	-	DFI25/300-2S	607157	6
40	300	-	-	DFI40/300-2S	607158	6
63	300	-	-	EFI63/300-2S	604570	6
25	30	-	-	EFI25/030-4S	604571	3
40	30	-	-	EFI40/030-4S	604572	3
63	30	-	-	EFI63/030-4S	604573	3
25	300	-	-	EFI25/300-4S	604574	3
40	300	-	-	EFI40/300-4S	604575	3
63	300	-	-	EFI63/300-4S	604576	3

Operates at -25°C



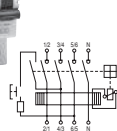
2P

127-230V

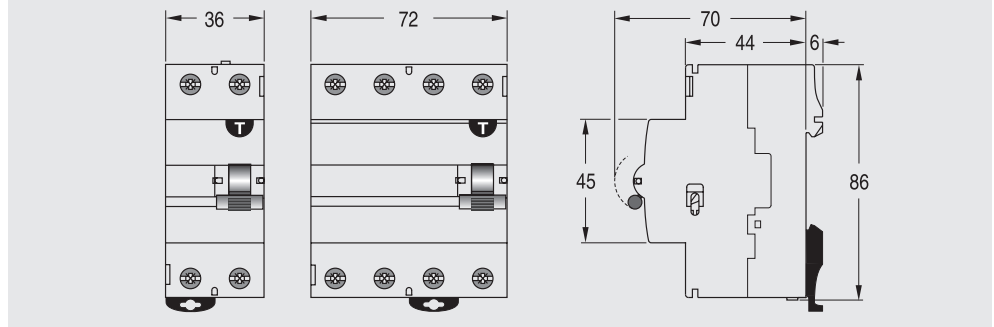


4P

230-400V



Dimensions

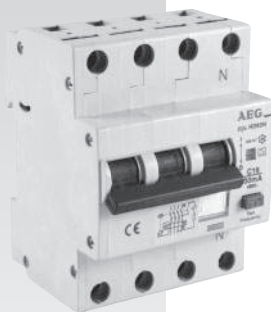


RCBOs - Residual current circuit breakers with overcurrent protection

IEC 61009-1

Series HD63N

For pulsating DC and AC fault currents
3 pole protected



Series HD63N

Applications



Marking



Performance

Number of poles	3P+N
Number of modules	4
Type	A
Tripping time at $I_{\Delta n}$ (instantaneous)	< 40 ms
Rated voltage	(Vn) 400V~
Rated current at 30°C	(In) $10A \leq I_n \leq 25A$
Tripping characteristics	C
Power supply	Top/Bottom
Rated residual current $I_{\Delta n}$	(mA) 30
Mechanical/electrical endurance	20000/10000
Operating temperature	-25°/+40°
Rated frequency	50/60 Hz
Protection degree	
(outside/inside electrical enclosure)	IP20/IP40
Fire resistance (glow wire test)	960°C
Terminal capacity flexible/rigid cable	(mm ²) 1.5/25 - 1/35
Torque	3Nm
Dimensions HxWxD	(mm) 92x72x74
Weight	(g) 475

Short-circuit capacity

According to IEC 61009-1

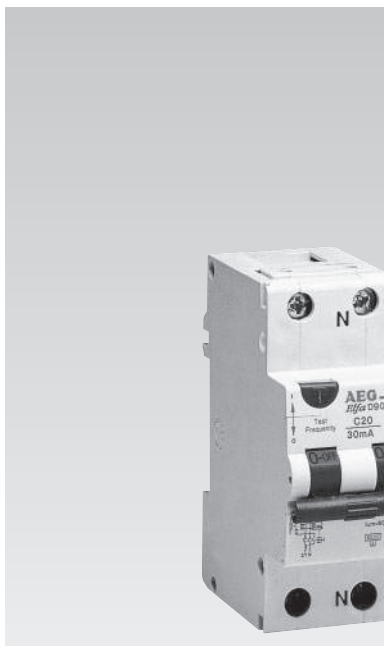
Residual making and breaking capacity	$I_{\Delta m} = 3000A$
Rated breaking capacity	6000A
Selectivity class	3

Series HD63N



	Rated current (A)	Rated fault current (mA)	C		
			Cat. No.	Ref. No.	Pack.
3P+N	10	30	HD63NC10/030	568195	1
	13	30	HD63NC13/030	568196	1
	16	30	HD63NC16/030	568197	1
	20	30	HD63NC20/030	568198	1
	25	30	HD63NC25/030	783521	1

B



RCCBs - Residual current circuit breakers with overcurrent protection

EN/IEC 61009-1 6kA

Series HD90 For pulsating DC and AC fault currents

Series D90 For sinusoidal AC fault currents

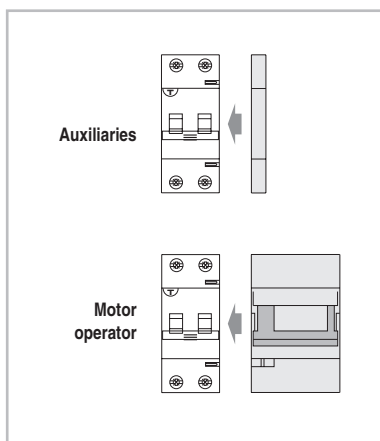
Applications



Approvals / Marking



Add-on devices



- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Panel board switch ● pg A.24
- Motor operator ● pg A.24

- Busbars ● chapter C
- Dimensions ● pg B.13

Performance

Thermal setting In	(A) 4 to 40
Residual current IΔn	(mA) 10, 30, 300
Tripping characteristic	B-C
Rated voltage AC Un	(V) 230
Minimum operating voltage U_{Bmin}	(V) 117
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to	
EN/IEC 60068-2-28/2-30 and DIN 40046	95%RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	Top terminal: 16-25 Bottom terminal: 25-35
Poles	1+N
Nuisance tripping resistance	250A 8/20μs; 200A 0.5μs - 100kHz
Ambient temperature	(°C) Type AC: -5 upto 40 Type A: -25 upto 40
Weight	(g) 250

Short-circuit capacity

According to EN/IEC 61009-1 and EN/IEC 60898-1

Residual making and breaking capacity	I _{Δm} = 6000A
Short-circuit capacity	I _{cn} = 6000A at 230V
Energy limiting class	3

According to IEC 60947-2

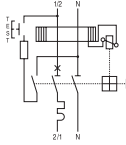
Short-circuit capacity	I _{cu} = 10000A at 230V
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Series HD90 - D90

Resistance to surge currents up to 250A

B Characteristic 1P+N

230V



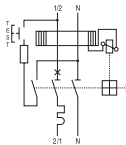
Thermal operating limit: 1.13 - 1.45 x I_n
Magnetic operating limit: 3 - 5 x I_n

Rated current [A]	Rated fault current [mA]	HD90 Type A		D90 Type AC		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	10	HD90 B06/010	604580	D90 B06/010	604642	1
10	10	HD90 B10/010	604581	D90 B10/010	604643	1
13	10	HD90 B13/010	604582	D90 B13/010	604644	1
16	10	HD90 B16/010	604583	D90 B16/010	604645	1
20	10	HD90 B20/010	604584	D90 B20/010	604646	1
6	30	HD90 B06/030	604585	D90 B06/030	604647	1
10	30	HD90 B10/030	604586	D90 B10/030	604648	1
13	30	HD90 B13/030	604587	D90 B13/030	604649	1
16	30	HD90 B16/030	604588	D90 B16/030	604650	1
20	30	HD90 B20/030	604589	D90 B20/030	604651	1
25	30	HD90 B25/030	604590	D90 B25/030	604652	1
32	30	HD90 B32/030	604591	D90 B32/030	604653	1
40	30	HD90 B40/030	604592	D90 B40/030	604654	1
6	300	HD90 B06/300	604601	D90 B06/300	604663	1
10	300	HD90 B10/300	604602	D90 B10/300	604664	1
13	300	HD90 B13/300	604603	D90 B13/300	604665	1
16	300	HD90 B16/300	604604	D90 B16/300	604666	1
20	300	HD90 B20/300	604605	D90 B20/300	604667	1
25	300	HD90 B25/300	604606	D90 B25/300	604668	1
32	300	HD90 B32/300	604607	D90 B32/300	604669	1
40	300	HD90 B40/300	604608	D90 B40/300	604670	1

Resistance to surge currents up to 250A

C Characteristic 1P+N

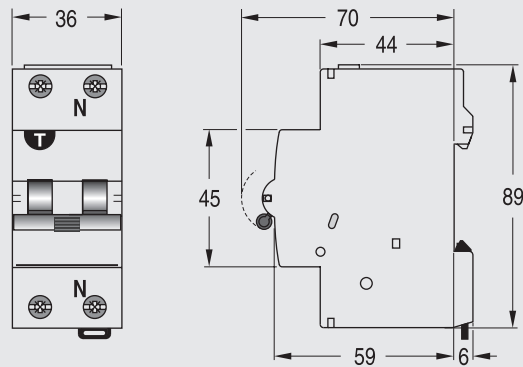
230V

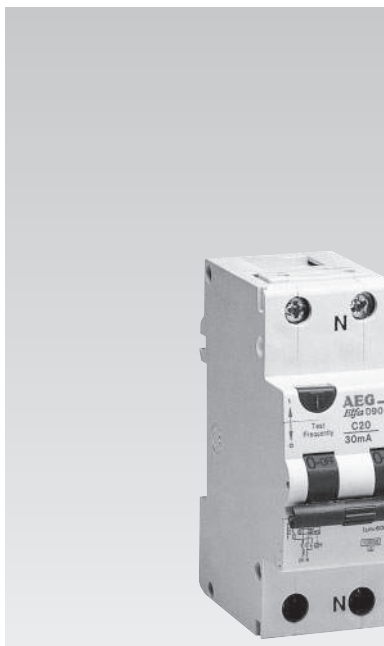


Thermal operating limit: 1.13 - 1.45 x I_n
Magnetic operating limit: 5 - 10 x I_n

4	10	HD90 C04/010	604609	D90 C04/010	604671	1
6	10	HD90 C06/010	604610	D90 C06/010	604672	1
10	10	HD90 C10/010	604611	D90 C10/010	604673	1
13	10	HD90 C13/010	604612	D90 C13/010	604674	1
16	10	HD90 C16/010	604613	D90 C16/010	604675	1
20	10	HD90 C20/010	604614	D90 C20/010	604676	1
4	30	HD90 C04/030	604615	D90 C04/030	604677	1
6	30	HD90 C06/030	604616	D90 C06/030	604678	1
10	30	HD90 C10/030	604617	D90 C10/030	604679	1
13	30	HD90 C13/030	604618	D90 C13/030	604680	1
16	30	HD90 C16/030	604619	D90 C16/030	604681	1
20	30	HD90 C20/030	604620	D90 C20/030	604682	1
25	30	HD90 C25/030	604621	D90 C25/030	604683	1
32	30	HD90 C32/030	604622	D90 C32/030	604684	1
40	30	HD90 C40/030	604623	D90 C40/030	604685	1
4	300	HD90 C04/300	604633	D90 C04/300	604695	1
6	300	HD90 C06/300	604634	D90 C06/300	604696	1
10	300	HD90 C10/300	604635	D90 C10/300	604697	1
13	300	HD90 C13/300	604636	D90 C13/300	604698	1
16	300	HD90 C16/300	604637	D90 C16/300	604699	1
20	300	HD90 C20/300	604638	D90 C20/300	604700	1
25	300	HD90 C25/300	604639	D90 C25/300	604701	1
32	300	HD90 C32/300	604640	D90 C32/300	604702	1
40	300	HD90 C40/300	604641	D90 C40/300	604703	1

Dimensions





RCBOs - Residual current circuit breakers with overcurrent protection

EN/IEC 61009-1 10kA

Series HD90S For pulsating DC and AC fault currents

Series D90S For sinusoidal AC fault currents

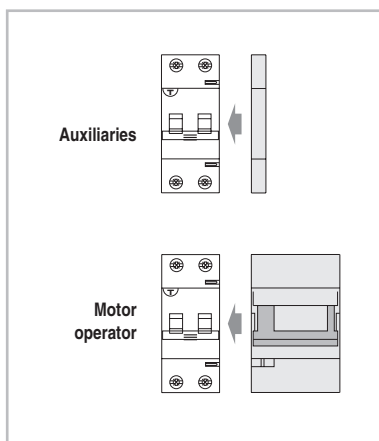
Applications



Approval / Marking



Add-on devices



- Auxiliary contacts ● pg A.24
- Shunt trip ● pg A.24
- Undervoltage release ● pg A.24
- Panel board switch ● pg A.24
- Motor operator ● pg A.24

- Busbars ● chapter C
- Dimensions ● pg B.15

Performance

Thermal setting I_n	(A) 4 to 40
Residual current $I_{\Delta n}$	(mA) 10, 30, 300
Tripping characteristic	B-C
Rated voltage AC U_n	(V) 230
Minimum operating voltage U_{Bmin}	(V) 117
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to	
EN/IEC 60068-2-28/2-30 and DIN 40046	95%RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	Top terminal: 16-25 Bottom terminal: 25-35
Poles	1+N
Nuisance tripping resistance	250A 8/20μs; 200A 0.5μs - 100kHz
Ambient temperature	(°C) Type AC: -5 upto 40 Type A: -25 upto 40
Weight	(g) 250

Short-circuit capacity

According to EN/IEC 61009-1 and EN/IEC 60898-1

Residual making and breaking capacity	$I_{\Delta m} = 6000A$
Short-circuit capacity	$I_{cn} = 10.000A$ at 230V
Selectivity class	3

According to EN/IEC 60947-2

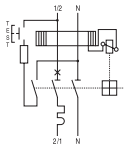
Short-circuit capacity	$I_{cu} = 15.000A$ at 230V
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Series HD90S - D90S

Resistance to surge currents up to 250A

B Characteristic 1P+N

240V



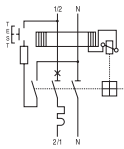
Thermal operating limit: 1.13 - 1.45 x I_n
Magnetic operating limit: 3 - 5 x I_n

Rated current [A]	Rated fault current [mA]	HD90S Type A		D90S Type AC		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	10	HD90SB06/010	604704	D90SB06/010	604766	6
10	10	HD90SB10/010	604705	D90SB10/010	604767	6
13	10	HD90SB13/010	604706	D90SB13/010	604768	6
16	10	HD90SB16/010	604707	D90SB16/010	604769	6
20	10	HD90SB20/010	604708	D90SB20/010	604770	6
6	30	HD90SB06/030	604709	D90SB06/030	604771	6
10	30	HD90SB10/030	604710	D90SB10/030	604772	6
13	30	HD90SB13/030	604711	D90SB13/030	604773	6
16	30	HD90SB16/030	604712	D90SB16/030	604774	6
20	30	HD90SB20/030	604713	D90SB20/030	604775	6
25	30	HD90SB25/030	604714	D90SB25/030	604776	6
32	30	HD90SB32/030	604715	D90SB32/030	604777	6
40	30	HD90SB40/030	604716	D90SB40/030	604778	6
6	100	HD90SB06/100	604717	D90SB06/100	604779	6
10	100	HD90SB10/100	604718	D90SB10/100	604780	6
13	100	HD90SB13/100	604719	D90SB13/100	604781	6
16	100	HD90SB16/100	604720	D90SB16/100	604782	6
20	100	HD90SB20/100	604721	D90SB20/100	604783	6
25	100	HD90SB25/100	604722	D90SB25/100	604784	6
32	100	HD90SB32/100	604723	D90SB32/100	604785	6
40	100	HD90SB40/100	604724	D90SB40/100	604786	6
6	300	HD90SB06/300	604725	D90SB06/300	604787	6
10	300	HD90SB10/300	604726	D90SB10/300	604788	6
13	300	HD90SB13/300	604727	D90SB13/300	604789	6
16	300	HD90SB16/300	604728	D90SB16/300	604790	6
20	300	HD90SB20/300	604729	D90SB20/300	604791	6
25	300	HD90SB25/300	604730	D90SB25/300	604792	6
32	300	HD90SB32/300	604731	D90SB32/300	604793	6
40	300	HD90SB40/300	604732	D90SB40/300	604794	6

Resistance to surge currents up to 250A

C Characteristic 1P+N

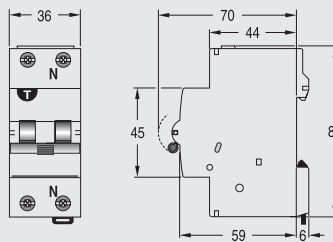
240V



Thermal operating limit: 1.13 - 1.45 x I_n
Magnetic operating limit: 5 - 10 x I_n

4	10	HD90SC04/010	604733	D90SC04/010	604795	6
6	10	HD90SC06/010	604734	D90SC06/010	604796	6
10	10	HD90SC10/010	604735	D90SC10/010	604797	6
13	10	HD90SC13/010	604736	D90SC13/010	604798	6
16	10	HD90SC16/010	604737	D90SC16/010	604799	6
20	10	HD90SC20/010	604738	D90SC20/010	604800	6
4	30	HD90SC04/030	604739	D90SC04/030	604801	6
6	30	HD90SC06/030	604740	D90SC06/030	604802	6
10	30	HD90SC10/030	604741	D90SC10/030	604803	6
13	30	HD90SC13/030	604742	D90SC13/030	604804	6
16	30	HD90SC16/030	604743	D90SC16/030	604805	6
20	30	HD90SC20/030	604744	D90SC20/030	604806	6
25	30	HD90SC25/030	604745	D90SC25/030	604807	6
32	30	HD90SC32/030	604746	D90SC32/030	604808	6
40	30	HD90SC40/030	604747	D90SC40/030	604809	6
4	100	HD90SC04/100	604748	D90SC04/100	604810	6
6	100	HD90SC06/100	604749	D90SC06/100	604811	6
10	100	HD90SC10/100	604750	D90SC10/100	604812	6
13	100	HD90SC13/100	604751	D90SC13/100	604813	6
16	100	HD90SC16/100	604752	D90SC16/100	604814	6
20	100	HD90SC20/100	604753	D90SC20/100	604815	6
25	100	HD90SC25/100	604754	D90SC25/100	604816	6
32	100	HD90SC32/100	604755	D90SC32/100	604817	6
40	100	HD90SC40/100	604756	D90SC40/100	604818	6
4	300	HD90SC04/300	604757	D90SC04/300	604819	6
6	300	HD90SC06/300	604758	D90SC06/300	604820	6
10	300	HD90SC10/300	604759	D90SC10/300	604821	6
13	300	HD90SC13/300	604760	D90SC13/300	604822	6
16	300	HD90SC16/300	604761	D90SC16/300	604823	6
20	300	HD90SC20/300	604762	D90SC20/300	604824	6
25	300	HD90SC25/300	604763	D90SC25/300	604825	6
32	300	HD90SC32/300	604764	D90SC32/300	604826	6
40	300	HD90SC40/300	604765	D90SC40/300	604827	6

Dimensions





RCBOs - Electronic residual current circuit breakers with overcurrent protection

IEC 61009-1 6-10kA

Series DE90 For sinusoidal AC fault currents

Series DE90S For sinusoidal AC fault current

Applications



Marking

CE

Performance

Thermal setting In	(A) 6, 10, 16, 20, 25, 32, 40
Residual current IΔn	(mA) 30
Tripping characteristic	B, C
Rated voltage AC U_n	(V) 265
Minimum operating voltage U_{Bmin}	(V) 195
Mechanical/electrical endurance	20000/10000
Tropicalisation acc. to	
EN/IEC 60068-2-28/2-30	95%RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	Bottom terminal: 16-25
Poles	1+N (1 module)
Nuisance tripping resistance	250A 8/20 μ s
Ambient temperature	(°C) -5 upto 55
Weight	(g) 350

The earth reference cable (FE white) ensures protection against earth leakage in case of loss of supply neutral.

Short-circuit capacity

DE90 according to IEC 61009-1

Residual making and breaking capacity	I Δ m = 6000A
Short-circuit capacity	I _{cn} = 6000A at 240V
Energy limiting class	3

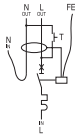
DE90S according to IEC 61009-1

Residual making and breaking capacity	I Δ m = 10.000A
Short-circuit capacity	I _{cn} = 10.000A at 240V
Energy limiting class	3

Dimensions ● pg B.17

Series DE90 - 6 kA

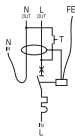
Unswitched neutral
1P+N
Characteristic C



Rated current [A]	Rated fault current [mA]	DE90 Type AC		
		Cat. No.	Ref. No.	Pack.
6	30	DE90 C06/030	604989	1
10	30	DE90 C10/030	604990	1
16	30	DE90 C16/030	604991	1
20	30	DE90 C20/030	604992	1
25	30	DE90 C25/030	604993	1
32	30	DE90 C32/030	604994	1
40	30	DE90 C40/030	604995	1

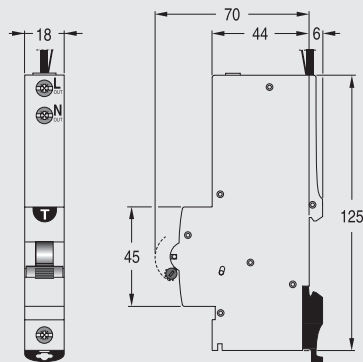
Series DE90S - 10 kA

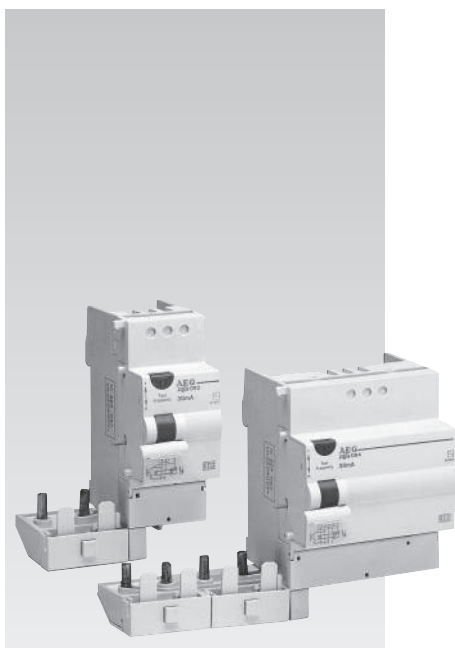
Unswitched neutral
1P+N
Characteristic C



Rated current [A]	Rated fault current [mA]	DE90S Type AC		
		Cat. No.	Ref. No.	Pack.
6	30	DE90S C06/030	604982	1
10	30	DE90S C10/030	604983	1
16	30	DE90S C16/030	604984	1
20	30	DE90S C20/030	604985	1
25	30	DE90S C25/030	604986	1
32	30	DE90S C32/030	604987	1
40	30	DE90S C40/030	604988	1

Dimensions





Add-on residual current circuit breakers

To be added on MCB Series E90

To be added on MCBs Series E880

EN/IEC 61009-1

Series HD92/93/94/95 For pulsating DC and AC fault currents

Series D92/93/94/95 For sinusoidal AC fault currents

Series HDS92/93/94/95 Time delayed trip for pulsating DC and AC fault currents

Series DS92/93/94/95 Time delayed trip for sinusoidal AC fault currents

Applications



Approval / Marking



Performance

Thermal setting I_n	(A) 32, 63
Residual current $I_{\Delta n}$	(mA) 30, 300
Rated voltage AC U_n	(V) 2P: 240/415 4P: 415
Minimum operating voltage U_{Bmin}	(V) 2P: 205 3P: 205 4P: 205
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to EN/IEC 60068-2/3 and DIN 40046	95%RH at 55°C
Terminal capacity flexible/rigid cable (mm²)	2P 32 & 63A: 25-35 4P 32 & 63A 4 mod.: 25-35
Poles	2, 4
Nuisance tripping resistance	Type A, AC: 250A 8/20μs; 200A 0.5μs - 100kHz Type HDS: 3000A 8/20μs
Ambient temperature	(°C) Type AC: -5 up to 55 Type A, HDS: -25 up to 55
Weight	(g) 2P: 250 4P: 340

Short-circuit capacity

Depends on the associated MCB

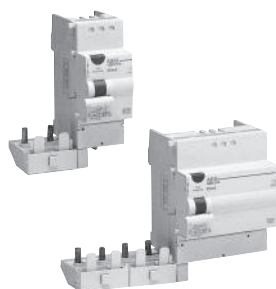
		MCB			
		E90N	E90E	E90	E90S
Residual making and breaking capacity	$I_{\Delta m}$	3000	4500	6000	7500
Short-circuit capacity	I_{cn}	3000	4500	6000	10000

Dimensions ● pg B.19

Series HD92/93/94/95 - D92/93/94/95 - HDS92/93/94/95 - DS92/93/94/95

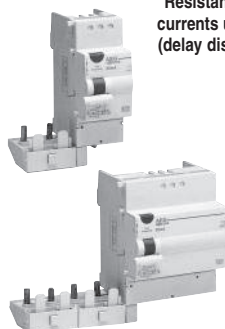
RATED CURRENT 32-63A

Resistance to surge currents up to 250A
2P
 230-400V



4P
 230-400V

Resistance to surge currents up to 3000A (delay disconnected)



4P
 230-400V

4P
 230-400V

Rated current [A]	Rated fault current [mA]	HD92/94/95 Type A		D92/94/95 Type AC		Pack.	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.		
32	30	HD92 32/030	604830	D92 32/030	604848	1	
	300	HD92 32/300	604832	D92 32/300	604850	1	
	30	HD92 63/030	604835	D92 63/030	604853	1	
	300	HD92 63/300	604837	D92 63/300	604855	1	
32 (2 mod.)	30	HD95 32/030	604886	D95 32/030	604895	1	
	300	HD95 32/300	604888	D95 32/300	604897	1	
	30	HD94 32/030	604900	D94 32/030	604918	1	
	300	HD94 32/300	604902	D94 32/300	604920	1	
	30	HD94 63/030	604909	D94 63/030	604923	1	
	300	HD94 63/300	604911	D94 63/300	604925	1	
	HDS92/94/95 Type S						
	32	300	HDS92 32/300	604841	-	-	1
300		HDS92 63/300	604845	-	-	1	
32 (2 mod.)	300	HDS95 32/300	604892	-	-	1	
	300	HDS94 32/300	604906	-	-	1	
	300	HDS94 63/300	604915	-	-	1	
32 (2 mod.)	500	HDS95 32/500	604893	-	-	1	
	500	HDS94 32/500	604907	-	-	1	
	500	HDS94 63/500	604916	-	-	1	

RATED CURRENT 125A

2P

3P

4P

Delay disconnected

2P

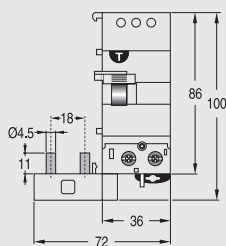
3P

4P

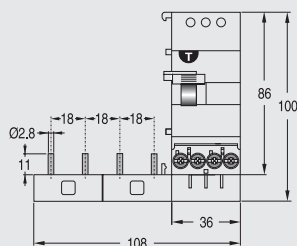
Rated current [A]	Rated fault current [mA]	HD92/93/94 Type A		D92/93/94 Type AC		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	
125	30	HD92 125/030	676675	D92 125/030	676676	1
	300	HD92 125/300	676677	D92 125/300	676678	1
125	30	HD93 125/030	676681	D93 125/030	676682	1
	300	HD93 125/300	676683	D93 125/300	676684	1
125	30	HD94 125/030	676689	D94 125/030	676690	1
	300	HD94 125/300	676691	D94 125/300	676692	1
HDS92/93/94 Type A DS92/93/94 Type AC						
125	300	HDS92 125/300	676679	DS92 125/300	676680	1
	300	HDS93 125/300	676685	DS93 125/300	676686	1
125	1000	HDS93 125/1000	676687	DS93 125/1000	676688	1
	1000	HDS94 125/300	676693	DS94 125/300	676694	1
125	1000	HDS94 125/1000	676695	DS94 125/1000	676696	1

Dimensions

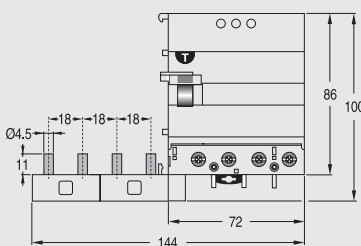
2 Poles 32-63A



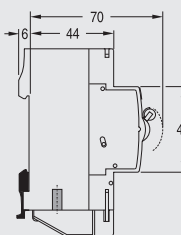
4 Poles 32A



4 Poles 63A



2/4 Poles 32-63A





Compact 2P RCBOs

Residual Current Circuit Breaker with Overcurrent Protection

2 poles in 2 modules

Series HDC90E

For pulsating DC and AC fault currents

Series DC90E

For sinusoidal AC fault currents

EN / IEC 61009-1

4.5kA

Type A



Type AC



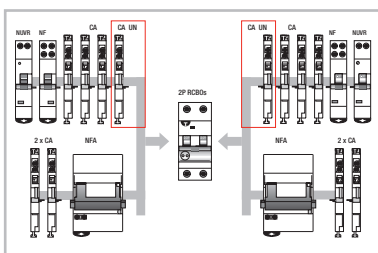
Applications



Approvals / Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if NFA needs to trip the 2P RCBO.
If the RCBO is used only to reconnect, the interface is not needed.

- CA UN ● A.45
- Auxiliary contacts ● A.24
- Shunt trip ● A.24
- Under voltage release ● A.24
- Motor operator ● A.24

Performance

Thermal setting In	(A) 6-40
Residual current I Δ n	(mA) 30, 300
Tripping characteristics	C
Rated voltage AC Un	(V) 230
Minimum operating voltage U _b min.	(V) 117 ⁽¹⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	55°C/95%
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2
Nuisance tripping resistance	(A) 250
Ambient temperature	(°C) Type A: -25 up to 60 Type AC: -5 up to 60
Weight / mod.	(g) 110

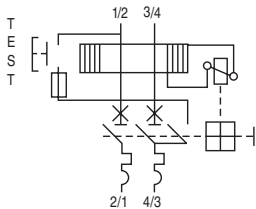
Short-circuit capacity

Acc. to EN/IEC 61009-1

Residual making and breaking capacity	I Δ m = 4500A
Energy limiting class	3
Short-circuit capacity	I _{cn} = 4500A at 230V

(1) U_bmin = 150V for 30mA

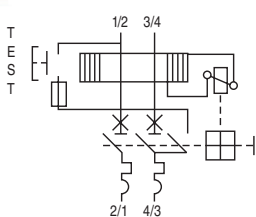
Compact RCBOs



Series HDC90E - Type A - characteristic C

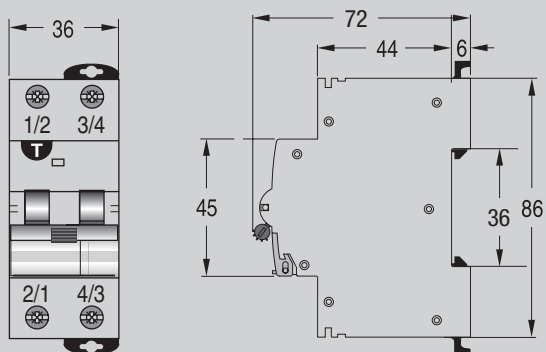
In (A)	10mA		30 mA		300 mA		Pack
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
6	-	-	HDC90EC06/030	607880	HDC90EC06/300	607888	1/6
10	-	-	HDC90EC10/030	607881	HDC90EC10/300	607889	1/6
13	-	-	HDC90EC13/030	607882	HDC90EC13/300	607890	1/6
16	-	-	HDC90EC16/030	607883	HDC90EC16/300	607891	1/6
20	-	-	HDC90EC20/030	607884	HDC90EC20/300	607892	1/6
25	-	-	HDC90EC25/030	607885	HDC90EC25/300	607893	1/6
32	-	-	HDC90EC32/030	607886	HDC90EC32/300	607894	1/6
40	-	-	HDC90EC40/030	607887	HDC90EC40/300	607895	1/6

Series DC90E - Type AC - characteristic C



6	-	-	DC90EC06/030	607896	DC90EC06/300	607904	1/6
10	-	-	DC90EC10/030	607897	DC90EC10/300	607905	1/6
13	-	-	DC90EC13/030	607898	DC90EC13/300	607906	1/6
16	-	-	DC90EC16/030	607899	DC90EC16/300	607907	1/6
20	-	-	DC90EC20/030	607900	DC90EC20/300	607908	1/6
25	-	-	DC90EC25/030	607901	DC90EC25/300	607909	1/6
32	-	-	DC90EC32/030	607902	DC90EC32/300	607910	1/6
40	-	-	DC90EC40/030	607903	DC90EC40/300	607911	1/6

Dimensions





Compact 2P RCBOs

Residual Current Circuit Breaker with Overcurrent Protection

2 poles in 2 modules

Series HDC90

For pulsating DC and AC fault currents

Series DC90

For sinusoidal AC fault currents

EN / IEC 61009-1

6kA

Type A



Type AC



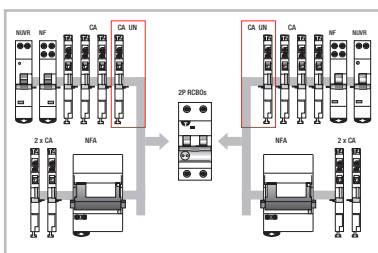
Applications



Approvals / Marking



Add-on devices



The auxiliary contact CA UN is needed as interface if NFA needs to trip the 2P RCBO.
If the RCBO is used only to reconnect, the interface is not needed.

Performance

Thermal setting In	(A) 6-40
Residual current $I_{\Delta n}$	(mA) 10, 30, 300
Tripping characteristics	B, C
Rated voltage AC Un	(V) 230
Minimum operating voltage U_b min.	(V) 117 ⁽¹⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	55°C/95%
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2
Nuisance tripping resistance	(A) 250
Ambient temperature	(°C) Type A: -25 up to 60 Type AC: -5 up to 60
Weight / mod.	(g) 110

Short-circuit capacity

Acc. to EN/IEC 61009-1

Residual making and breaking capacity	$I_{\Delta m} = 6000A$
Energy limiting class	3
Short-circuit capacity	$I_{cn} = 6000A$ at 230V

(1) $U_{bmin} = 150V$ for 30mA

- CA UN ● A.45
- Auxiliary contacts ● A.24
- Shunt trip ● A.24
- Under voltage release ● A.24
- Motor operator ● A.24
- Dimensions ● B.21

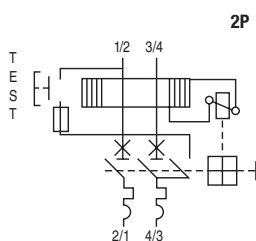
Compact RCBOs



Series HDC90 - Type A - characteristic B

In (A)	10mA		30 mA		300 mA		Pack
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.	
2P 6	-	-	HDC90B06/030	607915	HDC90B06/300	607923	1/6
10	HDC90B10/010	607912	HDC90B10/030	607916	HDC90B10/300	607924	1/6
13	HDC90B13/010	607913	HDC90B13/030	607917	HDC90B13/300	607925	1/6
16	HDC90B16/010	607914	HDC90B16/030	607918	HDC90B16/300	607926	1/6
20	-	-	HDC90B20/030	607919	HDC90B20/300	607927	1/6
25	-	-	HDC90B25/030	607920	HDC90B25/300	607928	1/6
32	-	-	HDC90B32/030	607921	HDC90B32/300	607929	1/6
40	-	-	HDC90B40/030	607922	HDC90B40/300	607930	1/6

Series HDC90 - Type A - characteristic C



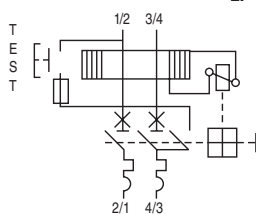
2P 6	-	-	HDC90C06/030	607934	HDC90C06/300	608193	1/6
10	HDC90C10/010	607931	HDC90C10/030	607935	HDC90C10/300	608194	1/6
13	HDC90C13/010	607932	HDC90C13/030	607936	HDC90C13/300	608195	1/6
16	HDC90C16/010	607933	HDC90C16/030	608188	HDC90C16/300	608196	1/6
20	-	-	HDC90C20/030	608189	HDC90C20/300	608197	1/6
25	-	-	HDC90C25/030	608190	HDC90C25/300	608198	1/6
32	-	-	HDC90C32/030	608191	HDC90C32/300	608199	1/6
40	-	-	HDC90C40/030	608192	HDC90C40/300	608200	1/6

Series DC90 - Type AC - characteristic B



2P 6	-	-	DC90B06/030	608204	DC90B06/300	608212	1/6
10	DC90B10/010	608201	DC90B10/030	608205	DC90B10/300	608213	1/6
13	DC90B13/010	608202	DC90B13/030	608206	DC90B13/300	608214	1/6
16	DC90B16/010	608203	DC90B16/030	608207	DC90B16/300	608215	1/6
20	-	-	DC90B20/030	608208	DC90B20/300	608216	1/6
25	-	-	DC90B25/030	608209	DC90B25/300	608217	1/6
32	-	-	DC90B32/030	608210	DC90B32/300	608218	1/6
40	-	-	DC90B40/030	608211	DC90B40/300	608219	1/6

Series DC90 - Type AC - characteristic C



2P 6	-	-	DC90C06/030	608223	DC90C06/300	608231	1/6
10	DC90C10/010	608220	DC90C10/030	608224	DC90C10/300	608232	1/6
13	DC90C13/010	608221	DC90C13/030	608225	DC90C13/300	608233	1/6
16	DC90C16/010	608222	DC90C16/030	608226	DC90C16/300	608234	1/6
20	-	-	DC90C20/030	608227	DC90C20/300	608235	1/6
25	-	-	DC90C25/030	608228	DC90C25/300	608236	1/6
32	-	-	DC90C32/030	608229	DC90C32/300	608237	1/6
40	-	-	DC90C40/030	608230	DC90C40/300	608238	1/6

Series HDC/DC90

B



Compact 2P RCBOs

Residual Current Circuit Breaker with Overcurrent Protection

2 poles in 2 modules

Series HDC90S

For pulsating DC and AC fault currents

Series DC90S

For sinusoidal AC fault currents

EN / IEC 61009-1

10kA

Type A



Type AC



Applications

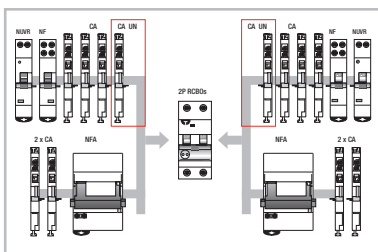


Approvals / Marking



(1) Lloyd's register
(2) RINA

Add-on devices



The auxiliary contact CA UN is needed as interface if NFA needs to trip the 2P RCBO.
If the RCBO is used only to reconnect, the interface is not needed.

- CA UN ● A.45
- Auxiliary contacts ● A.24
- Shunt trip ● A.24
- Under voltage release ● A.24
- Motor operator ● A.24
- Dimensions ● B.21

Performance

Thermal setting In	(A) 6-40
Residual current $I_{\Delta n}$	(mA) 10, 30, 300
Tripping characteristics	B ⁽¹⁾ -C ⁽¹⁾
Rated voltage AC Un	(V) 230
Minimum operating voltage U_b min.	(V) 117 ⁽²⁾
Mechanical / electrical endurance	10000/20000
Tropicalisation acc. to EN/IEC 60068-2	55°C/95%
Terminal capacity flexible / rigid cable	(mm ²) 25/35
Poles	2
Nuisance tripping resistance	(A) 250
Ambient temperature	(°C) Type A: -25 up to 60 Type AC: -5 up to 60
Weight / mod.	(g) 110

(1) Additional to traditional B and C curves, specials ones focused in Norwegian standards for 10A, 13A, 16A, 20A

(2) $U_{bmin} = 150V$ for 30mA

Short-circuit capacity

Acc. to EN/IEC 61009-1

Residual making and breaking capacity	$I_{\Delta m} = 6000A$
Energy limiting class	3
Short-circuit capacity	$I_{cn} = 10000A$ at 230V

Compact RCBOs

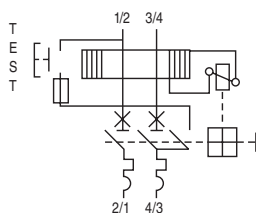


Series HDC90S - Type A - characteristic B

In (A)	10mA		30 mA		300 mA		Pack	
	Cat. no.	Ref. no.	Cat. no.	Ref. no.	Cat. no.	Ref. no.		
2P	6	-	-	HDC90SB06/030	608242	HDC90SB06/300	608254	1/6
	10	HDC90SB10/010	608239	HDC90SB10/030	608243	HDC90SB10/300	608255	1/6
	13	HDC90SB13/010	608240	HDC90SB13/030	608244	HDC90SB13/300	608256	1/6
	16	HDC90SB16/010	608241	HDC90SB16/030	608245	HDC90SB16/300	608257	1/6
	20	-	-	HDC90SB20/030	608246	HDC90SB20/300	608258	1/6
	10	-	-	HDC90SB10/030	608247 ⁽¹⁾	-	-	1/6
	13	-	-	HDC90SB13/030	608248 ⁽¹⁾	-	-	1/6
	16	-	-	HDC90SB16/030	608249 ⁽¹⁾	-	-	1/6
	20	-	-	HDC90SB20/030	608250 ⁽¹⁾	-	-	1/6
	25	-	-	HDC90SB25/030	608251	HDC90SB25/300	608259	1/6
	32	-	-	HDC90SB32/030	608252	HDC90SB32/300	608260	1/6
	40	-	-	HDC90SB40/030	608253	HDC90SB40/300	608261	1/6

Series HDC90S - Type A - characteristic C

2P	6	-	-	HDC90SC06/030	608265	HDC90SC06/300	606451	1/6
	10	HDC90SC10/010	608262	HDC90SC10/030	608266	HDC90SC10/300	606452	1/6
	13	HDC90SC13/010	608263	HDC90SC13/030	606441	HDC90SC13/300	606453	1/6
	16	HDC90SC16/010	608264	HDC90SC16/030	606442	HDC90SC16/300	606454	1/6
	20	-	-	HDC90SC20/030	606443	HDC90SC20/300	606455	1/6
	10	-	-	HDC90SC10/030	606444 ⁽¹⁾	-	-	1/6
	13	-	-	HDC90SC13/030	606445 ⁽¹⁾	-	-	1/6
	16	-	-	HDC90SC16/030	606446 ⁽¹⁾	-	-	1/6
	20	-	-	HDC90SC20/030	606447 ⁽¹⁾	-	-	1/6
	25	-	-	HDC90SC25/030	606448	HDC90SC25/300	606456	1/6
	32	-	-	HDC90SC32/030	606449	HDC90SC32/300	606457	1/6
	40	-	-	HDC90SC40/030	606450	HDC90SC40/300	606458	1/6



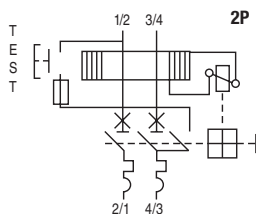
Series DC90S - Type AC - characteristic B

2P	6	-	-	DC90SB06/030	606462	DC90SB06/300	606470	1/6
	10	DC90SB10/010	606459	DC90SB10/030	606463	DC90SB10/300	606471	1/6
	13	DC90SB13/010	606460	DC90SB13/030	606464	DC90SB13/300	606472	1/6
	16	DC90SB16/010	606461	DC90SB16/030	606465	DC90SB16/300	606473	1/6
	20	-	-	DC90SB20/030	606466	DC90SB20/300	606474	1/6
	25	-	-	DC90SB25/030	606467	DC90SB25/300	606475	1/6
	32	-	-	DC90SB32/030	606468	DC90SB32/300	606476	1/6
	40	-	-	DC90SB40/030	606469	DC90SB40/300	606477	1/6



Series DC90S - Type AC - characteristic C

2P	6	-	-	DC90SC06/030	606481	DC90SC06/300	606489	1/6
	10	DC90SC10/010	606478	DC90SC10/030	606482	DC90SC10/300	606490	1/6
	13	DC90SC13/010	606479	DC90SC13/030	606483	DC90SC13/300	606491	1/6
	16	DC90SC16/010	606480	DC90SC16/030	606484	DC90SC16/300	606492	1/6
	20	-	-	DC90SC20/030	606485	DC90SC20/300	606493	1/6
	25	-	-	DC90SC25/030	606486	DC90SC25/300	606494	1/6
	32	-	-	DC90SC32/030	606487	DC90SC32/300	606495	1/6
	40	-	-	DC90SC40/030	606488	DC90SC40/300	606496	1/6



(1) Special thermal tripping curves for Norway

Technical data - Compact 2P RCBOs

Series		HDC/DC90E	HDC/DC90	HDC/DC90S
Standards		EN 61009-1 Ed. 2012	EN 61009-1 Ed. 2012	EN 61009-1 Ed. 2012
Magnetic tripping characteristics		C	B,C	B,C
Residual tripping characteristics		A, AC	A, AC	A, AC
Tripping time at I Δ n Instantaneous	ms	<60	<60	<60
Rated current	A	6-40	6-40	6-40
Rated residual current (I Δ n)	mA	30, 300	10, 30, 300	10, 30, 300
Earth leakage tripping indicator: blue flag		yes	yes	yes
Calibration temperature	°C	30	30	30
Number of poles (# mod.)		2P (2 mod.)	2P (2 mod.)	2P (2 mod.)
Rated voltage Un AC 2P	V	230	230	230
Frequency	Hz	50	50	50
Maximum service voltage Ub max	V	265	265	265
Minimum service voltage Ub min	V	117 ⁽²⁾	117 ⁽²⁾	117 ⁽²⁾
Minimum voltage for leakage protection	V	Voltage independent	Voltage independent	Voltage independent
Power supply		top/bottom	top/bottom	top/bottom
Energy limiting class		3	3	3
Residual making and breaking capacity (I Δ m)	A	4500	6000	6000
Rated short-circuit capacity (Icn)	A	4500	6000	10000
Grid distance (safety distance between two devices)	mm	35	35	60
Isolator application		yes	yes	yes
Insulation degree				
Insulation voltage	V(DC)	440	440	440
Test shock voltage 1.2/50us	kV	6	6	6
Insulation resistance	Mohm	1000	1000	1000
Dielectric strength	V	2500	2500	2500
Shock resistance in x, y, z direction (EN/IEC 60077/16.3)		40g, 18 shocks 5 ms	40g, 18 shocks 5 ms	40g, 18 shocks 5 ms
Vibration resistance in x, y, z direction (EN/IEC 60068-2-6)		1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz	1.5g, 30 min, 0...80Hz
Endurance	Electrical at Un, In Mechanical	10000 20000	10000 20000	10000 20000
Protection degree (EN 60529) (outside/inside electrical enclosure with door)		IP20/IP40	IP20/IP40	IP20/IP40
Self extinguish degree (UL94)		V2	V2	V2
Tropicalisation (EN/IEC 60068-2, DIN 40046)	°C/RH	55°C/95%	55°C/95%	55°C/95%
Pollution degree (EN/IEC 60947-1)		3	3	3
Operating temperature	°C	-25 up to +60 (-5°C type AC)	-25 up to +60 (-5°C type AC)	-25 up to +60 (-5°C type AC)
Storage temperature	°C	-25 up to +70	-25 up to +70	-25 up to +70
Terminal capacity				
Rigid cable Min./Max. (top)	mm ²	1/35	1/35	1/35
Flexible cable Min./Max. (top)	mm ²	1/25	1/25	1/25
Rigid cable Min./Max. (bottom)	mm ²	1/35	1/35	1/35
Flexible cable Min./Max. (bottom)	mm ²	1/25	1/25	1/25
Torque top/bottom (max.)	Nm	4	4	4
Add-on devices (side add-on)				
Auxiliary contacts		yes	yes	yes
Remote release NF		yes ⁽¹⁾	yes ⁽¹⁾	yes ⁽¹⁾
Undervoltage trip NUVR		yes ⁽¹⁾	yes ⁽¹⁾	yes ⁽¹⁾
Remote drive NFA		yes ⁽¹⁾	yes ⁽¹⁾	yes ⁽¹⁾
Panel board switch NLVS		yes ⁽¹⁾	yes ⁽¹⁾	yes ⁽¹⁾
Maximum add-on combinations (per side)		4x CA + 1x TeleL + 1x Tele U	4x CA + 1x TeleL + 1x Tele U	4x CA + 1x TeleL + 1x Tele U
TeleREC Plus		in development	in development	in development
Busbar systems	Pin (top/bottom) Fork (top/bottom)	yes/yes yes/yes	yes/yes yes/yes	yes/yes yes/yes
Accessories		yes	yes	yes
Width per mod.	mm	18	18	18
Weight per mod.	gr	110	110	110
Package	pcs	1/6	1/6	1/6
Approvals		IMQ	NF, CEBC, KEMA, IMQ, VDE	NF, CEBC, KEMA, IMQ, VDE, LR, RINA
CE- marking		yes	yes	yes
Page		B.20	B.22	B.24

(1) Requires CA auxiliary contact as interface

(2) Ubmin = 150V for 30mA

Short-circuit capacity - Compact 2P RCB0s				
Series		HDC/DC90E	HDC/DC90	HDC/DC90S
Short-circuit capacity (Icn) at 230Vac (EN/IEC 61009-1)	A	4500	6000	10000
Service short-circuit capacity (Ics)	kA	4.5	6	7.5
Rated short-circuit capacity (Icu) acc. EN/IEC 60947-2	kA	4.5	6	10



Screwless RCCBs

Residual current circuit breakers

EN/IEC 61008-1

Type A



Type S



Series EHFIP
Series ESHFIP

With wireless plug-in connection

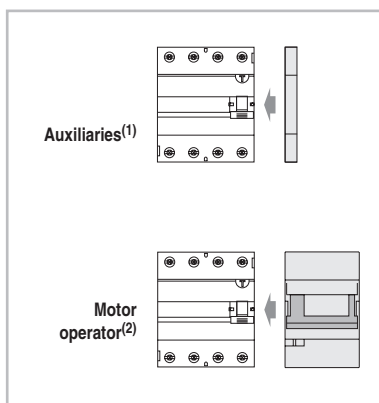
Applications



Approval / Marking



Add-on devices



(1) Series H, SH, NF, NUVR, NFA

(2) Only at right side end of the extreme pin busbar

- Auxiliary contacts ● pg A.24
- Motor operator ● pg A.24
- Other auxiliary ● pg A.24
- Technical data ● pg B.22

- Busbars ● chapter C
- Dimensions ● pg B.29

Performance



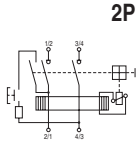
Thermal setting I_n	(A) 25, 40, 63
Residual current $I_{\Delta n}$	(mA) 30, 100, 300
Rated voltage AC U_n	(V) 2P: 240 4P: 415
Minimum operating voltage U_{Bmin}	(V) 2P: 117 4P: 205
Mechanical/electrical endurance	20000/10000
Tropicalisation acc.to	95%RH at 55°C
EN/IEC 60068-2-28/2-30 and DIN 40046	
Terminal capacity flexible/rigid cable (mm²)	35-50
Poles	2, 4
Nuisance tripping resistance	Type A Type S
Ambient temperature	(°C) -25 ... +50
Weight	(g) 2P: 248 4P: 364

Short-circuit capacity

Acc. EN/IEC 61008-1	
Making and breaking capacity	$I_m = 500A$ from 16 up to 40A $I_m = 10I_n$ from 63 up to 100A
Residual making and breaking capacity	$I_{\Delta m} = 500A$ from 16 up to 40A $I_{\Delta m} = 10I_n$ from 63 up to 100A
Short-circuit capacity	$I_{nc} = 10000A$ at 240/415V fuse 80A gG

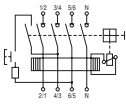
Plug-in

Serie EHFIP - Type A 



2P

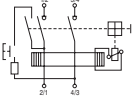
In (A)	30 mA			100 mA		300 mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
25	EHFIP25/030-2	678589	EHFIP25/100-2	678595	EHFIP25/300-2	678601	6	
40	EHFIP40/030-2	678590	EHFIP40/100-2	678596	EHFIP40/300-2	678602	6	
63	EHFIP63/030-2	678591	EHFIP63/100-2	678597	EHFIP63/300-2	678603	6	



4P

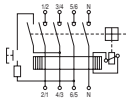
25	EHFIP25/030-4	678592	EHFIP25/100-4	678598	EHFIP25/300-4	678604	3
40	EHFIP40/030-4	678593	EHFIP40/100-4	678599	EHFIP40/300-4	678605	3
63	EHFIP63/030-4	678594	EHFIP63/100-4	678600	EHFIP63/300-4	678606	3

Serie ESHFIP - Type S  



2P

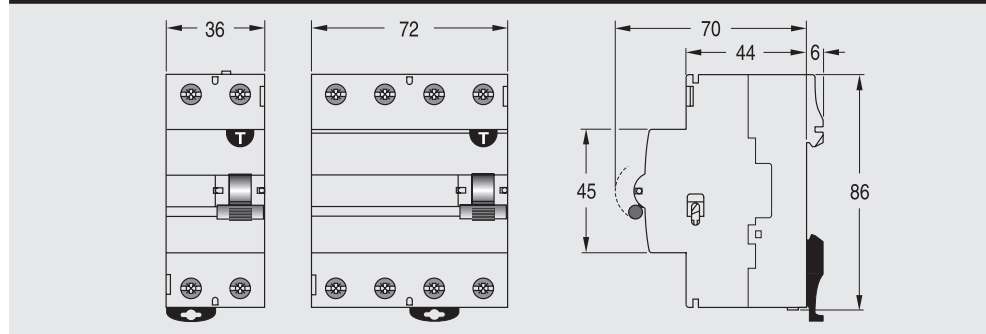
In (A)	Cat. No.	Ref. No.	Cat. No.	Ref. No.	300 mA		Pack.
					Cat. No.	Ref. No.	
40					ESHFIP40/300-2	678607	6
63					ESHFIP63/300-2	678608	6



4P

40					ESHFIP40/300-4	678609	3
63					ESHFIP63/300-4	678610	3

Dimensions



Technical data of screwless plug-in RCCBs - Fixwell™

Series			EHFIP, ESHFIP
Standards			EN 61008-1
Residual tripping characteristic			A, S
Tripping time at I Δ n	Instantaneous	(ms)	<40
	Selective	(ms)	>150
Rated current ⁽¹⁾		(A)	25, 40, 63
Rated residual current (I Δ n)		(mA)	30, 100, 300
Calibration temperature		(°C)	30
Number of poles versus modules			1
Rated voltage (Un)	2P AC	(V)	240
	4P AC	(V)	415
Frequency		(Hz)	50/60
Maximum service voltage (U _{bmax})		(V)	2P=265 / 4P=455
Minimum service voltage (U _{bmin})		(V)	2P=117 / 4P=205
Power supply			Top/Bottom
Rated making and breaking capacity (Im)		(A)	500 (or 10xIn)
Residual making and breaking capacity (I Δ m)		(A)	500 (or 10xIn)
Conditional short-circuit capacity (Inc)		(A)	10000 fuse 100A
Conditional residual short-circuit capacity (I Δ c)		(A)	10000
Isolator application			yes
Insulation degree	Insulation voltage	(V (DC))	500
	Shock voltage (1,2/50ms)	(kV)	8
	Insulation resistance	(M Ω)	1000
	Dielectric strength	(V)	2500
Shock resistance in x, y, z direction (EN/IEC 60077/16.3)			40g, 18 shocks 5 ms
Vibration resistance in x, y, z direction (EN/IEC 60068-2-6)			1.5g, 30 min, 0...80Hz
Endurance	Electrical at Un, In		10000
	Mechanical at Un, In		20000
Protection degree (outside/inside electrical enclosure)			IP20 / IP40
Self extinguish degree (acc. to UL94)			V2
Tropicalisation (EN/IEC 60068-2, DIN 40046)		(°C/RH)	+55/95%
Pollution degree (EN/IEC 60947-1)			3
Operating temperature ⁽²⁾			-25...+60
Storage temperature		(°C)	-25...+70
Terminal capacity			see page B.31
Add-on devices (side add-on)	Auxiliary contacts CA		yes
	Remote release NF		yes
	Undervoltage trip NUVR		yes
	Remote drive NFA		
	Panel board switch NLVS		yes
Busbar system bottom	Pin		yes
	Fork		no
Accessories			yes
Dimensions, weights, packaging	# Poles		2/4
	(HxDxW) 2P/4P	(mm)	88x68x36/73,2
	Weight	(g)	2P=248 / 4P=364
	Package		2P=1/6 / 4P=1/3
Approvals			VDE
CE-marking			yes

(1) Rating current derating as usual in function of installation conditions.

(2) With plug-in busbar: -25/+50°C

(3) With plug-in busbar only at **right extreme side** of each row. No pin busbars let through allowed.

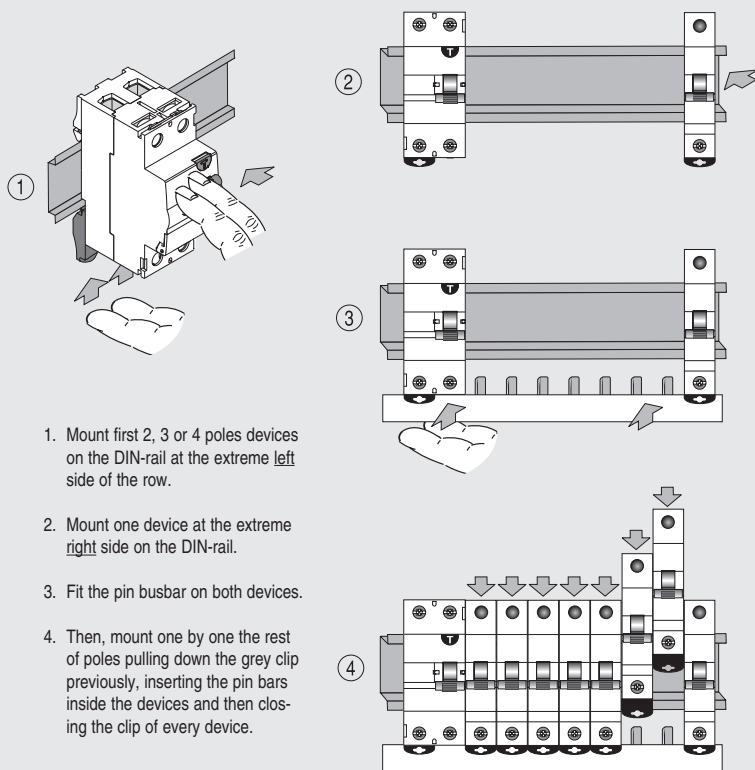
Terminal capacity of plug-in RCCBs

Top terminals		
Ratings 25A, 40A and 63A:		
Cage terminals		
Rigid cable (min/max)	mm ²	1.5/50
Flexible cable (min/max)	mm ²	1.5/35
Recommended torque	Nm	2.5
Maximum torque	Nm	5

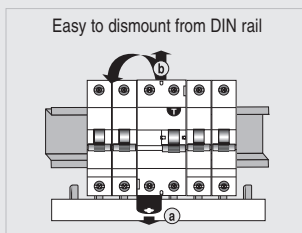
Bottom terminals			Pin busbar specifications
Ratings 25A, 40A and 63A:		Ratings 25A, 40A and 63A:	
Cage terminals ⁽¹⁾		Flat plug-in terminals ⁽²⁾	
Rigid cable (min/max)	mm ²	1/25	
Flexible cable (min/max)	mm ²	0.75/16	
Recommended torque	Nm	2.5	
Maximum torque	Nm	4.5	
		To insert AEG pin busbars, or other brands under following dimensions: Length = 11.5 ± 0.2mm Width = 4 ± 0.2 mm Thickness = 1.5 ± 0.05 mm Corners min. radius = 0.3 mm	

- (1) Bottom terminals provide a cage terminal to connect also cables to feed other rows /devices limited to rated current of the device.
 (2) Plug-in window terminals are only foreseen for pin busbars providing the incoming to several devices from the bottom side.
 Not intended for any other conductor with or without cable lugs or cable connectors.

How to mount the busbar into devices



1. Mount first 2, 3 or 4 poles devices on the DIN-rail at the extreme left side of the row.
2. Mount one device at the extreme right side on the DIN-rail.
3. Fit the pin busbar on both devices.
4. Then, mount one by one the rest of poles pulling down the grey clip previously, inserting the pin bars inside the devices and then closing the clip of every device.

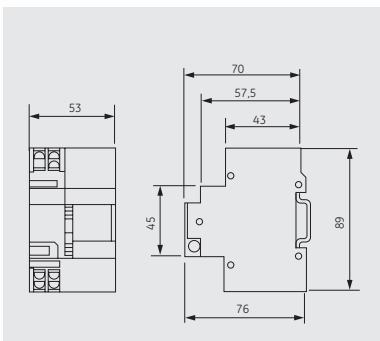




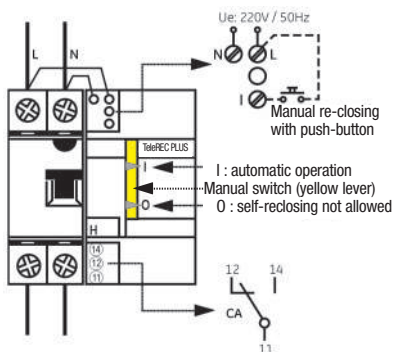
Applications



Dimensional drawings



Electrical diagram



Reconnection relays

RCCBs EN/IEC 61008-1

Type A



Type S

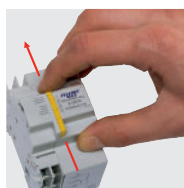


TeleREC

Performance

Dimensions	3 modules
Unom.	(Vac) 220/240
Frequency	(Hz) 50-60
Reclose attempts	6
Time intervals between re-close attempts	(sec) 10, 20, 30, 60, 120, 600
Security lock	Yellow safety lever
Status indication	Through voltage free output
	(Imax.) 2A (250V or 24Vdc)
	(Imin.) 20mA
Manual reclosing	Through external reset push-button

Characteristics



Status indicator

The yellow lever clearly indicates the status of the TeleREC.
In position 1 the relay is ready to work, in position 0 the relay is blocked both electrically and mechanically.



Easy connection

The RCCB toggle slides easily into the toggle actuator of the relay.



One fits all

Both 2 modules and 4 modules RCCBs can be connected to the reconnection relay TeleREC.

For the commercial/industrial market

Series TeleREC PLUS



Reconnection relay

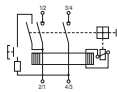
In (A)	Cat. No.	Ref. No.	Pack.
-	Tele REC PLUS Motor	677144	1

+ The reconnection relay TeleREC PLUS can be easily coupled to any RCCB:

Series EFI - Type AC

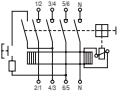


2P
Type AC



In (A)	10*/30mA		100mA		300mA		500mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
16	EFI16/010-2	604446	-	-	-	-	-	-	6
25	DFI25/030-2	607130	EFI25/100-2	604455	DFI25/300-2	607132	DFI25/300-2	604468	6
40	DFI40/030-2	607131	EFI40/100-2	604456	DFI40/300-2	607133	DFI40/300-2	604469	6
63	EFI63/030-2	604449	EFI63/100-2	604457	EFI63/300-2	604465	EFI63/300-2	604470	6
80	EFI80/030-2	604450	EFI80/100-2	604458	EFI80/300-2	604466	EFI80/300-2	604471	6
100	EFI100/030-2	604451	EFI100/100-2	604459	EFI100/300-2	604467	EFI100/300-2	604472	6

4P
Type AC

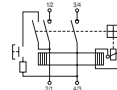


25	EFI25/030-4		EFI25/100-4		EFI25/300-4		EFI25/500-4		3
40	EFI40/030-4		EFI40/100-4		EFI40/300-4		EFI40/500-4		3
63	EFI63/030-4		EFI63/100-4		EFI63/300-4		EFI63/500-4		3
80	EFI80/030-4		EFI80/100-4		EFI80/300-4		EFI80/500-4		3
100	EFI100/030-4		EFI100/100-4		EFI100/300-4		EFI100/500-4		3

Series EHF1 - Type A

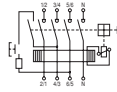


2P
Type A



In (A)	10*/30mA		100mA		300mA		500mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
16	EHF16/010-2	604941	-	-	-	-	-	-	6
25	EHF25/030-2	604942	EHF25/100-2	604947	EHF25/300-2	604416	EHF25/500-2	604426	6
40	EHF40/030-2	604943	EHF40/100-2	604948	EHF40/300-2	604417	EHF40/500-2	604427	6
63	EHF63/030-2	604944	EHF63/100-2	604949	EHF63/300-2	604418	EHF63/500-2	604428	6
80	EHF80/030-2	604945	EHF80/100-2	604950	EHF80/300-2	604419	EHF80/500-2	604429	6
100	EHF100/030-2	604946	EHF100/100-2	604951	EHF100/300-2	604420	EHF100/500-2	604430	6

4P
Type A

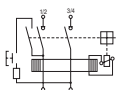


25	EHF25/030-4	604478	EHF25/100-4	604483	EHF25/300-4	604493	EHF25/500-4	604503	3
40	EHF40/030-4	604479	EHF40/100-4	604484	EHF40/300-4	604494	EHF40/500-4	604504	3
63	EHF63/030-4	604480	EHF63/100-4	604485	EHF63/300-4	604495	EHF63/500-4	604505	3
80	EHF80/030-4	604481	EHF80/100-4	604486	EHF80/300-4	604496	EHF80/500-4	604506	3
100	EHF100/030-4	604482	EHF100/100-4	604487	EHF100/300-4	604497	EHF100/500-4	604507	3

Series ESHF1 - Type S

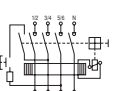


2P
Type S



In (A)	300mA		500mA		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
40	ESHF140/300-2	604422	ESHF140/500-2	604432	6
63	ESHF163/300-2	604423	ESHF163/500-2	604433	6
80	ESHF180/300-2	604424	ESHF180/500-2	604434	6
100	ESHF100/300-2	604425	ESHF100/500-2	604435	6

4P
Type A



40	ESHF140/300-4	604499	ESHF140/500-4	604509	3
63	ESHF163/300-4	604500	ESHF163/500-4	604510	3
80	ESHF180/300-4	604501	ESHF180/500-4	604511	3
100	ESHF100/300-4	604502	ESHF100/500-4	604512	3

*On request: 1000 mA

Electrical diagram see page B.29

For the residential/commercial market

Series TeleREC BASIC - Type AC

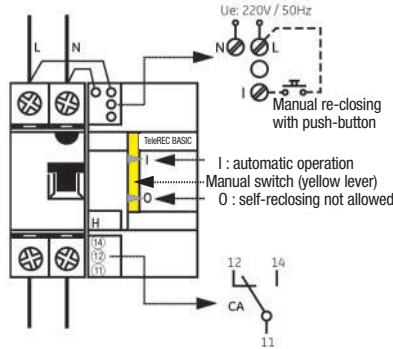


2P
Type AC

4P
Type AC

In (A)	30 mA		Pack.
	Cat. No.	Ref. No.	
40	Tele REC BASIC 240/030	677147	1
40	Tele REC BASIC 440/030	677148	1

Electrical diagram



The complete solution in **only one device**:

- Total protection against person's indirect contacts.
- Safe reconnection of RCCB after trip by transitory earth leakage.
- Maintenance of power against trips provoked by high frequency earth leakages.
- Maintenance of power against shock waves up to 3000 A.

B

Especially designed for photovoltaic applications

Series TeleREC SOLAR



Reconnection relay

In (A)	Reconnection relay		Pack.
	Cat. No.	Ref. No.	
-	Tele REC SOLAR Motor	677145	1



The reconnection relay TeleREC SOLAR can be easily coupled to MCB's series EP100 UC:

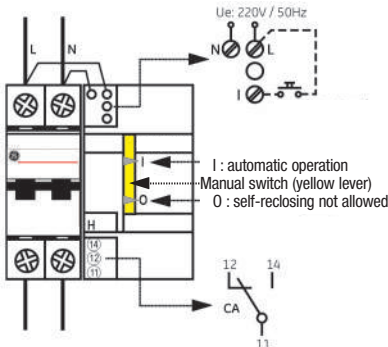
Series EP100 UC - 10kA - characteristic B-C



2P
2 mod.

In (A)	B		C		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
6	E92S UC B06	553290	E92S UC C06	553325	6
10	E92S UC B10	553292	E92S UC C10	553327	6
16	E92S UC B16	553294	E92S UC C16	553329	6
20	E92S UC B20	553295	E92S UC C20	553330	6
25	E92S UC B25	553296	E92S UC C25	553331	6
32	E92S UC B32	553297	E92S UC C32	553332	6
40	E92S UC B40	553298	E92S UC C40	553333	6
50	E92S UC B50	553299	E92S UC C50	553334	6
63	E92S UC B63	553300	E92S UC C63	553335	6

Electrical diagram



Only valid for photovoltaic application with MCBs Series EP102UC until 440Vdc ($I_{cc} < 2I_n$).
The TeleREC SOLAR voltage is 230Vac.

Miniature circuit breakers A

Residual current circuit breakers B

***Busbar systems* C**

- C.3 Busbar system for MCBs
- C.4 Insulated PIN type busbars
- C.6 Insulated FORK type busbars
- C.8 Accessories

Comfort functions/Energy control D

Residential enclosures E

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units H

Manual motor starters I

Moulded case circuit breakers J

Fuse systems/Loadbreak disconnectors K

Air circuit breakers L

General purpose enclosures M

System enclosures N

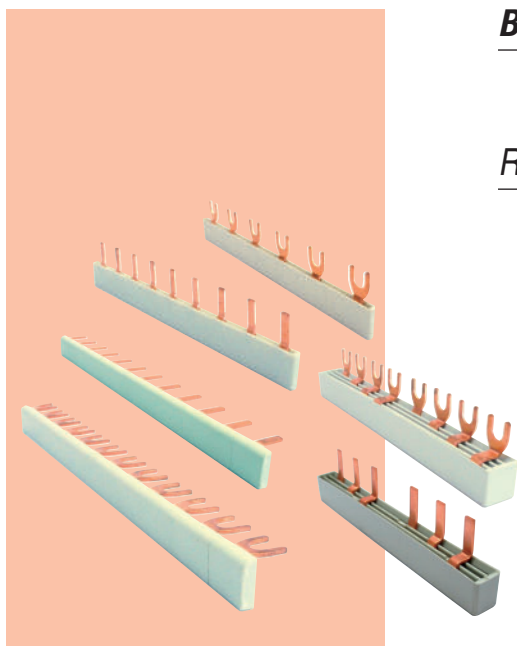
Numerical index X

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.

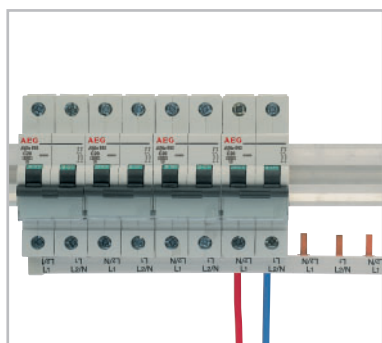
Busbar systems

Rails



Technical data

Rail	copper (oxygen free)
Insulation strip	plastic heat resistant > 96 °C self extinguishing V0
Dielectric strength	36kV/mm (acc. to DIN 53481/1.2)
Short-circuit resistance	25kA (100A fuse)
Climate proofing	according to IEC 60068-2-30
Creepage resistance/tracking index	400V (acc. to IEC 60112)
Insulation group acc. to EN 60439-1	Material group II, 400V



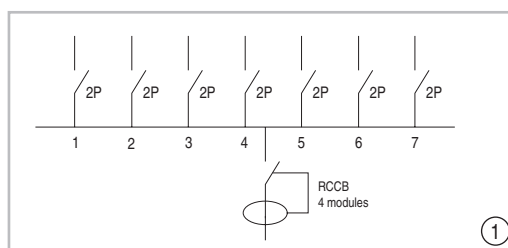
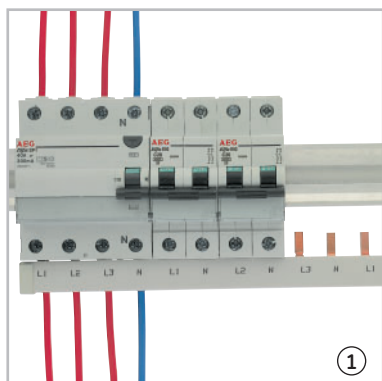
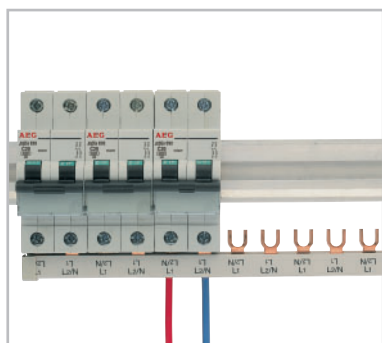
Load values in A (Ith)

Connection	1 pole			
	side		middle	
Section (mm ²)	Ith (A)	K (mm ²)	Ith (A)	K (mm ²)
10 isolated	80	10	100	25
12 non isolated	90	16	110	35
16 non isolated	110	25	130	35
24 non isolated	160	25	180	2x25
36 non isolated	200	35	220	2x35

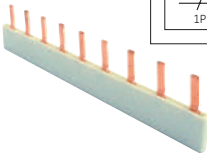
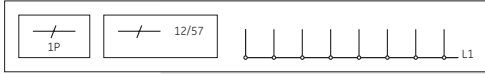
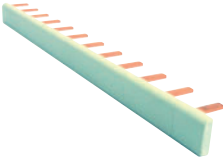
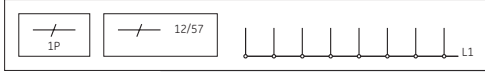
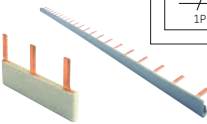

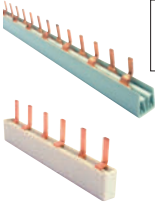
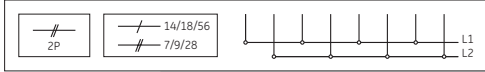
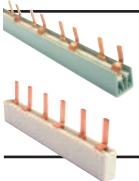
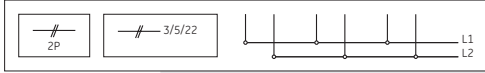
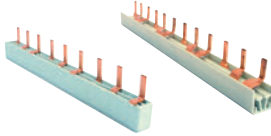
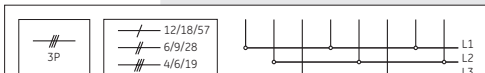
Connection	n poles			
	side		middle	
Section (mm ²)	Ith (A)	K (mm ²)	Ith (A)	K (mm ²)
10 isolated	80	16	100	25
16 isolated	120	25	130	35


K = section of the connection wire

n = 2P, 1P + N, 3P, 3P + N, 4P



Insulated PIN type busbars

		Section mm ²	Description	Ref. No.	Pack.
1-phase					
		10	2x1P	546253	10
		10	6x1P	546254	10
		10	12x1P	546255	10
		10	13x1P	650156	10
		10	57x1P - length 1m	624991*	1/10
		16	57x1P - length 1m	544193*	1/10
		1-phase 90°			
		10	3x1P - 90°	624959	20
		10	4x1P - 90°	624960	20
		10	5x1P - 90°	624961	20
		10	6x1P - 90°	624962	20
		10	7x1P - 90°	624963	20
		10	8x1P - 90°	624964	20
		10	9x1P - 90°	624965	20
		10	10x1P - 90°	624966	20
		10	11x1P - 90°	624967	20
		10	12x1P - 90°	624968	20
		10	13x1P - 90°	624969	20
		10	14x1P - 90°	624970	20
		10	15x1P - 90°	624971	20
		10	16x1P - 90°	624972	20
10	17x1P - 90°	624973	20		
10	18x1P - 90°	624974	20		
1-phase with 1P + auxiliary					
		10	2 x (1P + auxiliary)	546256	10
		10	6 x (1P + auxiliary)	546257	10
		10	8 x (1P + auxiliary)	546237	10
		10	36 x (1P + auxiliary) or MCBs Hti - length 1m	546152*	1/50
		16	36 x (1P + auxiliary) or MCBs Hti - length 1m	624994*	1/50
2-phase					
		10	4x1P or 2x2P	546265	10
		10	6x1P or 3x2P	546266	10
		10	12x1P or 6x2P	546267	10
		10	14x1P or 7x2P	544186	10
		10	18x1P or 9x2P	624805	10
		16	14x1P or 7x2P	618294	20
		16	56x1P or 28x2P - length 1m	546139*	1/20
2-phase with 2P + auxiliary					
		10	3 x (2P + auxiliary)	546269	10
		10	5 x (2P + auxiliary)	546270	10
		16	22 x (2P + auxiliary) - length 1m	546126*	1/20
3-phase					
		10	6x1P or 3x2P or 2x3P	546277	10
		10	9x1P or 4x2P or 3x3P	546308	10
		10	12x1P or 4x3P or 3x4P	546278	10
		10	15x1P or 5x3P	544180	10
		10	18x1P or 6x3P	544181	10
		10	21x1P or 7x3P	544182	10
		10	24x1P or 12x2P or 8x3P	624839	20
		10	57x1P or 28x2P or 19x3P - length 1m	546142*	1/20
		16	57x1P or 28x2P or 19x3P - length 1m	546143*	1/20

* Rails with 1m length can be shortened 

Insulated PIN type busbars (continued)

		Section mm ²	Description	Ref. No.	Pack.
3-phase for screwless MCBs Fixwell™					
			10 1xRCD + 6x1P or 3x2P	544183	10
			10 1xRCD + 8x1P or 4x2P	544184	10
3-phase with 2P + auxiliary					
			10 2 x (3P + auxiliary)	555434	10
			10 4 x (3P + auxiliary)	555435	10
			10 15 x (3P + auxiliary) - length 1m	544195*	1/20
3-phase with 1P + auxiliary					
			10 6 x (1P + auxiliary) or 6x1P MCBs Hti or 3x2P MCBs Hti or 2x3P MCBs Hti	546396	10
			10 8 x (1P + auxiliary) or 8x1P Hti MCB or 4x2P Hti MCB	544185	10
			10 9 x (1P + auxiliary) or 3x3P MCBs Hti	546397	10
			10 36 x (1P + auxiliary) or 18x2P Hti MCB or 12x3P Hti MCB - length 1m	546128*	1/20
4-phase 4P or 3P+N					
			10 2x4P or 2x3P+N	546282	5
			10 3x4P or 3x3P+N	546283	5
			10 4x4P or 4x3P+N	544187	5
			10 14x4P or 14x3P+N - length 1m	624807*	1/15
			16 14x4P or 14x3P+N - length 1m	546130*	1/15
4-phase 1P+N or 2P					
			10 6x1P+N or 6x2P	546284	5
			10 9x1P+N or 9x2P	546285	5
			10 27x1P+N or 27x2P - length 1m	624995*	1/15
			16 27x1P+N or 27x2P - length 1m	624996*	1/15
1-phase 90° for compact MCBs Unibis™					
			10 13x1P - 90° - grey	646091	15
			10 13x1P - 90° - blue	646092	15
1-phase+N / 2P for compact MCBs Unibis™					
			10 18x1P+N / 2P	624796	20
			10 55x1P+N / 2P - length 1m	624893*	1/20
3-phase for compact MCBs Unibis™					
			10 12x2P	624797	15
			10 55x2P - length 1m	624798*	1/15
4-phase 1P+N or 2P for compact MCBs Unibis™					
			10 55x2P - length 1m	624892*	1/10
4-phase 4P or 3P+N for compact MCBs Unibis™					
			10 55x3P or 4P - length 1m incl. 4 end caps and 4 connection clamps	624800*	1/5

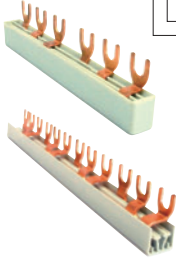
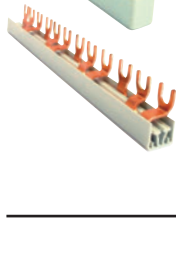
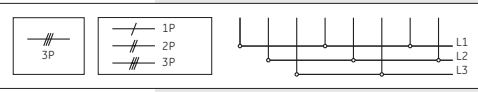
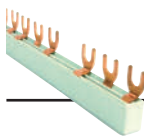
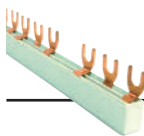
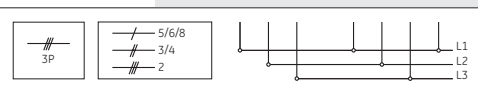
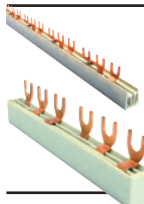
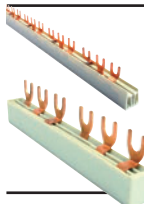
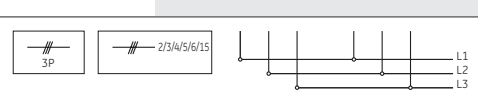
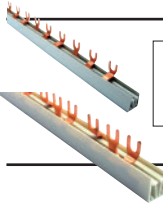
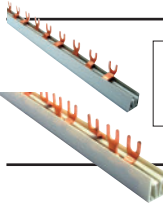
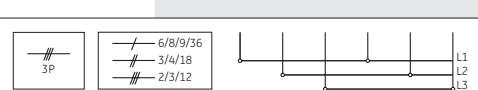
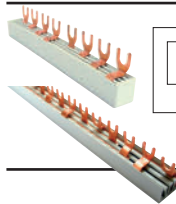
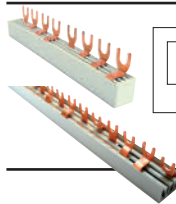
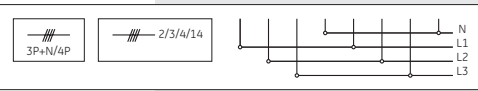
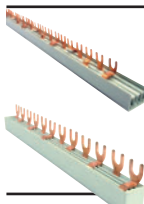
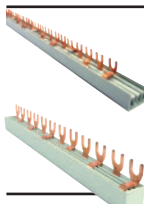
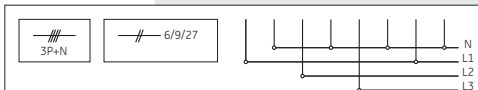
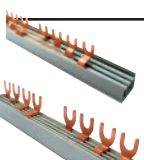
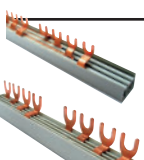
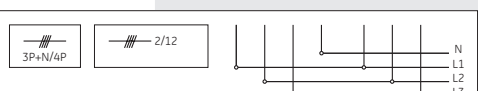
* Rails with 1m length can be shortened


Insulated FORK type busbars

	Section mm ²	Description	Ref. No.	Pack.	
1-phase					
	10	2x1P	546247	20	
	10	3x1P	644873	20	
	10	4x1P	546341	20	
	10	5x1P	650164	20	
	10	6x1P	546248	20	
	10	12x1P	546249	20	
	10	13x1P	650152	20	
	10	57x1P - length 1m	546187*	1/10	
	16	57x1P - length 1m	544188*	1/10	
	1-phase 90°				
	10	2x1P - 90°	624975	20	
	10	4x1P - 90°	624976	20	
	10	5x1P - 90°	624977	20	
	10	6x1P - 90°	624978	20	
	10	7x1P - 90°	624979	20	
	10	8x1P - 90°	624980	20	
	10	9x1P - 90°	624981	20	
	10	10x1P - 90°	624982	20	
	10	11x1P - 90°	624983	20	
	10	12x1P - 90°	624984	20	
	10	13x1P - 90°	624985	20	
	10	14x1P - 90°	624986	20	
	10	15x1P - 90°	624987	20	
	10	16x1P - 90°	624988	20	
	10	17x1P - 90°	624989	20	
	10	18x1P - 90°	624990	20	
	16	57x1P - 90° - length 1m	644890*	1/50	
	10	2x1P - 90° for surge arresters SurgeGuard	624993	20	
10	3x1P - 90° for surge arresters SurgeGuard	644893	20		
10	4x1P - 90° for surge arresters SurgeGuard	568106	20		
10	8x1P - 90° for surge arresters SurgeGuard	644897	20		
1-phase with 1P + auxiliary					
	10	2 x (1P + auxiliary)	546250	20	
	10	3 x (1P + auxiliary)	644875	20	
	10	4 x (1P + auxiliary)	644876	20	
	10	5 x (1P + auxiliary)	644877	20	
	10	6 x (1P + auxiliary)	546251	20	
	10	8 x (1P + auxiliary)	546295	20	
	10	9 x (1P + auxiliary)	546252	20	
	1-phase with 1P + auxiliary 90°				
		10	2 x (1P + auxiliary) - 90°	544272	20
10		7 x 1P + auxiliary) - 90°	544277	20	
10		13 x (1P + auxiliary) - 90°	544296	50	
10		14 x (1P + auxiliary) - 90°	644879	20	
10		15 x (1P + auxiliary) - 90°	644880	20	
16		15 x (1P + auxiliary) - 90°	544327	20	
10		37 x (1P + auxiliary) - 90° - length 1m	546197*	1/50	
16		37 x (1P + auxiliary) - 90° - length 1m	544189*	1/50	
2-phase					
		10	4x1P or 2x2P	546259	10
	10	6x1P or 3x2P	546260	10	
	10	10x1P or 5x2P	644881	10	
	10	12x1P or 6x2P	546261	10	
	10	14x1P or 7x2P	544178	10	
	10	18x1P or 9x2P	644882	10	
	10	56x1P or 28x2P - length 1m	544191*	1/20	
	16	56x1P or 28x2P - length 1m	546227*	1/20	
2-phase with 2P + auxiliary					
	10	2 x (2P + auxiliary)	546262	10	
	10	3 x (2P + auxiliary)	546263	10	
	10	4 x (2P + auxiliary)	544344	10	
	10	5 x (2P + auxiliary)	546264	10	
	16	22 x (2P + auxiliary) - length 1m	546125*	1/20	




* Rails with 1m length can be shortened

Insulated FORK type busbars (continued)

		Section mm ²	Description	Ref. No.	Pack.
3-phase					
			10 6x1P or 3x2P or 2x3P	546271	10
			10 7x1P	624957	10
			10 9x1P or 3x3P	546296	10
			10 12x1P or 6x2P or 4x3P	546272	10
			10 13x1P	650153	10
			10 14x1P or 7x2P	650154	10
			10 15x1P or 5x3P	544172	10
			10 18x1P or 9x2P or 6x3P	544173	10
			10 21x1P or 7x3P	544174	10
			10 24x1P or 12x2P or 8x3P	624958	20
			10 57x1P or 28x2P or 19x3P - length 1m All forks on the lateral side of the busbar	546229*	1/20
			16 57x1P or 19x3P - length 1m All forks in the middle of the busbar	546176*	1/20
16 57x1P or 28x2P or 19x3P - length 1m All forks in the middle of the busbar	546230*	1/20			
3-phase RCD's					
			10 1xRCD + 5x1P	555609	10
			10 1xRCD + 6x1P or 3x2P or 2x3P	544175	10
			10 1xRCD + 8x1P or 4x2P	544176	10
3-phase with 3P + auxiliary					
			10 2 x (3P + auxiliary)	546273	10
			10 3 x (3P + auxiliary)	644884	10
			10 4 x (3P + auxiliary)	546274	10
			10 5 x (3P + auxiliary)	644885	10
			10 6 x (3P + auxiliary)	644886	10
			16 15 x (3P + auxiliary) - length 1m	546129*	1/20
3-phase with 1P + auxiliary					
			10 6 x (1P + auxiliary) or 6x MCBs Hti	546275	10
			10 8 x (1P + auxiliary) or 8x MCBs Hti	544177	10
			10 9 x (1P + auxiliary) or 9x MCBs Hti	546276	10
			16 36 x (1P + auxiliary) - length 1m	546127*	1/20
			4-phase 4P or 3P+N		
			10 2x4P or 2x3P+N	546279	5
			10 3x4P or 3x3P+N	546280	5
			10 4x4P or 4x3P+N	544179	5
			10 14x4P or 14x3P+N - length 1m	618293*	1/15
			16 14x4P or 14x3P+N - length 1m	546234*	1/15
4-phase 1P+N or 2P					
			10 6x1P+N or 6x2P	546398	5
			10 9x1P+N or 9x2P	546281	5
			10 2xAdd on 32A +4P	546228	5
			10 27x1P+N or 27x2P - length 1m	624799*	1/15
			16 27x1P+N or 27x2P - length 1m	544192*	1/15
4-phase with 4P + auxiliary					
			10 2 x (4P + auxiliary) or 2 x (3P+N + auxiliary)	646084	5
			16 12 x (4P + auxiliary) or 12 x (3P+N + auxiliary) - length 1m	646083*	1/15

* Rails with 1m length can be shortened 

Busbars for connection of auxiliaries

	Section mm ²	Description	Ref. No.	Pack.
	For auxiliary function added on 1P MCB			
	27mm / 8P		546244	10
	27mm / 4P		544346	10
	For auxiliary function added on 2P MCB			
	45mm / 5P		546245	10
	45mm / 4P		544347	10
	For auxiliary function added on 3P MCB			
	63mm / 4P		546246	10

Accessories

	End caps			
	10/16	for 1P busbars	644891	50
	10	for 2P busbars	546181	10
	10	for 3P busbars	546200	10
	16	for 2P and 3P busbars	546184	10
	10/16	for 4P busbars	629867	10
	Connection clamps			
	25	fork	546287	30
	25	pin	546288	30
	25	pin long	546289	50
	35	for fork and pin direct on busbar	546290	10
	25	4P compact MCBs Unibis™	624795	30
	Insulation cap			
		Pin/fork - Yellow (RAL 1004)	546291	10
	Insulation strip			
		For fork and pin - length 1m	624992	10
	Clamps for neutral conductor			
	16	7 poles	546297	10
	16	12 poles	546298	10
	16	12 poles, insulated	568083	10
	16	15 poles	546299	10
	Clamps for phase conductors			
	16	7 poles	546300	10
	16	12 poles	546301	10
	16	12 poles, insulated	568084	10
	16	15 poles	546302	10
	DIN-rail (EN 50022)			
		Length 1000mm - Height 7mm	564092	10

Miniature circuit breakers A

Residual current circuit breakers B

Busbar systems C

Comfort functions/Energy control D

Residential enclosures E

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units H

Manual motor starters I

Moulded case circuit breakers J

Air circuit breakers K

Fuse systems/Loadbreak disconnectors L

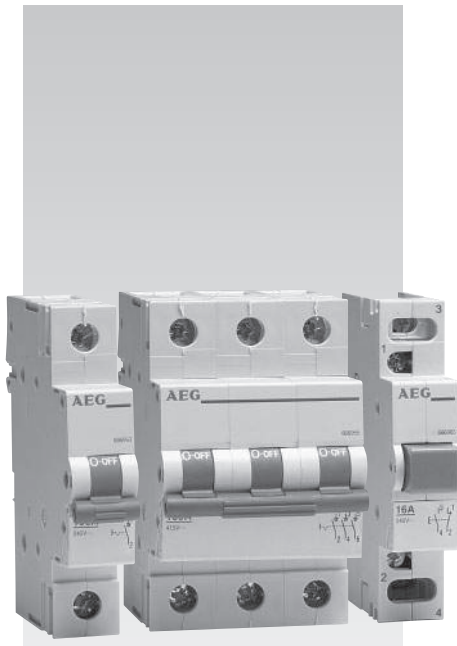
General purpose enclosures M

System enclosures N

Numerical index X

- D.2 Switches and push-buttons
- D.4 Indication lamp
- D.5 Socket-outlet
- D.6 Contactors
- D.8 Relays
- D.12 Impulse switches
- D.16 Staircase switches
- D.18 Time relays
- D.20 Digital time switches
- D.22 Light sensitive switches
- D.24 Transformers
- D.26 Analogue measurement instruments
- D.28 Surge arresters

- D.32 Home and building automation system



Switches and Push-buttons

Applications



Switching of lighting and heating in homes, shops, offices, warehouses, factories, hospitals, etc.

Function

Manual control of all kinds of electrical devices.

Approval



Features

Wide range with respect to available contact combinations and switching capacity. Mains disconnect switches and switches with change-over contact and off position available.

Compact (4-pole in 1 module) with high switching capacity due to double interruption per path.

All switches are sealable through padlock or by means of a lock. The terminals are equipped with captive Pozidriv screws and have IP20 protection degree.

Mains disconnect switches accepts auxiliary contacts H.

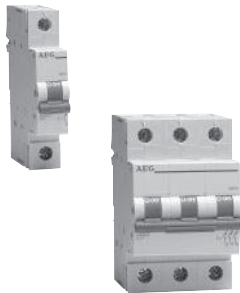






Standards

Switches 16/32A	BS EN 60669-1 VDE 0632 Part 1
Mains disconnect switches 40-100	BS EN 60947-3 VDE 0632 Part 101

Performance

	Mains disconnect switches 40-63-100A	Switches 16A 32A	Push-buttons 16A
Nominal rated current	40-63-100A	16A 32A	16A
Usable as mains disconnect switch	yes	no	no
Impulse withstand voltage	8kV	-	-
Utilization category	AC-22A	-	-
Nominal voltage single pole devices	240/415V	240V	240V
Nominal voltage multipole devices	240/415V	415V	-
Maximum allowed current during less than 1 s.	2kA	-	-
Mechanical service life (complete on-off-cycle)	>10000	>20000	>20000
Electrical service life, $\cos \varphi = 0.95$, U_n and I_n	>1500	>20000 >5000	>20000
Short-circuit resistance with upfront fuses	16kA (nominal)	4.5kA (nominal)	4.5kA (nominal)
Protection degree	IP20	IP20	IP20
Screws	Pozidriv 2	Pozidriv 1	Pozidriv 1
Terminal capacity: min	1x6mm ²	1x1.5mm ²	1x1.5mm ²
max	1x50mm ²	1x10mm ²	1x10mm ²

Switches and Push-buttons

	Nominal current	Contact combination	Number of modules	Cat. No.	Ref. No.	Pack.	
 <p>Mains disconnect switch</p>	40A/240V	1NO	1	ASR1040	666985	12	
	40A/415V	2NO	2	ASR2040	666986	6	
	40A/415V	3NO	3	ASR3040	666987	4	
	40A/415V	4NO	4	ASR4040	666988	3	
	63A/240V	1NO	1	ASR1063	666957	12	
	63A/415V	2NO	2	ASR2063	666958	6	
	63A/415V	3NO	3	ASR3063	666959	4	
	63A/415V	4NO	4	ASR4063	666960	3	
	100A/240V	1NO	1	ASR10100	666953	12	
	100A/415V	2NO	2	ASR20100	666954	6	
	100A/415V	3NO	3	ASR30100	666955	4	
	100A/415V	4NO	4	ASR40100	666956	3	
	 <p>Switch</p>	16A/240V	1NO	1	ASV1016	666966	12
		16A/240V	2NO	1	ASV2016	666968	12
16A/415V		3NO	1	ASV3016	666969	12	
16A/415V		4NO	1	ASV4016	666970	12	
32A/240V		1NO	1	ASV1032	666972	12	
32A/240V		2NO	1	ASV2031	666974	12	
32A/415V		3NO	1	ASV3032	666975	12	
32A/415V		4NO	1	ASV4032	666976	12	
 <p>Changeover switch</p>		16A/240V	1CO	1	WSV1016	666965	12
		16A/240V	2CO	1	WSV2016	666967	12
	32A/240V	1CO	1	WSV1032	666971	12	
	32A/415V	2CO	1	WSV2032	666973	12	
 <p>Switch with signal lamp</p>	16A/240V	1NO	1	ASV-L1016	666977	12	
	16A/240V	2NO	1	ASV-L2016	666978	12	
	32A/240V	1NO	1	ASV-L1032	666979	12	
	32A/240V	2NO	1	ASV-L2032	666980	12	
 <p>Changeover witches with zero position</p>	16A/240V	1CO	1	GSV1016	666981	12	
	16A/240V	2CO	1	GSV2016	666982	12	
	32A/240V	1CO	1	GSV1032	666983	12	
	32A/240V	2CO	1	GSV2032	666984	12	
 <p>Push-button</p>	16A/240V	1NC	1	TV0116	666961	12	
	16A/240V	1NO	1	TV1016	666962	12	
	16A/240V	1NO 1NC	1	TV116	666963	12	
 <p>Push-button with signal lamp</p>	16A/240V	1NO	1	TV-L1016	666964	12	



Indication lamp

Function

Status visualisation.

Applications



Mainly used to visualise the status of a (sub)part of the installation, heater, motor, fan, pump etc.

Features

Available in different voltages and with different coloured lenses.

Performance

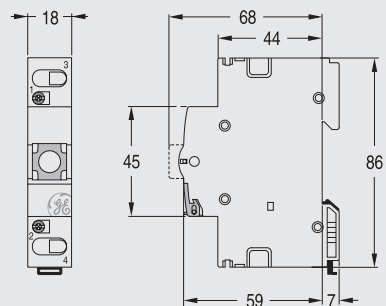
Nominal voltage	12V	24V	230V
Own consumption	120mA	85mA	2.2mA
Lamp	Incandescent lamp	Incandescent lamp	Neon lamp
Lens colours	Red, green, orange and transparent	Red, green, orange and transparent	Red, green, orange and transparent
Protection degree	IP20	IP20	IP20
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 1
Terminal capacity: min	1x1.5mm ²	1x1.5mm ²	1x1.5mm ²
max	1x10mm ² / 2x4mm ²	1x10mm ² / 2x4mm ²	1x10mm ² / 2x4mm ²

Indication lamp

Order codes

	Nominal operating voltage	Colour	Number of modules	Cat. No.	Ref. No.	Pack.
Lampholder	-	-	1	VL1	666881	12
Lamp	12V	-	-	AST B12	666340	12
	24V	-	-	AST B24	666342	12
	230V	-	-	AST B230	666341	12
Lamp LED E10	235V \sim / =	Green	-	AST LG 230V	666876	10
	235V \sim / =	Amber	-	AST LA 230V	666874	10
	235V \sim / =	Red	-	AST LR 230V	666877	10
	235V \sim / =	Blue	-	AST LB 230V	666875	10
	235V \sim / =	White	-	AST LW 230V	666878	10
Lens	-	Transparent	-	AST L CL	666343	12
	-	Green	-	AST L GN	666344	12
	-	Orange	-	AST L OR	666345	12
	-	Red	-	AST L RD	666346	12

Dimensions



Socket-outlet

Standards

BS EN C61112-1, NF C61-303 (86), IEC 60884-1

Approval



Performance

Nominal current	16A
Nominal voltage	250V
Operating temperature	-20 ... +55°C
Protection degree	IP20
Screws	Pozidriv 2
Terminal capacity: min	1x1 mm ²
max	1x6 mm ² or 2x2.5 mm ²

Socket-outlet

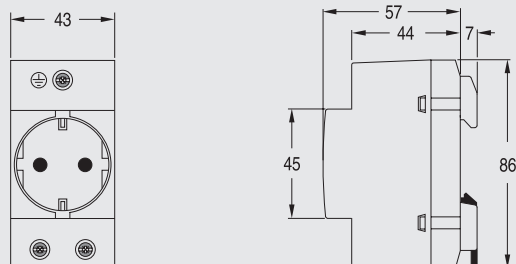
Order codes



Edged earth

Nominal current	Nominal voltage	Number of modules	Cat. No.	Ref. No.	Pack.
16A	250V	2.5	NST16	666938	1

Dimensions





Contactors

Applications



Switching of lighting, heating-equipment, motors for pumps and fans, ... Day and night contactors are used mainly in combination with dual-tariff applications to allow high-energy-loads (i.e. electrical water heaters, accumulation heaters) only to consume energy during the low-tariff period. A forced-on, forced-off, auto-switch allows to overrule the normal operation of the DN-contactor at all times.

Features

Except for the 20A version, all contactors have DC coils, resulting in an absolutely noise-free, real silent operation: 50 or 60Hz noise generation by the contactor is impossible. As all DC coil contactors have an internal diode rectifier bridge, they all can be operated by both DC and AC power supplies. The built-in varistor protects the coil against an overvoltage of up to 5kV. The switch position of the contactor is visualised through an indicator flag. The loss-proof safety terminals are equipped with Pozidriv screws and have IP20 protection degree. Add-on auxiliary contacts as well as spacers and sealing pieces are available.

Standards

IEC 60947-4-1, BS EN 60947-4-1, IEC 61095, BS EN 61095.
Approval VDE

Function

Contactors are electromechanically controlled switches used to control single or multi-phase (high) power loads while the control itself can be (very) low power.

Performance

	20A	24A	40A	63A
Rated switching capacity				
Rated insulation voltage	400V	500V	500V	500V
Rated operational voltage	250V	440V	440V	440V
Switching-on capacity				
cos φ = 0.65 at 380-400V 3phase	-	90A	220A	300A
cos φ = 0.95 at 220-230V 1phase	100A	-	-	-
Switching-off capacity				
cos φ = 0.65 at 380-400V 3phase	-	72A	176A	240A
cos φ = 0.95 at 220-230V 1phase	80A	-	-	-
Fuse type GL for short-circuit protection	20A	35A	63A	80A
Ohmic loss per contact at I _n	1.0W	1.5W	3.0W	6.0W
Maximum switching frequency AC1 / AC7a	300/h	300/h	300/h	300/h
Maximum switching frequency AC3 / AC7b	600/h	600/h	600/h	600/h
Mechanical service life	10 ⁶	10 ⁶	10 ⁶	10 ⁶
Electrical service life AC1 / AC7a	150000	150000	150000	150000
Electrical service life AC3 / AC7b	150000	500000	170000	240000
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 2	Pozidriv 2
Terminal capacity: min	1x1 mm ²	1x1 mm ²	1x1.5 mm ²	1x1.5 mm ²
max	1x10mm ² or 2x4 mm ²	1x10mm ² or 2x4 mm ²	1x25mm ² or 2x10 mm ²	1x25mm ² or 2x10 mm ²
Magnetic control system				
Control voltage range	85 ... 110%xUn	85 ... 110%xUn	85 ... 110%xUn	85 ... 110%xUn
Rated operating frequency	50 or 60Hz	DC, 40 ... 450Hz	DC, 40 ... 450Hz	DC, 40 ... 450Hz
Operating temperature range	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾	-25 ... +55°C ⁽¹⁾
Maximum pull-in coil power loss	8.0VA / 5.0W	4VA / 4W	5VA / 5W	65VA / 65W
Maximum holding coil power loss	3.2VA / 1.2W	4VA / 4W	5VA / 5W	4.2VA / 4.2W
Switching-on delay	9 ... 12 ms	< 40 ms	< 40 ms	< 40 ms
Switching-off delay	10 ... 12 ms	< 40 ms	< 40 ms	< 40 ms
Screws	Pozidriv 1	Pozidriv 1	Pozidriv 1	Pozidriv 1
Terminal capacity: min	1x1 mm ²	1x1 mm ²	1x1 mm ²	1x1 mm ²
max	1x4mm ² or 2x2.5 mm ²	1x4mm ² or 2x2.5 mm ²	1x4mm ² or 2x2.5 mm ²	1x4mm ² or 2x2.5 mm ²

(1) Remark: If several contactors are mounted next to each-other and the time of operation exceeds 1 hour and the ambient temperature rises above 40°C, a 1/2-module spacer must be added every second contactor (i.e. contactor contactor spacer contactor contactor spacer contactor contactor etc.)

Contactors



Contactor



1 NO 1 NC



2 NO 2 NC



3 NO



4 NC



4 NO

Nominal current	Contact combination	Coil voltage	AC/DC	Number of modules	Cat. No.	Ref. No.	Pack.
20A	2NO	12V	AC	1	VI2020J5	666786	12
20A	2NO	24V	AC	1	VI2020B5	666788	12
20A	2NO	230V	AC	1	VI2020M5	666787	12
24A	2NO 2NC	24V	AC/DC	2	VI224BU	666791	5
24A	2NO 2NC	230V	AC/DC	2	VI2224MU	666790	5
24A	3NO	24V	AC/DC	2	VI3024BU	666793	5
24A	3NO	230V	AC/DC	2	VI3024MU	666792	5
24A	4NC	24V	AC/DC	2	VI0424BU	666795	5
24A	4NC	230V	AC/DC	2	VI0424MU	666794	5
24A	4NO	24V	AC/DC	2	VI4024BU	666797	5
24A	4NO	230V	AC/DC	2	VI4024MU	666796	5
40A	2NO	24V	AC/DC	3	VI2040BU	666799	3
40A	2NO	230V	AC/DC	3	VI2040MU	666798	3
40A	3NO	24V	AC/DC	3	VI3040BU	666801	3
40A	3NO	230V	AC/DC	3	VI3040MU	666800	3
40A	4NO	24V	AC/DC	3	VI4040BU	666803	3
40A	4NO	230V	AC/DC	3	VI4040MU	666802	3
63A	4NO	24V	AC/DC	3	VI4063BU	666806	3
63A	4NO	230V	AC/DC	3	VI4063MU	666805	3
63A	2NO	230V	AC/DC	3	VI2063MU	666804	3



Auxiliary contact



1 NO 1 NC



2 NO

6A	1NO 1NC	-	-	0.5	VI1106	666810	1
6A	2NO	-	-	0.5	VI2006	666811	1



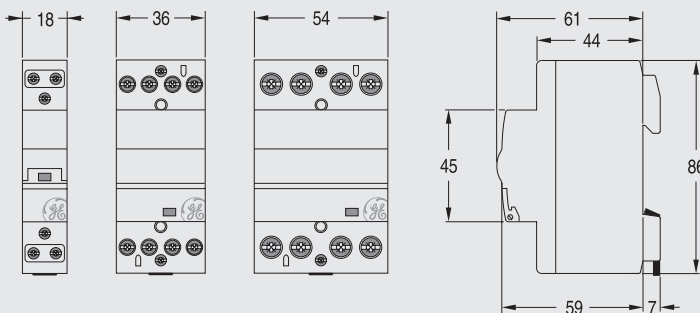
Spacer

-	-	-	-	0.5	VIFS	666809	12
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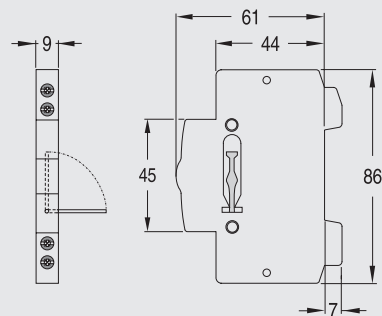
Sealing piece

-	-	-	-	2	VIPK2	666808	12
-	-	-	-	3	VIPK3	666807	12

Contactors



Auxiliary contact





Relays

Applications



- Switching of lighting, heating, etc.
- Galvanic insulation of i.e. status signalisation lamps from a (high) power (high voltage) circuit.
- Galvanic insulation of PLC-inputs or outputs to avoid destruction through excessive voltage.

Features

- The switch position is visualised by the position of the front handle.
- The safety terminals are equipped with captive Pozidriv screws and have IP20 protection degree.
- Add-on auxiliary contacts available.
- Because of the advanced product design, no spacers are needed.
- Increased safety: sealing caps for both coil and terminal are available.

Function

Relays are electromechanically controlled switches used to control low power loads.

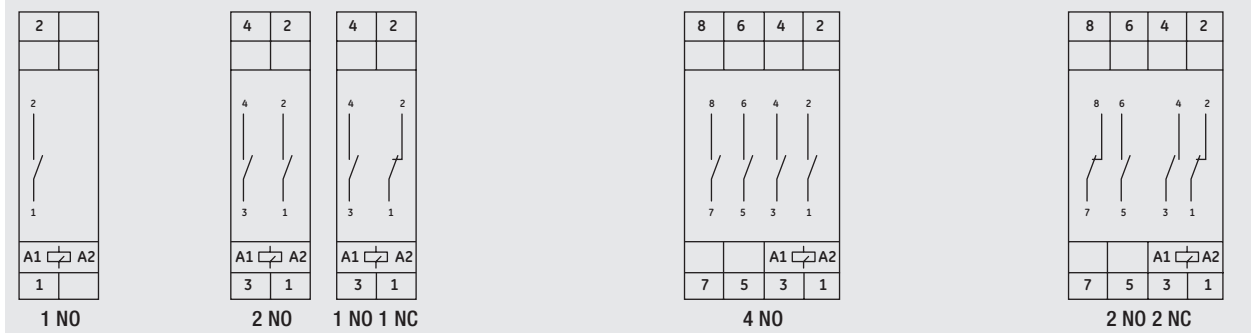
Standard

EN 60947-4-1

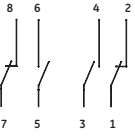
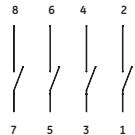
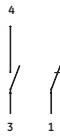
Marking



Terminal identification

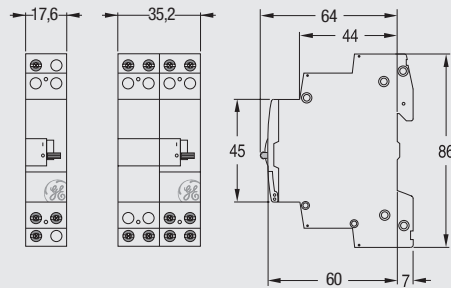


Relays



Nominal current	Contact combination	Coil voltage AC	Coil voltage DC	Number of modules	Cat. No.	Ref. No.	Pack.
16A	1NO	8	-	1	VFR+1016A5	686220	12
16A	1NO	12	6	1	VFR+1016J5	686223	12
16A	1NO	24	12	1	VFR+1016B5	686221	12
16A	1NO	48	24	1	VFR+1016E5	686222	12
16A	1NO	230	115	1	VFR+1016M5	686224	12
16A	1NO	240	120	1	VFR+1016P5	686225	12
16A	1NO 1NC	8	-	1	VFR+1116A5	686226	12
16A	1NO 1NC	12	6	1	VFR+1116J5	686229	12
16A	1NO 1NC	24	12	1	VFR+1116B5	686227	12
16A	1NO 1NC	48	24	1	VFR+1116E5	686228	12
16A	1NO 1NC	230	115	1	VFR+1116M5	686230	12
16A	1NO 1NC	240	120	1	VFR+1116P5	686231	12
16A	2NO	8	-	1	VFR+2016A5	686232	12
16A	2NO	12	6	1	VFR+2016J5	686235	12
16A	2NO	24	12	1	VFR+2016B5	686233	12
16A	2NO	48	24	1	VFR+2016E5	686234	12
16A	2NO	230	115	1	VFR+2016M5	686236	12
16A	2NO	240	120	1	VFR+2016P5	686237	12
16A	2NO 2NC	8	-	2	VFR+2216A5	686238	6
16A	2NO 2NC	12	6	2	VFR+2216J5	686241	6
16A	2NO 2NC	24	12	2	VFR+2216B5	686239	6
16A	2NO 2NC	48	24	2	VFR+2216E5	686240	6
16A	2NO 2NC	230	115	2	VFR+2216M5	686242	6
16A	2NO 2NC	240	120	2	VFR+2216P5	686243	6
16A	4NO	8	-	2	VFR+4016A5	686244	6
16A	4NO	12	6	2	VFR+4016J5	686247	6
16A	4NO	24	12	2	VFR+4016B5	686245	6
16A	4NO	48	24	2	VFR+4016E5	686246	6
16A	4NO	230	115	2	VFR+4016M5	686248	6
16A	4NO	240	120	2	VFR+4016P5	686249	6

Dimensions



Relays: Performance

			Relays
			VFR+
Rated current (according to EN 60947-4-1)			
250V AC (1 & 2 pole) / 400V AC (3 & 4 pole)		A	16
Nominal thermal current (I _{th})		A	16
Number of pole			1 → 4
Contacts			
	NO		1 → 4
	Changeover ("m" contacts)		1 → 4
	NO + NC		1+1 / 2+2
Width (in 17.8mm DIN modules)			
	1P & 2P	Mod.	1
	3P & 4P	Mod.	2
Coil specifications			
Supply voltage: DC/AC ratio ⁽¹⁾			0.5 / 1
Supply voltage range (in % of U _n)		%	85-110
Coil pick-up power	1P & 2P	VA	3.4
	3P & 4P	VA	6.7
Coil power loss - AC	1P & 2P	VA	1.8
	3P & 4P	VA	3.4
Coil power loss - DC	1P & 2P	W	2.1
	3P & 4P	W	3.9
Maximum coil holding voltage time			unlimited
Contact bounce time at closing		sec.	<0.010
Operate and release time (bounce time incl.)			
Pick-up time	NO contact	sec.	< 0.040
(from 0 to U _n)	NC contact	sec.	< 0.020
Drop-out time	NO contact	sec.	< 0.050
(from U _n to 0)	NC contact	sec.	< 0.050
Maximum peak current at closing			
Single phase 250V AC cos $\psi = 0.95$		A	45
3-phase 400V~ cos $\psi = 0.65$		A	60
Maximum peak current at opening			
Single phase 250V AC cos $\psi = 0.95$		A	75
3-phase 400V~ cos $\psi = 0.65$		A	60
Lifetime (in number of operations)⁽²⁾			
Electrical (in AC-1 - At full load)			3 x 10 ⁵
Mechanical			2 x 10 ⁶
Load specifications per phase			
Maximum load AC-1	1P & 2P	kW	3.0
	3P & 4P	kW	8.5
Maximum load AC-5b		kW	1.8
Maximum load AC-7b		kW	0.9
Maximum load AC-3	250V AC	kW	1.5
	400V AC	kW	2.2
Minimum load (under 5V)		W	2
Short-circuit fuse protection		A	20
Maximum lamp load (10³ operations/h)			
Incandesc. & halogen (40 to 200W lamps)		W	1,800
Fluorescence, compensated (cos $\psi = 0.9$)			
	Serial compensation	VA	1,800
	Parallel compensation	VA	500
Fluorescence, non compensated (cos $\psi = 0.5$)		VA	900
General specifications			
Auxiliary contact add-on (PLS / CTX R)			yes
Need for spacer			no
DIN rail mounting			yes
2-position DIN rail lock			yes
Front handle for manual operation			yes
Permanent ON/OFF			no
Indicator of contact position			yes
Clamping terminals			yes
Unlosable screws			yes
Sealable terminals (coil and load)			yes
Cable cross section (Ø min/max)	Coil	mm ²	1.5 / 10
	Load	mm ²	1.5 / 10
Maximum torque on terminals		Nm	1
Ambient temperature at installation point (min./max.)		°C	-20 / +45

(1) DC supply voltage = AC supply voltage x DC/AC ratio, except for 8V AC and 115V AC (48V DC)

(2) 1 cycle = 2 operations per pole (closing + opening)

Impulse switches and relays: maximum lamp loads

Lamps type	Lamp Watts	Relays	Impulse switches
	Power consumption	VFR+	VFS+
Incandescent lamps			
Max. load 230V AC		1800W	3000W
Max. number of lamps	15W	120	200
	25W	72	120
	40W	45	75
	60W	30	50
	75W	24	40
	100W	18	30
	150W	12	20
	200W	9	15
	300W	6	9
	500W	3	5
Fluor lamp PF uncorrected			
Max. load 230V AC		900W	1800W
Max. number of lamps	18W	50	81
	36W	25	44
	40W	23	38
	58W	16	29
	65W	13	26
Fluor twin lamps			
Max. load 230V AC		1800W	3000W
Max. number of lamps	2 x 18W	50	78
	2 x 36W	25	38
	2 x 40W	23	35
	2 x 58W	16	23
	2 x 65W	13	22
Fluor lamp parallel compensation			
Max. load 230V AC		500W	2500W
Max. number of lamps	18W	17	103
	36W	13	55
	40W	12	50
	58W	8	34
	65W	7	30
Halogen 230V			
Max. load 230V AC		1800W	3000W
Max. number of lamps	150W	12	20
	250W	7	12
	300W	6	10
	400W	4	7
	500W	3	6
	1000W	2	3
HP sodium vapour			
Max. load 230V AC		800W	1200W
Max. number of lamps	70W	10	15
	150W	5	8
	250W	3	4
	400W	2	3
	1000W	-	1
LP sodium vapour			
Max. load 230V AC		400W	1400W
Max. number of lamps	55W	6	27
	90W	4	16
	135W	3	11
	180W	2	8
	185W	2	8
HP mercury vapour			
Max. load 230V AC		800W	1200W
Max. number of lamps	50W	16	19
	80W	10	15
	125W	7	9
	250W	3	4
	400W	2	3
	1000W	-	1
VLV halogen			
Max. load 230V AC		1500W	2300W
Max. number of lamps	20W	72	116
	50W	29	46
	75W	20	31
	100W	15	24
	150W	10	15
	200W	7	12
	300W	5	7
Electronic reactor			
Max. load 230V AC		1000W	1600W
Max. number of lamps	1 x 18W	38	83
	1 x 36W	30	46
	1 x 58W	17	31
	2 x 18W	19	40
	2 x 36W	15	23
	2 x 58W	8	14



Impulse switches

Function

Impulse switches are electromechanically controlled switches used to control single- or multi-phase medium-power loads while the control itself can be (very) low power. The device switches between 2 stable positions, each time a (brief) impulse energises its control circuit.

Applications



Mainly used for the switching of lighting and heating equipment and/or to obtain a simplified wiring in case the load needs to be controlled at reduced voltage and/or from more than 2 different places.

Features

- Besides the normal operation through electrically energising the coil, manual operation is possible at all times, except series VSF+2016.
- The switch position is visualised by the position of the front handle for all devices, except series VSF+2016.
- The central command version was developed to force several devices at the same time to the on or off position, independently of the current status of each individual device. Also in this case, the possibility of operating the device locally remains.
- The safety terminals are equipped with captive Pozidriv screws and have IP20 protection degree.
- An add-on auxiliary contact, and a spacer are available.
- The use of a large number of luminous push-buttons is possible.

For the table Impulse switches maximum lamp loads, see page D.11

Standards

IEC 60669-1, IEC 60669-2-2

Marking

CE

Technical data ● pg D.14

Dimensions ● pg D.15

Impulse switches



Impulse switches



Nominal current	Contact combination	Coil voltage AC	Coil voltage DC	Number of modules	Cat. No.	Ref. No.	Pack.
16A	1NO	8	-	1	VFS+1016A5	686254	12
16A	1NO	12	6	1	VFS+1016J5	686257	12
16A	1NO	24	12	1	VFS+1016B5	686255	12
16A	1NO	48	24	1	VFS+1016E5	686256	12
16A	1NO	230	115	1	VFS+1016M5	686258	12
16A	1NO	240	120	1	VFS+1016P5	686259	12
16A	1NO 1NC	8	-	1	VFS+1116A5	686260	12
16A	1NO 1NC	12	6	1	VFS+1116J5	686263	12
16A	1NO 1NC	24	12	1	VFS+1116B5	686261	12
16A	1NO 1NC	48	24	1	VFS+1116E5	686262	12
16A	1NO 1NC	230	115	1	VFS+1116M5	686264	12
16A	1NO 1NC	240	120	1	VFS+1116P5	686265	12
16A	2NO	8	-	1	VFS+2016A5	686266	8
16A	2NO	12	6	1	VFS+2016J5	686269	8
16A	2NO	24	12	1	VFS+2016B5	686267	8
16A	2NO	48	24	1	VFS+2016E5	686268	8
16A	2NO	230	115	1	VFS+2016M5	686270	8
16A	2NO	240	120	1	VFS+2016P5	686271	8



Add-on power contact

16A	2NO	-	-	1	VFS+ 16 20	686251	10
16A	1NO 1NC	-	-	1	VFS+ 16 11	686250	10

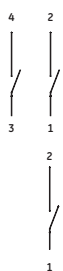


Step by step multi circuit
Steps = 0-A-AB-B-0

16A	1NO 1NC	12	6	1	VSF+ S2016J5	686274	12
16A	1NO 1NC	230	115	1	VFS+S2016M5	686272	12



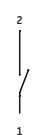
All-in central command



16A	1NO	12	6	1	VSF+Z1016J5	686277	12
16A	1NO	24	12	1	VSF+Z1016B5	686275	12
16A	1NO	48	24	1	VSF+Z1016E5	686276	12
16A	1NO	230	115	1	VSF+Z1016M5	686278	12
16A	2NO	12	6	1.5	VSF+Z2016J5	686281	8
16A	2NO	24	12	1.5	VSF+Z2016B5	686279	8
16A	2NO	48	24	1.5	VSF+Z2016E5	686280	8
16A	2NO	230	115	1.5	VSF+Z2016M5	686282	8



Add-on auxiliary contact



-	1NO 1NC	-	-	0.5	VFS+Z 5 11	686035	16
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Spacer

-	-	-	-	0.5	CTX SP	686069	50
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Terminal identification, see page D.15

Impulse switches: Performance

			VFS+10... VFS+11... VFS+20...	VFS+S20...	VFS+Z10... VFS+Z20...
Rated current (acc. to IEC 669-2-3)					
250V AC (1 & 2 pole) / 400V AC (3 & 4 pole)			A	16	16
Direct Current (at 30V DC)			A	16	16
Number of poles				1 → 4	2
Contacts					
NO				1 → 4	2
Changeover ("m")				1 → 4	-
NO + NC				1+1 / 2+2	-
Width (in 17.8mm DIN modules)					
1 P			Mod.	1	-
2 P			Mod.	1	1½
3 P			Mod.	2	2
4 P			Mod.	2	-
Coil specifications					
Supply voltage: DC/AC ratio ⁽¹⁾				0.5 / 1	0.5 / 1
Supply voltage range (in % of Un)			%	90-110	90-110
Coil pick-up power (AC)					
1P & 2P			VA	14.5	14.5
3P & 4P			VA	14.5	16.0
Coil power loss - AC					
1P & 2P			VA	11.0	11.0
3P & 4P			VA	11.0	11.0
Coil power loss - DC					
1P & 2P			W	7.5	7.5
3P & 4P			W	7.5	14.5
Maximum coil holding voltage time				(2)	(2)
Impulse times					
Minimum impulse time (under Un)			sec.	0.050	0.050
Minimum impulse time (90% Un)			sec.	0.100	0.100
Minimum time between impulses			sec.	0.150	0.150
Maximum number of impulses per mn				250	250
Lifetime (in number of operations)⁽³⁾					
Electrical (in AC-1 - At full load) ⁽⁴⁾				4 x 10 ⁵	3 x 10 ⁵
Mechanical				2 x 10 ⁶	2 x 10 ⁶
Load specifications					
Maximum load AC-1 per phase			A	20	20
Maximum load DC (30V DC)			A	16	16
Minimum load per phase (under 5V)			W	2	2
Short-circuit fuse protection			A	20	20
Maximum lamp load (10³ operations/h)					
Incandescence & halogen (40 to 200 W lamps)			W	3,000	3,000
Fluorescence, compensated (cos φ = 0.9)					
Serial compensation			VA	3,000	3,000
Parallel compensation			VA	2,500	2,500
Fluorescence, non compensated (cos φ = 0.5)			VA	1,800	1,800
Maximum number of push-buttons					
Non illuminated push-buttons				unlimited	unlimited
Luminous push-buttons (0.6mA)					
4 terminals				unlimited	unlimited
3 terminals					
			Without compensator	8	8
			1 compensator	18	27
			2 compensators	45	43
General specifications					
Power contact add-on				yes	no
Auxiliary contact add-on (PLS / CTX R)				yes	no
Need for spacer ⁽²⁾				yes	yes
DIN rail mounting				yes	yes
2-position DIN rail lock				yes	yes
2-position handle				yes	no
Indicator of contact position				yes	yes
Clamping terminals				yes	yes
Unlosable screws				yes	yes
Sealable terminals (coil and load)				yes	yes
Cable cross section (Ø min/max)					
Coil			mm ²	1.5 / 10	1.5 / 10
Load 1P-3P & 4P			mm ²	1.5 / 10	1.5 / 10
Load 2P			mm ²	1.5 / 10	1.5 / 6
Maximum torque on terminals			Nm	1	1
Ambient temperature at installation point (min./max.)			°C	-20 / +45	-20 / +45

(1) For all impulse relays, DC supply voltage = AC supply voltage x DC/AC ratio, except for 8V AC

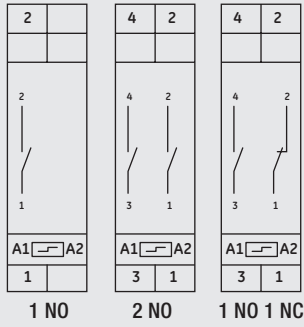
(2) Whenever the normal use of the impulse relay integrates a permanent coil working, use of a spacer is required on both sides.

Make sure that the duty factor allows the device to come back to the ambient temperature

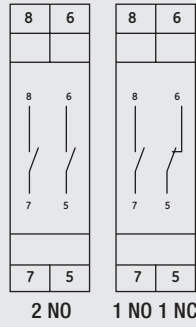
(3) 1 cycle = 2 operations per pole (closing + opening)

Terminal capacity - Impulse switches

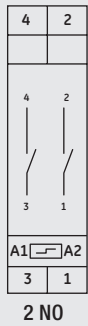
Impulse switches



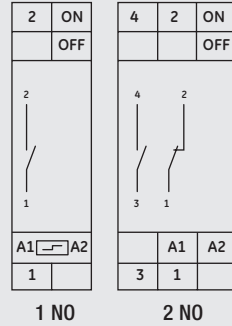
Add-on power contact



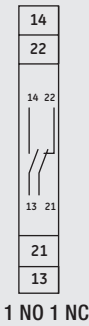
Step by step multi circuit



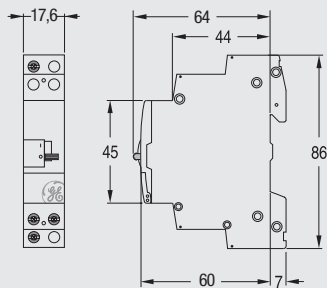
All-in central command



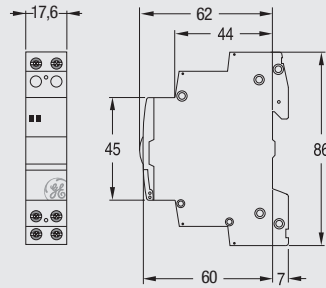
Add-on auxiliary contact



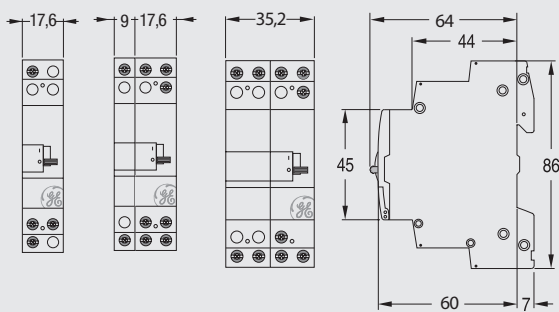
Impulse switches



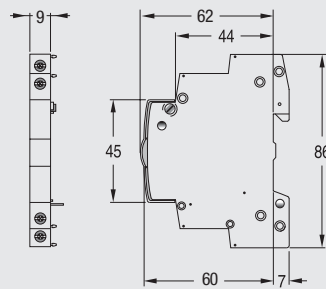
Step by step multi circuit



All-in central command



Add-on auxiliary contact





Staircase switches

Applications



Lighting or ventilation of staircases, basements, halls, etc.

Features

- Designed for a real 3.500W switching capacity.
- User adjustable time.
- Electromechanical contact and electronic timer with manual override off or on possible at all time for VTR4.
- 3 or 4 wire wiring possible.
- Device for pre-extinction warning adjustable from 20 to 40 sec only for incandescence sources.
- Safety terminals equipped with captive Pozidriv screws and IP20 protection degree.
- Anti vandalisme: resistant to blocked push-buttons.

Function

Push-button operated single-shot timer, switching the power to the load after the push-button has been pushed briefly, and switching off again after the preset time has elapsed.

Energy saving: the VTR5 is especially developed to switch off during the preset time when the staircase switch receives a new impulse.

Standard / Marking

EN 60669-2-3



Performance

		VTR5	VTR4	VTRHL
Rated current (acc. IEC 669-2-3)	A	16	16	16
Width (in number of DIN-modules)		1	1	1
Contacts	NO	1	1	1
Time range	1 function	1mn / 20mn	30s / 15mn	20s / 40s
Supply voltage	230V - 50/60Hz	yes	yes	yes
	24V AC / 24VDC	on request	on request	on request
Supply voltage range (in % of Un)	%	90-110	90-110	90-110
Rated power consumption				
Closed circuit current	230V VA	4.0	4.0	4.0
Working current (ignition & running)	230V VA	4.0	4.0	4.0
Light types				
Incandescent lamps		yes	yes	yes
Fluorescent lamps		yes	yes	no
Switching capacity				
AC-5b Incandescent lamps (40 to 200 W lamps)	W	3,500	3,500	3,500
Fluorescence compensated (cos $\psi = 0.9$)				
	Serial compensation W	3,500	3,500	n/a
	Parallel compensation VA	2,500	2,500	n/a
Lifetime (in number of operations) ⁽¹⁾				
Electrical (AC-1)	at 1,200W	2 x 10 ⁶	2 x 10 ⁶	2 x 10 ⁶
	at full load	1 x 10 ⁶	3 x 10 ⁵	3 x 10 ⁵
Mechanical		1 x 10 ⁷	1 x 10 ⁷	1 x 10 ⁷
Max. number of push-buttons				
Non illuminated push-buttons		unlimited	unlimited	unlimited
Luminous push-buttons (0.6mA):				
4 terminals		unlimited	unlimited	unlimited
3 terminals				
	Without compensator	39	83	83
	1 compensator (2 μ F)	45	300	300
	2 compensators (2 x 2 μ F)	59	600	600
General specifications				
DIN rail mounting		yes	yes	yes
Silent operations		yes	yes	yes
Setting accuracy - Full range	%	+/- 15	+/- 15	+/- 15
3-wire and 4-wire installation		yes	yes	yes
Resistant to blocked push-buttons		yes	yes	yes
Continuously adjustable time-lag		yes	yes	yes
Manual switching (number of positions)		2	3	-
Front switch-off lever		yes	yes	-
Clamping screw terminals, unlosable screws		yes	yes	yes
Cable cross section (\varnothing min./max)	Coil mm ²	1.5 / 10	1.5 / 10	1.5 / 10
	Load mm ²	1.5 / 10	1.5 / 10	1.5 / 10
Maximum torque on terminals	N x m	1	1	1
Ambient temperature at installation point (min./max.)	°C	-20 / +45	-20 / +45	-20 / +45

(1) cycle = 2 operations per pole (closing + opening)

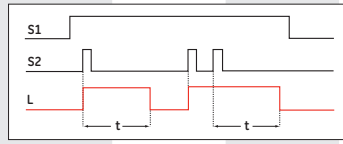
Staircase switches



Staircase switch



Nominal current	Contact combination	Coil voltage AC	Coil voltage DC	Number of modules	Cat. No.	Ref. No.	Pack.
16	1NO	230	-	1	VTR 4	686031	12



Dimmer for staircase switch

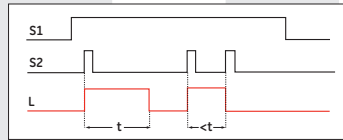
16	3500W	230	-	1	VTRHL	686033	12
To be used only in combination with the staircase switch.							



Time-delay impulse relay



16	1NO	230	-	1	VTR 5	686252	12
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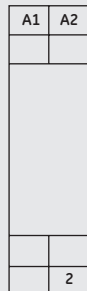
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Terminal identification

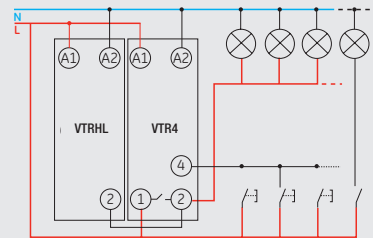
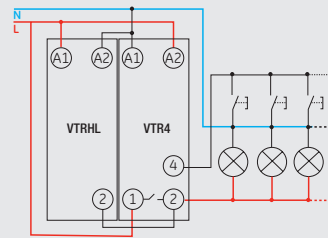
Staircase switch
Time-delay impulse relay



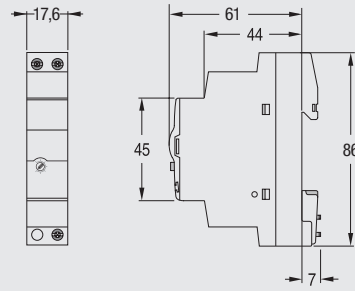
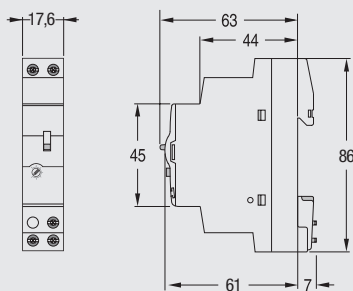
Dimmer for staircase switch



Wiring diagrams



Dimensional drawings





Time relays

Applications



From the delayed lighting of driveways (to avoid unnecessary on/off switching), to after-circulation of a pump (to build in some hysteresis, again to avoid continuous on/off switching) to the post-present ventilation of a meeting room.

Features

- Devices with delay on (ON), delay off (OFF) and positive edge single shot (PS).
- User presettable prescaler and time.
- The loss-proof safety terminals are equipped with Pozidriv screws and have IP20 protection degree.

Function

Conditioning of incoming source to exact predictable output.

Standard / Marking

IEC 60669-2-3



Performance

			PLT +
Rated current (acc. IEC 669-2-3)		A	16
Width (number of DIN-modules)			1
Contacts	Changeover		1
	Static input		-
Time range	1 function		1s / 60mn
	Multifunction		0.1s. / 20h.
Supply voltage	230/240V - 50/60Hz		yes
	24V AC / 24V DC		yes
Supply voltage range (in % of Un)		%	90-110
Rated power consumption			
Closed circuit current	230V	VA	1.5
	24V	VA	0.2
Working current(ignition & running)	230V	VA	4.0
	24V	VA	2.0
Light types			
Incandescent lamps			yes
Fluorescent lamps			yes
Switching capacity			
AC-5b Incandescent lamps (40 to 200 W lamps)		W	2300
Fluorescence compensated (cos ψ =0.9)			
	Serial compensation	W	2300
	Parallel compensation	VA	1000
Inductive load cos ψ =0.5			10A
	Load AC-7b	W	900
Lifetime (in number of operations) ⁽¹⁾			
Electrical (AC-1)	at 1,200W		2 x 10 ⁶
	at full load		3 x 10 ⁵
Mechanical			1 x 10 ⁷
General specifications			
DIN rail mounting			yes
Silent operations			yes
Setting accuracy - Full range		%	+/- 15
Continuously adjustable time-lag			yes
Front switch-off lever			no
Clamping screw terminals, unlosable screws			yes
Cable cross section (Ø min/max)	Coil	mm ²	1.5 / 10
	Load	mm ²	1.5 / 10
Maximum torque on terminals		N x m	1
Ambient temperature at installation point (min./max.)		°C	-20 / +45

(1) cycle = 2 operations per pole (closing + opening)

Time relays



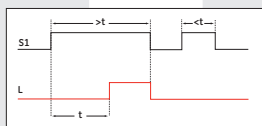
Delay on



Nominal current	Contact combination	Coil voltage AC	Coil voltage DC	Number of modules	Cat. No.	Ref. No.	Pack.
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Operating scale from 1 sec. up to 60 seconds

16	1CO	230	-	1	NVZR+AV	686029	12
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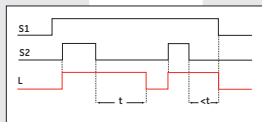


Delay off



Operating scale from 1 min. up to 60 minutes

16	1CO	230	-	1	NVZR+RV	686273	12
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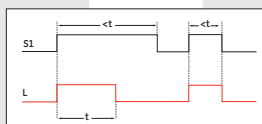


Positive edge single shot



Operating scale from 1 sec. up to 60 seconds

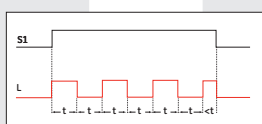
16	1CO	230	-	1	NCZR+EW	686283	12
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Symmetrical flasher



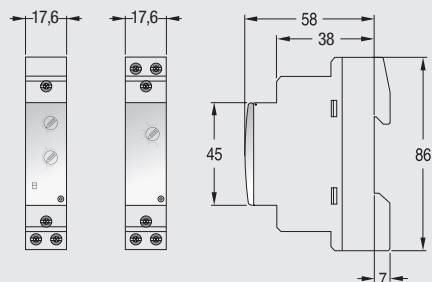
16	1CO	230	-	1	NVZR+TI	686287	6
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Terminal designation



Dimensional drawings





Digital time switches

Applications



Going from the pre-programmed switching of lighting (car park, advertising signs, public roads, etc.) over pre-programmed switching of heating equipment (home and work environment, water heating, etc.) to the pre-programmed switching of motors for pumps and fans and even to random presence simulation.

Function

Pre-programmed switching of all kinds of electrical devices.

Features

Very easy programming, with quasi unlimited possibilities compared to the analogue time switches. Devices with daily/weekly event programming possibilities are available in 1 channel execution. All devices have a shortest switching time of one minute and are all internally quartz-synchronized. On the devices, the summer/winter time change is fully automatic. Devices with free weekday block-programming, holiday function are available. Manual ON or OFF override is possible at all times and all devices are sealable.

Standards

BS EN-60730-1, BS EN-60730-2-7, VDE 0633

Performance

Contacts	
Contact	GD - 7-70/1
Rated switching capacity	Voltage-free changeover
- Resistive load	16A/250V
- Inductive load (cos φ = 0.6)	10A/250V
- Incandescent lamps	2600W
Fluorescent uncorrected / serial corrected	1000VA
- Halogen lamp load	2600W
- Compact fluorescent lamp	22 x 7W, 18 x 11W, 16 x 15W, 16 x 20W, 14 x 23W
- Energy saving lamps	37 x 7W, 30 x 11W, 26 x 15W, 26 x 20W, 11 x 23W
Minimum switching load	3000mW
DC switching capacity	800mA / 300mA / 150mA
Shortest switching time	1min.
Screws	Pozidriv 1
Terminal capacity	1 x 4mm ²
Clockwork	
Operating voltage	110V-230VAC
Own consumption at 230V	1VA
Running reserve (at 20° C)	3 years at 20°C
Battery type	CR2032
Operating temperature range	-25°C to +55°C
Accuracy	±0.5s./day at 20°C
Sealable and unloosable cover	yes

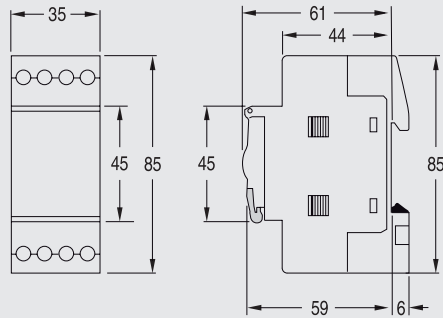
Digital time switches

Day/Week programmable



Program	No. of channels	Switching capacity	Operating voltage	Running reserve	Shortest switching time	No. of prog. steps	No. of mod.	Cat. No.	Ref. No.	Pack.
7x24h	1CO	16A/250V	110...230V	3 years	1min.	70	2	GD-7-70/1 AEG	666350	1
<ul style="list-style-type: none"> • Display lighting • PIN-code • Hour counter with service function • 12/24h time setting • Weekly and holiday program (ON/OFF) • Free weekdays block formation • Summer/winter time changeover: auto/free selectable/OFF • Manual switch: auto/override/fix ON-OFF • Non-volatile memory (EEPROM) • Easy battery replacement (from top side) 										

Dimensional drawings





Light sensitive switches

Applications



Control of lighting in shop windows, offices, car parking areas, controlling street lights, advertising signs, sun blinds, shutters, or even lighting in a home to simulate the presence of people.

Features

User presettable switch light intensity, intensity range and hysteresis (to avoid on/off a stable behavior). 1 channel with separate photocell is available besides a 1 channel all-in-one device.

Function

Electronic switch controlled by the intensity of the ambient light, detected by a separate or integrated photocell (depending on the model). When the light intensity drops below the threshold setting, the switch changes its state to the on position. An increasing ambient light intensity eventually will switch off the device again.


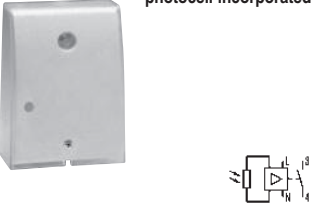
Standards

VDE 0632, VDE 0633,
BS EN 60669-1

Performance

	1 channel GDS	GDSW
Contacts		
Contact	1 make contact NO	1 make contact NO
Switching capacity		
- Resistive load	16A/250V	10A/250V
- Inductive load (cos $\psi = 0.6$)	8A/250V	2A/250V
- Incandescent lamps	2000W	1200W
Switching capacity	800mA at 24V, 300mA at 60V; 150mA at 220V	Not allowed
Shortest switching time	-	-
Screws	Pozidriv 1	Slot head
Terminal capacity: min	1x0.5 mm ²	1x0.5 mm ²
max	1x6 mm ² or 2x2.5 mm ²	1x6 mm ² or 2x2.5 mm ²
Light sensitive operating part		
Light intensity switching range	2 ... 500 lux	2 ... 2000 lux
Switching hysteresis		
On/Off switching delay	100 s. On 100 s. Off	20...120 sec.
Light sensitive sensor wire-length	max 100m	-
Light sensitive sensor protection degree	IP65 (sensor)	IP54 (complete device)
Operating voltage	220/240V 50/60Hz	220/240V 50/60Hz
Own consumption at 230V	5VA	6VA
Running reserve	-	-
Battery	-	-
Operating temperature range	-20 ... +55°C (switch) -30 ... +70°C (sensor)	-35 ... +60°C
Sealable	yes	-
Screws	Pozidriv 1	Slot head
Terminal capacity: min	1x0.5 mm ²	1x0.5 mm ²
max	1x6 mm ² or 2x2.5 mm ²	1x6 mm ² or 2x2.5 mm ²

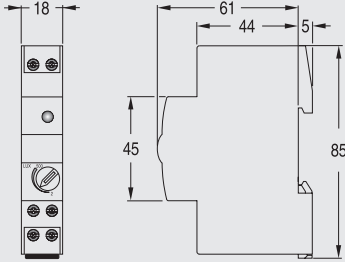
Light sensitive switches

	Program	Number of channels	Nominal current	Operating voltage	Number of modules	Cat. No.	Ref. No.	Pack.
<p>DIN rail mounting, separate photocell included</p> 	2...500 lux	1NO	16A/250V	230V	1	GDS11	666883	
<p>Wall mounting photocell incorporated</p> 	2...2000 lux	1NO	16A/250V	230V	-	GDSW	666884	1

D

Dimensions

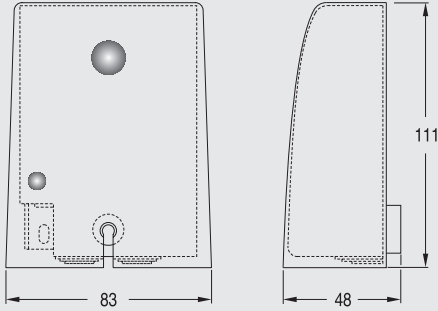
Light sensitive switches



Dimensions for DIN rail switch: 18mm width, 45mm height, 61mm total width, 44mm mounting width, 5mm depth, 85mm total height.

Photocell dimensions: 20mm top diameter, 40mm mounting diameter, 60mm height, 85mm total height, 21mm top diameter, 32mm bottom diameter, 20.4mm mounting diameter.

Light sensitive switches - wall mounted



Dimensions for wall mounted switch: 83mm width, 48mm mounting width, 111mm height.



Transformers

Applications



Going from supplying power to a bell circuit, to supplying power to the control circuit of impulse switches, relays or contactors for the control of lighting, heating, etc.

Features

Safety transformers have short-circuit protection and continuous nominal power. Bell transformers are recommended for intermittent use at the nominal power declared (50% for continuous use). Full power available at all secondary voltages. The safety terminals are equipped with captive Pozidriv screws and have IP20 protection degree.

Function

Reducing the voltage to a very low (safety) voltage used mainly as control-voltage in order to reduce the risk of electrocution due to environmental circumstances (i.e. high degree of humidity like outdoors, in a swimming pool complex, etc.).

Standards

IEC 61558-1-2-6: Safety transformer
IEC 61558-1-2-8: Bell transformer

D

Performance

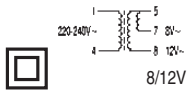
	Bell transformer	Safety transformer
Nominal primary voltage and frequency	230V 50Hz / 240V 60Hz	230V 50Hz / 240V 60Hz
Secondary voltage at nominal primary voltage	8 or 12V	12 or 24V
Maximum secondary voltage at zero load	1.5xUn sec.	1.05xUn sec.
Minimum secondary voltage at nominal load	0.85xUn sec.	1xUn sec.
Maximum load	Nominal power	Nominal power
Short-circuit protection	PTC ⁽¹⁾	PTC
Operating temperature	-20...+40°C	-20...+40°C
Isolation voltage	4kV	4kV
Protection degree	IP 20	IP 20
Screw	Pozidriv 1	Pozidriv 1
Terminal capacity: min	1x1mm ²	1x1mm ²
max	1x16mm ² or 2x6mm ²	1x16mm ² or 2x6mm ²

(1) Except 666999 - protection by construction

Transformers

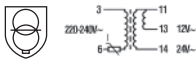
Bell transformer

Output power	Secondary voltage	Primary voltage	Number of modules	Cat. No.	Ref. No.	Pack.
5VA	8/12V	220...240V	2	KTB5	666995	1
15VA	8/12V	220...240V	2	KTB15	666994	1
30VA	12/24V	220...240V	2	KTB30	666999	1

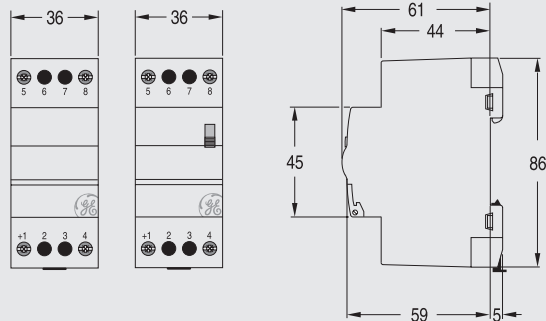


Safety transformer

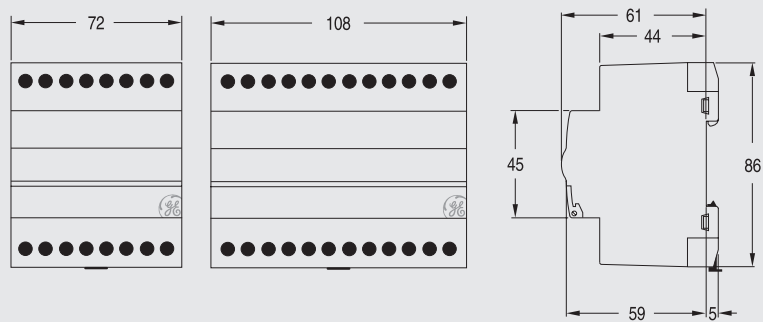
25VA	12/24V	220...240V	4	KTS25	666996	1
40VA	12/24V	220...240V	4	KTS40	666997	1
63VA	12/24V	220...240V	6	KTS63	666998	1



Bell transformers



Safety transformers





Measurement instruments

Applications



Measurement of basic electrical values as voltage, current, frequency. To avoid down-time due to abnormal situations, i.e. power-supply voltage too high, absorbed power too high, etc., leading to malfunctioning and even break-down of the machinery, the measurement and monitoring of the electrical values like voltage, current, frequency, etc. is an absolute must and even an indispensable asset when it comes to preventive maintenance.

Function

Measurement, visualisation and logging of voltage, current, frequency, hours of operation.

Standards

EN 61010-1, BS EN 60051-1-2










Features

- AC measurement devices with analogue technology and readout are available.
- The devices (one measurement only i.e. voltage, current, frequency) are only available in single phase.
- High currents can be measured through the intermediate use of a current transformer (for the analogue amp-meter combined with an interchangeable scale-plate).
- All devices have very good precision and have also a very low self-consumption to limit as much as possible the measurement error.
- Using one monophas-volt or amp-meter in a 3-phase system is possible by using the appropriate selector switch.

Performance

	Analogue instruments <i>Polycarbonate + carbon needle</i> Interchangeable scaleplate
<i>Readout</i>	
Scale selection	
Own consumption current meters	0.3VA
Own consumption other meters	1.5VA
Operating temperature range	-10 ... +55°C
Test voltage	2000V at 50Hz during 1 minute
Class of precision (accuracy)	1.5 (0.5 for frequency meter)
Overload current coils	
- 1 second	10xIn
- Continuous	2xIn
Overload voltage coils	
- 0.5 second	2xUn
- Continuous	1.2xUn
Vibration resistance	0.35 mm at 10/55Hz on 3 axes, duration of 6 hours
Shock resistance	50g
Protection degree	IP40
Screws	Pozidriv 1
Terminal capacity: min	1x1 mm ²
max	1x16 mm ² or 2x6 mm ²

Analogue measurement instruments

		Scale	Accuracy	Number of phases	Number of modules	Cat. No.	Ref. No.	Pack.
	Volt meter 	500V	1.5	1	3	MGAV500	666890	1
 	Ammeter 	-	1.5	1	3	MGAA	666887	1
		15A	1.5	1	3	MGAA15	666885	1
	Frequency meter 	45..65Hz	0.5	1	3	MGAF	666888	1
	Hour counter 	12V	-	1	2	MGABZL5	666900	1
		230V/50Hz	-	1	2	MGABZM5	666889	1

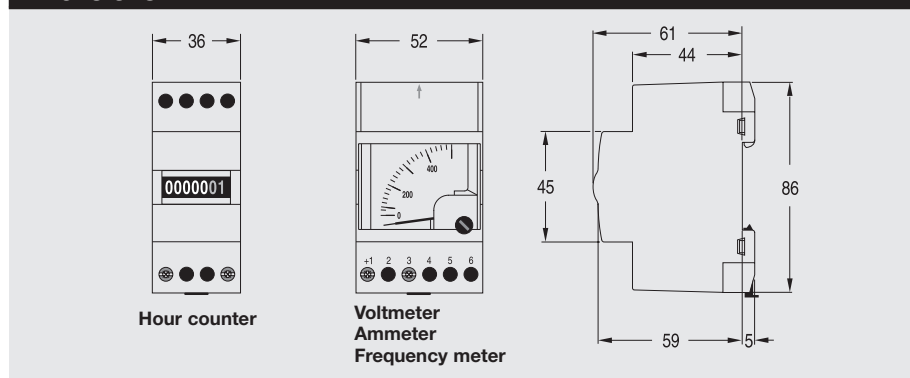
Accessories

Interchangeable Ammeter scaleplates for 666887



Scale	Cat. No.	Ref. No.	Pack.
40/5A	MT SP 40	666395	1
50/5A	MT SP 50	666397	1
60/5A	MT SP 60	666399	1
80/5A	MT SP 80	666401	1
100/5A	MT SP 100	666389	1
150/5A	MT SP 150	666391	1
200/5A	MT SP 200	666392	1
250/5A	MT SP 250	666393	1
300/5A	MT SP 300	666394	1
400/5A	MT SP 400	666396	1
500/5A	MT SP 500	666398	1
600/5A	MT SP 600	666400	1
800/5A	MT SP 800	666402	1
1000/5A	MT SP 1000	666390	1

Dimensions





Surge arresters

ASA BLOCK
ASA PLUG-IN
ASA PHOT
ASA TELE OV

Standards

Protection of an electrical installation and all electrical and electronic devices connected to this installation against destructive surges. Such voltage surges can be generated by lightning induced currents, by network polluting devices such as motors, frequency converters, dimmers, etc., and by power supply networks switching operations.

Standards

NF C61-740
 IEC 61643-I
 IEC 61643-II
 BS 6651
 DIN VDE 0675-6

Marking



Applications



ASA BLOCK, ASA PLUG-IN and ASA PHOT surge arresters cover the protection of home appliances (TV, Hifi, VCR, laundry-machine, dishwasher...), commercial building equipment (computer, data networks, intrusion and alarm systems, access control and building automation systems), industrial equipment (PLC, instrumentation, medical apparatus, monitoring devices) and even the protection of entire off-shore drilling platforms.

Features

- AEG family of surge arresters includes a full range of compact protectors for installation on DIN rail.
- The range is specially designed to provide complete and effective protection against surges, protecting equipment and property connected to the low-voltage network.
- The range includes Class I/B 35 kA to 10 kA surge arresters in 10/350 ms wave form, and Class II/C surge arresters with different discharge capacities: 40 kA and 100 kA in wave form 8/20 ms. Class 2 SPD's for DC photovoltaic applications are also available.
- The most suitable value will be selected according to the type of installation, premises and equipments to be protected.
- Several different formats one-pole, single-phase, two-phase and three-phase available for all types of electrical net systems: TT, TN-S, TN-C, IT.
- Additionally, a complete line for temporary overvoltage (TOV) is included in this range. TOV is a voltage peak of hundreds of volts for an indeterminate period due to the unbalance of the network (normally caused by neutral fault).

Applications

Impulse current (Iimp)

This is the peak current that the SPD can withstand without failing. The waveform of the applied current is normalised as 10/350 μ s. Used in Class 1 SPD.

Maximum discharge current (Imax)

This is the peak current it can withstand in a single pulse without failing. The waveform of the applied current is normalised as 8/20 μ s. Used in Class 2 SPD.

Nominal discharge current (In)

This is the current that the device is capable of shunting to ground at least 20 times without failing.

Level of protection (Up)

This is the parameter that characterises the action of the protection device against surges by limiting the voltage between its terminals. It must be less than the surge withstand capacity given by the category of the equipment to be protected. However, if the protector is far from the equipment to be protected it may be necessary to use additional protectors.

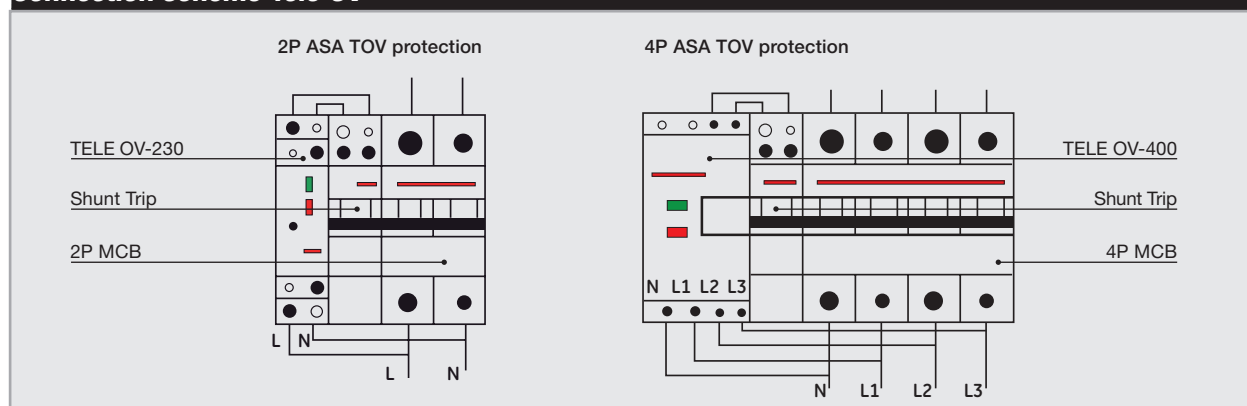
Maximum continuous operating voltage Umax (Uc)

This is the maximum AC or DC voltage which may be continuously applied to the terminals of the SPD.

Performance

	ASA BLOCK I	ASA BLOCK I&II	ASA PLUG-IN II single phase	ASA BLOCK II multi-phase
Energy impulse wave	10/350 μ s	10/350 μ s and 8/20 μ s	8/20 μ s	8/20 μ s
Response time	<100ns	<100ns	<25ns	<25ns
Thermal fuse	-	yes	yes	yes
Thermal fuse healthy indication	-	Indicator flag window	Indicator flag window	Indicator flag window
Nominal voltage	230V or 400V	230V or 400V	230V or 400V	230V or 400V
Frequency	50/60Hz	50/60Hz	50/60Hz	50/60Hz
Useable in network	TT, TN-S, TT, IT	TT, TN-S, TT, IT	TT, TN-S, TT, IT	TT, TN-S
Operating temperature	-40°C... +80°C	-40°C... +80°C	-40°C... +75°C	-40°C... +80°C
Screws	Pozidriv 3	Pozidriv 3	Pozidriv 3	Pozidriv 3
Terminal capacity: min	6mm ²	6mm ²	6mm ²	6mm ²
max (flexible/rigid)	35/50mm ²	25/35mm ²	25/50mm ²	25/35mm ²

Connection scheme Tele OV



SA BLOCK - SA PLUG-IN / Surge arresters

Class I/B

These surge arresters have the capacity to divert excess energy for low-voltage line protection. Class I surge arresters should be installed in areas at high risk from direct lightning strike discharge.

Single phase



TT, TN-S, TN-C, IT



limp	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
35kA	-	4000V	-	-	255V	1P	-	1	ASA BLOCK I 35	667520	1
100kA	-	4000V	-	-	255V	1P	-	1	ASA BLOCK I 100 N	667521	1
100kA	100kA	-	-	-	500V	1P	-	1	ASA BLOCK I PC	667522	1

Class I/B and II/C

The ASA BLOCK I&II can operate as a Class I and Class II protection in accordance with the IEC 61643-11, Class I/B and Class II/C integrated in only one device. Used in main panelboards (incomer of installations) with high risk from direct lightning strike discharge. Not needed decoupling coils and class II downstream SA BLOCK I&II in the main panelboard.

Single phase



TT, TN-S, TN-C, IT



limp/Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
Class I/class II	Class II										
15kA / 100kA	30kA	1300V	-	-	275V	1P	-	2	ASA BLOCK I&II 100	667523	1
30kA / 100kA	65kA	1500V	-	-	275V	1P	-	2	ASA BLOCK I&II 100N	667524	1

Class II/C

The Class II protection is the most frequently used because they offer high protection and are compatible with most equipments.

Single phase plug-in (base+module)



TT, TN-S, TN-C, IT



Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
40kA	20kA	1300V	-	-	280V	1P	-	1	ASA PLUGIN II 40/230	667531	1
40kA	20kA	1300V	-	-	280V	1P	1CO	1	ASA PLUGIN II 40/230 C	667529	1
40kA	20kA	1900V	-	-	440V	1P	1CO	1	ASA PLUGIN II 40/400 C	667530	1
60kA	30kA	1500V	-	-	255V	1P	-	1	ASA PLUGIN II 60 NGND	667532	1

Multi-phase monobloc



TT, TN-S



Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
Common mode protection											
40kA	15kA	1300V	-	-	275V	2P	-	2	ASA BLOCK II 40/230 LLE	667526	1
Common mode protection											
40kA	15kA	1300V	-	-	440V	4P	-	4	ASA BLOCK II 40/400 4L/NE	667527	1
40kA	15kA	1300V	-	-	440V	4P	1CO	4	ASA BLOCK II 40/400 4L/NE C	667528	1

Special applications

Class II/C protection for (DC) Photovoltaic applications



Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
40kA	15kA	2600V	-	-	600Vdc	2P	-	2	ASA PHOT 600V	667536	1
40kA	15kA	3800V	-	-	1000Vdc	2P	-	2	ASA PHOT 1000V	667537	1

Accessories

Class II - Replacement modules for plug-in versions

TT, TN-S, TN-C, IT

Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
40kA	20kA	-	1200V	-	280V	1P	-	1	ASA MODULE 40/230	667533	1
40kA	20kA	-	1300V	-	440V	1P	-	1	ASA MODULE 40/400	667534	1
60kA	20kA	-	1500V	-	255V	1P	-	1	ASA MODULE 60 NGND	667535	1

To be used between class I/B and class II/C if these arresters are placed in the same panelboard. We can save it if we use ASA BLOCK I&II.

Decoupling coil



Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
-	35A	-	-	-	-	1P	-	2	ASA C35	667525	1

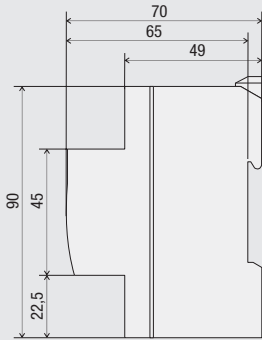
ASA TELE OV - Temporally Overvoltage (ATOV)

Protection against permanent overvoltage

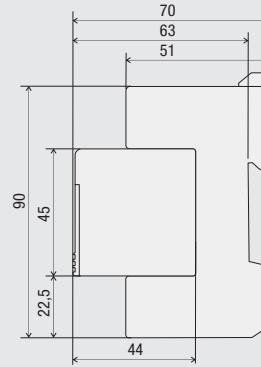
Imax	In	Up	Up (L-N)	Up (N-EP)	Umax (Uc)	No. of poles	Aux. contact	No. of modules	Cat. No.	Ref. No.	Pack.
-	mcb	254V	<4 sec.	<0.5 sec.	230V	2	-	1	ATELE OV 230	667538	1
-	mcb	254V	<4 sec.	<0.5 sec.	400V	4	-	2	ATELE OV 400	667539	1

Surge arresters

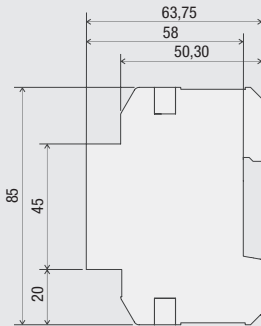
ASA BLOCK, ASA PHOT x 2 MODULES, ASA C



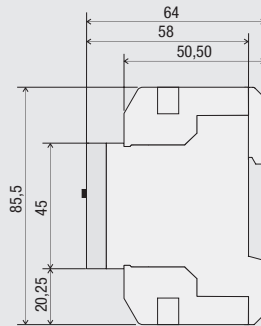
Plug-in types ASA C



ASA BLOCK II 15 LN



ASA TELE OV - Overvoltage protection



HabiTEQ™

Home and Building Automation

The growing recognition of the fact that buildings consume 40% of total energy used and are responsible for 36% of CO₂ emissions in the European Union, places ever increasing emphasis on improving energy efficiency in buildings.

Development of innovative technologies offers new possibilities to upgrade electrical installations – the heart of every building. This area holds great potential for designing properties with greater flexibility, energy saving and additional comfort without compromising lifestyle.

HabiTEQ™ hybrid automation system combines wired and wireless control technologies to enable energy efficiency improvements: optimize the regulation of energy used by heating, lighting, ventilation, and building electrical infrastructure and further increases energy awareness through consumption reporting.



- Energy management
- Flexibility and comfort
- Installation simplified



Shaping the future with HabiTEQ™ wireless

Advancement in wireless technology has transformed communications ranging from indispensable devices like mobile phone and Wifi PC networks to highly reliable aircraft communication and navigation systems impacting everyday life.

Emerging standards and advances in wireless technology have made it possible to deploy wireless solutions in building automation networks.

Wireless sensing gives you economical control and optimum comfort in areas that are frequently re-configured, or where hardwiring is challenging or simply not possible.

The wireless technology is ideal for minimizing the impact on existing building installations and decorative surfaces, or for controlling large, open spaces or structures with brick or concrete walls.

Wireless technology offers unlimited flexibility for new installations.



**HabiTEQ™
wired**

NEW!

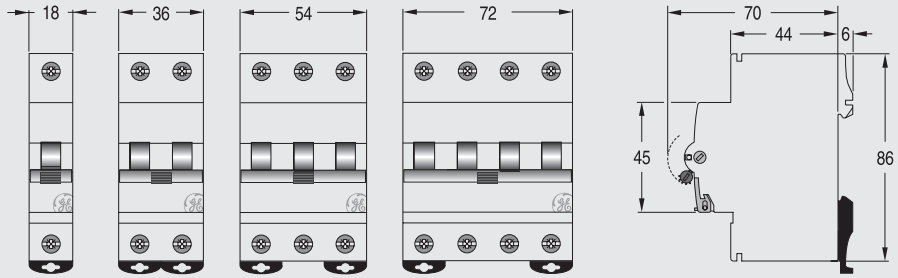
**HabiTEQ™
wireless**



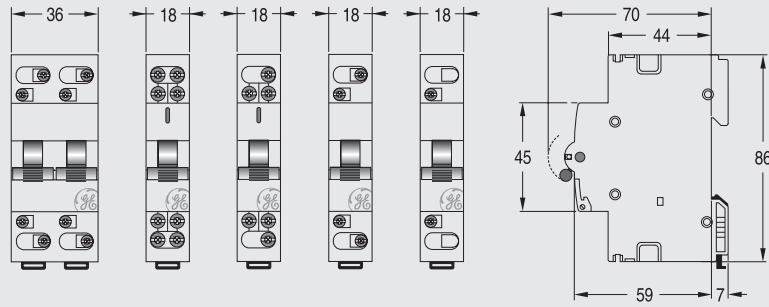
For more information, please contact us.

Dimensions

Mains disconnect switches

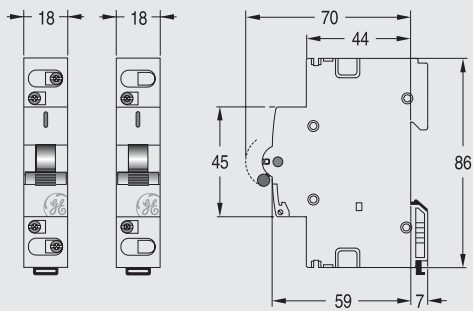


Switches

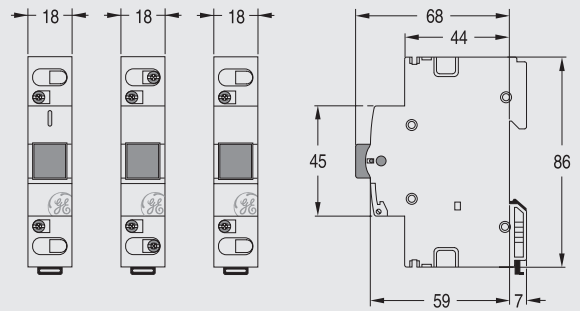


D

Switches with signal lamp



Push-buttons



Miniature circuit breakers A

Residual current circuit breakers B

Busbar systems C

Comfort functions/Energy control D

Residential enclosures E

E.2 Surface and flush mounting - Europe Line

E.4 Surface mounting - Fix-o-Rail Junior

E.5 Surface mounting - Fix-o-Rail Covers

E.6 Surface mounting - Fix-o-Rail Classic

E.8 Surface mounting - Fix-o-Rail 150

E.10 Surface mounting - Aquaria

E.12 Surface mounting - Fix-o-Rail 55

E.13 Surface mounting - Fix-o-Rail Senior

E.14 Flush mounting - Fix-o-Rail 150-F4

E.15 Flush mounting - Abaco F

E.16 Junction boxes - Flex-o-Box

E.17 Junction boxes - Series 55

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units H

Manual motor starters I

Moulded case circuit breakers J

Air circuit breakers K

Fuse systems/Loadbreak disconnectors L

General purpose enclosures M

System enclosures N

Numerical index X



Insulated enclosures Surface mounting

Europe Line

IP30

Features

- Masking frame, base and protective cover made from high resistance material
- Metal door, powder coated, opens through 180°
- Cable entry from top, below, from side and from rear side
- Cable entry plate (top, bottom) removable for easy cable mounting from front side
- Clamp relief possibility
- Sealing possible
- Label for circuit indication
- Rated voltage up to 400V/50Hz
- Rated current up to 63A
- Protection class II (total isolation)

Standards

DIN 43871 and DIN VDE 0603 Part 1

Distribution boards



Description	Dimensions HxWxD (mm)	Ref. No.	Pack
1 row, 12 mod.	245 x 300	564538	1
2 rows, 24 mod.	370 x 300	564539	1
3 rows, 36 mod.	495 x 300	564540	1
4 rows, 48 mod.	620 x 300	564541	1
With screwless earth (PE/N) bar			
1 row, 12 mod.	245 x 300	619413	1
2 rows, 24 mod.	370 x 300	619414	1
3 rows, 36 mod.	495 x 300	619415	1
4 rows, 48 mod.	620 x 300	619416	1

Doors



Plain metal door

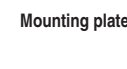


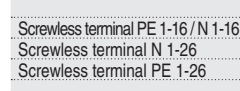





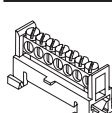
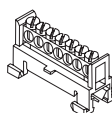

No. of rows	Dimensions HxWxD (mm)	Ref. No.	Pack
1	189 x 300 x 8.5	564533	1
2	314 x 300 x 8.5	564546	1
3	439 x 300 x 8.5	564547	1
4	564 x 300 x 8.5	564548	1



Metal door with clear window

1	189 x 300 x 8.5	564061	1
2	314 x 300 x 8.5	564062	1
3	439 x 300 x 8.5	564063	1
4	564 x 300 x 8.5	564064	1

Europe Line accessories

	Description	Ref. No.	Pack
	2 rows	564066	1
	3 rows	564067	1
	4 rows	564068	1
	Surface mounting, different keys	564350	1
	Surface mounting, same keys	564056	1
	12-pole	564050	1
	16-pole	564051	1
	33-pole	564052	1
	Screwless terminal PE 1-16 / N 1-16	619393	20
	Screwless terminal N 1-26	619394	20
	Screwless terminal PE 1-26	619395	20
	PE terminal	564047	1
	PE / N terminal	564048	1
	PE / N terminal	564049	1
	N terminal	564046	1
	Partition vertical		
	2 rows	564043	1
	4 rows	564045	1
	Partition horizontal	564041	1
	RCCB clamps	564053	1
	Mounting rail with reduced height	564054	1
	1, 2 rows	564352	1
	3, 4 rows	564353	1
	7 poles	546297	10
	12 poles	546298	10
	15 poles	546299	10
	7 poles	546300	10
	12 poles	546301	10
	DIN-rail EN 50022 - 1000 mm long	564092	10
	Filling piece	546331	25
	8,75 mm to disperse the heat for DIN-rail EN 50022		



Insulated enclosures Surface mounting

Fix-o-Rail Junior

IP40/43

Features

- High resistance material
- Modern design
- Compact construction
- High protection degree IP40: 4 modules
IP43: 8 modules
- Total insulation
- Total security
- Transparent cover allowing visibility of devices
- For all modular equipment
- Available in 4 and 8 modules
- Colour: RAL 7035
- Polystyreen for the base
- Flame resistance: self extinguishing material, resist the 650 °C
- Polycarbonate for the lid
- Flame resistance: self extinguishing material, resist the 960 °C

Standards

EN 60439-3

Approval/Marking



Applications

For new buildings, replacing old units and adding add-on devices.

Fix-o-Rail Junior



	Equipment	No. of modules	Ref. No.	Pack.
170 x 90 x 100 Max. depth of the devices: 70 mm Entries: 1 x PG29 or 2 x PG21	Earth terminal: connection 5 x 16 mm ² Neutral terminal: connection 5 x 16 mm ²	4	610344	1/15
170 x 170 x 120 Max. depth of the devices: 92.5 mm Upper entries: 3 x PG21 or 2 x PG21 + 1 x PG29 Bottom entries: 4 x PG16 + 1 x PG21 or 4 x PG16 + 1 x PG29	Earth terminal: connection 6 x 10 + 2 x 16 mm ² Neutral terminal: connection 6 x 10 + 2 x 16 mm ²	8	610345	1/8

Accessories



Earth/neutral terminals

Fix-o-Rail Junior 4 modules	Connection 5 x 16 mm ²	4	610141	2
Fix-o-Rail Junior 8 modules	Earth terminal: connection 6 x 10 + 2 x 16 mm ²	8	610186	4
Fix-o-Rail Junior 8 modules	Neutral terminal: connection 6 x 10 + 2 x 16 mm ²	8	610187	4



Grommets

PG16			610130	25
PG21			610132	25
PG29			610133	25

Sealing bracket

610140 2

Blank plate 4 modules

Length: 72 mm RAL 7035	Cut out width: 45 mm Can be cut into 9 mm length		610142	4
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Insulated enclosures Surface mounting

Fix-o-Rail Covers

IP30



Marking



Features

- Made from high resistance material
- Protection degree: IP30
- Colour: Grey RAL 7035
- Made from high resistance ABS
- With DIN-rail
- Flame resistance: self extinguishing material, resist the 960°C
- Installation temperature: -15°C up to +60°C

Fix-o-Rail Covers without door

	H x W x D	No. of rows	No. of modules	Ref. No.	Pack.
Without door	139 x 51 x 61	1	2	610090	1
	139 x 88 x 61	1	4	610091	1
	140 x 165 x 72	1	6	610354	1
	198 x 200 x 72	1	8	610355	1



Applications

Fix-o-Rail Classic and the accessories are a homogeneous system for power distribution purposes in the house building, new homes, adding extensions and replacing old units.

Approvals/Marking



Insulated enclosures Surface mounting

Fix-o-Rail Classic

IP30/IP40

Features

- Protection degree: IP30
- IP40 with door (optional)
- Colour: RAL 9010
- 13, 26, 39 and 52 modules
- Total insulation (with backplate and door)
- Transparent or plain door
- Surface mounting
- Adjustable DIN-rail
- Polystyreen for the covers
- Flame resistance: self extinguishing material, resist the 650°C
- Polycarbonate for the transparent doors
- Door in metal for enclosure 4 rows
- Flame resistance: self extinguishing material, resist the 960°C

Components

The Fix-o-Rail Classic A packaging includes:

- A mounting frame
- A protective cover
- A backplate
- A support with earth and neutral terminals
- A modular blank plate
- Four insulating caps
- Labels for circuit identification
- Installation guidelines

The Fix-o-Rail Classic B packaging includes:

- A mounting frame
- A protective cover
- Labels for circuit identification
- Installation guidelines

Advantages

- Two DIN-rail positions: 47 and 55 mm
- Generous wiring room 30 mm behind the mounting frame
- 13 modules on each row
- 125 mm distance between two DIN-rails
- Self positioning protective cover, fixation with four captive quarter-turn screws
- Door can be opened to the left or the right and hinges over 180°
- The Classic range can be coupled

Fix-o-Rail Classic



Classic A
With earth and neutral terminals

H x W x D	Equipment	No. of rows	No. of modules	Ref. No.	Pack.
250 x 250 x 94	Earth bar: connection 8 x 16 mm ² Neutral bar: connection 10 x 16 mm ²	1	13	619200	1
250 x 250 x 94	Earth bar: connection 18 x 16 mm ² Neutral bar: connection 2(8 x 16 mm ²)	2	26	619201	1
375 x 250 x 94	Earth bar: connection 27 x 16 mm ² Neutral bar: connection 2(8 x 16 mm ²)	3	39	619202	1
625 x 250 x 94	Earth bar: connection 27 x 16 mm ² Neutral bar: connection 2(8 x 16 mm ²)	4	52	618116	1

Classic B
Without earth and neutral terminals

250 x 250 x 94			13	619203	1
375 x 250 x 94			26	619204	1
500 x 250 x 94			39	619205	1
625 x 250 x 94			52	618117	1

Accessories

ACCESSORIES FOR CLASSIC B



Insulated backplate + screws

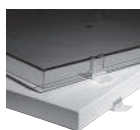
		1	13	618505	1
		2	26	618511	1
		3	39	618517	1
		4	52	619411	1



Equipped insulated support

	Earth bar: connection 8 x 16 mm ² Neutral bar: connection 10 x 16 mm ²	1		618506	1
	Earth bar: connection 18 x 16 mm ² Neutral bar: connection 2(8 x 16 mm ²)	2		618512	1
	Earth bar: connection 27 x 16 mm ² Neutral bar: connection 2(8 x 16 mm ²)	3/4		618518	1

COMMON ACCESSORIES



Transparent door + hinges

		1	13	618503	1
		2	26	618509	1
		3	39	618515	1
	* in metal	4*	52	617961	1

Plain door + hinges
- colour RAL 9010

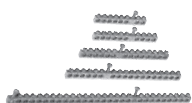
		1	13	619206	1
		2	26	619207	1
		3	39	619208	1
	* in metal	4*	52	617962	1

Insulated support for earth and neutral terminals

				618530	1
--	--	--	--	--------	---

Equipped insulated support 3P+N + earth assembly

	5 x (8 x 16 mm ²)			618529	1
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Earth or neutral terminals

	8 x 16 mm ²			618519	4
	10 x 16 mm ²			618520	4
	14 x 16 mm ²			618521	4
	18 x 16 mm ²			618522	4
	27 x 16 mm ²			618523	4

Link for neutral or earth terminal

				618525	10
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Shrouding for earth and neutral support

				618531	1
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Metal support for connection terminals

				618524	1
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Connection terminals

	Phase terminal 6 x 10 mm ² + 2 x 16 mm ²			610185	4
	Earth terminal 6 x 10 mm ² + 2 x 16 mm ²			610186	4
	Neutral terminal 6 x 10 mm ² + 2 x 16 mm ²			610187	4



Cable connector clamps

	Axial 25 mm ² insulated pin type			624864	30
	Axial 35 mm ² insulated pin type			624862	1/50



Cable entry

				619084	1
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Blank plate 4 modules

	Length: 72 mm - RAL 9010 Cut out width : 45 mm Can be cut into 9 mm length			610382	4
--	--	--	--	--------	---



Coupling

				618528	2
--	--	--	--	--------	---



Sealing bracket

				618527	2
--	--	--	--	--------	---



Applications



Fix-o-Rail 150 is the best choice for power distribution purposes in:

- hotels, restaurants, offices, etc.
- the house building industry.

For applications in new homes, for replacing old units or adding add-on devices.

Standards

EN 60439-3

Approval/Marking



- ① Undeep base
- ② Screwless earth bar
- ③ Removable mounting frame
- ④ Protective cover
- ⑤ Entry plate
- ⑥ Transparent door
- ⑦ Insulating cap
- ⑧ Fastener
- ⑨ Hinge
- ⑩ Quarter-turn screw

Insulated enclosures Surface mounting

Fix-o-Rail 150

IP40

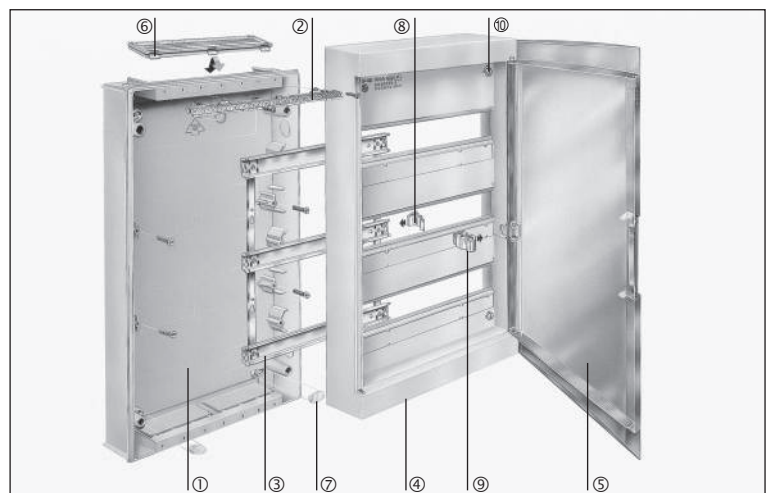
Features

- High protection degree: IP40 with closed door
- Total insulation
- High impact strength: IK08
- 1-2-3-4 rows / 18 modules per row
- For surface mounting
- With transparent or grey door
 - can be opened to 180°
- For DIN-rail equipment up to 92.5 mm
- Optional security lock
- Generous wiring room:
 - 30 mm behind the mounting frame
 - 150 mm centre distance between DIN rails
 - above and below the base
 - shallow base
- Fixation with four captive quarter-turn screws
- Removable mounting frame
- All knockouts are easy to remove
- High impact resistance material, colour RAL 7035
- Enclosure and mounting frame are extremely sturdy
- Polystyreen for the base
- Flame resistance: self extinguishing material, resist the 650°C
- Polycarbonate for the lid
- Flame resistance: self extinguishing material, resist the 960°C

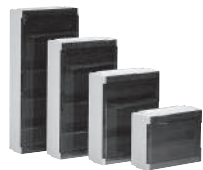
Components

A Fix-o-Rail 150 enclosure also includes:

- screwless earth bar
- entry plate
- blank plate
- four insulating caps =
- labels
- adhesive pictograms
- installation guidelines

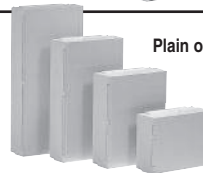


Fix-o-Rail 150



Transparent overlapping door

H x W x D	Equipment	No. of rows	No. of modules	Ref. No.	Pack
270 x 355 x 150	Earth bar: connection 14x16 mm ² In 80A	1	18	610275	1
450 x 355 x 150	Earth bar: connection 14x16 mm ² In 80A	2	36	610285	1
600 x 355 x 150	Earth bar: connection 18x16 mm ² In 100A	3	54	610295	1
750 x 355 x 150	Earth bar: connection 18x16 mm ² In 100A	4	72	610303	1



Plain overlapping door

270 x 355 x 150	Earth bar: connection 14x16 mm ² In 80A	1	18	610276	1
450 x 355 x 150	Earth bar: connection 14x16 mm ² In 80A	2	36	610286	1
600 x 355 x 150	Earth bar: connection 18x16 mm ² In 100A	3	54	610296	1
750 x 355 x 150	Earth bar: connection 18x16 mm ² In 100A	4	72	610304	1

Neutral terminal is optional; order the ref nrs 610386 for the 1 and 2 rows
Neutral terminal is optional; order the ref nrs 610385 for the 3 and 4 rows

Accessories



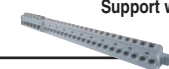
4 pole terminals

	Equipment	Ref. No.	Pack
63A	Connection 4 x (10 x 16 mm ²) Cu section 6,5 x 9 mm	610022	12
160A	Connection 4 x (10 x 10 mm ²) Cu section 12 x 5 mm	610020	15
160A with cover	4x (1 x 10 to 50 mm ² incoming + 3 x 6 to 35 mm ² + 8 x 2.5 to 16 mm ² outgoing) Cu section 12 x 10 mm	617992	15



Protective shroud

	For 160A terminal (ref. 610020)	610021	1
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Support with screwless earthbar

	Included with all enclosures	610396	1
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Support with earth or neutral terminals

	Delivered with 1 and 2 rows enclosure Cable section: 14 x 16 mm ²	610386	4
	Delivered with 3 and 4 rows enclosure Cable section: 18 x 16 mm ²	610385	4



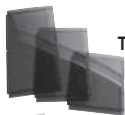
Support with terminal bars

	Cable section: 2 (17 x 16 mm ²)	610532	4
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Support with terminal bars L1-L2-L3-N

	Cable section: 4 (5 x 16 mm ²)	610387	4
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Transparent replacement door

	For enclosure 610275	610277	1
	For enclosure 610285	610287	1
	For enclosure 610295	610297	1
	For enclosure 610303	610305	1



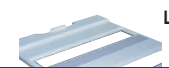
Plain replacement door

	For enclosure 610276	610281	1
	For enclosure 610286	610291	1
	For enclosure 610296	610301	1
	For enclosure 610304	610306	1



Adhesive pictograms

	For clear and permanent identification of circuits - Set of 50 pieces	610380	1
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Labels and labelholders

	Set of 50 pieces	610383	1
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Coupling - 2 x PG21

	Allows the facility to couple several Fix-o-Rail enclosures laterally, top and bottom	610327	1
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Universal entry plate

	For a sound and safe quality of finish. Increases the dust protection. With moulded-in marks for conduits.	610264	2
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Universal entry cap

Width: 355 mm	Can be mounted at the bottom or at the top of the enclosure. Easy to fix. Useful for the installation of cable glands or universal cable entries	610272	1
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Security lock

	With 2 keys	610170	1
--	-------------	--------	---



Drawing pocket

	To be fixed at the bottom or at the top of the protective cover	610265	1
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Blank plate 4 modules

Length: 72 mm	Can be cut into 9 mm lengths Cut-out width: 45 mm - RAL 7035	610142	4
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Insulated enclosures Surface mounting

Aquaria

IP65



Applications



Enclosures are designed for power distribution in areas where a high protection degree is mandatory, such as technical rooms, laboratories, factories etc

Standards

EN 60439-1, IEC 695-2-1,
CEI 23-48, CEI 23-49

Approval/Marking



Features

- Total insulation ☑
- High protection degree: IP65 – IK08
- Colour: grey RAL 7035
- Transparent hinged lid for 1 and 2 rows;
transparent hinged door for 3 rows
- For modular DIN rail devices up to 92.5mm
- DIN rail adjustable on 3 levels
- Operating temperature: -5°C to +60°C
- Flame resistant: self extinguishing material, resists 650°C
- Shock resistant CEI C-431
- Not UV proof
- Enclosures can not be coupled

Number of mod.	Ref. No.	Power loss (W)
5	597956	8
8	597957	11
12	597958	17
12	597959	20
24	597960	30
48	597961	45

Aquaria - insulated enclosures IP65



Colour	Dimensions mm (H x L x W)	Modules 17,5mm	Number of rows	Art.No.	ENCLOSURES		EARTH	
					Ref. No.	Pack	Ref. No.	Pack
Grey RAL 7035	120 x 160 x 90	3/5	1	AQA005PG	597956	1/40/840	597962	1/20/120
Grey RAL 7035	200 x 160 x 90	4/8	1	AQA008PG	597957	1/26/546	597963	1/20/120
Grey RAL 7035	225 x 200 x 110	6/12	1	AQA012PG	597958	1/14/294	619320	1/20/120
Grey RAL 7035	250 x 250 x 145	6/12	1	AQA912PG	597959	1/1/152	619320	1/20/120
Grey RAL 7035	375 x 250 x 145	24	2	AQA024PG	597960	1/1/108	619320	1/20/120
Grey RAL 7035	550 x 350 x 145	48	3	AQA048PG	597961	1/1/44	619321	1/10/60

Earthbars - to be ordered separately



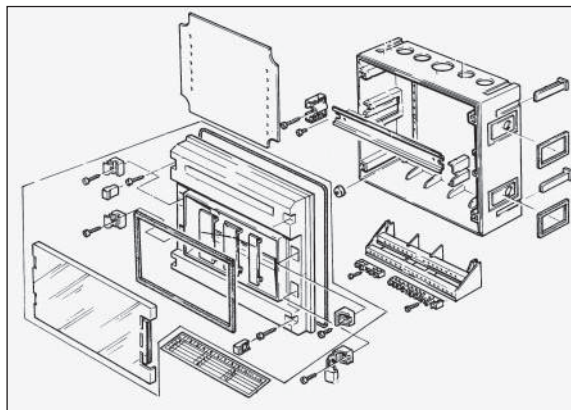
Connectivity	Number of earthbars	Ref. No.
2 x 16 mm ² + 5 x 10 mm ²	1	597962
2 x 16 mm ² + 8 x 10 mm ²	2	597963
2 x 16 mm ² + 12 x 10 mm ²	2	619320
2 x 16 mm ² + 12 x 10 mm ²	4	619321



Insulated enclosures Surface mounting

Fix-o-Rail 55

IP55



Standards

EN 60439-3

Approval/Marking



Applications

The Fix-o-Rail 55 enclosures are designed for power distribution in environments requiring a high degree of protection.

Features

- Total insulation
- Can be coupled
- For equipment up to 92.5 mm
- Adjustable DIN-rails, according the height of the DIN equipment
- The transparent door can be opened to the left and the right
- Bases in polystyrene for the 12 up to 36 modules
- ABS for the 3 up to 8 modules
- Flame resistance: self extinguishing material, resist the 650°C
- Polycarbonate for the transparent door
- Halogene free
- Flame resistance: self extinguishing material, resist the 960°C
- Protection degree IP55-IK07
- Transparent door
- Padlocking option



Components

- Rigid base and protection cover, colour RAL 7035
- Transparent door
- DIN-rails, the centre distance between two DIN-rail is 125 mm
- With earth bar for the 12 - 24 & 36 modules
- Labeling facilities

Fix-o-Rail 55

H x W x D	Equipment	No. of rows	No. of modules	Ref. No.	Pack.
175 x 83 x 114	Without earth bar	1	3	600573	1
175 x 125 x 114	Without earth bar	1	5	600574	1
175 x 215 x 114	Without earth bar	1	8	600575	1
250 x 285 x 136	Earth bar: connection 2x16mm ² +6x10 mm ²	1	12	610316	1
375 x 285 x 136	Earth bar: connection 2x16mm ² +8x10 mm ²	2	24	610317	1
500 x 285 x 136	Earth bar: connection 2x16mm ² +12x10 mm ²	3	36	610318	1

Accessories

	Terminal	Additional busbar for earth and neutral connections	Cable section: 2 x 16 mm ² + 6 x 6 mm ²	610314	1
	Coupling set	To couple two enclosures in a simple way		610315	1
	Locking device	Allows the enclosure to be fitted with a padlocking device		610313	



Metal enclosures Surface mounting

Fix-o-Rail Senior

IP43

Features

- Secure: total insulation ☑
Double wall: a steel outer wall plus an inner insulated extruded wall
- Protection degree: IP41-IK08
- Universal: for DIN-rail equipment up to 92.5 mm
- Installation friendly: ample wiring room and a removable mounting frame
- Flexible cable entries, integrated in the base

Components

The Fix-o-Rail Senior enclosure includes:

- base in RAL 9002
- mounting frame
- labels for circuit indication
- coverplates
- a transparent or grey door in RAL 9002
- closed by handle without lock
- padlocking option





Applications

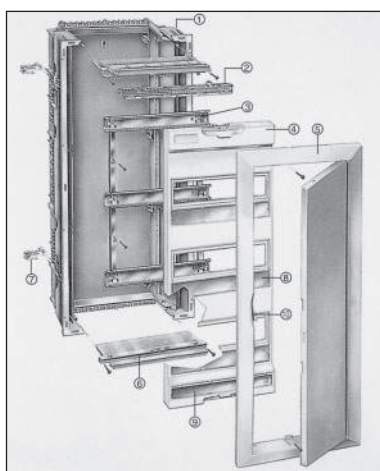
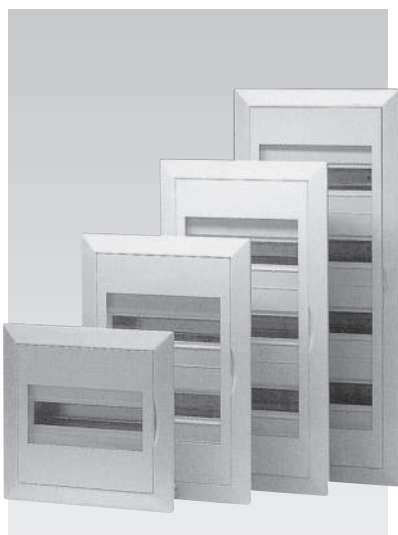
As an elegant insulated enclosure in restaurants and hotels, workshops, hospitals, shopping centers, offices, ...

Fix-o-Rail Senior

H x W x D	No. of rows	No. of modules	Plain door	Transparent door	Pack.
			Ref. No.	Ref. No.	
650 x 300 x 210	4	48	610239	610328	1
800 x 300 x 210	5	60	610248	610330	1
650 x 550 x 210	4	96	610240	610329	1
800 x 550 x 210	5	120	610249	610331	1
950 x 550 x 210	6	144	610257	610332	1
1100 x 550 x 210	7	168	610241	-	1
1250 x 550 x 210	8	192	610242	-	1
1100 x 800 x 210	7	252	610243	-	1
1250 x 800 x 210	8	288	610244	-	1

Accessories

	4 pole terminals	63A		610022	12
		160A		610020	15
		160 A with cover		617992	1
		Protective shroud for 610020		610021	1
	Earth/neutral bar	For enclosure width 300 mm		828152	1
		For enclosure width 550 mm		828153	1
		For enclosure width 800 mm		828149	1
		Cylindrical lock with key n°2432E		811331	1
		Adaptor set for cylindrical lock		815105	1
	Cable-entry plates	Plain plate		815094	1
		Predrilled plate 17 x PG13.5		815093	1
		Predrilled plate 1 x PG21 + 2 x PG13.5 + 2 x PG29 + 4 x PG13.5		815092	1
	Cover strip	For cut out of 45 mm		828056	1
	Label for circuit indication	For enclosure width 300 mm		610232	10
		For enclosure width 550 mm		610233	10
		For enclosure width 800 mm		610238	10
	Pocket for drawings	Self adhesive. To be fitted on the innerside of the door W x H = 155 x 225		832000	1



- | | |
|----------------------------|-------------------------------------|
| 1 Base | 7 Positioning lugs |
| 2 Support with terminals | 8 Labels and label holders |
| 3 Removable mounting frame | 9 Receptacle for storing the single |
| 4 Protective cover | 10 Door catch |
| 5 Masking frame and door | |
| 6 Removable entries | |

Insulated enclosures Flush mounting

Fix-o-Rail 150-F4

IP40

Features

- Base, protective cover and removable cable entries are made in high resistant material
- Incandescent wire test:
 - protective cover 650°C
 - base and entries 850°C
 - terminal supports 960°C
- Each DIN-rail can accommodate as much as 14 modular units of 18 mm width
- Either with plain or transparent door
- One enclosure can be installed in either:
 - brickwork
 - hollow walls
 - half-inset mounting
- The door and the masking frame are in sheet steel coated with a white epoxy powder (colour RAL 9010)
- Degree of protection: IP40 - IK07
- Total insulation \square
- Polystyrene for the base and cover
- Flame resistance: self extinguishing material, resist the 850°C
- CE-label / In accordance with EN 60439-3
- CEBEC and VDE 0603 Teil 1 approved.

Components

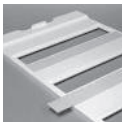

Fix-o-Rail 150-F4 enclosure includes:

- an earth bar
- adhesive pictograms
- labels for circuit identification
- protective plate on the base (against dust and plaster)
- label holders
- installation guidelines
- a blank plate

Fix-o-Rail 150-F4 - Base and door included

H x W x D	Equipment	No. of rows	No. of modules	Transparent door	Plain door	Pack.	
				Ref. No.	Ref. No.		
350 x 375 x 108	Earth bar: connection 14 x 16 mm ² Neutral bar: connection 14 x 16 mm ²	In 50A	1	14	610368	610372	1
525 x 375 x 108	Earth bar: connection 14 x 16 mm ² Neutral bar: connection 14 x 16 mm ²	In 63A	2	28	610369	610373	1
675 x 375 x 108	Earth bar: connection 18 x 16 mm ² Neutral bar: connection 18 x 16 mm ²	In 80A	3	42	610370	610374	1
825 x 375 x 108	Earth bar: connection 18 x 16 mm ² Neutral bar: connection 18 x 16 mm ²	In 100A	4	56	610371	610375	1

Accessories

	Labels and labelholders	Set of 50 pieces			610383	1
	Blank plates	Length = 72 mm / Cut-out width = 45 mm / Section of 9 mm / Colour RAL 9010			610382	1
	Adhesive pictograms	For clear and permanent identification of circuits / Set of 50 pieces			610380	1
	Security lock	With two keys			610384	1
	Grips	For building into studded walls			610381	1

Insulated enclosures Flush mounting

Abaco F

IP40



Features

- Flush mounting
- Degree of protection IP40
- High impact resistance material
- Transparent door made from polycarbonate
- 20 mm clearance behind the mounting frame
- Total insulation \square
- Removable mounting frame
- Six dimensions in three colours
- Colours: grey RAL 7030, white RAL 9010 and metallised black
- Range from 2 modules up to 39 modules
- Colours: Grey: RAL 7035 (4, 7, 10, 26 and 39 modules)
White: RAL 9010 (4, 7, 10, 14 26 and 39 modules)
Metallised black: (4, 7, 10, 14 26 and 39 modules)

Marking



Standards

IEC 695-2-1, CEI 670, CEI 23-48

Applications

Fix-o-Rail Abaco enclosures find their place in the power distribution into the house building industry: new homes, apartments, offices, hotels. Due to the design of the masking frame and the door, the Abaco flush mounting enclosure offers significant aesthetic appeal, particularly in applications where appearance is important.

Abaco F - Enclosure base with transparent door

Enclosure base with transparent door		H x W x D	No. of modules	No. of rows	Ref. No.	Pack.
	Grey	120 x 200 x 73	2/4	1	619300	12
	White	120 x 200 x 73	2/4	1	619324	12
	Metallised black	120 x 200 x 73	2/4	1	619362	12
	Grey	180 x 200 x 73	4/7	1	619301	12
	White	180 x 200 x 73	4/7	1	619325	12
	Metallised black	180 x 200 x 73	4/7	1	619331	12
	Grey	230 x 200 x 73	6/10	1	619302	12
	White	230 x 200 x 73	6/10	1	619326	12
	Metallised black	230 x 200 x 73	6/10	1	619332	12
	Grey	300 x 200 x 73	10/14	1	619303	12
	White	300 x 200 x 73	10/14	1	619327	12
	Metallised black	300 x 200 x 73	10/14	1	619333	12
	Grey	315 x 400 x 80	24/26	2	619304	1
	White	315 x 400 x 80	24/26	2	619328	1
	Metallised black	315 x 400 x 80	24/26	2	619334	1
	Grey	315 x 525 x 80	36/39	3	619305	1
	White	315 x 525 x 80	36/39	3	619329	1
	Metallised black	315 x 525 x 80	36/39	3	619335	1

Accessories

Insulated support for earth or neutral	For enclosure 2/4 modules	connection range 5 x 10 mm ²	619368	12
	For enclosure 4/7 modules	connection range 7 x 10 mm ²	619337	12
	For enclosure 6/10 modules	connection range 2 x 16 mm ² + 8 x 10 mm ²	619319	12
	For enclosure 10/14 modules	connection range 2 x 16 mm ² + 12 x 10 mm ²	619320	12
	For enclosure 24/36 modules	connection range 2 x 16 mm ² + 12 x 10 mm ²	619321	12
Blank plate	Grey, 5 modules, width= 45mm		619323	30
	White, 5 modules, width= 45mm		619338	30
	Black, 5 modules, width= 45mm		619339	30
Transparent lid	For enclosure 2/4 modules		619340	1
	For enclosure 4/7 modules		619341	1
	For enclosure 6/10 modules		619342	1
	For enclosure 10/14 modules		619343	1
	For enclosure 24/36 modules		619344	1
	For enclosure 36/39 modules		619345	1



Junction boxes

Flex-o-Box

IP65

Features

Flex-o-Box Junior

Technical data

- Suitable for surface mounting
- 2.5 mm² - 500V
- IP65 protection degree
- Standards and approvals
CEBEC: NBN C 68-685-2-0
NBN C68-685-1
KEMA: IEC 670
- Colour: RAL 7035
- Material: resists the 650°C incandescent wire test
- Halogen-free
- Operating temperature: -5°C to +60°C
- Total insulation: ☐

Eight flexible entries

- 7 x Ø 20 in the side wall
- 1 x Ø 20 in the back
- Suitable for cable max. Ø 20
- Suitable for tubes 5/8" and 3/4"

Flex-o-Box JB⁶

Technical data

- Suitable for surface mounting
- 6 mm² - 500V
- IP65 protection degree
- Standards and approvals:
CEBEC: NBN C68-685-2-0
NBN C68-685-1
KEMA: IEC 670
- Colour: RAL 7035
- Material: resists the 650°C incandescent wire test
- Halogen-free
- Operating temperature: -5°C to +60°C
- Total insulation: ☐



Nine flexible entries

- 7 x M20 in the side wall
- 2 x Ø 20 mm max. entries in the back of the base
- Suitable for cable max. Ø 20
- Suitable for tubes 5/8" and 3/4"
- Suitable for cable seals (8 mm min. thread length)



Approvals/Marking



Junction box

			Ref. No.	Pack.
	Junior	Junction box 2.5 mm ²	600656	10/100
		Junction box 2.5 mm ² (40 pieces in a red polybox basket)	600311	1
	JB6	Junction box 6 mm ²	600651	10/100
		Junction box 6 mm ² (24 pieces in a grey polybox basket)	600310	1

Accessories

	Terminal block	6 mm ² - 500V - pin-type 5-terminal blocks Possible connections per terminal: 6 x 1.5 mm ² , 4 x 2.5 mm ² , 3 x 4 mm ² , 2 x 6 mm ² , 2 x 10 mm ²	600950	30
	Terminal strip	6 mm ² - 500V - hole-type 5-terminal strips Possible connections per terminal: 6 x 1.5 mm ² , 4 x 2.5 mm ² , 3 x 4 mm ² , 2 x 6 mm ²	600650	20
	Cable seals	M20, grey	851652	50
	Entry socket for tube	M20 for tube ø16 and ø20 mm, grey	600346	25/300
	Insulation cap	M20, grey	851674	100
	Screws for cover fastening	Stainless steel	600652	40

Junction boxes

Series 55

IP66



Series 55

Approval



Applications

- As an empty box
- As a junction box (10/16/25 mm²)
- Coupled

Features

- Standard: IEC 60529
- Material: thermoplastic high impact polyphenylene oxide
- Total insulation: □

Dimensions

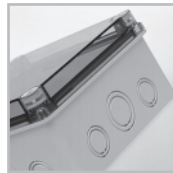
Three sizes - three types

55100 - 125 x 125 x 75 mm

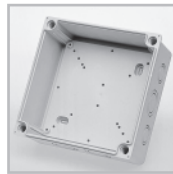
55200 - 175 x 175 x 95 mm

55300 - 225 x 175 x 95 mm

Benefits



The cable entries are selective knockouts placed as close as possible to the wall.



Oval openings in the base allow levelling. Four fixing holes outside the gasket and two fixing holes inside the box.



The raised bottom avoids obstruction while cabling and bending of the cables.



Raised supports for the placement of the mounting plate.




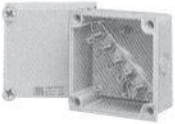
The screws are thermoplastic, captive, full turn, with a big pitch and placed outside the gasket.




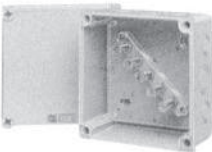

All the boxes are sealable.

E


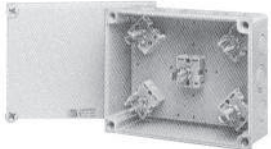
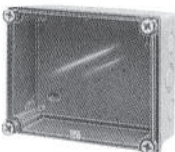
Series 55100 - 10 mm²☐ **IP66 - IK07**

	Cover	Entries	Characteristics	Ref. No.	Pack.
	grey	5 x PG 16/21	Empty. Can be equipped with terminal blocks 600516	600514	1/16
	grey	5 x PG 16/21	Equipped with terminal blocks 600516: 5 clamps with maximum capacity: 5 x 4 mm ² / 4 x 6 mm ² / 3 x 10 mm ²	600515	1/16












Series 55200 - 16 mm²☐ **IP66 - IK07**

	Cover	Entries	Characteristics	Ref. No.	Pack.
	grey	6 x PG 16/21 5 x PG 21/29	Empty. Can be equipped with terminal blocks 600525 600526 (x5) 600544 (x5) 600545 (x5) 600516	600517	1/9
	grey	6 x PG 16/21 5 x PG 21/29	Equipped with terminal blocks 600525: 5 clamps with maximum capacity: 5 x 6 mm ² / 4 x 10 mm ² / 3 x 16 mm ²	600524	1/9
	transparent	6 x PG 16/21 5 x PG 21/29	Empty	600523	1/9

Series 55300 - 25 mm²☐ **IP66 - IK07**

	Cover	Entries	Characteristics	Ref. No.	Pack.
	grey	8 x PG 21 6 x PG 21/29	Empty. Can be equipped with terminal blocks 600544 (x5) 600545 (x5) 600525 600526 (x5)	600532	1/9
	grey	8 x PG 21 6 x PG 21/29	Equipped with terminal blocks 600544 (x5): 5 clamps/nuts with maximum capacity: 4 x 16 mm ² / 3 x 25 mm ² / 2 x 35 mm ²	600543	1/9
	transparent	8 x PG 21 6 x PG 21/29	Empty	600539	1/9

Accessories Series 55

		Description	Ref. No.	Pack.
	Terminal blocks 500V 10 mm ²	Set terminal blocks with two fixation screws. With five clamps suitable for Al or Cu connection. Maximum cable section per clamp: 5 x 4 mm ² / 5 x 4 mm ² / 5 x 4 mm ² . Can be fitted in types 55100 and 55200.	600516	1/6
	500V 16 mm ²	With five clamps, suitable for Al or Cu connection. Terminal blocks Maximum cable section per clamp: 5 x 6 mm ² / 4 x 10 mm ² / 3 x 16 mm ² . Can be fitted in types 55200 and 55300.	600525	1/6
	Terminal blocks 500V 16 mm ²	With one clamp/nut (with nut), suitable for Al or Cu connection. Maximum cable section per clamp: 5 x 6 mm ² / 4 x 10 mm ² / 3 x 16 mm ² . Can be fitted in types 55200 and 55300.	600526	1/24
	Terminal blocks 500V 25 mm ²	With one clamp/nut (with nut), suitable for Al or Cu connection. Maximum cable section per clamp: 4 x 16 mm ² / 3 x 25 mm ² / 2 x 35 mm ² . Can be fitted in types 55200 and 55300.	600544	1/24
	Terminal blocks 500V 25 mm ²	With one clamp/nut (double nut), suitable for Al or Cu connection. Maximum cable section per clamp: 4 x 16 mm ² / 3 x 25 mm ² / 2 x 35 mm ² . Can be fitted in types 55200 and 55300.	600545	1/24
	Insulated cap	Suitable for terminal blocks 600526, 600544 and 600545	890838	48
	Couplings	Set of two pieces / PG21 It is possible to combine types 55200 and 55300	600509	1
	Compression glands	PG21 with nut in glass fibre reinforced polyamide. Grey. PG29 with nut in glass fibre reinforced polyamide. Grey.	600504 600505	25 25
	Compression glands	PG21 polyamide with nut in glass fibre reinforced polyamide. Brown. PG29 polyamide with nut in glass fibre reinforced polyamide. Brown.	600501 600502	25 25
	Locknuts	Nut in glass fibre reinforced polyamide to connect compression glands PG21. Grey. Nut in glass fibre reinforced polyamide to connect compression glands PG29. Grey.	600506 600507	100 50
	Universal entries (grey)	Cable max. 18 mm, drill 23 mm, PG16 Cable max. 24 mm, drill 29 mm, PG21 Cable max. 32 mm, drill 38 mm, PG29	610130 610132 610133	25 25 25

Notes

A large grid area for taking notes, consisting of a 20x20 grid of small squares. The grid is empty and occupies the majority of the page.

- F.2 Overview auxiliary contactors - Series SH
- F.3 Overview mini and compact contactors - Series LS and up to 5.5 kW
- F.4 Overview compact contactors - Series LS...K 4 kW up to 55 kW
- F.6 Overview compact contactors - Series LS...K 75 kW up to 450 kW

AC contactors

- F.8 Mini-contactors
- F.9 Compact contactors
- F.11 Accessories for compact contactors
- F.13 LS...K contactors
- F.16 Contactors with wide range coils
- F.17 Accessories for LS...K contactors
- F.18 Spare parts for LS...K contactors
- F.19 Spare coils
- F.20 Contactors for capacitor switching

- Miniature circuit breakers* A
- Residential current circuit breakers* B
- Busbar systems* C
- Comfort functions/Energy control* D
- Residential enclosures* E
- Contactors/Soft starters/Speed drives* F**

Contactor combinations

- F.22 Small insulated enclosure
- F.23 Reversing contactor

Auxiliary contactors

- F.24 Mini, compact, SH 5 contactors
- F.24 Coupling relays (interface)
- F.24 Integrated coil overvoltage suppressor
- F.25 Accessories - compact contactors series SH 05
- F.26 Accessories - contactors type SH 5
- F.27 Spare coils for SH 05 and SH 5

Soft starters




- F.28 ASTAT S
- F.31 ASTAT XT

Speed drives

- F.34 VAT20
- F.40 VAT200











- Overload relays* G
- Control and signalling units* H
- Manual motor starters* I
- Moulded case circuit breakers* J
- Air circuit breakers* K
- Fuse systems/Loadbreak disconnectors* L
- General purpose enclosures* M
- System enclosures* N
- Numerical index* X

Overview auxiliary contactors - Series SH

Type		SH 04	SH 05	SH 5
Auxiliary contactors		4-pole	4-pole (+1-6 aux. contacts)	4-pole (+1-4 aux. contacts)
AC operated DC operated				
According DIN EN 50 011 for example SH 04.31 31E = 3 NO + 1 NC 0 = overlapping contacts		Screw terminals Flat plug terminals Solder pin terminals AC/DC SH 04.22 22E SH 04.31 31E SH 04.40 40E SH 04.13 13E	Screw terminals Flat plug terminals AC/DC SH 05.22 22E SH 05.31 31E SH 05.40 40E	Screw terminals AC/DC SH 5.22 22E SH 5.31 31E SH 5.40 40E SH 5.04 04E SH 5V.22 22Eü
Rated current Ie AC - 15	AC 230V	6A	6A	10A
	AC 400V		4A	6A
	AC 500V		2.5A	4A
	AC 600V		1.5A	2A
Rated current Ie DC - 13	DC 24V	2.5A	5A	6A
	DC 48V	1.5A	3.5A	4A
	DC 110V	0.7A	2A	2A
	DC 220V	0.36A	0.6A	0.7A
Dimensions (screw mounting)	AC-coil W/H/D mm	45/42/44	45/48/56	45/81/85
	DC-coil W/H/D mm	45/42/44	45/48/68	45/81/115
Accessories for direct mounting			see also type LS 02K, LS 05	see also type LS 4K...LS 7K
Aux. contacts	front	-	HS 05K 2/4-poles	HS 7K/V 1-pole
	side	-	HS 05K 1-pole	HS 8R 2-poles
Timer	pneumatic front	-	-	TMD.../TMI...
	electronic front	-	EV 05	BETL...CG/...DG
Mech. latch	mechanical front	-	-	WBK
Transient voltage suppressor	RC-unit at A1/A2	-	EB 05	LR 2K
	diode at A1/A2	with integrated available	EB 05	LDK
	varistor at A1/A2	with integrated available	-	LV 3K
Interlock	mechanical side	-	VB 05	LUV 18K
	mech.+electr. side	-	-	LUV 18E






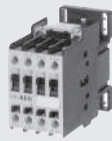




















Order codes ● pg F.22

Overview mini and compact contactors - Series LS and LS...K up to 5.5 kW













Type	LS 07	LS 05K	LS 06K	
Contactors 3-pole AC Alternating current control DC Direct current control	Screw terminal F-Flat plug terminal Solder-Pin terminal AC, DC .10/.01 	Screw terminal F-Flat plug terminal Solder-Pin terminal AC, DC .10/.01 	Screw terminal AC, DC .10/.01 	
Contactors 4-pole AC Alternating current control DC Direct current control AC/DC control with electronic coil energization Main contacts LS...K- 4.00 = 4NO LS...K-22.00 = 2NO + 2NC LS...K-04.00 = 4NC		LS 05K-4.00 LS 05K-22.00 LS 05K-04.22 Screw terminals F-Flat plug terminal Solder-Pin terminal 		
Motor rating AC-3 duty, 3~	Contactor style 230 V kW 400 V kW 415 V kW 500 V kW 690 V kW	3-pole 1.5 3 3 - -	3-pole / 4-pole 3 4 4 4 4	3-pole 3 5.5 5.5 5.5 5.5
le max. AC-3 (Ue) 440V)	A	7.3 ⁽¹⁾	9	12
Resistive load AC-1	A	16	20	20
Dimensions without auxiliary contacts	width mm	45	45	45
	high mm	42	48	48
	depth mm	44	56 / 68	56
Aux. contact	integrated	.10 / .01	.10/.01/ .00	.10/.01 / .00
	front	-	HS 05K 2-/4-pole	HS 05K 2-/4-pole
	side	-	HS 05 1-pole	HS 05 1-pole
Timer	electronic front	-	EV 05	EV 05
Transient voltage	RC-module at A1/A2	-	EB 05	EB 05
surpressor	diode at A1/A2	-	EB 05	EB 05
Interlock	mechanical side	-	VB 05	VB 05
Spare coils	AC-operated	-	C 130-XX	C 130-XX
	DC-operated	-	C 133-XX	C 133-XX
Accessories for direct installation		HS 05K 2-/4-pole, front +36 mm  EB 05, front + 21.5 mm 	HS 05 1-pole, side + 9.8 mm  EV 05, front + 32 mm 	VB 05 
Thermal overload relays AC	Thermal overload relays - direct mount to contactor - separate mount adaptor - 15 overlapping current ranges 	LS 05K	LS 06K	
Type		b 05	b 05	
Current rating		0.11 ... 14A	0.11 ... 14A	

(1) Only up to 400VAC

Overview compact contactors - Series LS...K up to 55 kW

Type	LS 4K	LS 5K	LS 7K	LS 11K	LS 12K																																																																																																																																																																																																																																																						
Contactors 3-pole AC Alternating current control DC Direct current control AC/DC control with electronic coil energization	Screw terminal AC .10/01 DC .10/01	Screw terminal AC .10/01 DC .10/01	Screw terminal AC .10/01 DC .10/01	Screw terminal AC .00 DC .00	Screw terminal AC .10/01 DC .10/01																																																																																																																																																																																																																																																						
																																																																																																																																																																																																																																																											
Contactors 4-pole AC Alternating current control DC Direct current control AC/DC control with electronic coil energization Main contacts LS...K- 4.00 = 4NO LS...K-22.00 = 2NO + 2NC		LS 5K-4.00 LS 5K-22.00 Screw terminal AC/DC	LS 7K-4.00 LS 7K-22.00 Screw terminal AC/DC	LS 11K-4.00 LS 11K-22.00 Screw terminal AC/DC																																																																																																																																																																																																																																																							
																																																																																																																																																																																																																																																											
	<table border="1"> <thead> <tr> <th>Contactor style</th> <th>3-pole</th> <th>3-pole</th> <th>4-pole</th> <th>3-pole</th> <th>4-pole</th> <th>3-pole</th> <th>4-pole</th> <th>3-pole</th> </tr> </thead> <tbody> <tr> <td>Motor rating</td> <td>230 V kW</td> <td>2.2</td> <td>3</td> <td>4</td> <td>4</td> <td>7.5</td> <td>7.5</td> <td>7.5</td> </tr> <tr> <td rowspan="4">AC-3 duty, 3~</td> <td>400 V kW</td> <td>4</td> <td>5.5</td> <td>7.5</td> <td>7.5</td> <td>11</td> <td>11</td> <td>12</td> </tr> <tr> <td>415 V kW</td> <td>4</td> <td>5.5</td> <td>7.5</td> <td>7.5</td> <td>11</td> <td>11</td> <td>12</td> </tr> <tr> <td>500 V kW</td> <td>5.5</td> <td>7.5</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>15</td> </tr> <tr> <td>690 V kW</td> <td>5.5</td> <td>7.5</td> <td>10</td> <td>10</td> <td>15</td> <td>15</td> <td>15</td> </tr> <tr> <td>Ie max. AC-3 (Ue ≤ 440 V)</td> <td>A</td> <td>9</td> <td>12</td> <td>18</td> <td>18</td> <td>25</td> <td>25</td> <td>25</td> </tr> <tr> <td>Resistive load AC-1</td> <td>A</td> <td>25</td> <td>25</td> <td>32</td> <td>32</td> <td>45</td> <td>45</td> <td>45</td> </tr> <tr> <td rowspan="3">Dimensions without auxiliary contacts</td> <td>width mm</td> <td>45</td> <td>45</td> <td>45</td> <td>45</td> <td>45/55</td> <td>45/55</td> <td>55</td> </tr> <tr> <td>high mm</td> <td>81</td> <td>81</td> <td>81</td> <td>81</td> <td>81/87</td> <td>81/87</td> <td>87</td> </tr> <tr> <td>depth mm</td> <td>85/115</td> <td>85/115</td> <td>85/115</td> <td>85/115</td> <td>85/115 98/134</td> <td>85/115 98/134</td> <td>98/134</td> </tr> <tr> <td rowspan="2">Aux. contact</td> <td>integrated</td> <td>.00/10/01</td> <td>.00/10/01 .00</td> <td>.00/10/01 .00</td> <td>.00/10/01 .00</td> <td>.00</td> <td>.00</td> <td>.00/10/01</td> </tr> <tr> <td>front side</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> <td>HS 7K/V HS 8K/R</td> </tr> <tr> <td rowspan="2">Timer</td> <td>pneumatic front</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> <td>TMD.../TMI...</td> </tr> <tr> <td>electronic front</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> <td>BETL...CG/...DG</td> </tr> <tr> <td>Mech. latch</td> <td>mechanical front</td> <td>WBK</td> <td>WBK</td> <td>WBK</td> <td>WBK</td> <td>WBK</td> <td>WBK</td> <td>WBK</td> </tr> <tr> <td rowspan="3">Transient voltage suppressor</td> <td>RC-module at A1/A2</td> <td>LR 2K</td> <td>LR 2K</td> <td>LR 2K</td> <td>LR 2K</td> <td>LR 2K</td> <td>LR 2K</td> <td>LR 2K</td> </tr> <tr> <td>diode at A1/A2</td> <td>LDK</td> <td>LDK</td> <td>LDK</td> <td>LDK</td> <td>LDK</td> <td>LDK</td> <td>LDK</td> </tr> <tr> <td>varistor at A1/A2</td> <td>LV 3K</td> <td>LV 3K</td> <td>LV 3K</td> <td>LV 3K</td> <td>LV 3K</td> <td>LV 3K</td> <td>LV 3K</td> </tr> <tr> <td rowspan="2">Interlock</td> <td>mechanical side</td> <td>LUV 18K</td> <td>LUV 18K</td> <td>LUV 18K</td> <td>LUV 18K</td> <td>LUV 18K</td> <td>LUV 18K</td> <td>LUV 18K</td> </tr> <tr> <td>mech. + electr. side</td> <td>LUV 18E</td> <td>LUV 18E</td> <td>LUV 18E</td> <td>LUV 18E</td> <td>LUV 18E</td> <td>LUV 18E</td> <td>LUV 18E</td> </tr> <tr> <td>Interface module</td> <td>at A1/A2</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> <td>IMRDG, IMSSDG</td> </tr> <tr> <td>Main contacts</td> <td>spare</td> <td>CS 4</td> <td>CS 5 CS 5C</td> <td>CS 7 CS 7C</td> <td>CS 11 CS 11C</td> <td>CS 11 CS 11C</td> <td>CS 11 CS 11C</td> <td>CS 11 CS 11C</td> </tr> <tr> <td rowspan="2">Spare coils</td> <td>AC-operated</td> <td>C 650-XX</td> <td>C 650-XX</td> <td>C 650-XX</td> <td>C 650 / 652-XX</td> <td>C 650 / 652-XX</td> <td>C 650 / 652-XX</td> <td>C 652-XX</td> </tr> <tr> <td>DC-operated</td> <td>C 660-XX</td> <td>C 660-XX</td> <td>C 660-XX</td> <td>C 660 / 662-XX</td> <td>C 660 / 662-XX</td> <td>C 660 / 662-XX</td> <td>C 662-XX</td> </tr> <tr> <td> Accessories for direct installation for contactors type LS 4..K up tot LS 55..K </td> <td> HS 7K.10 HS 7K.01 HS 7V.10 HS 7V.01 front +29 mm </td> <td> HS 8K.11 HS 8K.20 HS 8R.11 HS 8R.20 side +12,4 mm </td> <td> LUV 18K LUV 18E LUV 55K LUV 55E </td> <td> TMD 30 TMD 60 TMI 30 TMI 60 </td> <td> WBK 24 V WBK 42 V WBK 60 V/DC WBK 110 V WBK 230 V WBK 400 V WBK 500 V </td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td> Thermal overload relays - direct mount to contactor with variable connecting pin locations. - separate mount adaptor. - 17 overlapping current ranges </td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td>LS 4K</td> <td>LS 5K</td> <td>LS 7K</td> <td>LS 11K</td> <td>LS 12K</td> </tr> <tr> <td>Type</td> <td>b 18K</td> <td>b 18K</td> <td>b 18K</td> <td>b 18K</td> <td>b 18K</td> </tr> <tr> <td>Current rating</td> <td>0.16 ... 40A</td> <td>0.16 ... 40A</td> <td>0.16 ... 40A</td> <td>0.16 ... 40A</td> <td>0.16 ... 40A</td> </tr> </tbody> </table>	Contactor style	3-pole	3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	3-pole	Motor rating	230 V kW	2.2	3	4	4	7.5	7.5	7.5	AC-3 duty, 3~	400 V kW	4	5.5	7.5	7.5	11	11	12	415 V kW	4	5.5	7.5	7.5	11	11	12	500 V kW	5.5	7.5	10	10	15	15	15	690 V kW	5.5	7.5	10	10	15	15	15	Ie max. AC-3 (Ue ≤ 440 V)	A	9	12	18	18	25	25	25	Resistive load AC-1	A	25	25	32	32	45	45	45	Dimensions without auxiliary contacts	width mm	45	45	45	45	45/55	45/55	55	high mm	81	81	81	81	81/87	81/87	87	depth mm	85/115	85/115	85/115	85/115	85/115 98/134	85/115 98/134	98/134	Aux. contact	integrated	.00/10/01	.00/10/01 .00	.00/10/01 .00	.00/10/01 .00	.00	.00	.00/10/01	front side	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	Timer	pneumatic front	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	electronic front	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	Mech. latch	mechanical front	WBK	WBK	WBK	WBK	WBK	WBK	WBK	Transient voltage suppressor	RC-module at A1/A2	LR 2K	LR 2K	LR 2K	LR 2K	LR 2K	LR 2K	LR 2K	diode at A1/A2	LDK	LDK	LDK	LDK	LDK	LDK	LDK	varistor at A1/A2	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	Interlock	mechanical side	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K	mech. + electr. side	LUV 18E	LUV 18E	LUV 18E	LUV 18E	LUV 18E	LUV 18E	LUV 18E	Interface module	at A1/A2	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	Main contacts	spare	CS 4	CS 5 CS 5C	CS 7 CS 7C	CS 11 CS 11C	CS 11 CS 11C	CS 11 CS 11C	CS 11 CS 11C	Spare coils	AC-operated	C 650-XX	C 650-XX	C 650-XX	C 650 / 652-XX	C 650 / 652-XX	C 650 / 652-XX	C 652-XX	DC-operated	C 660-XX	C 660-XX	C 660-XX	C 660 / 662-XX	C 660 / 662-XX	C 660 / 662-XX	C 662-XX	Accessories for direct installation for contactors type LS 4..K up tot LS 55..K	HS 7K.10 HS 7K.01 HS 7V.10 HS 7V.01 front +29 mm	HS 8K.11 HS 8K.20 HS 8R.11 HS 8R.20 side +12,4 mm	LUV 18K LUV 18E LUV 55K LUV 55E	TMD 30 TMD 60 TMI 30 TMI 60	WBK 24 V WBK 42 V WBK 60 V/DC WBK 110 V WBK 230 V WBK 400 V WBK 500 V							Thermal overload relays - direct mount to contactor with variable connecting pin locations. - separate mount adaptor. - 17 overlapping current ranges							LS 4K	LS 5K	LS 7K	LS 11K	LS 12K	Type	b 18K	b 18K	b 18K	b 18K	b 18K	Current rating	0.16 ... 40A	0.16 ... 40A	0.16 ... 40A	0.16 ... 40A	0.16 ... 40A
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Aux. contact	integrated	.00/10/01	.00/10/01 .00	.00/10/01 .00	.00/10/01 .00	.00	.00	.00/10/01																																																																																																																																																																																																																																																			
	front side	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R	HS 7K/V HS 8K/R																																																																																																																																																																																																																																																			
Timer	pneumatic front	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...																																																																																																																																																																																																																																																			
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	diode at A1/A2	LDK	LDK	LDK	LDK	LDK	LDK	LDK																																																																																																																																																																																																																																																			
	varistor at A1/A2	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K																																																																																																																																																																																																																																																			
Interlock	mechanical side	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K	LUV 18K																																																																																																																																																																																																																																																			
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Spare coils	AC-operated	C 650-XX	C 650-XX	C 650-XX	C 650 / 652-XX	C 650 / 652-XX	C 650 / 652-XX	C 652-XX																																																																																																																																																																																																																																																			
	DC-operated	C 660-XX	C 660-XX	C 660-XX	C 660 / 662-XX	C 660 / 662-XX	C 660 / 662-XX	C 662-XX																																																																																																																																																																																																																																																			
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Order codes ● pg F.13

LS 15K		LS 18K		LS 22K		LS 30K		LS 37K		LS 45K		LS 55K	
Screw terminal Double box termin. AC .00 DC .00		Screw terminal Double box termin. AC .00 DC .00		Screw terminal Double box termin. AC .00 AC/DC .00		Screw terminal Double box termin. AC .00 AC/DC .00		Screw terminal Double box termin. AC .00 AC/DC .00		Screw terminal Double box termin. AC .00 AC/DC .00		Screw terminal Double box termin. AC .00 AC/DC .00	
													
LS 15K-4.00 LS 15K-22.00 Screw terminal Box termin. AC, AC/DC		LS 18K-4.00 LS 18K-22.00 Screw terminal Double box termin. AC, AC/DC				LS 30K-4.00 LS 30K-22.00 Screw terminal Double box termin. AC, AC/DC		LS 37K-4.00 Screw terminal Double box termin. AC, AC/DC		LS 45K-4.00 Screw terminal Double box termin. AC, AC/DC		LS 55K-4.00 see page F.6	
													
3-pole	4-pole	3-pole	4-pole	3-pole		3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	3-pole	
9		11		15		18.5	22	25	30	37	45	55	
16		18.5		22		25	30	37	45	50	55	65	
16		22		25		30	35	40	45	55	65	75	
18.5		25		30		35	40	45	55	65	75	85	
18.5		30		35		40	45	55	65	75	85	95	
32		40		50		65	80	95	110	140	160	180	
60	60	90	90	90	90	110	110	140	140	160	160	180	
55	55	87	87	66	66	66	87	66	87	75	96	117.5	
87	55	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	117.5	
98/134	98/134	119/147	119/147	116/144	116/144	116/144	119/147	116/144	119/147	126/154	126/154	126/154	
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	.00	
HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	HS 7K/V	
HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	
TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD.../TMI...	TMD/TMI	
BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	BETL...CG/...DG	
WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	WBK	
LR 2K	LR 2K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 2K / LR 3K	LR 3K	
LDK	LDK	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK / -	LDK	
LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	LV 3K	
LUV 18K	LUV 18K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	LUV 55K	
LUV 18E	LUV 18E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	LUV 55E	
IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	IMRDG, IMSSDG	
CS 15 CS 15C	CS 18 CS 18C	CS 22	CS 22	CS 30 CS 30C	CS 30 CS 30C	CS 37 CS 37C	CS 37 CS 37C	CS 45	CS 45	CS 55	CS 55	CS 55	
C 652-XX	C 652 / 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	C 653-XX	
C 662-XX	C 662 / C664-XX	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	see page F.19	

LR 2K
24 ... 48 V/AC
50 ... 127 V/AC
130 ... 250 V/AC

BETL02CG
BETL45CG

BETL02DG
BETL45DG

LR 3K
24 ... 48 V/AC
50 ... 127 V/AC
130 ... 250 V/AC

LDK
12 ... 600 V/DC

LV 3K (... V AC/DC)
24 ... 48 V/AC/DC
50 ... 127 V/AC/DC
130 ... 250 V/AC/DC




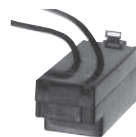

- direct mount to contactor.
- separate mount adaptor
- 10 overlapping current ranges

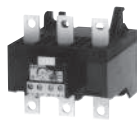
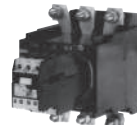
LS 15K	LS 18K	LS 22K	LS 30K	LS 37K	LS 45K	LS 55K
b 18K⁽¹⁾ 0.16 ... 40A	b 18K⁽¹⁾ 0.16 ... 40A	b 18K⁽¹⁾ 0.16 ... 40A	b 55K 11.5 ... 110A	b 55K 11.5 ... 110A	b 55K 11.5 ... 110A	b 55K 11.5 ... 110A

(1) Series LS 18K-4.00 / 22.00 only with separate mounted TOR




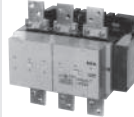



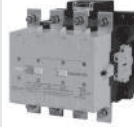
Overview compact contactors - Series LS...K 75 up to 450 kW

Type	LS 55K-4	LS 75K	LS 90K	LS 110K	LS 132K	LS 160K
Contactors 3-pole AC Alternating current control AC/DC AC/DC control with electronic coil energization	LS 55K (3-pole) See page F.5	Screw terminal AC .22 AC/DC .11	Screw terminal AC .22 AC/DC .11	Screw terminal AC .22 AC/DC .11	Screw terminal AC/DC .22	Screw terminal AC/DC .22
Contactors 4-pole AC Alternating current control AC/DC AC/DC control with electronic coil energization Main contacts: LS ...K-4 = 4NO LS ...K-22 = 2NO + 2NC	LS 55K-4 AC, AC/DC .11 Screw terminal Box termin. AC, AC/DC	LS 90K-4 Screw terminal AC, AC/DC .11	LS 132K-4 Screw terminal AC, AC/DC .11	LS 160K-4 Screw terminal AC, AC/DC .11		
Contactor style Motor rating AC-3 duty, 3~	4-pole	3-pole	3-pole 4-pole	3-pole	3-pole 4-pole	3-pole 4-pole
230 V kW	30	45	55	65	75	90
400 V kW	55	75	90	110	132	160
415 V kW	55	80	100	125	132	185
500 V kW	65	100	110	132	160	200
690 V kW	65	100	132	155	200	250
I_e max. AC-3 (U_e ≤ 440 V)	A 105	150	185	205	250	309
Resistive load AC-1	A 200	250	250 325	315	315 400	450 500
Dimensions	Width mm 173	135	135 253	173	173 253	173 253
without auxiliary contacts	Height mm 200	178 ⁽¹⁾	178 ⁽¹⁾ 270	212	212 270	212 270
LS 75K ... LS 450K with .22	Depth mm 176	165.5	165.5 246	208	208 246	208 246
Aux. contact	integrated	.00	.00	.00	.00	.00
	front	-	-	-	-	-
	side	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R	HS 8K/R
Timer	pneumatic front	-	-	-	-	-
	electronic front	-	-	-	-	-
Mech. latch	mechanical front	-	-	-	-	-
Transient voltage suppressor	RC-module at A1/A2	LR 5K	LR 3K	LR 3K LS 5K	LR 5K	-
	Diode at A1/A2	-	-	-	-	-
	Varistor at A1/A2	LV 3K	LV 3K	LR 3K -	-	-
Interlock	mechanical side	LUV 375	LUV 375H/V	LUV 375H/V	LUV 375H/V	LUV 375H
	mech. + electr. side	-	-	-	-	-
Interface module	at A1/A2	-	-	-	-	-
Main contact spares		CS 55F	CS 75	CS 90	CS 110	CS 132
Spare coils	AC-operated	C 655-XX	C 654-XX	C 654-XX C 656-XX	C 655-XX	AC/DC ⁽²⁾
	DC-operated	AC/DC ⁽²⁾	AC/DC ⁽²⁾	AC/DC ⁽²⁾	AC/DC ⁽²⁾	AC/DC ⁽²⁾

Accessories	LS 55K-4	LS 75K	LS 90K	LS 110K	LS 132K	LS 160K
for direct installation	HS 8K .11 HS 8K .20 HS 8R .11 HS 8R .20 side + 12,4 mm		LR 5K ... 24 V/AC 48 ... 260 V/AC 380 ... 415 V/AC			LUV 375H
						
	(Accessories for type LS 55K-4, LS 75K up to LS 450K)					

Thermal overload relays	LS 55K-4	LS 75K	LS 90K	LS 110K	LS 132K	LS 160K
	Only for separate mounting		Thermal overload relays - Direct mount to contactor and separate mounting - 5 overlapping current ranges		Thermal overload relays - Separate mounting - Contactor coupling with connection kit - 3 overlapping current ranges	
						
Type	-		b 90K		b 160K	
Current rating	-		55...190 A		120...310 A	

(1) AC/DC: 182
 (2) AC/DC: with electronic modules CM...-XX and coils C...-XX see catalogue page F.27

LS 220K		LS 280K		LS 375K		LS 450K	
Screw terminal AC/DC .22		Screw terminal AC/DC .22		Screw terminal AC/DC .22		Screw terminal AC .22	
							
LS 220K-4 Screw terminal AC/DC .11		LS 280K-4 Screw terminal AC/DC .11		LS 375K-4 Screw terminal AC/DC .11		LS 450K-4 Screw terminal AC .11	
							
3-pole	4-pole	3-pole	4-pole	3-pole	4-pole	3-pole	4-pole
125		160		220		250	
220		280		375		450	
230		315		400		450	
300		400		480		500	
375		450		500		550	
420		550		700		825	
600		700		1000		1250	
160 214		160 214		253 312		464 581	
220		220		270 265		380	
228		228		262 304		327	
.00		.00		.00		.00	
-		-		-		-	
HS 8K/R		HS 8K/R		HS 8K/R		HS 8K/R	
-		-		-		-	
-		-		-		-	
-		-		-		-	
-		-		-		-	
-		-		-		-	
LUV 375H		LUV 375H		LUV 375H/V		LUV 450V	
-		-		-		-	
-		-		-		-	
CS 220		CS 280		CS 375		CS 450	
AC/DC⁽¹⁾		AC/DC⁽¹⁾		AC/DC⁽¹⁾		C 668-XX	
AC/DC⁽¹⁾		AC/DC⁽¹⁾		AC/DC⁽¹⁾		AC/DC⁽¹⁾	

LUV 375V



LUV 450V



- Separate mounting
- Contactor coupling with connection kit
- 5 overlapping current ranges



- Separate mounting
- 1 range



b 375K
120 ... 700 A

b 450K
500 ... 850 A

(1) AC/DC: with electronic modules CM...-XX and coils C...-XX see catalogue page F.27

(2) with control circuit C 675-XX

AC contactors

Mini-contactors



3P
at 24V DC: 1.2W

4P
at 24V DC: LS 07-4 1.2W
LS 07-22 2.5W

	Power rating (kW), AC-3, 3~				Cat. No.	AC operation	DC operation	Pack.
	230V	400V	500V	690V		230V 50Hz	24V DC	
3P at 24V DC: 1.2W	Screw terminal							
	1.5	3			LS 07.10	251092	251164	10
	1.5	3			LS 07.01	251183	251256	10
	Screw terminal, coil with integrated diode							
	1.5	3			LS 07.10	-	257185	10
	1.5	3			LS 07.01	-	257186	10
	Flat plug terminal 1 x 6.3mm							
	1.5	3			LS 07.10	251142	251174	10
	1.5	3			LS 07.01	251233	251265	10
	Solder pin terminal 1 x 0.8mm (for soldering to PCB's)							
	1.1	1.5			LS 07.10	251275	251344	10
	1.1	1.5			LS 07.01	251322	251353	10
4P at 24V DC: LS 07-4 1.2W LS 07-22 2.5W	Screw terminal							
	1.5	3			LS 07-4.00	251121	251173	10
	1.5	3			LS 07-22.00	251364	251182	10
	Flat plug terminal 1 x 6.3mm							
	1.5	3			LS 07-4.00	251210	258997	10
	Solder pin terminal 1 x 0.8mm (for soldering to PCB's)							
1.1	1.5			LS 07-4.00	251299	259265	10	

Available voltages for contactors type LS 07 (coil not replaceable)⁽¹⁾

AC-operation		50 Hz	60 Hz	110	100	115	125	185	220	230	240	380	400	415
	(V)	110	125	100	115	-	150	220	255	265	280	440	-	-
AC-operation		50/60 Hz	24	42	48	110	115	120	200	220	230	240	380	400
Double frequency coil		(V)	24	42	48	110	115	120	200	220	230	240	380	400
DC-operation		DC	6 ⁽²⁾	12 ⁽²⁾	24	30 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125
(Maximum coil voltage only DC 180V)		(V)	6 ⁽²⁾	12 ⁽²⁾	24	30 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125

(1) For Ref. No. please contact us

(2) Price increase has to be considered

AC contactors

Compact contactors

3P
Up to 6 auxiliary contacts can be added



Power rating (kW), AC-3, 3~				Cat. No.	AC operation 230V 50Hz	DC operation 24V DC	Pack.
230V	400V	500V	690V		Ref. No.	Ref. No.	
Screw terminal							
3	4	4	4	LS 05.10	209624	209652	20/10
3	4	4	4	LS 05.01	209600	209644	20/10
3	5.5	5.5	5.5	LS 06K.10	135718	135728	20/10
3	5.5	5.5	5.5	LS 06K.01	135710	135724	20/10
Flat plug terminal 2 x 2.8mm (1 x 6.3/2 x 2.8mm, AC 1: 20A, on request)							
1.5	2.2	3	3	LS 02K.10	137612	-	20
1.5	2.2	3	3	LS 02K.01	137613	-	20
3	4	4	4	LS 05.10	290158	137430	20/10
3	4	4	4	LS 05.01	136985	137408	20/10
Solder pin terminal 1 x 1mm (for soldering to PCB's)							
1.5	2.2	3	3	LS 02K.10	137614	137619	20/10
1.5	2.2	3	3	LS 02K.01	137615	137620	20/10
3	4	4	4	LS 05.10	137381	209651	20/10
3	4	4	4	LS 05.01	290397	125848	20/10

Interface contactors 3P
Use no extra auxiliary blocks
only 24V DC / 1.2 W



Interface contactors 3P
Additional 2 auxiliary contacts
max. 24V DC / 2W



Screw terminal							
3	4	4	4	LS 05.10	-	133889	10
3	4	4	4	LS 05.01	-	209671	10
Solder pin terminal 1 x 1mm (for soldering to PCB's)							
3	4	4	4	LS 05.10	-	209682	10
3	4	4	4	LS 05.01	-	209676	10
Solder pin terminal 1 x 1mm (for soldering to PCB's)							
1.5	2.2	3	3	LS 02K.01	-	133153	10
3	4	4	4	LS 05.01	-	209675	10

Available voltages for contactors type LS 02K, LS 05 and LS 06K⁽¹⁾

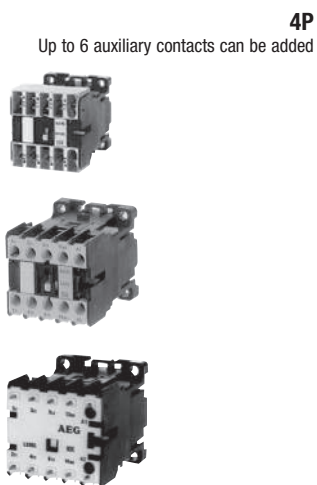
AC-operation																
50 Hz	(V)	48	-	115-127	-	220-240	-	380-400	415-440	500						
60 Hz	(V)	60	115	-	208-220	240-277	380	440	480	600						
AC-operation																
Double frequency coil																
50/60 Hz	(V)	24	42	48	110-115	120	220	230	240	400	440					
DC-operation																
(Maximum coil voltage only 250V/DC)																
DC	(V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	240 ⁽²⁾	250 ⁽²⁾

(1) For Ref. No. please contact us

(2) Price increase has to be considered

AC contactors

Compact contactors (continued)



	Power rating (kW), AC-3, 3~				Cat. No.	AC operation	DC operation	Pack.
	230V	400V	500V	690V		230V 50Hz	24V DC	
Screw terminal								
3	4	4	4	LS 05-4.00	125565	209664	20/10	
3	4	4	4	LS 05-22.00	290131	135122	20/10	
3	4	4	4	LS 05-04.00	209635	-	20/10	
Flat plug terminal 2 x 2.8mm (1 x 6.3/2 x 2.8 on request)								
3	4	4	4	LS 05-4.00	136749	136750	20/10	
Solder pin terminal 1 x 1mm								
3	4	4	4	LS 05-4.00	-	133164	-/10	
3	4	4	4	LS 05-22.00	290512	136956	20/10	

Available voltages for contactors type LS 02K, LS 05 and LS 06K⁽¹⁾

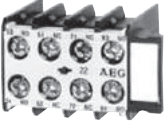




AC-operation		50 Hz	60 Hz	48	60	115	115-127	208-220	220-240	240-277	380	440	415-440	480	500	600		
Double frequency coil		50/60 Hz	(V)	24	42	48	110-115	120	220	230	240	400	440					
DC-operation		DC	(V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	240 ⁽²⁾	250 ⁽²⁾

(1) For Ref. No. please contact us

(2) Price increase has to be considered





AC contactors

Accessories for compact contactors

	Description	For contactors type LS 05, LS 06K	DIN EN...	Cat. No.	Ref. No.	Pack.	
<p>Auxiliary contact block DIN EN 50 012 for front snap-on mounting</p> 	Screw terminal, frame IV S	Design no. 10E	11E	HS 05K.01	133596	10	
		Design no. 10E	21E	HS 05K.11	133591	10	
		Design no. 10E	12E	HS 05K.02	133592	10	
		Design no. 10E	22E	HS 05K.12	133597	10	
		Design no. 10E	23E	HS 05K.13	133595	10	
		Design no. 10E	32E	HS 05K.22	133594	10	
		Design no. 10E	41E	HS 05K.31	133593	10	
<p>Auxiliary contact block DIN EN 50 005 for front snap-on mounting</p> 	Screw terminal, frame IV S	Any design no.	20	HS 05K.20	133598	10	
		Any design no.	11	HS 05K.11	133599	10	
		Any design no.	02	HS 05K.02	133600	10	
		Any design no.	40	HS 05K.40	133606	10	
		Any design no.	31	HS 05K.31	133607	10	
		Any design no.	22	HS 05K.22	133608	10	
		Any design no.	13	HS 05K.13	133609	10	
<p>Auxiliary contact block DIN EN 50 012 for side mounting</p> 	Screw terminal, frame I	Design no. 10E	20	HS 05.10	133258	10	
		Design no. 10E	11E	HS 05.01	133259	10	
	Flat plug terminal 2 x 2.8mm insulated, frame I	Design no. 10E	11E	HS 05.01	133261	10	
		Solder pin terminal 1 x 1mm, frame I for soldering to PCBs for soldering to PCBs	Design no. 10E	20	HS 05.10	133262	10
			Design no. 10E	11E	HS 05.01	133263	10
<p>Auxiliary contact block DIN EN 50 005 for side mounting</p> 	Screw terminal, frame I	Any design no.	10	HS 05.10	137252	10	
		Any design no.	01	HS 05.01	209456	10	
		manual operation possible	Any design no.	10	HT 05.10	133102	10
	Flat plug terminal 2 x 2.8mm insulated, frame I	Any design no.	10	HS 05.10	137243	10	
		Any design no.	01	HS 05.01	263075	10	
	Solder pin terminal 1 x 1mm, frame I for soldering to PCBs for soldering to PCBs	Any design no.	10	HS 05.10	125594	10	
		Any design no.	01	HS 05.01	263076	10	
<p>Pick-up delay 0.5 - 60s</p> 	with connecting wires for coil operating voltages Us = 24 - 240V AC/DC	Any design no.		EV 05	209994	10	
		Pick-up delay mounting			EV 05b	135791	10

AC contactors

Accessories for compact contactors (continued)

	Description	For contactors type LS 05, LS 06K	DIN EN...	Cat. No.	Ref. No.	Pack.
 <p>Overvoltage suppressor for front mounting to contactor</p>	RC unit					
	US = 12 - 60V 50/60Hz	Any design no.		EB 05	209983	10
	US = 72 - 240V 50/60Hz	Any design no.		EB 05	209984	10
	Diode					
	US = 6 - 240V DC	Any design no.		EB 05	209990	1
 <p>Connecting bridge for parallel connection of 2, 3 or 4 poles (also for type LS 07)</p>	Screw terminal	Any design no.		PB	137604	10
 <p>Mechanical interlock for mounting between 2 contactors with mounting clamps</p>	Set	Any design no.		VB 05	209977	20
 <p>Spare coils</p>	Please note type/order no. end digits -XX					
	LS 02K, LS 05 (3- and 4-pole) LS 06	AC		C 130-XX ⁽¹⁾	-	1
	LS 02K, LS 05 (3- and 4-pole) LS 06	DC		C 133-XX ⁽¹⁾	-	1
	no coil change possible on LS 07 and Interface contactors					

Voltage and frequency for spare coils for contactors LS 02K, LS 05 and LS 06K⁽¹⁾

AC-operation																		
50 Hz	(V)	48	115-127	-	220-240	380-400	415-440	500										
60 Hz	(V)	60	-	208-220	240-277	440	480	600										
AC-operation																		
Double frequency coil		50/60 Hz	(V)	24	42	48	110-115	120	220	230	240	400	440					
DC-operation																		
(Maximum coil voltage only 250V/DC)		DC	(V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	240	250

(1) For Ref. No. please contact us

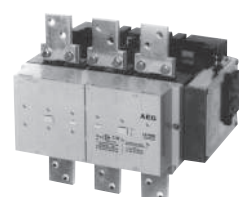
(2) Price increase has to be considered

(3) Coupling contactors (Interface) 1.2W or 2W at DC 24V no coil change possible.

AC contactors

LS ... K-contactors

3P



Power rating (kW), AC-3, 3~				Cat. No.	AC operation 230V 50Hz Ref. No.	DC operation 24V DC Ref. No.	Pack.
230V	400V	500V	690V				
Screw terminal							
2.2	4	5.5	5.5	LS 4K.10	143011	143631	1
2.2	4	5.5	5.5	LS 4K.01	143039	143645	1
3	5.5	7.5	7.5	LS 5K.10	143095	143659	1
3	5.5	7.5	7.5	LS 5K.01	143123	143673	1
4	7.5	10	10	LS 7K.10	143235	143715	1
4	7.5	10	10	LS 7K.01	143263	143729	1
7.5	11	15	15	LS 11K.00	143515	143589	1
Dual box type terminal							
7.5	12	15	15	LS 12K.10	136375	136377	1
7.5	12	15	15	LS 12K.01	136376	-	1
9	16	18.5	18.5	LS 15K.10	135127	-	1
9	16	18.5	18.5	LS 15K.01	135126	-	1
11	18.5	25	30	LS 18K.00	135055	135061	1
15	22	30	35	LS 22K.00	135071	-	1
15	22	30	35	LS 22K.00 AC/DC	135046	135042	1
18.5	30	40	45	LS 30K.00	125583	-	1
18.5	30	40	45	LS 30K.00 AC/DC	135010	135757	1
22	37	45	45	LS 37K.00	125587	-	1
22	37	45	45	LS 37K.00 AC/DC	135769	135012	1
25	45	55	55	LS 45K.00	135104	-	1
25	45	55	55	LS 45K.00 AC/DC	135775	135771	1
30	55	65	65	LS 55K.00	125718	-	1
30	55	65	65	LS 55K.00 AC/DC	135777	135024	1
Screw terminal							
45	75	100	100	LS 75K.22	135819	-	1
45	75	100	100	LS 75K.11 AC/DC	135826	135822	1
55	90	110	132	LS 90K.22	135839	-	1
55	90	110	132	LS 90K.11 AC/DC	135846	135842	1
65	110	132	155	LS 110K.22	135052	-	1
65	110	132	155	LS 110K.11 AC/DC	133411	133407	1
					AC/DC operation 220-250V 50/60Hz, DC	AC/DC operation 24-28V 50/60Hz, DC	
Screw terminal with AC/DC electronic coil							
75	132	160	200	LS 132K.22 AC/DC	135780	136005	1
90	160	200	250	LS 160K.22 AC/DC	133439	133435	1
125	220	300	375	LS 220K.22 AC/DC	133460	133456	1
160	280	400	450	LS 280K.22 AC/DC	133481	133477	1
220	375	480	500	LS 375K.22 AC/DC	133502	133498	1
					AC operation 220-240V 50/60Hz		
Screw terminal (220 - 240V 50/60Hz AC)							
250	450	550	550	LS 450K.22	133523		1

Remark: Available voltages see F.15

Series LS...K

F

AC contactors

LS ... K-contactors

4P



Power rating (kW), AC-3, 3~			AC-1 I _e (A)	Cat. No.	AC operation	DC operation	Pack.
230V	400V	230V 50Hz			24V DC		
Screw terminal					Ref. No.	Ref. No.	
3	5.5		25	LS 5K-4.00	143179	143687	1
3	5.5		25	LS 5K-22.00	143207	143701	1
4	7.5		32	LS 7K-4.00	143319	143743	1
4	7.5		32	LS 7K-22.00	143347	143757	1
<hr/>							
Dual box type terminal							
7.5	11		45	LS 11K-4.00	135034	135037	1
7.5	11		45	LS 11K-22.00	135032	135036	1
9	16		60	LS 15K-4.00	135049	135054	1
9	16		60	LS 15K-22.00	135051	133725	1
11	18.5		90	LS 18K-4.00	135063		1
11	18.5		90	LS 18K-22.00	116780		1
11	18.5		90	LS 18K-4.00 AC/DC	135781	136048	1
11	18.5		90	LS 18K-22.00 AC/DC	135782	292146	1
18.5	30		110	LS 30K-4.00	135089		1
18.5	30		110	LS 30K-22.00	135090		1
18.5	30		110	LS 30K-4.00 AC/DC	135783	136049	1
18.5	30		110	LS 30K-22.00 AC/DC	135784	136946	1
22	37		110	LS 37K-22.00	135103	136054	1
22	37		110	LS 37K-22.00 AC/DC	135785		1
25	45		140	LS 45K-4.00	135112		1
25	45		140	LS 45K-4.00 AC/DC	135786	136053	1
<hr/>							
Screw terminal							
30	55		200	LS 55K-4.11	135796		1
30	55		200	LS 55K-4.11 AC/DC	133397	133393	1
55	90		325	LS 90K-4.11	135803		1
55	90		325	LS 90K-4.11 AC/DC	133404	133400	1
<hr/>							
					AC/DC operation	AC/DC operation	
					220-250V 50/60Hz, DC	24-28V 50/60Hz, DC	
Screw terminal with AC/DC electronic coil ⁽¹⁾							
75	132		400	LS 132K-4.11 AC/DC	133704	133700	1
90	160		500	LS 160K-4.11 AC/DC	133446	133442	1
125	220		600	LS 220K-4.11 AC/DC	133467	133463	1
160	280		700	LS 280K-4.11 AC/DC	133488	-	1
220	375		1000	LS 375K-4.11 AC/DC	133509	133505	1
<hr/>							
					AC operation		
					220-240V 50/60Hz		
Screw terminal							
250	450		1250	LS 450K-4.11	133526		1

Remark: Available voltages see F.15

AC contactors

Available voltages for contactors type LS 4K up to LS 450K⁽¹⁾

AC-operation																			
LS 4K - LS 110K (3P)	50 Hz	(V)	48	-	110	127	-	208 ⁽¹⁾	220-230	240	-	380 ⁽¹⁾	380-400	415	660-690				
LS 5K-4 - LS 90K-4 (4P)	60 Hz	(V)	-	115 ⁽¹⁾	120 ⁽¹⁾	-	220	240	277	-	380	440	480	-	-				
AC-operation double frequency coil⁽²⁾																			
LS 4K - LS 55K (3P)	50/60 Hz	(V)	24	42 ⁽¹⁾	48	110-115 ⁽¹⁾	230	240	400										
LS 5K - LS 15K (4P)																			
DC-operation																			
LS 4K - LS 18K (3P)	DC	(V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	230 ⁽²⁾	240 ⁽²⁾	250 ⁽²⁾	440 ⁽²⁾
LS 5K - LS 15K (4P)																			
AC/DC-electronic coil																			
LS 22K - LS 55K (3P)	50/60 Hz	(V)	24-28	42-48	60-72	110-125	220-250	440											
LS 18K - LS 45K (4P)	DC																		
AC/DC-electronic coil																			
LS 75K - LS 375K (3P- 4P)	50/60 Hz	(V)	24-28	42-48	110-127	220-250	380-415	440-500											
LS 55K-4 (4P)	DC																		
AC-operation																			
only for LS 450K	50/60 Hz	(V)	110-120	220-240	360-440														

(1) For Ref. No. please contact us

(2) Price increase has to be considered

Contactors type LS...K

Protection against short-circuit.

Protection with fuses, max. values, according coordination type 1 and 2 and without welding, contactors without TOR

Type	LS 4K	LS 5K (3+4P)	LS 7K (3+4P)	LS 11K	LS 12K LS 11K (4P)	LS 15K	LS 15K (4P)	LS 18K	LS 18K (4P)	LS 22K (3+4P)	LS 30K (3+4P)	LS 37K (3+4P)	LS 45K (3+4P)
Coordination type 2													
gG/gL (A)	35	35	35	50	63	63	63	80	100	100	125	125	160
Coordination type 1													
gG/gL (A)	50	50	63	63	100	100	100	125	200	200	200	200	250
Without welding													
gG/gL (A)	10	10	25	35	35	35	35	50	80	80	100	100	140

Type	LS 55K (3+4P)	LS 55K (4p)	LS 75K	LS 90K	LS 90K (4p)	LS 110K	LS 132K	LS 132K (4p)	LS 160K (3+4P)	LS 220K (3+4P)	LS 280K (3+4P)	LS 375K (3+4P)	LS 450K (3+4P)
Coordination type 2													
gG/gL (A)	200	250	250	250	400	315	400	500	500	630	800	1000	1250
Coordination type 1													
gG/gL (A)	250	315	355	355	500	500	500	630	630	1250	1250	1250	2x800
Without welding													
gG/gL (A)	160	200	200	200	250	250	315	315	425	500	630	800	1000

AC contactors

With DC wide range coils



3P



DC operated with wide range coil 0,7 - 1,3 x Us								
Power rating, (kW), AC-3, 3				AC-1	Additional aux. cont.	Cat. No.	DC operation	
230V	400V	500V	690V	Ie (A)			24 V/DC / Ref. No.	Pack.
Screw terminal								
2.2	4	5.5	5.5	25	2NO or 1NC	LS4K.10 DWD	136484	1
3	5.5	7.5	7.5	25	2NO or 1NC	LS5K.10 DWD	136485	1
4	7.5	10	10	32	2NO or 1NC	LS7K.10 DWD	136486	1
Dual box terminals								
7.5	12	15	15	45	1NO and 1NC	LS12K.00 DWD	136487	1
9	16	18.5	18.5	60	1NO and 1NC	LS15K.00 DWD	136488	1
11	18.5	25	30	60	1NO and 1NC	LS18K.00 DWD	136489	1
15	22	30	35	90	4 contacts	LS22K.00 DWD ⁽²⁾	103751	1
15	22	30	35	90	4 contacts	LS22K.00 EWD ⁽¹⁾	136490	1
18.5	30	40	45	110	4 contacts	LS30K.00 DWD ⁽²⁾	103758	1
18.5	30	40	45	110	4 contacts	LS30K.00 EWD ⁽¹⁾	136491	1
22	37	45	45	110	4 contacts	LS37K.00 DWD ⁽²⁾	103765	1
22	37	45	45	110	4 contacts	LS37K.00 EWD ⁽¹⁾	136492	1
25	45	55	55	140	4 contacts	LS45K.00 DWD ⁽²⁾	103772	1
25	45	55	55	140	4 contacts	LS45K.00 EWD ⁽¹⁾	136493	1
30	55	65	65	140	4 contacts	LS55K.00 DWD ⁽²⁾	103779	1
30	55	65	65	140	4 contacts	LS55K.00 EWD ⁽¹⁾	136494	1
Screw terminals								
45	75	100	100	250	without	LS75K.11EWD	136495	1
55	90	110	132	250	without	LS90K.11EWD	136496	1



4P



Screw terminals								
3	5.5	7.5	7.5	25	2NO or 1NC	LS5K-4.00 DWD	136568	1
4	7.5	10	10	32	2NO or 1NC	LS7K-4.00 DWD	136569	1
Dual box terminals								
7.5	11	15	15	45	1NO and 1NC	LS11K-4.00 DWD	136570	1
9	16	18.5	18.5	60	1NO and 1NC	LS15K-4.00 DWD	136571	1
11	18.5	25	30	90	4 contacts	LS18K-4.00 DWD ⁽²⁾	103805	1
11	18.5	25	30	90	4 contacts	LS18K-4.00 EWD ⁽¹⁾	136572	1
18.5	30	40	45	110	4 contacts	LS30K-4.00 DWD ⁽²⁾	103806	1
18.5	30	40	45	110	4 contacts	LS30K-4.00 EWD ⁽¹⁾	136573	1
25	45	55	55	140	4 contacts	LS45K-4.00 DWD ⁽²⁾	103807	1
25	45	55	55	140	4 contacts	LS45K-4.00 EWD ⁽¹⁾	136574	1
Screw terminals								
55	90	110	132	325	without	LS90K-4.11 EWD ⁽³⁾	136575	1

Cat. No. voltage suffix

for contactors Type LS 4..K up to LS 90...K with wide range coil

DC operation (0.7-1.3 x Us) LS 4K-LS 55K (3-pole) LS 5K-LS 45K (4-pole)	Suffix DC (V)	-WD 24	-WE 33	-WG 48	-WI 72	-WI 72	-WN 220
AC/DC-electronic coil (0.7-1.3 x Us) LS 22K-LS 90K (3-pole) LS 18K-LS 45K (4-pole)	Suffix	-WD 24	-WE 33	-WG 48	-WI 72	-WI 110	-WN 220







- (1) DC-electronic coil for DC operation
 (2) DC operation (DC coil, PA = PH = 20 W)
 (3) Type LS 90K.11EWD only with DC-electronic coil DC 24V available

Remark: Ordering, pls. mention Cat. No. and Ref. No. If you need the contactor with the above mentioned control voltage 24V DC. If you need the contactor with an other control voltage pls. mention only the designation and instead of the voltage suffix **WD** use the suffix according to the control voltage you need, see above suffix schedule. Ordering example see below. Ref. No. on request.

Ordering example: Contactor type LS 4K.10DWJ (3-pole, screw terminal) with DC wide range coil for DC 110V


AC contactors

Accessories for LS...K contactors

	Description	Fits contactors type ...	Cat. No.	Ref. No.	Pack.																								
 <p>Auxiliary contact block, 1 contact</p>	Screw terminal, for front snap-on mounting, DIN EN 50 005, DIN EN 50 012 extended contact travel	LS 4K - LS 55K, not for LS 55K-4 (4-pole)	HS 7K.10 HS 7K.01	133768 133766	10 10																								
		HS 7V.10 HS 7V.01	133769 133767	10 10																									
 <p>Auxiliary contact block, 2 contacts</p>	Screw terminal, for side mounting, DIN EN 50 005, DIN EN 50 012 R: for mounting more than 4 front or 2 side-mounted auxiliary contacts	LS 4K - LS 450K	HS 8K.11 HS 8K.20	135002 135004	10 10																								
		LS 22K - LS 450K, LS 18K-4	HS 8R.11 HS 8R.20	133101 135003	10 10																								
 <p>Timer, pneumatic, 2 contacts</p>	Delayed ON, pneumatically delayed auxiliary contact, DIN EN 50 005 0.1 - 30s 1 - 60s Delayed OFF, pneumatically delayed auxiliary contact, DIN EN 50 005 0.1 - 30s 1 - 60s	LS 4K - LS 55K, not for LS 55K-4 (4-pole)	TMD 30 TMD 60	135028 135030	10 10																								
		LS 4K - LS 55K, not for LS 55K-4 (4-pole)	TMI 30 TMI 60	135029 135031	10 10																								
 <p>Mechanical latch, 1 contact</p>	With electronic impulse or manual, for front snap-on mounting, DIN EN 50 005 <table border="1"> <thead> <tr> <th>50 Hz (V)</th> <th>60 Hz (V)</th> <th>DC (V)</th> </tr> </thead> <tbody> <tr> <td>24 - 32</td> <td>24 - 32</td> <td>24 - 36</td> </tr> <tr> <td>42 - 48</td> <td>48 - 60</td> <td>42 - 48</td> </tr> <tr> <td>-</td> <td>-</td> <td>60 - 72</td> </tr> <tr> <td>110 - 127</td> <td>110 - 127</td> <td>110 - 125</td> </tr> <tr> <td>220 - 240</td> <td>208 - 277</td> <td>220 - 250</td> </tr> <tr> <td>380 - 480</td> <td>380 - 480</td> <td>440</td> </tr> <tr> <td>500 - 690</td> <td>600</td> <td></td> </tr> </tbody> </table>	50 Hz (V)	60 Hz (V)	DC (V)	24 - 32	24 - 32	24 - 36	42 - 48	48 - 60	42 - 48	-	-	60 - 72	110 - 127	110 - 127	110 - 125	220 - 240	208 - 277	220 - 250	380 - 480	380 - 480	440	500 - 690	600		LS 4K - LS 55K, not for LS 55K-4 (4-pole)	WBK WBK WBK WBK WBK WBK	135073 292913 292912 292914 135077 135807 135806	5 5 5 5 5 5 5
		50 Hz (V)	60 Hz (V)	DC (V)																									
		24 - 32	24 - 32	24 - 36																									
		42 - 48	48 - 60	42 - 48																									
		-	-	60 - 72																									
		110 - 127	110 - 127	110 - 125																									
		220 - 240	208 - 277	220 - 250																									
		380 - 480	380 - 480	440																									
		500 - 690	600																										
 <p>Overvoltage suppressor Directly parallel to the coil terminals A1/A2 adaptable without cable</p>	RC unit, for AC-operated contactors Ue 24 - 48V Ue 50 - 127V Ue 130 - 250V Ue 24 - 48V Ue 50 - 127V Ue 130 - 250V Ue 24V Ue 48 - 260V Ue 380 - 415V Diode, for DC-operated contactors Ue 12 - 600V Varistor, for AC or DC-operated contactors Ue 24 - 48V Ue 50 - 127V Ue 130 - 250V	LS 4K - LS 15K, LS 18K (3-pole)	LR 2K LR 2K LR 2K	135014 135015 135016	10 10 10																								
		LS 18K-4, LS 22K - LS 55K, LS 75K, LS 90K (3-pole), not for LS 55K-4 (4-pole)	LR 3K LR 3K LR 3K	135017 135018 135019	10 10 10																								
		LS 110K, LS 55K-4, LS 90K-4	LR 5K LR 5K LR 5K	292917 133586 133586	10 10 10																								
 <p>Timer, electronic (outgoing units) Directly parallel to the coil terminals A1/A2 adaptable without cable for contactors with Us: 24 - 250 V 50/60Hz/DC</p>	ON-delay 0.1 - 2s 1.5 - 45s OFF-delay 0.1 - 2s 1.5 - 45s	LS 4K - LS 55K, not for LS 55K-4 (4-pole)	BETL 02 CG BETL 45 CG	136670 136671	5 5																								
		LS 4K - LS 55K, not for LS 55K-4 (4-pole)	BETL 02 DG BETL 45 DG	136672 136673	5 5																								


AC contactors

Accessories for LS...K contactors

	Description	Fits contactors type...	Cat. No.	Ref. No.	Pack.	
 <p>Interlock</p>	Mechanical	LS 4K - LS 18K ⁽¹⁾	LUV18K	135007	5	
		LS 22K - LS 55K ⁽²⁾	LUV55K	135008	5	
	Mechanical/ electrical 2NC contacts	LS 4K - LS 18K ⁽¹⁾	LUV18E	135005	5	
		LS 22K - LS 55K ⁽²⁾	LUV55E	135006	5	
	Mechanical, horizontal contactor mounting	LS 75K - LS 375K	LUV375H	133588	1	
	Mechanical, vertical contactor mounting	LS 75K - LS 160K, LS 375K ⁽³⁾	LUV375V	133589	1	
		LS 450 K	LUV450V	133590	1	
	<p>Terminal cover For the main terminals used with busbars, protection acc. to DIN VDE 0106 Part 100</p>	For fitting to screw ends M M8 (1 set = 2 items) for 1-pole units, order 3 for 3-pole contactors	LS 75K, LS 90K (3-pol.)	KLA 90K	139672	1
		M10 (1 set = 6 items) order 2 for 4-pole contactors	LS 110K - LS 375K LS 90K-4	KLA 10-2	204799	1
<p>Device marking parts for identification and marking</p>	Labelling system 10 sheets with 260 labels each Label carrier	LS 4K - LS 450K	EAT-260 SPR	133773	10	
				133774	20	

(1) Not for type LS 55K-4 (4-pole)
 (2) Not for type LS 18K-4 (4-pole)
 (3) LS 220K and LS 280K only with Type LUV 375H (horizontal)

Spare parts LS...K contactors

	Description	Fits contactors type ...	Cat. No.	Ref. No.	Pack.		
 <p>Main contact set (3 NO-contacts)</p>	<p>1 set = 3 units 1 unit = 2 fixed contacts, 1 contact bridge and accessories for 3- and 4-pole contactors (order 2 sets for 4-pole contactors)</p>	LS 22K	CS 22	116576	1		
		LS 30K	CS 30	116577	1		
		LS 37K	CS 37	116579	1		
		LS 45K	CS 45	116581	1		
		LS 55K	CS 55	116582	1		
		LS 55K-4	CS 55F	136055	1		
		LS 75K	CS 75	136056	1		
		LS 90K	CS 90	136057	1		
		LS 110K	CS 110	136058	1		
		LS 132K	CS 132	136062	1		
		LS 160K	CS 160	136060	1		
		LS 220K	CS 220	133581	1		
		LS 280K	CS 280	133582	1		
		LS 375K	CS 375	133583	1		
		LS 450K	CS 450	133584	1		
		<p>Main contact set (2 NO + 2 NC contacts)</p>	<p>1 set = 4 units 1 unit = 2 fixed contacts, 1 contact bridge and accessories for 4-pole contactors LS ...K-22</p>	LS 15K-22	CS 15C	116573	1
				LS 18K-22	CS 18C	116575	1
LS 30K-22	CS 30C			116578	1		
LS 37K-22	CS 37C			116580	1		

AC contactors

Spare coils for alteration of control voltages of existing contactors

For alternation of control voltages of existing contactors

For contactors with
AC operation



Description	Cat. No.	Ref. No.	Pack.	
AC coil (230V, 50Hz)				
LS4K-LS7K (3-, 4-pole), LS11K (3-pole), LS12KCWN - LS25KCWN	C 650-00	143851	1	
LS11K (4-pole), LS12K, LS15K (3-, 4-pole), LS18K (3-pole), LS30KCWN	C 652-00	116591	1	
LS18K (4-pole), LS22K - LS45K (3-, 4-pole), LS55K (3-pole), LS45KCWN - LS70KCWN	C 653-00	116599	1	
for LS 75K, LS 90K (3-pole)	C 654-00	133876	1	
for LS 55K-4 (4-pole), LS 110K (3-pole)	C 655-00	135937	1	
LS 90K-4 (4-pole)	C 675-23	133577	1	
LS 450K (3-, 4-pole)	coil Control circuit with rectifier	C 668-23 C 675-23	133574 133577	1 1

For contactors with
electronic coil "AC/DC"

AC/DC coil incl. electronic module (220V - 250V 50/60Hz, DC)				
LS 18K (4-pole), LS 22K - LS 45K, LS 55K (3-pole)	C 664-44	135787	1	
Electronic coil and electronic module (220V - 250V 50/60Hz, DC)				
LS 75K, LS 90K (3-pole)	coil AC/DC-module	C 665-44 CM 672-44	136038 133535	1 1
LS 110K - LS 160K (3-pole), LS 55K-4 (4-pole)	coil AC/DC-module	C 667-44 CM 671-44	133563 136024	1 1
LS 375K, LS 90K-4 - LS 160K-4 (4-pole)	coil AC/DC-module	C 666-44 CM 670-44	133563 133556	1 1
LS 220K, LS 280K (3-, 4-pole)	coil AC/DC-module	C 674-44 CM 673-44	136401 136407	1 1

For contactors with
DC operation

LS 4K - LS 7K, LS 11K (3-pole)	DC coil	C 660-00	143869	1
LS 11K (4-pole), LS 15K, LS 18K (3-pole)		C 662-00	116612	1

Cat. No. suffix for spare coils for contactors type LS 4K - LS 450K

AC-operation (not for LS 450K)	Suffix	-8E	-86	-88	-8K	-69	-8M	-00	-81	-8P	-63	-83	-80	-8S				
	50 Hz (V)	48	-	110	127	-	208 ⁽¹⁾	220-230	240	-	380 ⁽¹⁾	380-400	415	660-690				
	60 Hz (V)	-	115 ⁽¹⁾	120 ⁽¹⁾	-	220	240	277	-	380	440	480	-	-				
AC-operation Double frequency coil⁽¹⁾ (not for LS 450K)	Suffix	-55	-54	-57	-56	-50	-51	-59										
	50/60 Hz (V)	24	42	48	110-115	230	240	400										
DC-operation LS 4K - LS 18K (3P) LS 5K - LS 15K (4P)	Suffix	-1A	-1B	-00	-1C	-1D	-1E	-16	-17	-1F	-18	-1G	-14	-19	-1H	-1J	-20	-1K
	DC (V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	230 ⁽²⁾	240 ⁽²⁾	250 ⁽²⁾	440 ⁽²⁾
AC/DC-electronic coil/mod. LS 22K - LS 55K (3P) LS 18K - LS 45K (4P)	Suffix	-40	-41	-42	-43	-44	-46											
	50/60 Hz (V)	24-28	42-48	60-72	110-125	220-250	440											
AC/DC-electronic coil/mod. LS 75K - LS 375K (3P- 4P) LS 55K-4 (4P)	Suffix	-40	-41	-43	-44	-45	-46											
	50/60 Hz (V)	24-28	42-48	110-127	220-250	380-415	440-500											
AC-operation only for LS 450K	Suffix	-88	-23	-63														
	50/60 Hz (V)	110-120	220-240	360-440														

Remark:

Use suffix only with Cat. No. of the basic execution, e.g. suffix for DC only with contactors with DC-coil.

On the label of the contactors and the coils, you will find the suffix according to above table, e.g. 48V, 50 Hz = suffix -8E.

Ordering example for spare coils:

Spare coil for contactor type LS 4K e.g. coil 48V 50Hz: Type C 650-8E (Ref. No. on request)
or spare coil for contactor type LS 11K e.g. coil DC 48V: Type C 662-16 (Ref. No. on request)

(1) Only for LS 4K - LS 55K (3-pole) and LS 5K-4 - LS 45K-4 (4-pole)

(2) Price increase has to be considered

AC contactors

Contactors for capacitor switching

kVAR values at ambient temperature +55°C



Power rating kVA AC 6b, 3~				Cat. No.	Ref. No.	Pack.
230V	400V	500V	690V			
Connection by screws						
7.5	12.5	16	15	LS12KCWN.20A00	247281	1
7.5	12.5	16	15	LS12KCWN.11A00	247282	1
7.5	12.5	16	15	LS12KCWN.02A00	247520	1
10	16.7	21	20	LS16KCWN.20A00	247283	1
10	16.7	21	20	LS16KCWN.11A00	247284	1
10	16.7	21	20	LS16KCWN.02A00	247251	1
12.5	20	25	25	LS20KCWN.10A00	247285	1
12.5	20	25	25	LS20KCWN.21A00	247522	1
12.5	20	25	25	LS20KCWN.12A00	247523	1
15	25	31	30	LS25KCWN.10A00	247286	1
15	25	31	30	LS25KCWN.21A00	247288	1
15	25	31	30	LS25KCWN.12A00	247524	1
Dual box terminals						
20	30	38	35	LS30KCWN.10A00	247289	1
20	30	38	35	LS30KCWN.21A00	247525	1
20	30	38	35	LS30KCWN.12A00	247526	1
25	45	56	55	LS45KCWN.10A00	247290	1
25	45	56	55	LS45KCWN.11A00	247527	1
25	45	56	55	LS45KCWN.12A00	247528	1
35	55	69	65	LS55KCWN.10A00	247291	1
35	55	69	65	LS55KCWN.11A00	247292	1
35	55	69	65	LS55KCWN.12A00	247293	1
45	70	88	85	LS70KCWN.10A00	247294	1
45	70	88	85	LS70KCWN.11A00	247295	1
45	70	88	85	LS70KCWN.12A00	247529	1

F

Cat. No. suffix for capacitor switching type LS 12KCWN up to LS 70KCWN

AC	Suffix	-88	-8K	-69	-8M	-00	-81	-8P	-63	-83	-80	-8S
LS 12KCWN - LS 70KCWN (3-P)	50 Hz (V)	110	127	-	208	220-230	240	-	380	380-400	415	660-690
	60 Hz (V)	120	-	220	240	277	-	380	440	480	-	-
AC-Dual frequency	Suffix	-55	-54	-57	-56	-50	-51	-59				
LS 12KCWN - LS 70KCWN (3-P)	50/60 Hz (V)	24	42	48	110-115	230	240	400				

Remark:

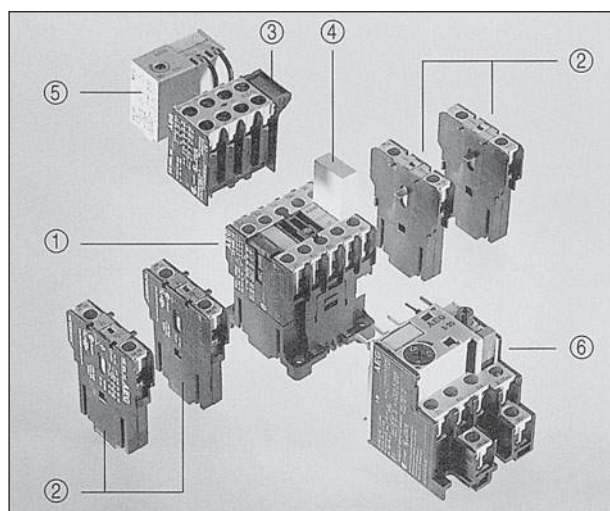
Ordering, pls. mention Cat. No. If you need the contactor with the above mentioned control voltage 230V 50Hz.

If you need the contactor with an other control voltage pls. mention only the Cat. No. and instead of the voltage suffix **00** use the suffix according the control voltage you need, see above suffix schedule. Ordering example see below.

Ordering example: Contactor type LS 12KCWN-20A **88** (3-pole, screw terminal) with coil for AC 110V 50Hz 120V 60Hz.

Spare coils: See page F.19

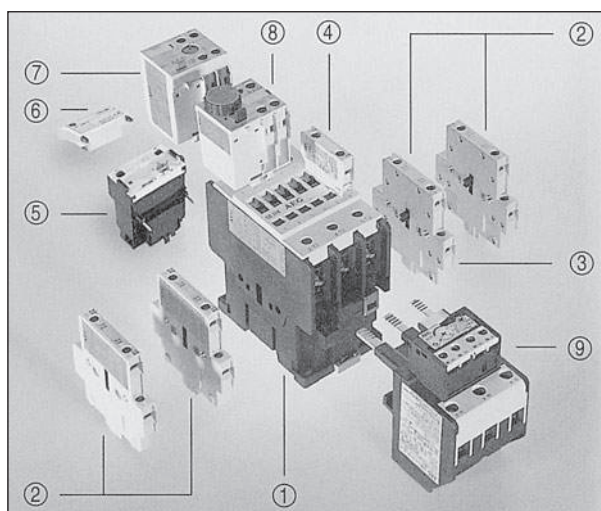
System compact contactors



Compact contactors type LS 02K, LS 05, LS 06K

- ① contactor
- ② auxiliary contact block for side mounting
- ③ auxiliary contact block for front mounting
- ④ overvoltage suppressor
- ⑤ timer, electronic
- ⑥ thermal overload relay

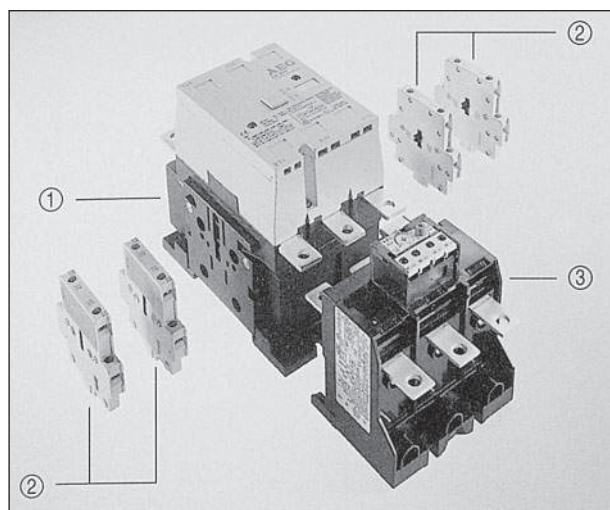
System LS...K contactors up to 55 kW



Contactors type LS 4K up to LS 55K

- ① contactor
- ② auxiliary contact block for side mounting
- ③ mechanical interlock
- ④ auxiliary contact block for front mounting
- ⑤ timer, electronic
- ⑥ overvoltage suppressor
- ⑦ mechanical latch
- ⑧ timer, pneumatic
- ⑨ thermal overload relay

System LS...K contactors from 75 kW up to 450 kW



Contactors from type LS 75K up to LS 450 K

- ① contactor
- ② auxiliary contact block for side mounting
- ③ thermal overload relay

Contactor combinations

Small insulated enclosure

Empty enclosure for housing of motorstarters (contactors + therm. overload relay)

Empty enclosure
For compact contactors Type LS 02K,
LS 05 or LS 06K with overload relay Type b 05



	Power rating (kW), AC-3, 3~			Combination	Contactors	Cat. No.	Ref. No.	Pack.	
	230V	400V	690V						
	With push-buttons I-O/R, (O/R protruding) ⁽¹⁾⁽³⁾								
	1.5 - 3	2.2 - 4	3-4	Lbi 02K, Lbi 05, Lbi 06K	LS 02K, LS 05, LS 06K	LGHV 65 IP65	137558	1	
	With push-button R ⁽¹⁾⁽³⁾								
	1.5 - 3	2.2 - 4	3-4	Lbi 02K, Lbi 05, Lbi 06K	LS 02K, LS 05, LS 06K	LGHR 65 IP65	116662	1	
Empty enclosure for compact contactors with overload relay Type b 18K	With push-buttons I-O/R, (O/R protruding) ⁽¹⁾⁽²⁾								
	2.2 - 4	4 - 7.5	5.5 - 10	Lbi 4K - 7K	LS 4K - 7K	I01K6P IP65	136733	1	
	With push-button R ⁽¹⁾⁽³⁾								
	2.2 - 4	4 - 7.5	5.5 - 10	Lbi 4K - 7K	LS 4K - 7K	I01K6R IP65	136737	1	
	Without push-buttons								
	2.2 - 4	4 - 7.5	5.5 - 10	Lbi 4K - 7K	LS 4K - 7K	I01K60 IP65	136735	1	
	With push-buttons I-O/R, (O/R protruding) ⁽¹⁾⁽²⁾								
	7.5	11	15	Lbi 11K	LS 11K	I02K6P IP65	136739	1	
With push-button R ⁽¹⁾⁽³⁾									
7.5	11	15	Lbi 11K	LS 11K	I02K6R IP65	136741	1		
Without push-buttons									
7.5	11	15	Lbi 11K	LS 11K	I02K60 IP65	136741	1		
With push-button I-O/R, (O/R protruding) ⁽¹⁾⁽²⁾									
7.5	12	15	Lbi12K	LS12K	I02K6P IP65	136739	1		
With push-button R ⁽¹⁾⁽³⁾									
7.5	12	15	Lbi12K	LS12K	I02K6R IP65	136741	1		
Neutral wire terminal for I01K... and I02K...						IKNL	136729	10	
Auxiliary contact block "I" (Start) for I01K... and I02K... as spare part	For mounting on the front of the contactor Operation via "Start"/"I" button on enclosure						IKHT	136731	10

- (1) Operating push-button: I = ON, O/R = OFF and Reset, R = Reset
 (2) Multifunction button on overload relay set to "M-0".
 (3) Multifunction button on overload relay set to "M" resp. "H".

Contactor combinations

Reversing contactor - AC operation 230V 50Hz

Please note the new LS Compact-Contactors with extensive, modular accessories



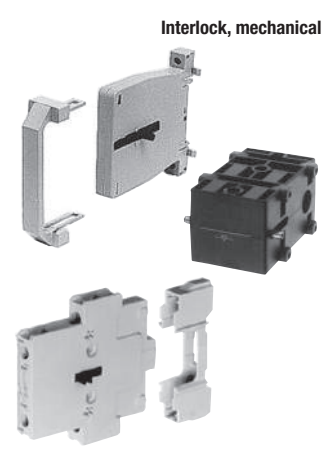
Power rating (kW), AC-3, 3~				Rated current (A) AC3, I _e , 400V	Cat. No.	Ref. No.	Pack.
230V	400V	500V	690V				
Screw terminal							
0.37	0.75			2.15	LUV 07.10	251369	5
0.37	0.75			2.15	LUV 07.01	251371	5
Flat plug terminal 1 x 6.3mm							
0.37	0.75			2.15	LUV 07.10	251375	5
0.37	0.75			2.15	LUV 07.01	251376	5
Solder pin terminal 1 x 0.8mm							
0.37	0.75			2.15	LUV 07.10	251377	4
0.37	0.75			2.15	LUV 07.01	251381	4

For soldering to PCBs

Deviating operation voltages see table "E-No. voltage suffix":
 LUV 07 see page F.8 (contactor LS 07) AC-operation between 24 V and 400 V. (0.75% coils double frequency and DC coils are not available for LUV 07)

Ordering example: Reversing contactor type LUV 07.10 with e.g. coil 110V 50Hz E-No. 910-302205-880.

Reversing contactor - Modular technique, self-assembling technique

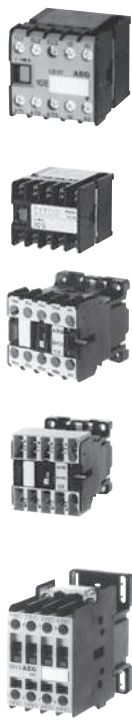


Description	Cat. No.	Ref. No.	Pack.
For fitting between 2 identical LS ..K-Contactors			
for LS 02K, LS 05	VB 05	209977	1
for LS 4K - LS 18K	LUV 18K	135007	1
for LS 22K - LS 55K	LUV 55K	135008	1
for LS 75K - LS 375K, horizontal design	LUV 375H	133588	1
for LS 75K - LS 160K, LS 375K, vertical design	LUV 375V ⁽¹⁾	133589	1
for LS 450K, vertical design	LUV 450V	133590	1

(1) LS 220K and LS 280K only with type LUV 375H (horizontal)

Auxiliary contactors


Mini, compact, SH5- contactors

	Rated current (A) AC-14/15 230V	Rated current (A) DC-13 24V	DIN EN 50 011 Design no.	Cat. No.	AC operation 230V 50Hz	DC operation 24V DC	Pack.
					Ref. No.	Ref. No.	
	4 contacts						
	Mini-relay, screw terminal						
	6	2.5	22E	SH 04.22	250179	250249	10
	6	2.5	31E	SH 04.31	250141	250165	10
	6	2.5	40E	SH 04.40	250003	250052	10
	6	2.5	13E	SH 04.13	250179	250246	10
	Mini-relay, flat plug terminal 1 x 6.3mm resp. 2 x 2.8mm						
	6	2.5	22E	SH 04.22	250289	250310	10
	6	2.5	31E	SH 04.31	250262	250283	10
	6	2.5	40E	SH 04.40	250029	250061	10
	6	2.5	13E	SH 04.13	250225	-	10
	Mini-relay, solder pin terminal						
	6	2.5	22E	SH 04.22	250343	250364	10
	6	2.5	31E	SH 04.31	250316	250337	10
	6	2.5	40E	SH 04.40	250091	250117	10
	Compact-relay, screw terminal up to 6 auxiliary contacts can be added						
	6	5	22E	SH 05.22	209696	209748	1
	6	5	31E	SH 05.31	209710	209757	1
	6	5	40E	SH 05.40	209721	209763	1
	Compact-relay, flat plug terminal 2 x 2.8mm insulated up to 6 auxiliary contacts can be added						
	6	5	22E	SH 05.22	136994	125868	1
	6	5	31E	SH 05.31	136991	137525	1
	6	5	40E	SH 05.40	136988	137539	1
	SH 5-relay, screw terminal up to 4 auxiliary contacts can be added						
10	6	22E	SH 5.22	143431	143799	1	
10	6	31E	SH 5.31	143403	143785	1	
10	6	40E	SH 5.40	143375	143771	1	
10	6	04E	SH 5.04	143459	143813	1	
10	6	22E	SH 5V.22	143487	143827	1	


Remark: Available voltages see F.27

Coupling relays (interface)

For operation on electronic controls, only available for 24V DC operating voltage screw terminal

	Rated current (A) AC-14/15 230V	Rated current (A) DC-13 24V	DIN EN 50 011 Design no.	Power consumption at 24V DC	Cat. No.	DC operation 24V DC	Pack.
						Ref. No.	
	4 contacts						
	Compact relay, no auxiliary contacts can be added						
	6	5	22E	1.2W (0.8 - 1.25 Us)	SH 05.22	209769	1
	6	5	31E	1.2W (0.8 - 1.25 Us)	SH 05.31	209771	1
	6	5	40E	1.2W (0.8 - 1.25 Us)	SH 05.40	125877	1
	Compact relay, up to 2 auxiliary contacts can be added						
	6	5	22E	2W (0.7 - 1.25 Us)	SH 05.22	209774	1
	6	5	31E	2W (0.7 - 1.25 Us)	SH 05.31	137554	1
	6	5	40E	2W (0.7 - 1.25 Us)	SH 05.40	209777	1







Integrated coil overvoltage suppressor - Screw terminal

	Rated current (A) AC-14/15 230V	Rated current (A) DC-13 24V	DIN EN 50 011 Design no.	Cat. No.	AC operation 230V 50Hz	DC operation 24V DC	Pack.
					Ref. No.	Ref. No.	
	4 contacts						
	Mini relay						
	6	2.5	22E	SH 04.22 (V/D) ⁽¹⁾	250130	250128	1
	6	2.5	31E	SH 04.31 (V/D) ⁽¹⁾	250131	250129	1
6	2.5	40E	SH 04.40 (V/D) ⁽¹⁾	259016	259112	1	

(1) AC-operated with integrated varistor (V)
DC-operated with integrated diode (D).

Auxiliary contactors

Accessories - compact contactors series SH 05

	Description	Attachable to relay series SH05	DIN EN..	Cat. No.	Ref. No.	Pack.
 <p>Auxiliary switch DIN EN 50 011 for front snap-on mounting</p>	Screw terminal, frame IV S	Design no. 40E	44E	HS 05K.04	133605	10
			53E	HS 05K.13	133604	10
			62E	HS 05K.22	133603	10
			71E	HS 05K.31	133602	10
			80E	HS 05K.40	133601	10
 <p>Auxiliary switch DIN EN 50 005 for front snap-on mounting</p>	Screw terminal, frame IV S	Any design no.	20	HS 05K.20	133598	10
			11	HS 05K.11	133599	10
			02	HS 05K.02	133600	10
			40	HS 05K.40	133606	10
			31	HS 05K.31	133607	10
			22	HS 05K.22	133608	10
			13	HS 05K.13	133609	10
			04	HS 05K.04	133610	10
 <p>Auxiliary switch DIN EN 50 005 for side mounting</p>	Screw terminal, frame I	Any design no.	10	HS 05.10	137252	10
			10	HS 05.01	209456	10
			10	HT 05.10	133102	10
			Flat plug terminal 2 x 2.8mm insulated, frame I			
			10	HS 05.10	137243	10
			10	HS 05.01	263075	10
 <p>Pick-up delay 0,5 - 60s for front or side mounting</p>	With connecting wires for relay operating voltages $U_S = 24 - 240V AC/DC$	Any design no.		EV 05	209994	10
<p>Pick-up delay mounting</p>	For fixing to rails DIN EN 50 022			EV 05b	135791	10
 <p>Overvoltage suppressor for front snap-on mounting</p>	RC-unit $U_S = 12 - 60V 50/60Hz$ $U_S = 72 - 240V 50/60Hz$	Any design no.		EB 05	209983	10
				EB 05	209984	10
			Diode $U_S = 6 - 240V DC$			
				Any design no.	EB 05	209990
<p>Mechanical interlock for mounting between 2 relays with clamps</p> 	Set	Any design no.		VB 05	209977	10

Auxiliary contactors

Accessories - contactors series SH 5



Auxiliary switch, 1 contact
for front snap-on mounting,
DIN EN 50 005,
DIN EN 50 011

Description	Cat. No.	Ref. No.	Pack.
Screw terminal			
	HS 7K.10	133768	10
	HS 7K.01	133766	10
extended contact travel	HS 7V.10	133769	10
extended contact travel	HS 7V.01	133767	10



Auxiliary switch, 2 contacts
for side mounting,
DIN EN 50 005,
DIN EN 50 012

Screw terminal			
	HS 8R.11	133101	10
	HS 8R.20	135003	10



Timer, pneumatic, 2 contacts
pneumatically delayed
auxiliary contacts,
DIN EN 50 005

ON-delay			
0.1 - 30s	TMD 30	135028	10
1 - 60s	TMD 60	135030	10
OFF-delay			
0.1 - 30s	TMI 30	135029	10
1 - 60s	TMI 60	135031	10



Mechanical latch, 1 contact
for front snap-on mounting,
DIN EN 50 005

With electronic impulse or manual						
50 Hz (V)		60 Hz (V)	DC (V)			
24 - 32	24 - 32	24 - 32	24 - 36	WBK	135073	5
42 - 48	48 - 60	42 - 60	42 - 48	WBK	292913	5
-	-	-	60 - 72	WBK	292912	5
110 - 127	110 - 127	110 - 125	110 - 125	WBK	292914	5
220 - 240	208 - 277	220 - 250	220 - 250	WBK	135077	5
380 - 480	380 - 480	440	440	WBK	135807	5
500 - 690	600	-	-	WBK	135806	5



Overvoltage suppressor
directly connected parallel to
the coil terminals A1/A2 without cable

RC unit, for AC-operated contactors			
Ue 24 - 48V	LR 2K	135014	10
Ue 50 - 127V	LR 2K	135015	10
Ue 130 - 250V	LR 2K	135016	10
Diode, for DC-operated contactors			
Ue 12 - 600V	LDK	135023	10
Varistor, for AC or DC-operated contactors			
Ue 24 - 48V	LV 3K	135020	10
Ue 50 - 127V	LV 3K	135021	10
Ue 130 - 250V	LV 3K	135022	10



Interlock
for side mounting

Mechanical	LUV18K	135007	5
Mechanical/ electrical			
2NO (NC)	LUV18E	135005	5

Auxiliary contactors

Spare coils for SH 05 and SH 5



Description	Attachable for relays type ...	Cat. No.	Ref. No. ⁽¹⁾	Pack.
No coil exchange possible				
	SH 04	-	-	
230V AC	SH 05, LS 02K,	C-130-00	133631	1
24V DC	LS 05, LS 06K	C-133-00	137282	1
230V AC	SH 5	C-650-00	143851	1
24V DC		C-660-00	143869	1

Available voltages for control relays series SH 05 and Cat. No. suffix for spare coils⁽¹⁾

AC-operation	Suffix	8E	-86	-8K	-69	-00	-8P	-63	-80	-82						
50 Hz	(V)	48	-	115-127	-	220-240	-	380-400	415-400	500						
60 Hz	(V)	60	115	-	208-220	240-277	380	440	480	600						
AC-operation	Suffix	-55	-54	-57	-56	-5C	-5D	-50	-51	-59	-53					
Double frequency coil	50/60 Hz (V)	24	42	48	110-115	120	220	230	240	400	440					
DC-operation	Suffix	-1A	-1B	-00	-1C	-1D	-1E	-16	-17	-1F	-18	-16	-14	-19	-1J	-20
(Maximum coil voltage only 250V/DC)	DC (V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	240 ⁽²⁾	250 ⁽²⁾

Available voltages for control relays series SH 5 and Cat. No. suffix for spare coils⁽¹⁾

AC-operation	Suffix	8E	-86	-88	-8K	-69	-8M	-00	-81	-8P	-63	-83	-80	-8S				
50 Hz	(V)	48	-	110	127	-	208	220-240	240	-	380	380-400	415	660-690				
60 Hz	(V)	-	115	120	-	220	240	277	-	380	440	480	-	-				
AC-operation	Suffix	-55	-54	-57	-56	-50	-51	-59										
Double frequency coil	50/60 Hz (V)	24	42	48	110-115	230	240	400										
DC-operation	Suffix	-1A	-1B	-00	-1C	-1D	-1E	-16	-17	-1F	-18	-16	-14	-19	-1H	-1J	-20	-1K
	DC (V)	6 ⁽²⁾	12 ⁽²⁾	24	32 ⁽²⁾	36 ⁽²⁾	42 ⁽²⁾	48	60	72 ⁽²⁾	110	120 ⁽²⁾	125	220	230 ⁽²⁾	240 ⁽²⁾	250 ⁽²⁾	440 ⁽²⁾

Available voltages for control relays series SH 04 and Cat. No. suffix for spare coils⁽¹⁾

AC-operation	Suffix	-88	-86	-8H	-8K	69	-89	-64	-00	-81	-63	-83	-80
50 Hz	(V)	110	100	115	125	185	200	220	230	240	380	400	415
60 Hz	(V)	125	115	-	150	220	230	255	265	280	440	-	-
AC-operation	Suffix	-55	-54	-77	-58	-56	-68	-5D	-50	-51	-5E	-59	-53
Double frequency coil	50/60 Hz (V)	24	42	48	110	115	00	220	230	240	380	400	440
DC-operation	Suffix	-00	-16	-17	-18	-14							
	DC (V)	24	48	60	110	125							

(1) For Ref. No. please contact us

(2) Price increase has to be considered



ASTAT S

Small soft starter with integral bypass

ASTAT S is compact, easy to operate soft starter, designed for use with standard 3-phase squirrel cage motors. It provides an advanced method of reducing current during motor starting and stopping. ASTAT S will start supplying a reduced voltage to the motor, increasing up to the rated voltage, so avoiding, high currents and generating soft starting and stopping. The motor has to be able to start in a reduced voltage.

- Solid soft starter for standard 3ph AC motors up to 30kW at 400V AC
- Voltage ratings up to 600V
- Two phase control with integral bypass
- Compact, small case
- DIN rail mounting. Optional from 31A
- Start and soft stop features

Marking



The cUL, is achieved for all range of ASTAT S, except for 58A models, items QA02P058S, QA12P058S, QA22P058S, QA32P058S.

Technical data

Ratings

Voltage ratings	3ph AC systems 220/230V (+10%, -15%) for units QA02P ___ S 380/415V (+10%, -15%) for units QA12P ___ S 480/500V (+10%, -15%) for units QA22P ___ S 575/600V (+10%, -15%) for units QA32P ___ S
Frequency range	50/60Hz, $\pm 5\%$
Load	3ph, AC standard motors

Control specifications

Ramp up	0,5 - 10 s
Ramp down	0,5 - 10 s
Initial voltage	0 - 80% U_n
Starting torque	0 - 64% T_n

I/O control

Inputs	one input for Start/Stop
Outputs	one output for «End of Ramp» signal for ratings 31, 44, 58A

Ambient conditions

Operating temperature	0 to 40°C. Up to 60°C derating by 1,2% per °C
Storage temperature	-20 to 70°C
Relative humidity	up to 80%, without condensation
Max. altitude	up to 1000m. Above this derate by 5% each 100m
Protection degree	IP20

Order codes ● pg. F.29

ASTAT S - Small soft starter with integral bypass



Input voltage V CA	Current rating ⁽²⁾ A	Maximum current A	Maximum motor power ⁽¹⁾				Cat. No.	Ref. No.	Pack
			220/230V kW/Hp	380/415V kW/Hp	480/500V kW/Hp	575/600V kW/Hp			
220	8	28	1.5 / 2	-	-	-	QA02P008S	120881	1
	17	60	4 / 5.5	-	-	-	QA02P017S	120882	1
	22	77	5.5 / 7.5	-	-	-	QA02P022S	120883	1
	31	110	7.5 / 10	-	-	-	QA02P031S	120884	1
	44	150	11 / 15	-	-	-	QA02P044S	120885	1
	58	200	15 / 20	-	-	-	QA02P058S	120886	1
400	8	28	-	4 / 5.5	-	-	QA12P008S	120892	1
	17	60	-	7.5 / 10	-	-	QA12P017S	120893	1
	22	77	-	11 / 15	-	-	QA12P022S	120894	1
	31	110	-	15 / 20	-	-	QA12P031S	120895	1
	44	150	-	22 / 30	-	-	QA12P044S	120896	1
	58	200	-	30 / 40	-	-	QA12P058S	120897	1
500	8	28	-	-	5.5 / 7.5	-	QA22P008S	120898	1
	17	60	-	-	11 / 15	-	QA22P017S	120899	1
	22	77	-	-	15 / 20	-	QA22P022S	120900	1
	31	110	-	-	22 / 30	-	QA22P031S	120901	1
	44	150	-	-	30 / 40	-	QA22P044S	120902	1
	58	200	-	-	45 / 60	-	QA22P058S	120903	1
600	8	28	-	-	-	7.5 / 10	QA32P008S	120904	1
	17	60	-	-	-	15 / 20	QA32P017S	120905	1
	22	77	-	-	-	22 / 30	QA32P022S	120906	1
	31	110	-	-	-	30 / 40	QA32P031S	120907	1
	44	150	-	-	-	37 / 50	QA32P044S	120908	1
	58	200	-	-	-	55 / 75	QA32P058S	120909	1
Accessory: DIN rail mounting kit for types 31A, 44A and 58A							QAOPTDIN	120910	1

Times between rampings Start/Stop

	Starting current	Ramp 1 sec.	Ramp 2 sec.	Ramp 5 sec.	Ramp 10 sec.
QA_2P008S	8	7	15	35	70
	16	16	33	77	155
	24	26	51	125	250
	28 ⁽³⁾	32	62	155	-
QA_2P017S	17	7	15	35	70
	34	16	33	77	155
	51	26	51	125	250
	60 ⁽³⁾	32	62	155	-
QA_2P022S	22	7	15	35	70
	44	16	33	77	155
	66	26	51	125	250
	77 ⁽³⁾	32	62	155	-
QA_2P031S	31	4	8	20	40
	62	8	15	38	76
	93	12	24	62	124
	110 ⁽³⁾	15	31	80	-
QA_2P044S	44	4	8	20	40
	88	8	15	38	76
	132	12	24	62	124
	155 ⁽³⁾	15	31	80	-
QA_2P058S	58	4	8	20	40
	116	8	15	38	76
	174	12	24	62	124
	200 ⁽³⁾	15	31	80	-

(1) Ratings for standard 4-poles AC motors
 (2) See Operations/hour in table below
 Cycles/hour includes both soft start and soft stop
 (3) Maximum starting current at all

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.



ASTAT XT

Digital soft starters for 3ph standard induction motors

GE's new ASTAT XT solid state soft starter features microprocessor control digital technology. Setup and adjustment is performed through a six-button keypad and parameters or messages are displayed out through a friendly LCD multilanguage interface with two rows, sixteen alphanumeric characters each. The design includes isolated I/O and high level of protection in their circuits to minimize the disturbance effects while working in the hardest industrial environment.

ASTAT XT Soft Starter offers reliable performance and smooth acceleration for a variety of standard AC motors up to 1400A and up to 690V, reducing mechanical shock to the driving system, resulting in extended component and motor life.

ASTAT XT offers many traditional features such a motor overload function, adjustable ramps, current limit, kick start, but also other high end features like Inside-Delta operation, Torque Control, Pump control and a reliable motor and unit set of protections.

Approvals / Marking



For units up to 820A. "U" type

Control panel



Key features

- Ratings up to 1400 Amps and up to 690VAC
- Friendly multilanguage interface with two rows, sixteen characters each
- Built-in with three extra power terminals for external bypass
- In-Line or Inside-Delta operation modes
- Torque control and pump control advanced features
- Motor protection according IEC 10, 20 and NEMA 10, 20, 30, even if ASTAT XT is in bypass
- Built in communications RS485 port, and ModBus protocol as standard
- ProfibusDP and DeviceNet optional interfaces for communications



ASTAT XT - Recommended motor and type unit ratings

	Light Duty	Normal Duty (IEC Class 10)					Heavy Duty				
	Max rating current (A)	Rated current (A)	230V kW	400V-415V kW	480V-500V kW	690V kW	Rated current (A)	230V kW	400V-415V kW	480V-500V kW	690V kW
Mains voltage	8	8	1.5	3	4	-	8	1.5	3	4	-
230-500Vac	17	17	4	7.5	7.5	-	12	3	5.5	5.5	-
Control voltage	34	31	7.5	15	18.5	-	31	7.5	15	18.5	-
230Vac	54	44	11	22	30	-	44	11	22	30	-
	65	58	15	30	37	-	55	15	30	37	-
	72	72	22	37	45	-	66	18.5	37	45	-
	104	85	22	45	55	-	80	22	45	55	-
Digital inputs	130	105	30	55	55	-	99	30	55	55	-
voltage	156	145	45	75	90	-	130	37	55	90	-
90-230Vac	170	170	55	90	110	-	134	37	75	90	-
	248	210	55	110	132	-	203	55	110	132	-
	361	310	90	160	200	-	310	75	160	200	-
	390	390	110	200	250	-	344	110	160	250	-
	480	460	132	250	315	-	432	132	250	315	-
	480	460	132	250	315	-	432	132	250	315	-
	610	580	160	315	400	-	488	160	250	355	-
	610	580	160	315	400	-	552	160	315	400	-
	820	650	200	355	400	-	552	160	315	400	-
	820	820	250	400	560	-	690	200	400	500	-
	1180	950	315	560	630	-	950	315	560	630	-
	1375	1100	355	630	800	-	1076	355	630	800	-
	1750	1400	400	800	1000	-	1400	400	800	1000	-
Mains voltage	8	8	-	-	-	5.5	8	-	-	-	5.5
690Vac	17	17	-	-	-	15	12	-	-	-	7.5
Control voltage	34	31	-	-	-	22	31	-	-	-	22
230Vac	54	44	-	-	-	37	44	-	-	-	37
	65	58	-	-	-	55	55	-	-	-	45
	72	72	-	-	-	55	66	-	-	-	55
	104	85	-	-	-	75	80	-	-	-	75
Digital inputs	130	105	-	-	-	90	99	-	-	-	90
voltage	156	145	-	-	-	132	130	-	-	-	90
90-230Vac	170	170	-	-	-	160	134	-	-	-	132
	248	210	-	-	-	200	203	-	-	-	200
	361	310	-	-	-	250	310	-	-	-	250
	390	390	-	-	-	355	344	-	-	-	315
	480	460	-	-	-	400	432	-	-	-	400
	610	580	-	-	-	560	488	-	-	-	400
	820	650	-	-	-	630	552	-	-	-	560
	1180	950	-	-	-	900	950	-	-	-	900
	1375	1100	-	-	-	1000	1076	-	-	-	1000
	1750	1400	-	-	-	-	1400	-	-	-	-

Remarks page F.32

- Motor kW ratings given in above table are for IEC, standard AC four poles motors.
- Always check that motor rated current is less than the specified rated current of the starter, for the specific application (Normal Duty or Heavy Duty)
- Other control and digital inputs voltages are available. Please contact GE
- **Profibus or DeviceNet options cannot be ordered separately.** For those communication networks, please order the ASTAT XT with the required option built-in

Remarks page F.33

- Motor HP ratings given in NEMA table are for standard AC four poles motors.
- Always check that motor rated current is less than the specified rated current of the starter, for the specific application (Light Duty, Normal Duty or Heavy Duty)
- Remote mounting kit for keypad that includes cable (3m), remote keypad box, dummy cover, frame and brackets:
 - Frame A QTAKPADKIT1169072
 - Frame B and others QTAKPADKIT2169073

For the international version:

- Frame A QTAKPADKIT1SG 129052
- Frame B and others QTAKPADKIT2SG 129053



QT10008U21MS
ASTAT XT 8A-72A



QT10105U21MS
ASTAT XT 105A-170A



QT10460N21MS
ASTAT XT 460A-650A

Built-in communication network				International version			
Modbus		Profibus DP	DeviceNet	Modbus		Profibus DP	DeviceNet
Cat. No.	Ref. No.	QT_N21PS QT_U21PS	QT_N21DS QT_U21DS	Cat. No.	Ref. No.	QT_N21PSG QT_U21PSG	QT_N21DSG QT_U21DSG
		Ref. No.	Ref. No.			Ref. No.	Ref. No.
QT10008U21MS	169075	169214	169314	QT10008U21MSG	129213	120954	817850
QT10017U21MS	169076	169215	169315	QT10017U21MSG	129214	120957	817851
QT10031U21MS	169077	169216	169316	QT10031U21MSG	129215	120958	817852
QT10044U21MS	169078	169217	169317	QT10044U21MSG	129216	120959	817853
QT10058U21MS	169079	169218	169318	QT10058U21MSG	129217	120960	817854
QT10072U21MS	169080	169219	169319	QT10072U21MSG	129218	120961	817855
QT10085U21MS	169081	169220	169320	QT10085U21MSG	129219	120962	817856
QT10105U21MS	169082	169221	169321	QT10105U21MSG	129220	120963	817857
QT10145U21MS	169083	169222	169322	QT10145U21MSG	129221	120964	817858
QT10170U21MS	169084	169223	169323	QT10170U21MSG	129222	120965	817859
QT10210U21MS	169085	169224	169324	QT10210U21MSG	129223	120966	817860
QT10310U21MS	169086	169225	169325	QT10310U21MSG	129224	120967	817861
QT10390U21MS	169087	169226	169326	QT10390U21MSG	129225	120968	817862
QT10460N21MS	169094	169233	169333	QT10460N21MSG	129229	120972	817863
QT10460U21MS	169088	169227	169327	QT10460U21MSG	129226	120969	817864
QT10580N21MS	169095	169234	169334	QT10580N21MSG	129230	120973	817865
QT10580U21MS	169089	169228	169328	QT10580U21MSG	129227	120970	817866
QT10650N21MS	169096	169235	169335	QT10650N21MSG	129231	120974	817867
QT10820U21MS	169090	169229	169329	QT10820U21MSG	129228	120971	817868
QT10950N21MS	169097	169236	169336	QT10950N21MSG	129232	120975	817869
QT11100N21MS	169098	169237	169337	QT11100N21MSG	129233	120976	817870
QT11400N21MS	169099	169238	169338	QT11400N21MSG	129234	120977	817871
QT30008N21MS	169119	169490	169573	QT30008N21MSG	129257	129511	817872
QT30017N21MS	169120	169491	169574	QT30017N21MSG	129258	129512	817873
QT30031N21MS	169121	169492	169575	QT30031N21MSG	129259	129513	817874
QT30044N21MS	169122	169493	169576	QT30044N21MSG	129260	129539	817875
QT30058N21MS	169123	169494	169577	QT30058N21MSG	129261	129540	817876
QT30072N21MS	169124	169495	169578	QT30072N21MSG	129262	129541	817877
QT30085N21MS	169125	169496	169579	QT30085N21MSG	129263	129542	817878
QT30105N21MS	169126	169497	169580	QT30105N21MSG	129264	129543	817879
QT30145N21MS	169127	169498	169581	QT30145N21MSG	129265	129544	817880
QT30170N21MS	169128	169499	169582	QT30170N21MSG	129266	129545	817881
QT30210N21MS	169129	169500	169583	QT30210N21MSG	129267	129546	817882
QT30310N21MS	169130	169501	169584	QT30310N21MSG	129268	129547	817883
QT30390N21MS	169131	169502	169585	QT30390N21MSG	129269	129548	817884
QT30460N21MS	169132	169503	169586	QT30460N21MSG	129270	129549	817885
QT30580N21MS	169133	169504	169587	QT30580N21MSG	129271	129550	817886
QT30650N21MS	169134	169505	169588	QT30650N21MSG	129272	129551	817887
QT30950N21MS	169135	169506	169589	QT30950N21MSG	129273	129552	817888
QT31100N21MS	169136	169507	169590	QT31100N21MSG	129274	129553	817889
QT31400N21MS	169137	169508	169591	QT31400N21MSG	129275	129554	817890

NEMA ratings. Recommended unit type and motor ratings

	Light Duty - NEMA 10				Normal Duty - NEMA 20				Heavy Duty - NEMA 30				Cat. No.	Ref. No.
	Current rating	230V	460V	575V	Current rating	230V	460V	575V	Current rating	230V	460V	575V		
	A	HP	HP	HP	A	HP	HP	HP	A	HP	HP	HP		
Mains voltage 230-500VAC	8	2	5	-	8	2	5	-	8	2	5	-	QT10008U21MS	169075
	17	5	10	-	17	5	10	-	12	3	7.5	-	QT10017U21MS	169076
	34	10	25	-	31	10	20	-	31	10	20	-	QT10031U21MS	169077
	54	20	40	-	44	15	30	-	44	15	30	-	QT10044U21MS	169078
	65	20	50	-	58	20	40	-	55	20	40	-	QT10058U21MS	169079
	72	25	50	-	72	25	50	-	66	20	50	-	QT10072U21MS	169080
	104	40	75	-	85	30	60	-	80	30	60	-	QT10085U21MS	169081
	130	50	100	-	105	40	75	-	99	40	75	-	QT10105U21MS	169082
	156	60	125	-	145	50	100	-	130	50	100	-	QT10145U21MS	169083
	170	60	125	-	170	60	125	-	134	50	100	-	QT10170U21MS	169084
	262	100	200	-	210	75	150	-	203	75	150	-	QT10210U21MS	169085
	387	150	300	-	310	100	250	-	310	100	250	-	QT10310U21MS	169086
	414	150	350	-	390	150	300	-	361	150	300	-	QT10390U21MS	169087
	480	200	400	-	460	150	350	-	432	150	350	-	QT10460U21MS	169088
	610	250	500	-	580	200	400	-	552	200	400	-	QT10580U21MS	169089
	820	-	-	-	820	250	500	-	690	250	500	-	QT10820U21MS	169090
Mains voltage 460-600VAC	8	-	5	5	8	-	5	5	8	-	5	5	QT20008U21MS	169100
	17	-	10	15	17	-	10	15	12	-	7.5	10	QT20017U21MS	169101
	34	-	25	30	31	-	20	25	31	-	20	25	QT20031U21MS	169102
	54	-	40	50	44	-	30	40	44	-	30	40	QT20044U21MS	169103
	65	-	50	60	58	-	40	50	55	-	40	50	QT20058U21MS	169104
	72	-	50	60	72	-	50	60	66	-	50	60	QT20072U21MS	169105
	104	-	75	100	85	-	60	75	80	-	60	75	QT20085U21MS	169106
	130	-	100	125	105	-	75	100	99	-	75	100	QT20105U21MS	169107
	156	-	125	150	145	-	100	150	130	-	100	125	QT20145U21MS	169108
	170	-	125	150	170	-	125	150	134	-	100	125	QT20170U21MS	169109
	262	-	200	250	210	-	150	200	203	-	150	200	QT20210U21MS	169110
	387	-	300	400	310	-	250	300	310	-	250	300	QT20310U21MS	169111
	414	-	350	400	390	-	300	400	361	-	300	300	QT20390U21MS	169112
	480	-	400	500	460	-	350	400	432	-	350	400	QT20460U21MS	169113
	610	-	500	-	580	-	400	400	552	-	400	500	QT20580U21MS	169114
	820	-	-	-	820	-	500	500	690	-	500	-	QT20820U21MS	169115

VAT20

Micro AC variable speed drives



- Single-phase or three-phase digital inverters for controlling the speed of three-phase induction AC motors from 0.2 to 2.2kW
- Built-in keypad and display
- IP20 or IP65 protection degree
- Built-in EMC filter for industrial environment (class A)
- DIN rail mountable by optional kit
- Global standards CE and cUL



Technical data

Control specifications

Control system	Sinusoidal wave PWM inverter
Output frequency	0 - 200Hz
Voltage / Frequency	Constant torque, Constant power, Torque boost Six selectable pre-set patterns
Overload capacity	150%, 60 sec.
Carrier frequency	Selectable 4 - 16kHz
Frequency setting resolution	Digital 0.1Hz(0-99.9Hz), 1Hz(100-200Hz) Analogic 0.1Hz/ 60Hz
Acceleration/deceleration	0.1 - 999 sec. Acceleration and deceleration set individually
Operating system	Two mode selection: forward run by FWD input, Reverse run by REV input Run by FWD input, forward/reverse command by REV input
Stopping system	Selectable either ramp down or coast to stop
DC braking	DC brake starting frequency 1-10Hz DC braking level 0-20%, DC braking time 0-25.5s
Frequency limit	Upper limit (1-200Hz), lower limit (0-200Hz)
Other functions	Auto re-start, Auto reset, Flying start, Jog Slow speeds

I/O configuration

Operation panel	3 digits, 7 segment display with 5 operation keys
Sequence input	Four digital inputs (2 are programmable)
Sequence output	One programmable relay output
Frequency setting input	One analogue either 0-10V, 4-20mA or 0-20mA configurable
Source for potentiometer	10VDC source for 2-10kΩ potentiometer
Analogue outputs	0-10VDC for frequency output display





Protection features

Prevention	Overcurrent limitation, Overvoltage limitation, Stall prevention
Trip	Overload, Overvoltage, Undervoltage, Overcurrent, Powerloss, Output short-circuit, Grounding fault, Overtemperature
Fault history	The last three faults are recorded

Operating environment

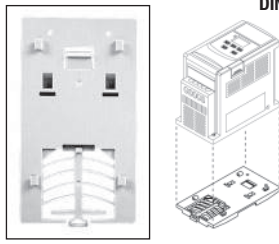
Installation	Indoor, with atmosphere free from corrosive or explosive gases, dust, steam or oil mist.
Protection degree	IP20 and IP65
Temperature range	from -10 to 50 °C
Relative humidity	0-95% without condensation
Vibrations	Under 1G (9.8 m/s ²)
Standards	cUL, CE

VAT20 - 1 phase and 3 phase speed drives

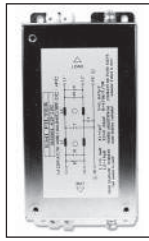
Input voltage		Input power kVA	Output current A	Max. motor power kW (1)	Cooling convection	Losses W	Protection degree	Cat. No.	Ref. No.	Pack	
+ 10%, -15%, 50/60 Hz (± 5%)											
	1ph 200V - 240V	0.53	1.4	0.2	natural	21	IP20	U20N0K2S	167075	1	
		0.88	2.3	0.4	forced	38	IP20	U20N0K4S	167076	1	
		1.6	4.2	0.75	forced	60	IP20	U20N0K7S	167077	1	
	1ph / 3ph 200V - 240V	2.9	7.5	1.5	forced	103	IP20	U20N1K5S ⁽²⁾	167078	1	
		4.0	10.5	2.2	forced	149	IP20	U20N2K2S ⁽²⁾	167079	1	
	3ph 380V - 480V	1.6	2.3	0.75	forced	61	IP20	U20X0K7S ⁽²⁾	167080	1	
2.9		3.8	1.5	forced	79	IP20	U20X1K5S ⁽²⁾	167081	1		
4.0		5.2	2.2	forced	94	IP20	U20X2K2S ⁽²⁾	167082	1		
	1ph 200V - 240V	0.53	1.4	0.2	natural	21	IP65	U20N0K2P ⁽³⁾	167088	1	
		0.88	2.3	0.4	natural	38	IP65	U20N0K4P ⁽³⁾	167089	1	
		1.6	4.2	0.75	natural	60	IP65	U20N0K7P ⁽³⁾	167090	1	
			0.53	1.4	0.2	natural	21	IP65	U20N0K2PS ⁽⁴⁾	167132	1
			0.88	2.3	0.4	natural	38	IP65	U20N0K4PS ⁽⁴⁾	167133	1
			1.6	4.2	0.75	natural	60	IP65	U20N0K7PS ⁽⁴⁾	167134	1
		1ph / 3ph 200V - 240V	2.9	7.5	1.5	natural	103	IP65	U20N1K5P ⁽³⁾	167091	1
			4.0	10.5	2.2	natural	149	IP65	U20N2K2P ⁽³⁾	167092	1
		3ph 380V - 480V	2.9	7.5	1.5	natural	103	IP65	U20N1K5PS ⁽⁴⁾	167135	1
4.0	10.5		2.2	natural	149	IP65	U20N2K2PS ⁽⁴⁾	167136	1		
			1.6	2.3	0.75	natural	61	IP65	U20X0K7P ⁽³⁾	167093	1
		2.9	3.8	1.5	natural	79	IP65	U20X1K5P ⁽³⁾	167094	1	
		4.0	5.2	2.2	natural	94	IP65	U20X2K2P ⁽³⁾	167095	1	
		1.6	2.3	0.75	natural	61	IP65	U20X0K7PS ⁽⁴⁾	167137	1	
		2.9	3.8	1.5	natural	79	IP65	U20X1K5PS ⁽⁴⁾	167138	1	
		4.0	5.2	2.2	natural	94	IP65	U20X2K2PS ⁽⁴⁾	167139	1	

- (1) Ratings for standard three-pole induction motors with four poles.
- (2) Units including dynamic braking function. An external braking resistor is needed to perform operation.
- (3) IP65 models type U20__P include only keypad in the front cover.
- (4) IP65 models type U20__PS include power switch, forward/reverse switch and potentiometer in the front cover.

VAT20 - Options and accessories



DIN rail kit



EMC filters

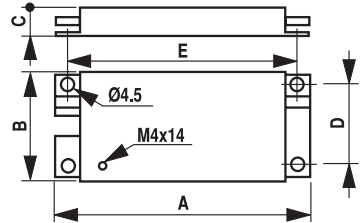
Applicable to drive	Cat. No.	Ref. No.	Pack
All drives	U20AR0K7 (pack of 10 pieces)	167087	1

U20N0K2S U20N0K4S U20N0K7S	U20AF0K7	167085	1
U20N1K5S U20N2K2S	U20AF2K2	167086	1
U20X0K7S U20X1K5S U20X2K2S	U20AF2K2X	167084	1

VAT 20 includes as standard a Class A EMC filter, for industrial environment.
For residential environment, the use of external Class B EMC foot print filter is recommended.

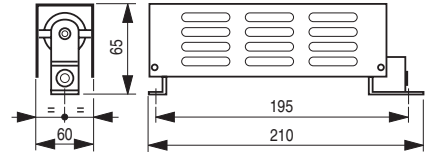
Cat. No.	A	B	C	D	E
U20AF0K7	156	76	25	60	145
U20AF2K2	170	221	38	108	156
U20AF2K2X	170	221	38	108	156

Dimensions in mm



Braking resistors
100% braking torque, 10% ED

Motor (kW)	Applicable to drive	Cat. No.	Ref. No.	Pack
1.5	U20N1K5	TLR100P200	108223	1
2.2	U20N2K2	TLR75P200	116300	1
0.75	U20X0K7	TLR750P200	116301	1
1.5	U20X1K5	TLR400P200	116302	1
2.2	U20X2K2	TLR250P200	108227	1



Reactors

Losses (W)	Applicable to drive	Cat. No.	Ref. No.	Pack
Input reactors for single phase drives				
2.4	U20N0K2S	ACRP3A7H0	168490	1
5.2	U20N0K4S	ACRP8A2H5	168491	1
6.8	U20N0K7S	ACRP12A2H5	168492	1
7.3	U20N1K5S	ACRP18A1H3	168493	1
8	U20N2K2S	ACRP22A0H84	168494	1
Input reactors for three phase drives				
17	U20N1K5S	ACRP6A2H5	168496	1
18	U20N2K2S	ACRP9A1H3	168497	1
17	U20X0K7S	ACRP3A8H1	168509	1
16	U20X1K5S	ACRP4A5H1	168510	1
19	U20X2K2S	ACRP6A3H4	168511	1

Cat.No.	Losses W	Fig.	A	B	C	D	E	Ø	Weight (kg)
ACRP3A7H0	2.4	4	75	96	85	80	56	6	1.3
ACRP8A2H5	5.2	4	75	96	100	80	56	6	1.8
ACRP12A2H5	6.8	4	84	102	110	86	65	6	2.7
ACRP18A1H3	7.3	4	96	112	106	96	77	6	3.2
ACRP22A0H84	8	4	96	112	116	96	77	6	3.7
ACRP6A2H5	17	1	120	80	152	41	100	6	1.5
ACRP9A1H3	18	1	120	80	152	41	100	6	1.6
ACRP3A8H1	17	1	120	80	152	41	100	6	1.4
ACRP4A5H1	16	1	120	80	152	41	100	6	1.5
ACRP6A3H4	19	1	120	80	152	41	100	6	1.7

Dimensions in mm

Fig. 4

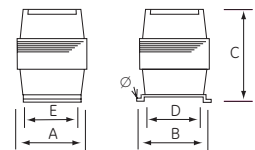
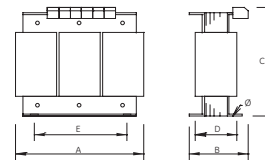


Fig. 1



I/O terminal board specifications

Digital inputs

Symbol	Description	Function
12V	Common digital inputs	12V DC supply for all digital inputs
FWD	Forward run	Used for forward run command
REV	Reverse run	Used for reverse run command
SP1	Multifunction input	This is a programmable digital input Either jog, slow speed, emergency stop, output shut off or reset function are allowed
RST	Fault reset	This is a programmable input set to reset function as default Either jog, slow speed, emergency and output shut off are allowed as well

Digital outputs

Trip relay	Multifunction output	This is a programmable output relay set to fault function as default
1, 2		Run status and frequency reached are allowed as well

Analogue inputs

MVI	Frequency setting	Programmable analogue frequency signal input 0-10V, 4-20mA or 0-20mA allowed
0V	Common analogue I/O	

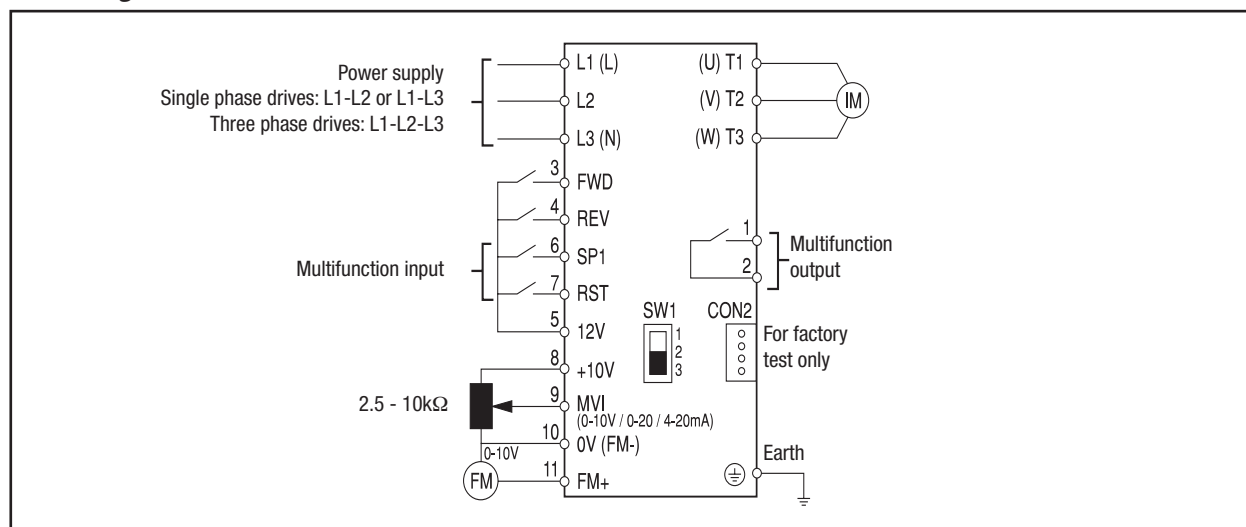
Analogue outputs

FM	Frequency output	Analogue output 0-10V. May be used as speed meter
0V	Common analogue I/O	

Other

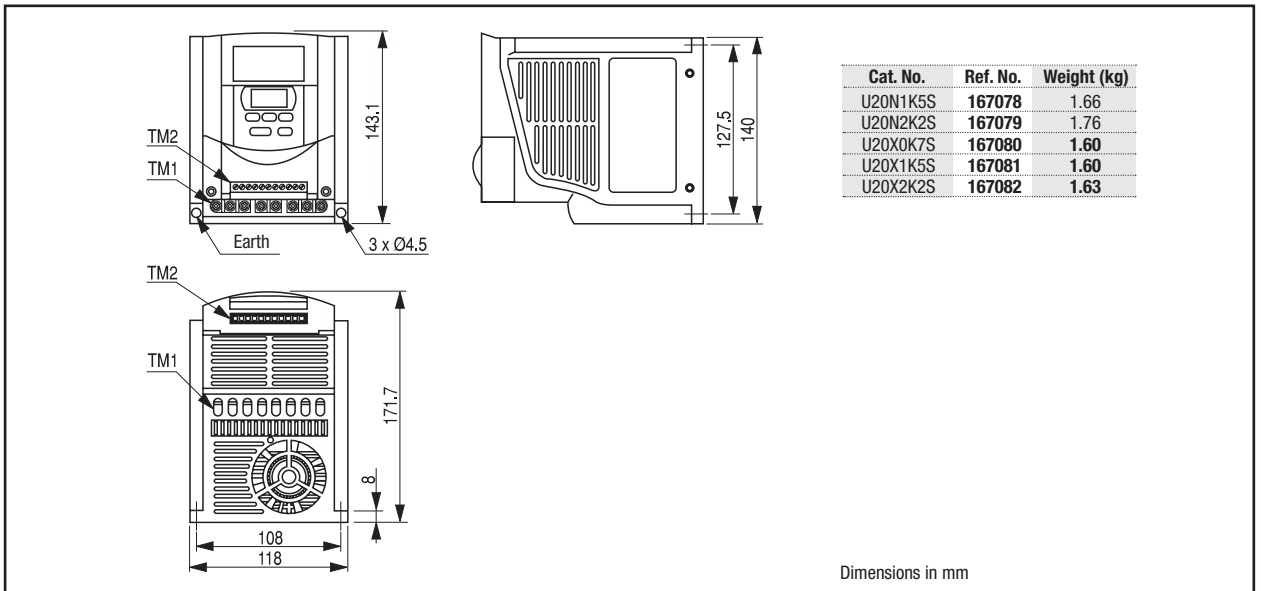
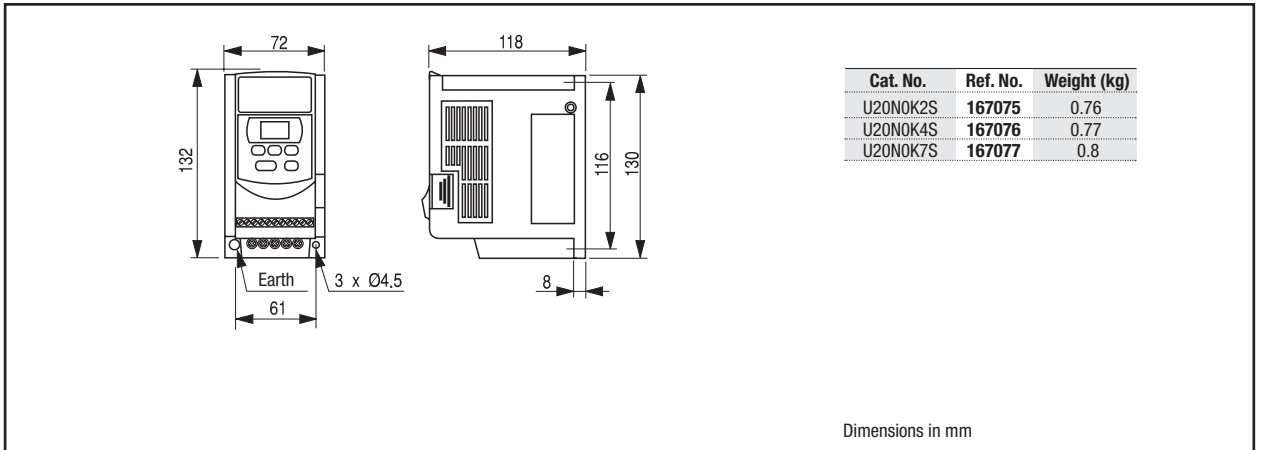
+10V	10V DC source	10V DC power supply for potentiometer 2-10kΩ (2W)
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I/O wiring

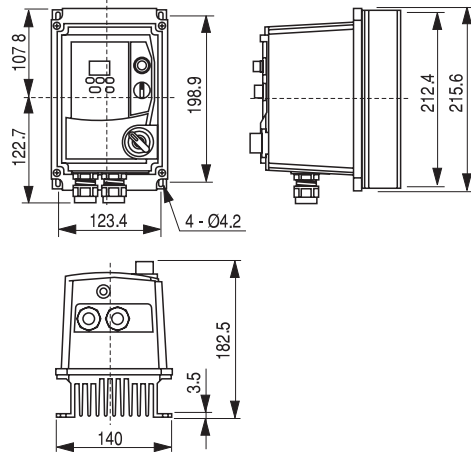


VAT20 - Dimensional drawings

Protection IP20

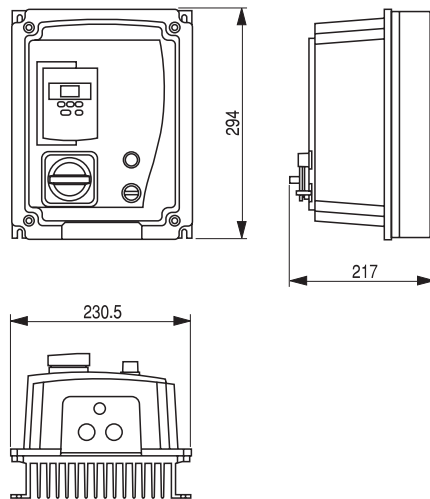
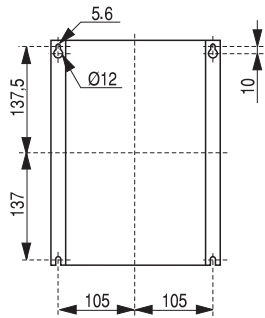


Protection IP65



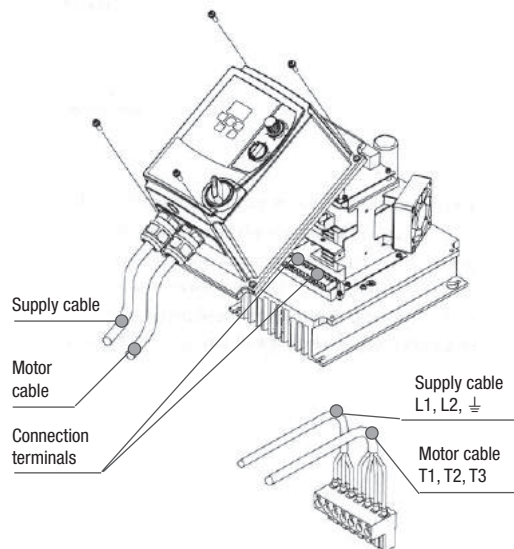
Cat. No.	Ref. No.	Weight (kg)
U20N0K2P	167088	2.9
U20N0K4P	167089	2.9
U20N0K7P	167090	2.9
U20N0K2PS	167132	2.9
U20N0K4PS	167133	2.9
U20N0K7PS	167134	2.9

Dimensions in mm



Cat. No.	Ref. No.	Weight (kg)
U20N1K5P	167091	4.8
U20N2K2P	167092	4.9
U20X0K7P	167093	4.9
U20X1K5P	167094	4.9
U20X2K2P	167095	4.9
U20N1K5PS	167135	5.2
U20N2K2PS	167136	5.3
U20X0K7PS	167137	5.2
U20X1K5PS	167138	5.2
U20X2K2PS	167139	5.2

Dimensions in mm



VAT200

Mini AC variable speed drives



The VAT200 is a well performed, sensorless vector VSD for AC standard motors available in the following ranges:

- From 0.4 to 2.2 kW at 200V, single phase power supply
- From 0.4 to 7.5 kW at 200V, three phase power supply
- From 0.75 to 55 kW at 400V, three phase power supply

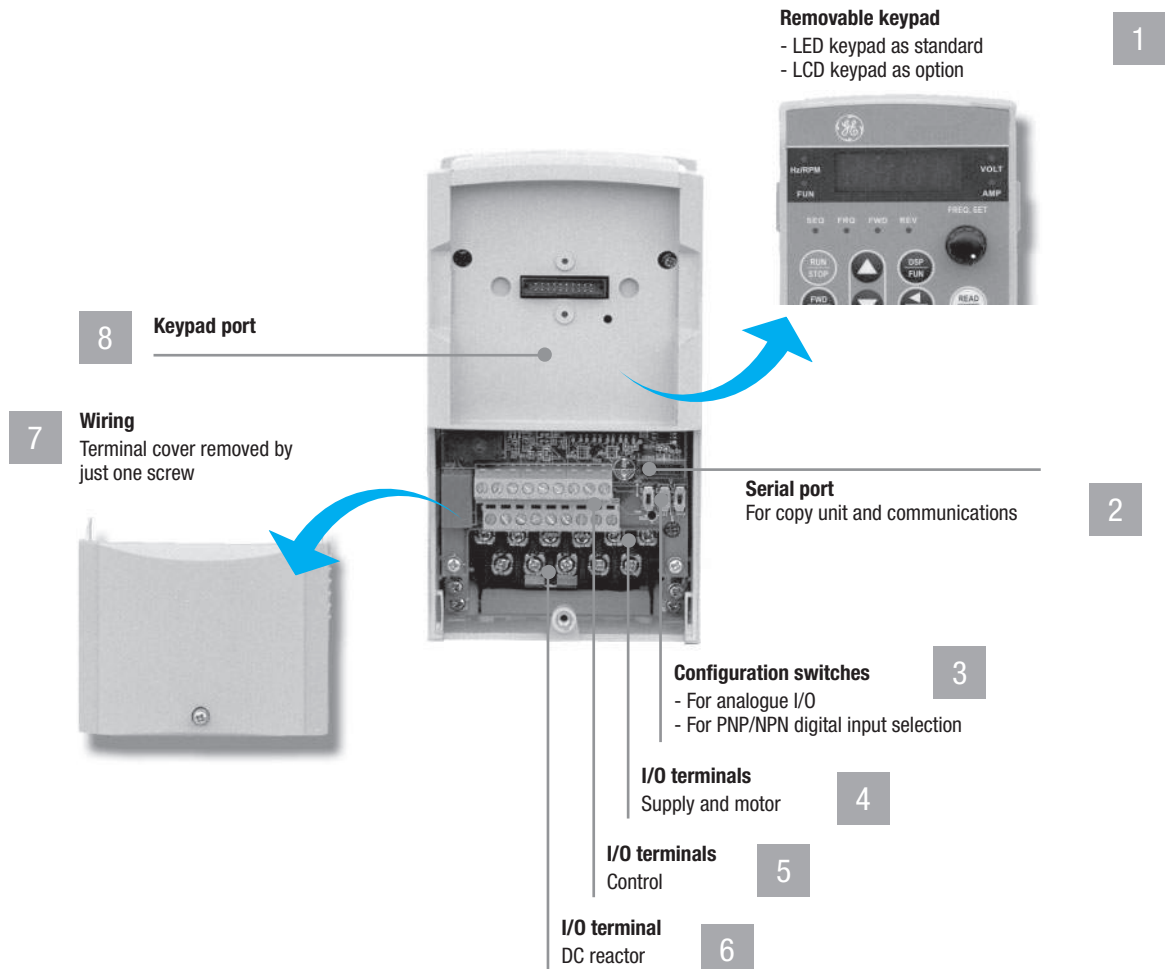
Advantages

- Compact size
- Built-in removable LED keypad
- Optional multilanguage LCD keypad
- Sensorless vector control or V/f control, selectable
- Built-in with ModBus RTU communications
- Optional Field bus communication DeviceNet, ProfibusDP
- Integrated EMC filters for U20...FS series
- Built-in with dynamic braking up to 15kW
- Performed with simple PLC and PID functions
- Easy start-up & tuning by PC or keypad
- Advanced programming and drive control by built-in PLC function
- Easy maintenance






Approvals / Marking








Simple and reliable



VAT200 - 1 phase and 3 phase speed drives

Input voltage + 10%, -15%, 50/60 Hz (± 5%)		Suitable motor capacity (kW)	Rated output de current (A)	Rated capacity (KVA)	Frame	Cat. No.	Ref. No.	Pack.
With EMC filter								
 Frame 1	1ph 200V - 240V	0.4	3.1	1.2	1	U201N00K4FS	167400	1
		0.75	4.5	1.7	1	U201N00K7FS	167401	1
		1.5	7.5	2.9	2	U201N01K5FS	167402	1
		2.2	10.5	4.0	2	U201N02K2FS	167403	1
Without EMC filter								
 Frame 2	1ph 200V - 240V	0.4	3.1	1.2	1	U201N00K4SS	167411	1
		0.75	4.5	1.7	1	U201N00K7SS	167412	1
		1.5	7.5	2.9	2	U201N01K5SS	167413	1
		2.2	10.5	4.0	2	U201N02K2SS	167414	1
Without EMC filter								
 Frame 3	3ph 200V - 240V	0.4	3.1	1.2	1	U203N00K4SS	167415	1
		0.75	4.5	1.7	1	U203N00K7SS	167416	1
		1.5	7.5	2.9	1	U203N01K5SS	167417	1
		2.2	10.5	4	2	U203N02K2SS	167418	1
		3.7	17.5	6.7	2	U203N04K0SS	167419	1
		5.5	26	9.9	3	U203N05K5SS	167420	1
		7.5	35	13.3	3	U203N07K5SS	167422	1
With EMC filter								
 Frame 4	3ph 380V - 480V	0.75	2.3	1.7	1	U203X00K7FS	167404	1
		1.5	3.8	2.9	1	U203X01K5FS	167405	1
		2.2	5.2	4	2	U203X02K2FS	167406	1
		3.7	8.8	6.7	2	U203X04K0FS	167407	1
		5.5	13	9.9	3	U203X05K5FS	167408	1
		7.5	17.5	13.3	3	U203X07K5FS	167409	1
		11	25	19.1	3	U203X11K0FS	167410	1
Without EMC filter								
 Frame 4	3ph 380V - 480V	0.75	2.3	1.7	1	U203X00K7SS	167424	1
		1.5	3.8	2.9	1	U203X01K5SS	167425	1
		2.2	5.2	4	2	U203X02K2SS	167426	1
		3.7	8.8	6.7	2	U203X04K0SS	167427	1
		5.5	13	9.9	3	U203X05K5SS	167428	1
		7.5	17.5	13.3	3	U203X07K5SS	167429	1
		11	25	19.1	3	U203X11K0SS	167430	1
		15	32	27.4	4	U203X15K0SS	167481	1
		18.5	40	34	4	U203X18K5SS	167482	1
		22	48	41	4	U203X22K0SS	167483	1
		30	64	54	5	U203X30K0SS	167484	1
37	80	68	5	U203X37K0SS	167485	1		
45	96	82	6	U203X45K0SS	167486	1		
55	128	110	6	U203X55K0SS	167487	1		

Accessories

Description	Details	Cat. No.	Ref. No.	Pack.
 U200ARS485 / 167435	External dynamic braking unit	U200ABU430	167468	1
 U200ARS232 / 167436	Communication interface	Profibus-DP	U200APB	167433
		DeviceNet	U200ADN	167434
		RS485	U200ARS485	167435
		RS232 for PC to drive	U200ARS232	167436
 U200AMP / 167437	Memory pack	Program copy	U200AMP	167437
	Keypad	LED ⁽¹⁾	U200ALEDK	167438
		LCD multilanguage	U200ALCDK	167439
		Blank cover	U200ABK	167440
	Remote wire for keypad	0.5m	U200AW05	167441
		1.0m	U200AW10	167442
		2.0m	U200AW20	167443
		3.0m	U200AW30	167444
		5.0m	U200AW50	167445

(1) All VAT200 include a LED keypad U200ALEDK as standard.

VAT200 - Technical data

General specifications

		1ph 200-240V (with / without EMC filter)				3ph 200-240V (without EMC filter)						
		U 2 0 1 N _ _ _ _ S				U 2 0 3 N _ _ _ _ S S						
		00K4	00K7	01K5	02K2	00K4	00K7	01K5	02K2	04K0	05K5	07K5
Motor ratings	(HP)	0.5	1	2	3	0.5	1	2	3	5.5	7.5	10
	(kW)	0.4	0.75	1.5	2.2	0.4	0.75	1.5	2.2	3.7	5.5	7.5
Rated output current	(A)	3.1	4.5	7.5	10.5	3.1	4.5	7.5	10.5	17.5	26	35
Rated capacity	(kVA)	1.2	1.7	2.9	4	1.2	1.7	2.9	4	6.7	9.9	13.3
Max. input voltage		Single phase: 200-240V +10 -15%, 50/60Hz ±5%				Three phase: 380-480V, +10 -15%, 50/60Hz ±5%						
Max. output voltage		Three phase: 0 - 240V				Three phase: 0 - 240V						
Input current	(A)	8.5	12	19	27	4.5	6.5	11	15.4	20	29	40

		3ph 380-480V (with / without EMC filter)							3ph 380-480V (without EMC filter)						
		U 2 0 3 X _ _ _ _ S							U 2 0 3 X _ _ _ _ S S						
		00K7	01K5	02K2	04K0	05K5	07K5	11K0	15K0	18K5	22K0	30K0	37K0	45K0	55K0
Motor ratings	(HP)	1	2	3	5.5	7.5	10	15	20	25	30	40	50	60	75
	(kW)	0.75	1.5	2.2	3.7	5.5	7.5	11	15	18.5	22	30	37	45	55
Rated output current	(A)	2.3	3.8	5.2	8.8	13	17.5	25	32	40	48	64	80	96	128
Rated capacity	(kVA)	1.7	2.9	4	6.7	9.9	13.3	19.1	27.4	34	41	54	68	82	110
Max. input voltage		Three phase: 380-480V, +10 -15%, 50/60Hz ±5%							Three phase: 380-480V, +10 -15%, 50/60Hz ±5%						
Max. output voltage		Three phase: 0 - 480V							Three phase: 0 - 480V						
Input current	(A)	4.2	5.6	7.3	11.6	17	23	31	38	48	56	75	92	112	142

Frequency control

Control mode	V/f or sensorless vector control
Range	0.1 to 650.0Hz
Starting torque	150% / 1Hz (sensorless vector)
Speed control range	1 : 50 (sensorless vector)
Speed control accuracy	±0.5% (sensorless vector)
Setting resolution	Digital : 0.01 Hz Analogue: 0.06Hz / 60Hz (10 bits)
Keypad setting	Set directly by Δ ∇ keys or by potentiometer on the keypad
Display function	Four digital LED (or 2x16 LCD) and status indicator; display frequency / speed / line speed / DC voltage / output voltage / current / rotation direction / inverter parameter / trouble log / program version
Frequency setting	1. External potentiometer 0-5V / 0-10V / 4-20mA / 5-0V / 10-0V / 20-4mA 2. Performs up/down controls, speed control or automatic procedure control with multifunctional contacts on the terminal block (TM2)
Frequency limit function	Respectively setting upper/lower frequency limits and three-stage skip frequencies

Control

Carrier frequency	2 to 16kHz
V / F pattern	18 fixable patterns, 1 programmable pattern
Acc./Dec. control	Two-stage Acc./Dec. time (0.1 to 3600 seconds) and two-stage S curve
Multifunctional analog output	5 different functions
Multifunctional input	Assigned to 28 different functions
Multifunctional output	Assigned to 15 different functions
Digital input signal	NPN / PNP toggle
Other functions	Momentary power loss restart, Speed search, Overload detection, Torque detection, 8 preset speeds, Acc./Dec. switch (2 stages), S curve, 3-wire control, PID control, Torque boost, Slip compensation, Frequency upper/lower limit, Auto energy saving, Modbus slave and control link, Abnormal restart, Sequence control, Built-in simple PLC function

Technical data (continued)

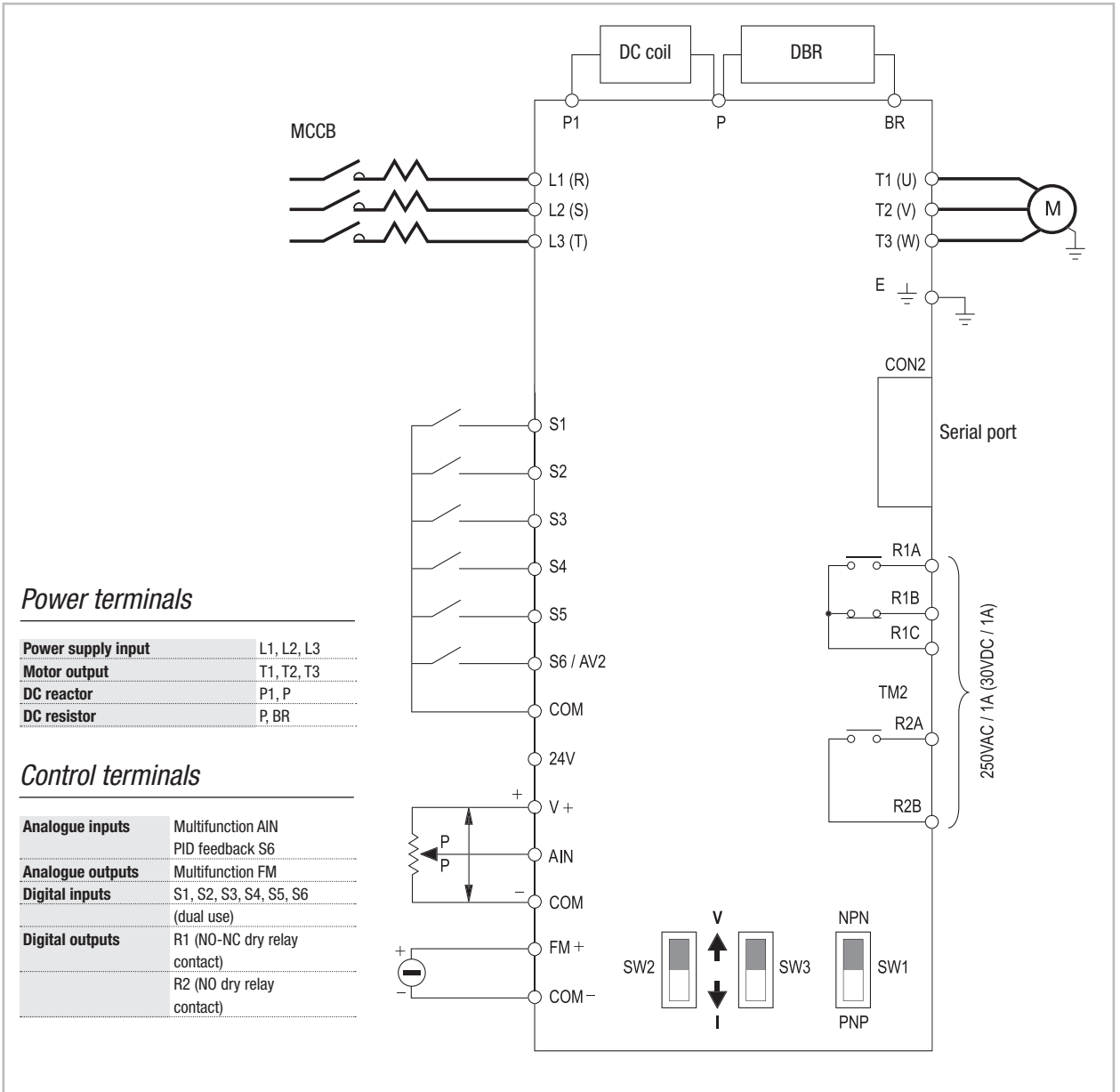
Others

Communication control	Control by RS232 or RS485
	One to one or multiink up to 254 stations (RS485 only)
	Can be set Baud rate, Stop bit and Parity bit
Braking torque	About 100% with braking resistor (20% without braking resistor)
Operation temperature	-10 to +50°C
Storage temperature	-20 to +60°C
Humidity	0 to 95% relative humidity (without condensation)
Vibration	1G (9.8m/S ²)
EMC	Comply with requirement EN 61800-3 with optional filter
LVD	Comply with requirement EN 50178
Enclosure	IP20 (NEMA 1 by external box attached)
Safety level	UL 508C

Protective functions

Overload protection	Inverse characteristic overload protection. Max. 150% inverter current rating / 60 sec.
Fuse protection	The motor stops after FUSE melt
Overvoltage	200V class: DC voltage > 410V 400V class: DC voltage > 820V
Undervoltage	200V class: DC voltage < 190V 400V class: DC voltage < 380V
Momentary power loss restart	Restart after more than 15ms-power loss possible. Programmed up to 2 sec.
Stall prevention	Stall prevention for Acceleration / Deceleration / Operation
Short-circuit output terminal	Electronic circuit protection
Grounding fault	Electronic circuit protection
Other protections	Heatsink overtemperature, overtorque detection, error contact control, reverse run restriction, restrictions for direct start after power up, error recovery and parameter lock out

VAT200 - I/O power and control layout



I/O control terminal description

Symbol	Description
R2A	Multifunctional terminals - Normally Open
R2B	
R1C	Common contact
R1B	Normally Closed contact
R1A	Normally Open contact
10V	Frequency knob (VR) power source terminal
AIN	Analogue frequency signal input terminal
24V	Common source for S1 to S5 in PNP input. Selectable by switch on main PCB
COM	Common terminal for S1 to S5 in NPN input. Selectable by switch on main PCB
FM +	Multifunction analog output, 0-10V DC
S1	Multifunction input terminals
S2	
S3	
S4	
S5	
S6 / AV2	Digital input or PID input terminal (selectable)

Contact rated capacity
250VAC/1A or 30VDC/1A

Multifunctional terminals
Normally Open

External accessories

	VAT200	Losses	W	AC reactors		DC reactors		Tubular resistors		
1ph 200-240V	U201N00K4FS	167400	32	ACRP8A2H5	168491	DCR4A5H7	168387	TLR200P200	129165	
	With									
	U201N00K7FS	167401	50	ACRP12A2H5	168492	DCR6A3H9	168388	TLR200P200	129165	
	EMC filter									
	U201N01K5FS	167402	85	ACRP18A1H3	168493	DCR9A2H4	168389	TLR100P200	108223	
	U201N02K2FS	167403	157	ACRP22A0H84	168494	DCR12A1H7	168390	TLR75P200	116300	
	U201N00K4SS	167411	28	ACRP8A2H5	168491	DCR4A5H7	168387	TLR200P200	129165	
Without										
	EMC filter									
	U201N00K7SS	167412	45	ACRP12A2H5	168492	DCR6A3H9	168388	TLR200P200	129165	
	U201N01K5SS	167413	77	ACRP18A1H3	168493	DCR9A2H4	168389	TLR100P200	108223	
U201N02K2SS	167414	142	ACRP22A0H84	168494	DCR12A1H7	168390	TLR75P200	116300		
3ph 200-240V	U203N00K4SS	167415	28	ACRP4A2H5	168495	DCR4A5H7	168387	TLR200P200	129165	
	With									
	U203N00K7SS	167416	44	ACRP6A2H5	168496	DCR6A3H9	168388	TLR200P200	129165	
	EMC filter									
	U203N01K5SS	167417	74	ACRP9A1H3	168497	DCR9A2H4	168389	TLR100P200	108223	
	U203N02K2SS	167418	140	ACRP12A0H84	168498	DCR12A1H7	168390	TLR75P200	116300	
	U203N04K0SS	167419	247	ACRP18A0H56	168499	DCR18A1H0	168391	TLR44P600	129166	
Without										
	EMC filter									
	U203N05K5SS	167420	274	ACRP27A0H37	168500	DCRP32A0H78	168542	TLR29P600	129167	
U203N07K5SS	167422	372	ACRP35A0H27	168501	DCRP45A0H55	168543	TLR22P600	129168		
3ph 380-480V	U203X00K7FS	167404	45	ACRP3A8H1	168509	DCR3A15H2	168392	TLR750P200	116301	
	With									
	U203X01K5FS	167405	69	ACRP4A5H1	168510	DCR4A9H2	168393	TLR400P200	116302	
	EMC filter									
	U203X02K2FS	167406	137	ACRP6A3H4	168511	DCR6A6H8	168394	TLR240P200	108227	
	U203X04K0FS	167407	231	ACRP10A2H	168512	DCR9A4H0	168395	TLR175P600	129173	
	U203X05K5FS	167408	361	ACRP14A1H4	168513	DCRP18A2H9	168555	TLR118P600	129174	
	U203X07K5FS	167409	446	ACRP18A1H1	168514	DCRP25A2H1	168556	TLR86P600	129175	
	U203X11K0FS	167410	656	ACRP27A0H75	168515	DCRP32A1H6	168557	TLR43P1000	129177	
	Without									
		EMC filter								
		U203X00K7SS	167424	40	ACRP3A8H1	168509	DCR3A15H2	168392	TLR750P200	116301
		U203X01K5SS	167425	62	ACRP4A5H1	168510	DCR4A9H2	168393	TLR400P200	116302
		U203X02K2SS	167426	123	ACRP6A3H4	168511	DCR6A6H8	168394	TLR240P200	108227
		U203X04K0SS	167427	208	ACRP10A2H	168512	DCR9A4H0	168395	TLR175P600	129173
		U203X05K5SS	167428	325	ACRP14A1H4	168513	DCRP18A2H9	168555	TLR118P600	129174
		U203X07K5SS	167429	402	ACRP18A1H1	168514	DCRP25A2H1	168556	TLR86P600	129175
		U203X11K0SS	167430	591	ACRP27A0H75	168515	DCRP32A1H6	168557	TLR43P1000	129177
		U203X15K0SS	167481	1051	ACRP35A0H58	168516	-	-	TLR43P1000	129177
	U203X18K0SS ⁽¹⁾	167482	1218	ACRP38A0H58	168517	-	-	TLR35P1500	129877	
	U203X22K0SS ⁽¹⁾	167483	1449	ACRP45A0H45	168518	-	-	TLR29P1800	129878	
U203X30K0SS ⁽¹⁾	167484	1608	ACRP70A0H29	168519	included	-	TLR22P2500	129879		
U203X37K0SS ⁽²⁾	167485	1993	ACRP90A0H22	168520	included	-	TLR35P1500 ⁽³⁾	129877		
U203X45K0SS ⁽²⁾	167486	2270	ACRP115A0H18	168521	included	-	TLR29P1800 ⁽³⁾	129878		
U203X55K0SS ⁽²⁾	167487	2957	ACRP160A0H14	168522	included	-	TLR22P2500 ⁽³⁾	129879		

(1) (2) Drives 18.5kW and above do not built dynamic braking. In case this is needed, use external braking unit U200ABU430.

(2) (3) Dynamic braking for drives 45kW, 55kW may need the use of two sets of braking units U200ABU430 in parallel with two sets of braking resistors (one resistor per braking unit).

VAT200 - EMC compliance

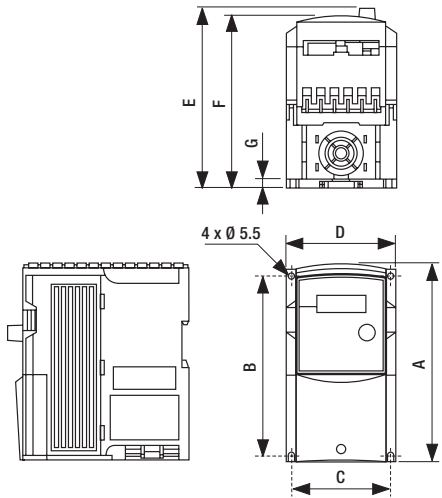
Drives with built-in filter type U20....FS, comply with EN 618000-3 second environment.

To comply with first environment restricted sector, or to allow EMC compliance to U20....SS drives, an external filter has to be used according following table

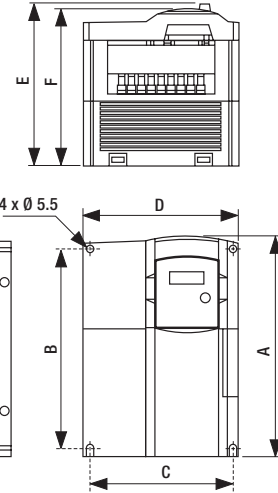
	VAT200		Second environment		First environment		
1ph 200-240V With EMC filter	U201N00K4FS	167400	Not needed	-	U200F611TA1	167453	
	U201N00K7FS	167401	Not needed	-	U200F611TA1	167453	
	U201N01K5FS	167402	Not needed	-	U200F627TA2	167454	
	U201N02K2FS	167403	Not needed	-	U200F627TA2	167454	
	Without EMC filter	U201N00K4SS	167411	U200F611TA1	167453	-	-
		U201N00K7SS	167412	U200F611TA1	167453	-	-
		U201N01K5SS	167413	U200F627TA2	167454	-	-
		U201N02K2SS	167414	U200F627TA2	167454	-	-
3ph 200-240V Without EMC filter	U203N00K4SS	167415	U200F709TA1	167456	-	-	
	U203N00K7SS	167416	U200F709TA1	167456	-	-	
	U203N01K5SS	167417	U200F709TA1	167456	-	-	
	U203N02K2SS	167418	U200F719TA2	167457	-	-	
	U203N04K0SS	167419	U200F719TA2	167457	-	-	
	U203N05K5SS	167420	U200F739TA3	167458	-	-	
	U203N07K5SS	167422	U200F739TA3	167458	-	-	
	3ph 380-480V With EMC filter	U203X00K7FS	167404	Not needed	-	U200F905TA1	167459
U203X01K5FS		167405	Not needed	-	U200F905TA1	167459	
U203X02K2FS		167406	Not needed	-	U200F910TA2	167460	
U203X04K0FS		167407	Not needed	-	U200F910TA2	167460	
U203X05K5FS		167408	Not needed	-	U200F928TA3	167461	
U203X07K5FS		167409	Not needed	-	U200F928TA3	167461	
U203X11K0FS		167410	Not needed	-	U200F928TA3	167461	
Without EMC filter		U203X00K7SS	167424	U200F905TA1	167459	-	-
		U203X01K5SS	167425	U200F905TA1	167459	-	-
		U203X02K2SS	167426	U200F910TA2	167460	-	-
		U203X04K0SS	167427	U200F910TA2	167460	-	-
		U203X05K5SS	167428	U200F928TA3	167461	-	-
		U203X07K5SS	167429	U200F928TA3	167461	-	-
		U203X11K0SS	167430	U200F928TA3	167461	-	-
		U203X15K0SS	167481	U200F34048SMA	167474	-	-
		U203X18K0SS	167482	U200F370A	167475	-	-
		U203X22K0SS	167483	U200F370A	167475	-	-
		U203X30K0SS	167484	U200F3100A	167476	-	-
		U203X37K0SS	167485	U200F3100A	167476	-	-
		U203X45K0SS	167486	U200F3150A	167477	-	-
		U203X55K0SS	167487	U200F3180A	167478	-	-

Dimensions

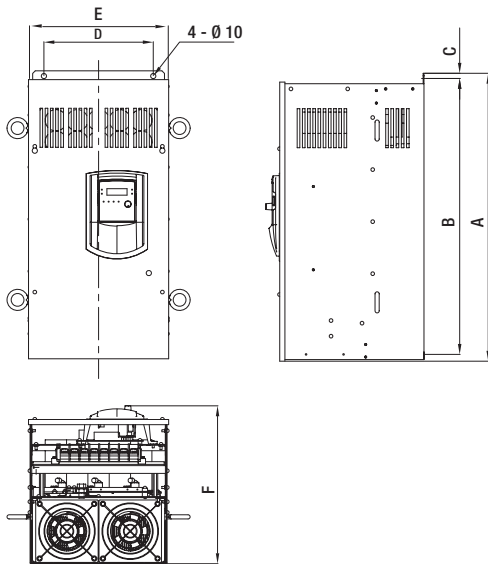
Speed drive



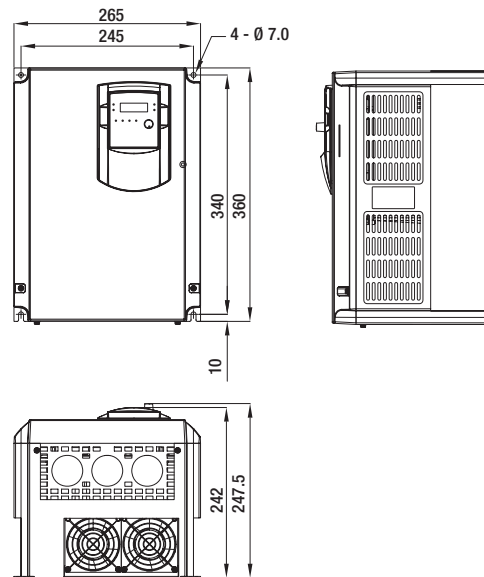
Series	Weight (kg)		Dimensions (mm)						
	SS	FS	A	B	C	D	E	F	G
U201N00K4..	1.2	1.3	163	150	78	90	147	141	7
U201N00K7..	1.2	1.3							
U203N00K4..	1.2	-							
U203N00K7..	1.2	-							
U203N01K5..	1.2	-							
U203X00K7..	1.2	1.3							
U203X01K5..	1.2	1.3							
U201N01K5..	1.5	1.8	187	170.5	114.5	128	148	142	7
U201N02K2..	1.9	2.3							
U203N02K2..	1.75	-							
U203N04K0..	1.9	-							
U203X02K2..	1.8	2.2							
U203X04K0..	1.9	2.3							



Series	Weight (kg)		Dimensions (mm)					
	SS	FS	A	B	C	D	E	F
U203N05K5..	5.6	-	260	244	173	186	195	188
U203N07K5..	5.6	-						
U203X05K5..	5.6	6.6						
U203X07K5..	5.6	6.6						
U203X11K0..	5.6	6.6						



Series	Weight (kg)	Dimensions (mm)					
		A	B	C	D	E	F
U203X30K0SS	33	553	530	10	210	269	303
U203X37K0SS	33	553	530	10	210	269	303
U203X45K0SS	50	653	630	10	250	308	308
U203X55K0SS	50	653	630	10	250	308	308



Series	Weight (kg)
U203X15K0SS	15
U203X18K5SS	15
U203X22K0SS	15

VAT200 - Dimensions (continued)

Braking resistor

Cat. No.	Ref.No.	A	B	C	D	E
ERN00K7	129148	115	80	175	40	20
ERX00K7	219154					
ERN01K5	129149	215	200	175	40	20
ERX01K5	129155					
ERN02K2	129150	165	150	125	60	30
ERX02K2	129156					
ERN04K0	129151	215	200	175	60	30
ERX04K0	129157					
ERN05K5	129152	335	320	295	60	30
ERN07K5	129153					
ERX05K5	129158					
ERX07K5	129159					

EMC external filter

Cat. No.	Ref.No.	Inverter mounting		External filter size			External filter mount.	
		A	B	C	D	E	F	G
U200F611TA1	167453	78	150	91	192	28	74	181
U200F709TA1	167456							
U200F905TA1	167459							
U200F627TA2	167454	114.5	170.5	128	215	37	111	204
U200F719TA2	167457							
U200F910TA2	167460							
U200F739TA3	167458	173	244	188	289	42	165	278
U200F928TA3	167461							

U200F34048SMA 167474

Cat. No.	Ref.No.	Dimensions (mm)						
		W	W1	H	H1	D	d	M
U200F370A	167475	93	79	312	298	190	7	M6
U200F3100A	167476	93	79	312	298	190	7	M6
U200F3150A	167477	126	112	312	298	224	7	M6
U200F3180A	167478	126	112	312	298	224	7	M6

External dynamic braking unit

Cat. No.	Ref.No.	Weight (kg)
		U200ABU430

Dimensions (continued)

AC Input reactors

Fig. 1		Fig. 3		Fig. 4	

Cat. No.	Ref.No.	Losses W	Fig.	Dimensions (mm)						Weight (kg)
				A	B	C	D	E	Ø	
ACRP8A2H5	168491	5.2	4	75	96	100	80	56	6	1.8
ACRP12A2H5	168492	6.8	4	84	102	110	86	65	6	2.7
ACRP18A1H3	168493	7.3	4	96	112	106	96	77	6	3.2
ACRP22A0H84	168494	8	4	96	112	116	96	77	6	3.7
ACRP4A2H5	168495	16	1	120	80	152	41	100	6	1.3
ACRP6A2H5	168496	18	1	120	80	152	41	100	6	1.5
ACRP9A1H3	168497	17	1	120	80	152	41	100	6	1.6
ACRP12A0H84	168498	18	1	120	80	152	41	100	6	1.7
ACRP18A0H56	168499	21	1	120	90	152	51	100	6	2.4
ACRP27A0H37	168500	32	1	150	95	183	46	125	6	3.3
ACRP35A0H27	168501	35	1	150	95	183	46	125	6	3.7
ACRP3A8H1	168509	17	1	120	80	152	41	100	6	1.4
ACRP4A5H1	168510	16	1	120	80	152	41	100	6	1.5
ACRP6A3H4	168511	19	1	120	80	152	41	100	6	1.7
ACRP10A2H	168512	23	1	120	90	152	51	100	6	2.5
ACRP14A1H4	168513	29	1	150	95	178	46	125	6	3.2
ACRP18A1H1	168514	35	1	150	95	178	46	125	6	4
ACRP27A0H75	168515	77	1	150	106	233	72	100	9	4.8
ACRP35A0H58	168516	98	1	150	111	233	77	100	9	5.5
ACRP38A0H58	168517	96	1	150	116	233	82	100	9	6.4
ACRP45A0H45	168518	102	1	150	121	233	87	100	9	7.1
ACRP70A0H29	168519	147	1	150	151	250	117	100	9	11
ACRP90A0H22	168520	158	1	180	136	286	102	120	9	13.1
ACRP115A0H18	168521	186	1	180	156	301	122	120	9	16.9
ACRP160A0H14	168522	268	3	240	181	288	107	160	9	25.7

VAT200

DC reactors

Fig. 2		Fig. 5	

Cat. No.	Ref.No.	Losses W	Fig.	Dimensions (mm)						Weight (kg)
				A	B	C	D	E	Ø	
DCR4A5H7	168387	4	2	50	97	84	80	34	6	0.78
DCR6A3H9	168388	6	2	50	97	94	80	34	6	0.94
DCR9A2H4	168389	9	2	75	96	95	80	56	6	1.3
DCR12A1H7	168390	15	2	75	96	95	80	56	6	1.3
DCR18A1H0	168391	22	2	75	96	110	80	56	6	1.8
DCR3A15H2	168392	4	2	50	97	94	80	34	6	0.94
DCR4A9H2	168393	4	2	75	96	95	80	56	6	1.3
DCR6A6H8	168394	6	2	75	96	95	80	56	6	1.3
DCR9A4H0	168395	9	2	75	96	95	80	56	6	1.3
DCRP32A0H78	168542	37	5	100	110	173	91	75	6	3.9
DCRP45A0H55	168543	33	5	120	110	203	86	90	6	6.1
DCRP18A2H9	168555	42	5	100	95	178	76	75	6	3.5
DCRP25A2H1	168556	54	5	100	95	183	76	75	6	3.5
DCRP32A1H6	168557	59	5	100	110	183	91	75	6	3.9

F


Notes

A large grid area for taking notes, consisting of 20 columns and 40 rows of small squares.




- G.2 **Thermal overload relays** for compact contactors
- G.3 **Thermal overload relays** for LS..K contactors
- G.4 Overload relays for heavy duty - Tripping class 20
- G.5 Overload relays for heavy duty - Tripping class 30
- G.6 Accessories for overload relays

<i>Miniature circuit breakers</i>	A
<i>Residential current circuit breakers</i>	B
<i>Busbar systems</i>	C
<i>Comfort functions/Energy control</i>	D
<i>Residential enclosures</i>	E
<i>Contactors/Soft starters/Speed drives</i>	F
<i>Overload relays</i>	G
<i>Control and signalling units</i>	H
<i>Manual motor starters</i>	I
<i>Moulded case circuit breakers</i>	J
<i>Air circuit breakers</i>	K
<i>Fuse systems/Loadbreak disconnectors</i>	L
<i>General purpose enclosures</i>	M
<i>System enclosures</i>	N
<i>Numerical index</i>	X

Thermal overload relays for compact contactors - 3 poles



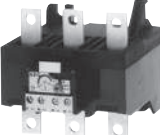
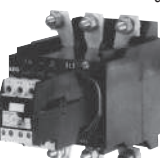
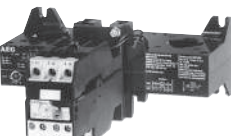

		Fits to contactors type...	Adjusting ranges of relays (A)	Cat. No.	Ref. No.	Pack.
<p>b 05 aux. contacts 1NC</p> 		Screw terminals LS 05K, LS 06K, LS 07	0.11 - 0.17	b 05	212578	1
			0.17 - 0.26	b 05	137592	1
			0.26 - 0.43	b 05	137594	1
			0.43 - 0.65	b 05	210046	1
			0.65 - 1	b 05	210051	1
			0.85 - 1.3	b 05	210057	1
			1.1 - 1.6	b 05	210063	1
			1.35 - 2	b 05	210069	1
			1.7 - 2.4	b 05	210074	1
			2.2 - 3.2	b 05	210080	1
			3 - 4.7	b 05	210086	1
			4 - 6.3	b 05	210092	1
			5.5 - 8	b 05	210097	1
			7.5 - 10.5	b 05	210102	1
			10-14	b 05	210105	1
		with terminal repeater 14/22 (only for one conductor) with conductor A2-96				

Accessories

		Description	Usable for devices type...	Cat. No.	Ref. No.	Pack.
<p>Adapter, screw mounting</p> 		Sep. mounting, for combinations	LS 07 with b 05	-	263079	1
<p>Adapter, separate mounting b 05</p> 		For snap-on mounting on rails DIN EN 50 0222 (order also terminal block)	b 05	-	125905	5
<p>Terminal block, separate mounting b 05</p> 		For mounting to thermal overload relays b 05 for screw mounting	b 05	-	125610	5
<p>Add-on auxiliary switch, 1 NO contact</p>		Snap-on mounting, only in position "H"	b 05	HB 05.10	209464	10

Thermal overload relays

Thermal overload relays for LS...K contactors - 3 poles

	Fits to contactors type...	Adjusting ranges of relays (A)	Cat. No.	Ref. No.	Pack.
b 18K aux. contacts 1NO 1NC CLASS 10 	Basic version to couple with contactor	0.16 - 0.26	b 18K	139600	5
	Separate mounting part see page G.6	0.25 - 0.41	b 18K	139601	5
	LS 4K (3-pole)	0.4 - 0.65	b 18K	139602	5
	LS 5K (3+4-pole)	0.65 - 1.1	b 18K	139603	5
	LS 7K (3+4-pole)	1 - 1.5	b 18K	139604	5
	LS 11K (3-pole)	1.3 - 1.9	b 18K	139605	5
	LS 12K	1.8 - 2.7	b 18K	139606	5
	LS 15K (3-pole)	2.5 - 4	b 18K	139607	5
	LS 18K (3-pole)	4 - 6.3	b 18K	139608	5
		5.5 - 8.5	b 18K	139609	5
		8 - 12	b 18K	139610	5
		10 - 16	b 18K	139611	5
		14.5 - 18	b 18K	139612	5
		17.5 - 22	b 18K	139613	5
		21 - 26	b 18K	139614	5
	25 - 32	b 18K	139615	5	
	30 - 40	b 18K	139616	5	
b 55K aux. contacts 1NO 1NC CLASS 10 	Basic version to couple with contactor	11.5 - 15	b 55K	139617	1
	Separate mounting part see page G.6	14.5 - 19	b 55K	139618	1
	LS 22K (3-pole)	18.5 - 25	b 55K	139619	1
	LS 30K (3-pole)	24 - 32	b 55K	139620	1
	LS 37K (3-pole)	30 - 43	b 55K	139621	1
	LS 45K (3-pole)	42 - 55	b 55K	139622	1
	LS 55K (3-pole)	54 - 65	b 55K	139623	1
		64 - 82	b 55K	139624	1
		78 - 97	b 55K	139625	1
		90 - 110	b 55K	139626	1
b 90K aux. contacts 1NO 1NC CLASS 10 	Basic version to couple with contactor	55 - 80	b 90K	139627	1
	No additional parts for sep. mounting with screws	63 - 90	b 90K	139628	1
	LS 75K (3-pole)	90 - 120	b 90K	139629	1
	LS 90K (3-pole)	110 - 140	b 90K	139630	1
		140 - 190	b 90K	139631	1
b 160K aux. contacts 1NO 1NC CLASS 10 	For separate mounting with screws	120 - 190	b 160K	139632	1
	Connecting parts to couple with contactor see page G.6	175 - 280	b 160K	139633	1
	LS 110K (3-pole)	200 - 310	b 160K	139634	1
	LS 132K (3-pole)				
b 375K aux. contacts 1NO 1NC CLASS 10 	For separate mounting with screws, basic version with ct's	120 - 190	b 375K	139650	1
	Connecting parts to couple with contactor see page G.6	175 - 280	b 375K	139651	1
	LS 220K (3-pole)	250 - 400	b 375K	139652	1
	LS 280K (3-pole)	315 - 500	b 375K	139653	1
	LS 375K (3-pole)	430 - 700	b 375K	139654	1
b 450K aux. contacts 1NO 1NC CLASS 10 	Kit consisting of 3 ct's and separate overload relay (Frame size as type b 18k for separate mounting) sep. mounting	500 - 850	b 450K	139660	1

Overload relays for heavy duty - Tripping class 20

3-pole, auxiliary contacts 1NO 1NC
 Tripping time 6s < TP ≤ 20s at 7.2 x IE from cold state for direct mounting on contactor



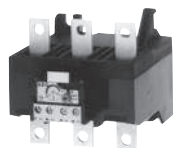
bx 18K
 aux. contacts 1NO 1NC
 CLASS 20

Fits to contactors type...	Adjusting ranges of relays (A)	Cat. No.	Ref. No.	Pack.
Basic execution for direct mounting on contactor	2.5 - 4.1	bx18K-041	114066	5
Separate mounting part see page G.6	4 - 6.3	bx18K-063	114067	5
LS 4K (3-pole)	5.5 - 8.5	bx18K-085	114068	5
LS 5K (3+4-pole)				
LS 7K (3+4-pole)	8 - 12	bx18K-120	114069	5
LS 11K (3-pole)	10 - 16	bx18K-160	114070	5
LS 12K	14.5 - 18	bx18K-180	114071	5
LS 15K (3-pole)				
LS 18K (3-pole)	17.5 - 22	bx18K-220	114072	5
	21 - 26	bx18K-260	114073	5
	25 - 32	bx18K-320	114074	5
	30 - 40	bx18K-400	114075	5



bx 55K
 aux. contacts 1NO 1NC
 CLASS 20

Basic execution for direct mounting on contactor	24 - 32	bx55K-032	114076	1
Separate mounting part see page G.6	30 - 43	bx55K-043	114077	1
LS 22K (3-pole)	42 - 55	bx55K-055	114078	1
LS 30K (3-pole)				
LS 37K (3-pole)	54 - 65	bx55K-065	114079	1
LS 45K (3-pole)	64 - 82	bx55K-082	114080	1
LS 55K (3-pole)	78 - 97	bx55K-097	114081	1
	90 - 110	bx55K-110	114082	1



bx 90K
 aux. contacts 1NO 1NC
 CLASS 20

Basic execution for direct mounting on contactor	63 - 90	bx90K-090	114083	1
or direct base mounting possible	90 - 120	bx90K-120	114084	1
LS 75K (3-pole)	110 - 140	bx90K-140	114085	1
LS 90K (3-pole)	140 - 190	bx90K-190	114086	1

Thermal overload relays

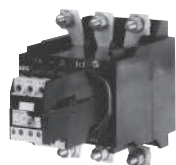
CT overload relays for heavy duty - Tripping class 30

3-pole auxiliary contacts 1NO 1NC
Tripping time $9s < TP \leq 30s$ at $7.2 \times IE$ from cold state for separate mounting



bw 55K
aux. contacts 1NO 1NC
CLASS 30

Fits to contactors type...	Adjusting ranges of relays (A)	Cat. No.	Ref. No.	Pack.
Screw terminals	2.5 - 4	bw 55K	139635	1
	4 - 6.5	bw 55K	139636	1
	5.5 - 8.5	bw 55K	139637	1
	7.5 - 11	bw 55K	139638	1
	10-16	bw 55K	139639	1
	12.5 - 20	bw 55K	139640	1
	17 - 27	bw 55K	139641	1
	26 - 40	bw 55K	139642	1
	32 - 52	bw 55K	139643	1
	45 - 70	bw 55K	139644	1
	60 - 90	bw 55K	139645	1
	80 - 125	bw 55K	139646	1



bw 160K
aux. contacts 1NO 1NC
CLASS 30

Screw terminals	120 - 190	bw 160K	139647	1
	175 - 280	bw 160K	139648	1
	200 - 310	bw 160K	139649	1
Connecting parts to couple to contactor see page G.6				



bw 375K
aux. contacts 1NO 1NC
CLASS 30




Screw terminals	120 - 190	bw 375K	139655	1
	175 - 280	bw 375K	139656	1
	250 - 400	bw 375K	139657	1
	315 - 500	bw 375K	139658	1
	430 - 700	bw 375K	139659	1
Connecting parts to couple to contactor see page G.6				



bw 450K
aux. contacts 1NO 1NC
CLASS 30

Kit consisting of 3 ct's and separate overload relay	500 - 850	bw 450K	139661	1
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Accessories for type b ...K and bw ...K

		Usable for device type...	Adjusting ranges of relays (A)	Cat. No.	Ref. No.	Pack.
	Separate mounting parts	For separate mounting b 18K, b 55K		VST 18K	139662	1
		For snap-on mounting on rails DIN EN 50 022		VST 55K	139663	1
	Connecting parts (E-No.=1 set)	For b 160K, bw 160K		AT 160K	139667	1
		For connection between overload relays and contactors				
		LS 110K - LS 160K				
		For b 375K, bw 375K		AT 280K	139668	1
		For connection between overload relays and contactors		AT 375K	139669	1
		LS 220K, LS 280K				
		LS 375K				
	Finger proof cover	Later mounting on b 90K, bx 90K Finger proof according to DIN 0106 Part 100 Type KLA 90K3 to cover the main terminals between contactor and overload relays. (For other terminals type KLA 90K, see pag. F.18) b 90K with contactor		KLA 90K3	139671	1
	Remote operation with bowden cable	With front element ø 22.5mm for door and cover mounting b 18K - b 450K, bx 18K - bx 90K		FRSbK	139665	1
		bw 55K - bw 450K		FRLbK	139666	1
	Cover for setting scale	b 18K - b 450K, bx 18K - bx 90K bw 55K - bw 450K		EAbK	139664	1
	Remote RESET element, electrical	For b 18K - b 450K, bx 18K - bx 90K and bw 55K - bw 450K	24	RRbK	136452	1
		For later mounting on overload relays b ...K, bw ...K	220 - 240	RRbK	136455	1
		Voltage operating limits 0.85 - 1.1Us,	380 - 415	RRbK	136456	1
		power consumption AC 100VA, DC 100W				
		Control voltage Us for AC 50/60Hz and DC				
			ON-time t₁	OFF-time t₂		
			1s	30s		
			5s	90s		
			10s	180s		
			E1min = 0.2s			
			not for continuous operating duty			

- Time relays**
- H.2 Series NMV electronic relays

- Control and signalling units**
- H.4 Operators 22 mm
- H.14 Contact blocks and power supplies for panel mounting
- H.15 Contact blocks and power supplies for base mounting
- H.16 Push-button stations
- H.17 Accessories

<i>Miniature circuit breakers</i>	A
<i>Residential current circuit breakers</i>	B
<i>Busbar systems</i>	C
<i>Comfort functions/Energy control</i>	D
<i>Residential enclosures</i>	E
<i>Contactors/Soft starters/Speed drives</i>	F
<i>Overload relays</i>	G
<i>Time relays / Control and signalling units</i>	H
<i>Manual motor starters</i>	I
<i>Moulded case circuit breakers</i>	J
<i>Air circuit breakers</i>	K
<i>Fuse systems/Loadbreak disconnectors</i>	L
<i>General purpose enclosures</i>	M
<i>System enclosures</i>	N
<i>Numerical index</i>	X

Electronic relays

Series NMV - multivoltage 22.5 mm module



Standards

EN 50002, EN 50042
 VDE 0106, VDE 0110
 CSA C 22.2 Nr.14
 UL 94, UL 508
 IEC 255.5, UNE 20-119,
 IEC/EN 60947-5-1, IEC/EN 61812-1

Approvals / Marking



Range overview

	22.5mm module	
	Series NMV Multivoltage	
Delay		Pg.
Delayed ON	NMTCV	H.3
OFF delay	NMRDV	H.3
Star-delta starter	NMETV	H.3
Multifunction	NMMFV	H.3
Impulse		
Delayed ON		
ON delay with auxiliary contact	NMMFV	H.3
OFF delay with auxiliary contact	NMMFV	H.3
ON + OFF with auxiliary contact	NMMFV	H.3
Intermittence		
Symmetric intermittence		
Asymmetric intermittence	NMIVV	H.3

Electronic relays

Multivoltage electronic timers - 22.5 mm module



Delayed ON relay

Supply voltage	Time range	Available contacts	Cat. No.	Ref. No.	Pack.
Direct 24-240V AC/DC	0.06 sec - 100 h.	2 changeover	NMTCV 2	124901	1



Star-delta starter relay

Direct 24-240V AC/DC	1 - 10 sec 6 - 60 sec	1 changeover	NMETV	124908	1
With transformer ⁽¹⁾	1 - 10 sec 6 - 60 sec	1 changeover	NMETV t AU ⁽²⁾	124911	1



Delayed OFF timer

Direct 24-240V AC/DC	0.5 - 6 sec	2 changeover	NMRDV 2-6	124915	1
24-240V AC/DC	5 - 60 sec	2 changeover	NMRDV 2-60	124916	1
24-240V AC/DC	50 - 600 sec	2 changeover	NMRDV 2-600	124917	1



Asymmetric intermittence,
started by connection
or pause (choice)

Direct 24-240V AC/DC	0.06 sec - 100 h.	1 changeover	NMIWV	124929	1
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Multifunction

- Delayed ON timer
- Delayed ON through contact timer
- Delayed OFF through contact timer
- Delayed ON and OFF through contact timer
- Impulse ON timer
- Impulse ON through contact timer
- Impulse OFF through contact timer
- Impulse ON and OFF through contact timer

Module 22.5mm					
Direct 24-240V AC/DC	0.6 sec - 100 h.	1 changeover	NMMFV	124930	1

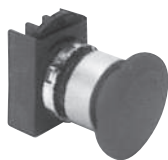
(1) Transformer inside the timer housing

(2) AU = coil 380V 50/60 Hz

Control and signalling units



Push-buttons



Mushroom push-button
Momentary
incl. flange for 3 contact blocks

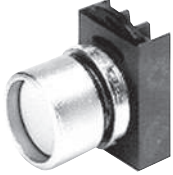
Illuminated mushroom push-button
Momentary
incl. flange for 1 contact block
and 1 bulb power supply

Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
Mushroom head diam. 28 mm								
black	BMP3S	147281	BFP3S	147015	-	-	1	
red	BMP3R	147282	BFP3R	147016	-	-	1	
green	BMP3G	147283	BFP3G	147017	-	-	1	
yellow	BMP3Y	147284	BFP3Y	147018	-	-	1	
Mushroom head diam. 40 mm								
black	BMP4S	147285	BFP4S	147019	-	-	1	
red	BMP4R	147286	BFP4R	147020	-	-	1	
green	BMP4G	147287	-	-	-	-	1	
yellow	BMP4Y	147288	-	-	-	-	1	
Mushroom head diam. 60 mm								
black	BMP5S	147289	-	-	-	-	1	
red	BMP5R	147290	-	-	-	-	1	
green	BMP5G	147291	-	-	-	-	1	
yellow	BMP5Y	147292	-	-	-	-	1	
Illuminated mushroom push-button								
red	BMLPR	147501	BFLPR	147236	BSLPR	147728	1	
green	BMLPG	147502	BFLPG	147237	-	-	1	
yellow	BMLPY	147503	BFLPY	147238	-	-	1	
blue	BMLPB	147504	-	-	-	-	1	
white	BMLPW	147505	-	-	-	-	1	
transparent	BMLPC	147506	BFLPC	147241	-	-	1	

Control and signalling units

Push-buttons

Push-button
incl. flange for 3 contact blocks



Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
With flush cap							
black	BMDGS	147260	BFDGS	147001	BSDGS	147525	1
red	BMDGR	147261	BFDGR	147002	BSDGR	147526	1
green	BMDGG	147262	BFDGG	147003	BSDGG	147527	1
yellow	BMDGY	147263	BFDGY	147004	BSDGY	147528	1
blue	BMDGB	147264	BFDGB	147005	BSDGB	147529	1
white	BMDGW	147265	BFDGW	147006	BSDGW	147530	1
no cap cover	BMDGO	147266	BFDGO	147007	BSDGO	147531	1
With raised cap							
black	BMDSS	147274	BFSS	147008	BSDSS	147532	1
red	BMDSR	147275	BFDSR	147009	BSDSR	147533	1
green	BMDSG	147276	BFDSG	147010	BSDSG	147534	1
yellow	BMDSY	147277	BFDSY	147011	BSDSY	147535	1
blue	BMDSB	147278	-	-	-	-	1
no cap cover	BMDSO	147280	BFDSO	147014	BSDSO	147538	1
With recessed cap							
black	BMDES	147267	-	-	-	-	1
red	BMDER	147268	-	-	-	-	1
green	BMDEG	147269	-	-	-	-	1
yellow	BMDEY	147270	-	-	-	-	1
blue	BMDEB	147271	-	-	-	-	1
white	BMDEW	147270	-	-	-	-	1
no cap cover	BMDEO	147273	-	-	-	-	1
Illuminated push-button incl. flange for 1 contact block and 1 bulb power supply							
With flush cap							
red	BMLGR	147471	BFLGR	147206	BSLGR	147698	1
green	BMLGG	147472	BFLGG	147207	BSLGG	147699	1
yellow	BMLGY	147473	BFLGY	147208	BSLGY	147700	1
blue	BMLGB	147474	BFLGB	147209	BSLGB	147701	1
white	BMLGW	147475	BFLGW	147210	BSLGW	147702	1
transparent	BMLGC	147476	BFLGC	147211	BSLGC	147703	1
With raised cap							
red	BMLSR	147483	BFLSR	147218	-	-	1
green	BMLSG	147484	BFLSG	147219	BSLSG	147711	1
yellow	BMSLY	147485	BFLSY	147220	BSLSY	147712	1
blue	BMLSB	147486	-	-	-	-	1
white	BMLSW	147487	-	-	BSLSW	147714	1
transparent	BMLSC	147488	-	-	BSLSC	147715	1
With recessed cap							
red	BMLER	147477	-	-	-	-	1
green	BMLEG	147478	-	-	-	-	1
yellow	BMLEY	147479	-	-	-	-	1
blue	BMLEB	147480	-	-	-	-	1
white	BMLEW	147481	-	-	-	-	1
transparent	BMLEC	147482	-	-	-	-	1

Control and signalling units

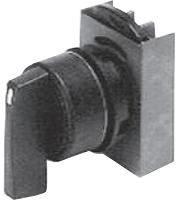
Push-buttons

	Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Mushroom control incl. flange for 2 contact blocks, mushroom head diam. 40 mm	Push-twist to release red	BMPRN	147293	BFPRN	147027	-	-	1
	Push-pull to release red	-	-	-	-	BSPRN	147543	1
Mushroom control - Emergency off incl. flange for 2 contact blocks, positive break, mushroom head diam. 40 mm	Push-twist to release red	-	-	BFPRA	147028	-	147544	1
	Push-key to release red	BMPRS	147294	BFPRS	147029	BSPRS	147545	1
Mushroom control - Push-button with 3 switching positions incl. flange for 2 contact blocks, mushroom head diam. 40 mm	0 fixed, 1 - 2 transient red	BMP2T	147296	BFP2T	147031	-	-	1
	1 - 0 fixed, 2 transient red	BMP1T	147295	BFP1T	147030	-	-	1
Illuminated mushroom control Push-button with 3 switching positions incl. flange for 2 contact blocks and bulb power supply, mushroom head diam. 40 mm	1 - 0 fixed, 2 transient red	BM2PR	147507	BF2PR	147242	-	-	1
	green	BM2PG	147508	-	-	-	-	1
	yellow	BM2PY	147509	-	-	-	-	1
	blue	BM2PB	147510	-	-	-	-	1
	white	BM2PW	147511	-	-	-	-	1
	transparent	BM2PC	147512	-	-	-	-	1
	1 - 2 fixed, 0 transient red	BM3PR	147513	-	-	-	-	1
	green	BM3PG	147514	-	-	-	-	1
	yellow	BM3PY	147515	-	-	-	-	1
	blue	BM3PB	147516	-	-	-	-	1
	white	BM3PW	147517	-	-	-	-	1
	transparent	BM3PC	147518	-	-	-	-	1

Control and signalling units

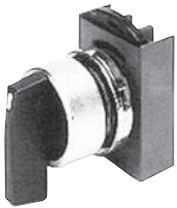
Selector switches

Selector switch with lever
Incl. flange for 2 contact blocks,
long lever



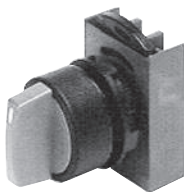
Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2 positions, fixed black	BMK1L	147297	BFK1L	147032	-	-	1
3 positions, fixed black	BMK3L	147299	BFK3L	147034	-	-	1
4 positions, fixed black	BMK7L	147303	BFK7L	147047	-	-	1
5 positions, fixed black	BMK9L	147305	-	-	-	-	1

**Selector switch /
push-button with lever**



2 positions, left fixed - right transient black	BMK2L	147298	BFK2L	147033	-	-	1
3 positions, left transient - middle and right fixed black	BMK4L	147300	-	-	-	-	1
3 positions, left and right transient - middle fixed black	BMK6L	147302	BFK6L	147037	-	-	1
3 positions, right transient - middle and left fixed black	BMK5L	147301	-	-	-	-	1
4 positions, 1, 2, 3 fixed - 4 transient black	BMK8L	147304	-	-	-	-	1

Selector switch with knob
Incl. flange for 2 contact blocks
short lever



2 positions, fixed, V position black	BMK1S	147306	BFK1S	147041	BSK1S	147548	1
3 positions, fixed black	BMK3S	147316	BFK3S	147051	BSK3S	147558	1
red	BMK3R	147317	-	-	-	-	1
green	BMK3G	147318	-	-	-	-	1
yellow	BMK3Y	147319	-	-	-	-	1
blue	BMK3B	147320	-	-	-	-	1
4 positions, fixed black	BMK7S	147336	BFK7S	147071	BSK7S	147573	1
red	BMK7R	147337	-	-	-	-	1
green	BMK7G	147338	-	-	-	-	1
yellow	BMK7Y	147338	-	-	-	-	1
blue	BMK7B	147339	-	-	-	-	1
5 positions, fixed black	BMK8S	147341	BFK8S	147076	-	-	1
red	BMK8R	147342	-	-	-	-	1
green	BMK8G	147343	-	-	-	-	1
yellow	BMK8Y	147344	-	-	-	-	1
blue	BMK8B	147341	-	-	-	-	1

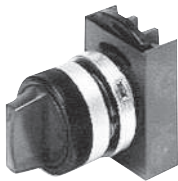
Control and signalling units

Selector switches

Selector switch / push-button with knob
Incl. flange for 2 contact blocks, short lever

Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
2 positions, right transient							
black	BMK2S	147311	BFK2S	147046	BSK2S	147553	1
green	BMK2G	147313	-	-	-	-	1
yellow	BMK2Y	147314	-	-	-	-	1
blue	BMK2B	147315	-	-	-	-	1
3 positions, middle fixed - left and right transient							
black	BMK6S	147331	BFK6S	147066	BSK6S	147573	1
red	BMK6R	147332	-	-	-	-	1
green	BMK6G	147333	-	-	-	-	1
yellow	BMK6Y	147334	-	-	-	-	1
blue	BMK6B	147335	-	-	-	-	1
3 positions, middle and left fixed - right transient							
black	BMK5S	147326	BFK5S	147061	BSK5S	147568	1
red	BMK5R	147327	-	-	-	-	1
green	BMK5G	147328	-	-	-	-	1
yellow	BMK5Y	147329	-	-	-	-	1
blue	BMK5B	147330	-	-	-	-	1
3 positions, middle and right fixed - left transient							
black	BMK4S	147321	BFK4S	147056	BSK4S	147563	1
red	BMK4R	147322	-	-	-	-	1
green	BMK4G	147323	-	-	-	-	1
yellow	BMK4Y	147324	-	-	-	-	1
blue	BMK4B	147325	-	-	-	-	1

Illuminated selector switch /
push-button with knob
Incl. flange for 1 contact block
and 1 bulb power supply,
short lever



2 positions, fixed							
red	BML2R	147489	BFL2R	147224	BSL2R	147716	1
green	BML2G	147490	BFL2G	147225	BSL2G	147717	1
yellow	BML2Y	147491	BFL2Y	147226	BSL2Y	147718	1
blue	BML2B	147492	BFL2B	147227	-	-	1
white	BML2W	147493	BFL2W	147228	-	-	1
transparent	BML2C	147494	BFL2C	147229	-	-	1
3 positions, fixed							
red	BML3R	147495	BFL3R	147230	BSL3R	147722	1
green	BML3G	147496	BFL3G	147231	BSL3G	147723	1
yellow	BML3Y	147497	BFL3Y	147232	-	-	1
blue	BML3B	147498	-	-	-	-	1
white	BML3W	147499	BFL3W	147234	-	-	1
transparent	BML3C	147500	BFL3C	147235	-	-	1

Control and signalling units

Push-buttons / Selector switches



Push-button with key lock
Incl. flange for 2 contact blocks,
key version 95

Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Key removable in left and right positions, lockable in normal position black	BMD1S	147346	-	-	-	-	1
Key removable in left and right positions, lockable in both positions black	BMD3S	147348	-	-	-	-	1
Key removable in left and right positions, lockable in depressed position black	BMD2S	147347	-	-	-	-	1
Key removable in right position, lockable in normal position black	BMD4S	147349	-	-	-	-	1
Key removable in right position, lockable in both positions black	BMD6S	147351	-	-	-	-	1
Key removable in right position, lockable in depressed position black	BMD5S	147350	-	-	-	-	1
Key removable in both positions Key version 95	BMS0K	147354	BFS0K	147089	-	-	1
Key version 01	BMS1K	147357	-	-	-	-	1
Key removable in left position Key version 95	BMS0A	147352	BFS0A	147087	BSS0A	147588	1
Key version 01	BMS1A	147355	-	-	-	-	1
Key removable in right position Key version 95	BMS0E	147353	BFS0E	147088	-	-	1
Key version 01	BMS1E	147356	-	-	-	-	1
Key removable in left position Key version 95	BMS0T	147379	BFS0T	147114	BSS0T	147615	1
Key version 01	BMS1T	147380	-	-	-	-	1

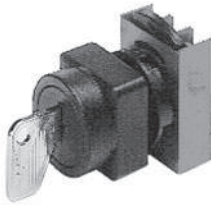
Selector switch with key, 2 positions, fixed
Incl. flange for 2 contact blocks,
switching angle 90°

**Selector switch / push button with key,
2 positions**
Right transient,
incl. flange for 2 contact blocks, 90°

Control and signalling units

Push-buttons / Selector switches

Selector switch with key,
3 positions, fixed
Incl. flange for
2 contact blocks, 2x45°



Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Key removable in left, middle and right positions							
	Key version 95	BMS0M	147391	BFS0M	147126	BSS0M	147627
Key version 01	BMS1M	147398	-	-	-	-	1
Key removable in left and middle positions							
	Key version 95	BMS0F	147388	-	-	-	-
Key version 01	BMS1F	147395	-	-	-	-	1
Key removable in left and right positions							
	Key version 95	BMS0G	147389	BFS0G	147124	BSS0G	147625
Key removable in left position							
	Key version 95	BMS0B	147385	BFS0B	147120	-	-
Key removable in middle and right positions							
	Key version 95	BMS0H	147390	-	-	-	-
Key version 01	BMS1H	147397	-	-	-	-	1
Key removable in middle position							
	Key version 95	BMS0C	147386	BFS0C	147121	-	-
Key version 01	BMS1C	147393	-	-	-	-	1
Key removable in right position							
	Key version 95	BMS0D	147387	BFS0D	147122	-	-

Control and signalling units

Selector switches

Selector switch / push button,
with key, 3 positions
Incl. flange for 2 contact blocks,
2x45°



Selector switch with key,
4 positions, fixed
Incl. flange for contact blocks,
key version 95, 3x40°

Colour			Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
Left transient, middle and right fixed, key removable in middle and right positions	Key version 95	BMS0S	147428	-	-	-	1	
	Key version 01	BMS0P	147427	-	-	-	1	
Left transient, middle and right fixed, key removable in middle position	Key version 95	BMS1P	147430	-	-	-	1	
	Key version 01	BMS1R	147429	-	-	-	1	
Left transient, middle and right fixed, key removable in right position	Key version 95	BMS4R	147439	BFS4R	147174	BSS4R	147675	1
	Key version 01	BMS2P	147433	BFS2P	147169	-	-	1
Right transient, middle and left fixed, key removable in middle position	Key version 95	BMS2R	147434	-	-	-	1	
	Key version 01	BMS3R	147437	-	-	-	1	
Right transient, middle and left fixed, key removable in right position	Key version 95	BMS1V	147441	-	-	-	1	
	Key version 01	BMS2V	147442	-	-	-	1	
Key removable in positions (see left)	1	BMS3V	147443	-	-	-	1	
	2	BMS4V	147444	-	-	-	1	
1 and 2	1 and 3	BMS5V	147445	-	-	-	1	
	1 and 4	BMS6V	147446	-	-	-	1	
1 and 3	1 and 4	BMS7V	147447	-	-	-	1	
	2 and 3	BMS8V	147448	-	-	-	1	
2 and 3	2 and 4	BMS9V	147449	-	-	-	1	
	3 and 4	BMSAV	147450	-	-	-	1	
2 and 4	1, 2 and 3	BMSBV	147451	-	-	-	1	
	1, 2 and 4	BMSCV	147452	-	-	-	1	
3 and 4	1, 3 and 4	BMSDV	147453	-	-	-	1	
	2, 3 and 4	BMSEV	147454	-	-	-	1	
1, 2, 3 and 4	BMSFV	147455	-	-	-	1		



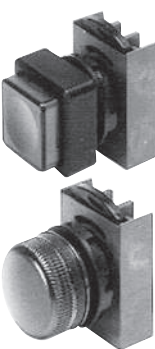
Control and signalling units

Other operators 22 mm

	Colour	Metal, round, satin chrome	Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.	
		Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.		
Toggle switch Incl. flange for 2 contact blocks	2 positions, fixed black	BMXCD	147456	BFXCD	147191	BSXCD	147692	1
	3 positions, fixed black	BMXCB	147457	-	-	-	-	1
Selector push-button switch Incl. flange for 2 contact blocks 	2 positions, fixed black	BMD2G	147458	-	-	-	-	1
	3 positions, fixed black	BMD4G	147459	-	-	-	-	1
Joystick Incl. flange for 2 contact blocks  	3 positions, 1 transient, 0 and 3 fixed black	BMN2A	147462	-	-	-	-	1
	3 positions, 1 and 3 transient, 0 fixed black	BMN2T	147461	BFN2T	147194	-	-	1
	3 positions, 1 and 3 fixed black	BMN2F	147460	BFN2F	147193	-	-	1
	3 positions, 3 transient, 0 and 1 fixed black	BMN2B	147463	-	-	-	-	1
	5 positions, 1,2,3 and 4 transient, 0 fixed, with interlock black	BMB4T	147467	BFB4T	147200	-	-	1
	5 positions, 1,2,3 and 4 transient, 0 fixed, without interlock black	BMN4T	147465	BFN4T	147198	-	-	1
	5 positions, fixed, with interlock black	BMB4F	147466	BFB4F	147199	-	-	1
	5 positions, fixed, without interlock black	BMN4F	147464	BFN4F	147197	-	-	1
Push-button with emergency lever Incl. flange for 2 contact blocks	Can be operated from all directions red	BMTWR	147468	-	-	-	-	1
Reset push-button Without flange for contact blocks 	With »R« Symbol blue	BMTRG	147469	BFTRG	147202	-	-	1

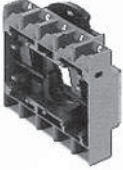
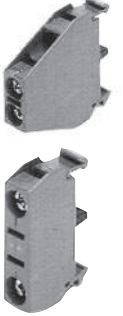


Control and signalling units

Other operators 22 mm

	Colour	Metal, round, satin chrome		Thermoplastic, round, satin black		Thermoplastic, square, satin black		Pack.
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
 <p>Potentiometer operator</p>	Black	BMUPZ	147470	BFUPZ	147203	BSUPZ	147695	1
<p>Buzzer</p>	Black, for AC/DC 24V	-	-	BFUAZ	147204	-	-	1
	110 - 240V	-	-	BFUBZ	147205	-	-	1
 <p>Double function push-button (IP40) Incl. flange for 2 contact blocks</p>	With white pilot light and I/O symbols green/red	-	-	-	-	BSDL01	147753	1
	With white pilot light, no symbols green/red	-	-	-	-	BSDL00	147752	1
	Red cap raised, with I/O symbols green/red	-	-	-	-	BSDR01	147755	1
	Red cap raised, no symbols green/red	-	-	-	-	BSDR00	147754	1
 <p>Pilot light Incl. flange for bulb power supply</p>	Suitable for labelling and symbols							
	red	BMLMR	147519	BFLMR	147254	BSLMR	147746	1
	green	BMLMG	147520	BFLMG	147255	BSLMG	147747	1
	yellow	BMLMY	147521	BFLMY	147256	BSLMY	147748	1
	blue	BMLMB	147522	BFLMB	147257	BSLMB	147749	1
	white	BMLMW	147523	BFLMW	147258	BSLMW	147750	1
	transparent	BMLMC	147524	BFLMC	147259	BSLMC	147751	1
	Clearly translucent, cannot be labelled							
	red	BMLKR	148217	-	-	-	-	1
	green	BMLKG	148218	-	-	-	-	1
	yellow	BMLKY	148219	-	-	-	-	1
	blue	BMLKB	148220	-	-	-	-	1
	transparent	BMLKC	148222	-	-	-	-	1

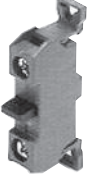

Control and signalling units

Contact blocks and power supplies for panel mounting

		Contacts, rated voltage	Cat. No.	Ref. No.	Pack.	
	Flanges	With 3 positions: Coming as standard with the cap	BTFC3	148230	1	
		With 5 positions	BTFC5	148231		
	Contact blocks	Flat-plug connection 6 x 0.8 or 2 x 2.8 x 0.8mm				
		1 NC	SEF01	147759	1	
		1 NO	SEF10	147758	1	
		Screw connection				
		1 NC	SES01	147757	1	
		1 NO	SES10	147756	1	
		2 NC	SEU02	147764	1	
		1 NO 1 NC contact	SEU11	147762	1	
		2 NO	SEU20	147763	1	
		1 NC late opening	SEV01V	147761	1	
1 NO early closing	SEV10V	147760	1			
	Lamp-holder unit UL/CSA max. 250 V, 2W	Flat-plug connection 6 x 0.8 or 2 x 2.8 x 0.8mm max. 380V, 2W	without BA 9s bulb	BLNF0	147775	1
		With transformer, 50/60 Hz, screw connection	with 6V 1.2W BA 9s bulb			
		110 - 120V/6V	with 6V 1.2W BA 9s bulb	BLTVJ	147770	1
		220 - 250V/6V	with 6V 1.2W BA 9s bulb	BLTVN	147771	1
		380V /6V	with 6V 1.2W BA 9s bulb	BLTVU	147772	1
		415 - 440V/6V	with 6V 1.2W BA 9s bulb	BLTVW	147773	1
		480 - 500V/6V	with 6V 1.2W BA 9s bulb	BLTVY	147774	1
		With resistor, lamp test (diode), screw connection	with 130V 2W BA 9s bulb			
		220 - 240V AC/DC		BLNVR	147769	1
		With resistor, screw connection	with 130V 2W BA 9s bulb			
		220 - 240V AC/DC		BLNVN	147767	1
		With resistor and diode, screw connection	with 130V 2W BA 9s bulb			
220 - 240V AC		BLNVD	148224	1		
Screw connection max. 380V, 2W	without BA 9s bulb					
		BLNV0	147765	1		
Screw connection with lamp test connection (diode)	without BA 9s bulb max. 300V, AC/DC, 2W					
		BLNVP	147768	1		
	Flashing light Y1 + 2 closed: steady light Y1 + 2 open: flashing light	Screw connection 24V AC/DC	with 24V 2W BA 9s bulb	BLMVD	147776	1
		With transformer, 50/60 Hz, screw connection	with 6V 0.6W BA 9s bulb			
		110 - 120V/6V	with 6V 0.6W BA 9s bulb	BTMVJ	147777	1
		220 - 250V/6V	with 6V 0.6W BA 9s bulb	BTMVN	147778	1
		380V /6V	with 6V 0.6W BA 9s bulb	BTMVU	147779	1

Control and signalling units

Contact blocks and power supplies for base mounting

		Contacts, rated voltage	Cat. No.	Ref. No.	Pack.
	Contact block	Screw connection			
		1 NC	SEB01	147783	1
		1 NO	SEB10	147782	1
	Lamp-holder unit	Screw connection			
		max. 380V, AC/DC, 2W	without BA 9s bulb	BDNBO	147784

Control and signalling units

Push-button stations







Plastic enclosure IP66
Including mounting rail for base mounting

Description	Cat. No.	Ref. No.	Pack.
Thermoplastic grey			
1 operator	BI01	148238	1
2 operators	BI02	148239	1
3 operators	BI03	148240	1
4 operators	BI04	148241	1
6 operators	BI06	148242	1
Thermoplastic grey with yellow cover			
1 control point	BIG1	148237	1
Metal enclosure			
Grey			
1 operator	BMDG1	148052	1
1 operator 1M	BMDM1	148053	1
2 operators	BMDG2	148054	1
2 operators 2M	BMGM2	148055	1
3 operators	BMDG3	148056	1
4 operators, 2 horizontal	BMDG4	148057	1
4 operators	BMDM4	148058	1
6 operators, 2 horizontal	BMDG6	148059	1

Metal enclosure
For front mounting of contact blocks
and lamp holder unit





Control and signalling units

Accessories

	Description	Cat. No.	Ref. No.	Pack.	
 <p>Insert holder with neutral insert engravable, background black/red, white text</p>	Standard 30 x 50mm, for round operators, for inserts 27 x 16mm	BZST1	148062	1	
	Extended 45 x 50mm, for round operators, for inserts 42 x 16mm	BZST2	148063	1	
	Standard 30 x 50mm, for square operators, for inserts 27 x 16mm	BZST3	148064	1	
 <p>Round plate yellow</p>	Diameter 59mm				
	without text	GKSOC	148114	1	
	NOT-AUS	GKSDC	148115	1	
	EMERGENCY-STOP	GKSEC	148116	1	
	ARRET-D'URGENCE	GKSFC	148117	1	
	EMERGENZA	GKSIC	148088	1	
	Diameter 78mm				
	without text	GKSOB	148118	1	
	NOT-AUS	GKSDB	148119	1	
	EMERGENCY-STOP	GKSEB	148120	1	
	ARRET-D'URGENCE	GKSEB	148121	1	
	EMERGENZA	GKSIB	148122	1	
	 <p>Lamp</p>	Neon lamp			
		110V/0,11W	BA110	148132	1
220V/0,33W		BA220	148133	1	
Bulb					
6V/0,6W		BA006	148124	1	
6V/1,5W		BA106	148125	1	
12V/2W		BA012	148126	1	
24V/2W		BA024	148127	1	
30V/2,1W		BA030	148128	1	
48V/2W		BA048	148129	1	
60V/1,2W		BA060	148130	1	
130V/2W		BA130	148131	1	
 <p>Spare key</p>		Code 3095	BSE95	148149	1
		Code 9901	BSE01	148150	1
		Code 9902	BSE02	148151	1
	Code 9903	BSE03	148152	1	
	Code 9904	BSE04	148153	1	
	Code 9905	BSE05	148154	1	
	Code 9910	BSE10	148155	1	
	Code 9916	BSE16	148156	1	

Control and signalling units

Accessories

	Description	Cat. No.	Ref. No.	Pack.
 <p>Protection caps (rubber) for increasing the protection degree</p>	For square, flush double function push-buttons for increased protection to IP 66 transparent	BSCDT	148234	1
	For square, raised double function push-buttons for increased protection to IP 66 transparent	BSADT	148235	1
	For square, flush push-buttons black	BSCPS	148163	1
	red	BSCPR	148164	1
	green	BSCPG	148165	1
	yellow	BSCPY	148166	1
	transparent	BSCPT	148167	1
	For square, raised push-buttons transparent	BSAPT	148168	1
	For round, flush push-buttons black	BGCPS	148157	1
	red	BGCPR	148158	1
	green	BGCPG	148159	1
	yellow	BGCPY	148160	1
	transparent	BGCPT	148161	1
For round, raised push-buttons transparent	BGAPT	148162	1	
 <p>Plugs</p>	Square	BSHP3	148170	1
	Round	BRHPR	148169	1
<p>Adapter</p>	For using ø 22mm operators in ø 30mm openings plastic, black, round	BCRAX	148227	1
	Metal, burnished chroming, octagonal	BCRAM	148228	1
 <p>Lockable cover</p>	For push-buttons, pilot lights, selector switches with lever	BCRCL	148171	1
 <p>Collar, guard ring</p>	For mushroom-head push-buttons ø 40mm	BCFS3	148229	1
<p>Adapter</p>	(Converts round to square) plastic, black, 30 x 30mm for all push-buttons (except mushroom-head form with forced opening and mushroom-head push-button with 3 positions)	BCRSN	148226	1
 <p>Adapter Push on/Push off</p>	For push-buttons and illuminated push-buttons only with 1-pole contact blocks only for early closing NOs (leading) type SEV 10v	BCDPP	148172	1
 <p>Extended screw</p>	For push-buttons length 80 - 170mm	BCVLR	148173	1
<p>Insert</p>	For actuating the central contact	BSHAC	148175	1
<p>Tools</p>	Locking-ring wrench for mounting ring	BCWAF	148166	1
	Bulb extractor	BCWAL	148177	1
	Cap extractor	BCWAG	148178	1

Control and signalling units

Accessories

White-on plates
Bilaminated, self adhesive, 20 x 20 mm
Black background
engrivable for white texts

English				German			
Description	Cat. No.	Ref. No.	Pack.	Description	Cat. No.	Ref. No.	Pack.
0	BZG76	147711	1	For push-button enclosures, black/red, text white			
I	BZG77	147712	1				
II	BZG78	147713	1	AB	BZG51	148249	1
II	BZG79	147714	1	AUF	BZG52	148250	1
0 - I	BZG80	147715	1	AUS	BZG53	148251	1
I - 0 - II	BZG81	147716	1	AUS EIN	BZG54	148252	1
	BZG82	147717	1	BETRIEB	BZG55	148253	1
FORWARD	BZG84	147719	1	EIN	BZG56	148254	1
DOWN	BZG85	147720	1	HALT	BZG57	148255	1
UP	BZG86	147721	1	HALT AUTO	BZG58	148256	1
ON	BZG87	147722	1	HALT 0 AUTO	BZG59	148257	1
OFF	BZG88	147723	1	HEBEN	BZG60	148258	1
CLOSE	BZG89	147724	1	LANGSAM	BZG61	148259	1
OPEN	BZG90	147725	1	LINKS	BZG62	148228	1
REVERSE	BZG91	147726	1	NOT AUS	BZG63	147698	1
AUTO	BZG92	147727	1	OFFNEN	BZG64	147699	1
LEFT	BZG93	147728	1	RECHTS	BZG65	147700	1
RIGHT	BZG94	147729	1	SCHLIESSEN	BZG66	147701	1
Without text	BZG83	147718	1	SCHNELL	BZG67	147702	1
				SENKEN	BZG68	147703	1
				START	BZG69	147704	1
				STOP	BZG70	147705	1
				STÖRUNG	BZG71	147706	1
				TIPPEN	BZG72	147707	1
				VOR	BZG73	147708	1
				ZU	BZG74	147709	1
				ZURÜCK	BZG75	147710	1

Rectangular inserts
27 x 16 mm
for insertholders 30 x 50 mm

CLOSE	BZE05	148099	1	Labelled, black/red, text white			
DOWN	BZE03	148102	1	AB	BZS11	148070	1
FAST	BZE08	148105	1	AUF	BZS10	148071	1
FORW.-0-REVERSE	BZE39	148113	1	AUS EIN	BZS19	148073	1
FORW.-REVERSE	BZE31	148110	1	AUS (red)	BZS07	148072	1
FORWARD	BZE14	148097	1	AUTO HAND	BZS21	148077	1
HAND-AUTO	BZE43	148108	1	AUTO 0 HAND	BZS24	148078	1
LEFT	BZE22	148103	1	BETRIEB	BZS23	148074	1
OFF-ON	BZE33	148111	1	EIN	BZS06	148075	1
OPEN	BZE06	148100	1	HALT	BZS30	148076	1
OPEN-CLOSE	BZE34	148107	1	HEBEN	BZS14	148079	1
REVERSE	BZE15	148098	1	I	BZS03	148066	1
RIGHT	BZE24	148104	1	II	BZS04	148067	1
SLOW	BZE07	148106	1	II-0-I	BZS34	148069	1
START	BZE02	148095	1	LANGSAM	BZS08	148080	1
STOP (red)	BZE01	148096	1	LINKS	BZS13	148081	1
STOP-START	BZE32	148109	1	NOT AUS (red)	BZS20	148082	1
UP	BZE04	148101	1	0	BZS02	148065	1
				0-I	BZS05	148068	1
				ÖFFNEN	BZS31	148083	1
				RECHTS	BZS12	148084	1
				SCHLIESSEN	BZS32	148085	1
				SCHNELL	BZS09	148086	1
				SENKEN	BZS15	148087	1
				STÖRUNG	BZS22	148090	1
				TIPPEN	BZS33	148091	1
				VOR	BZS28	148092	1
				ZU	BZS16	148093	1
				ZURÜCK	BZS29	148094	1

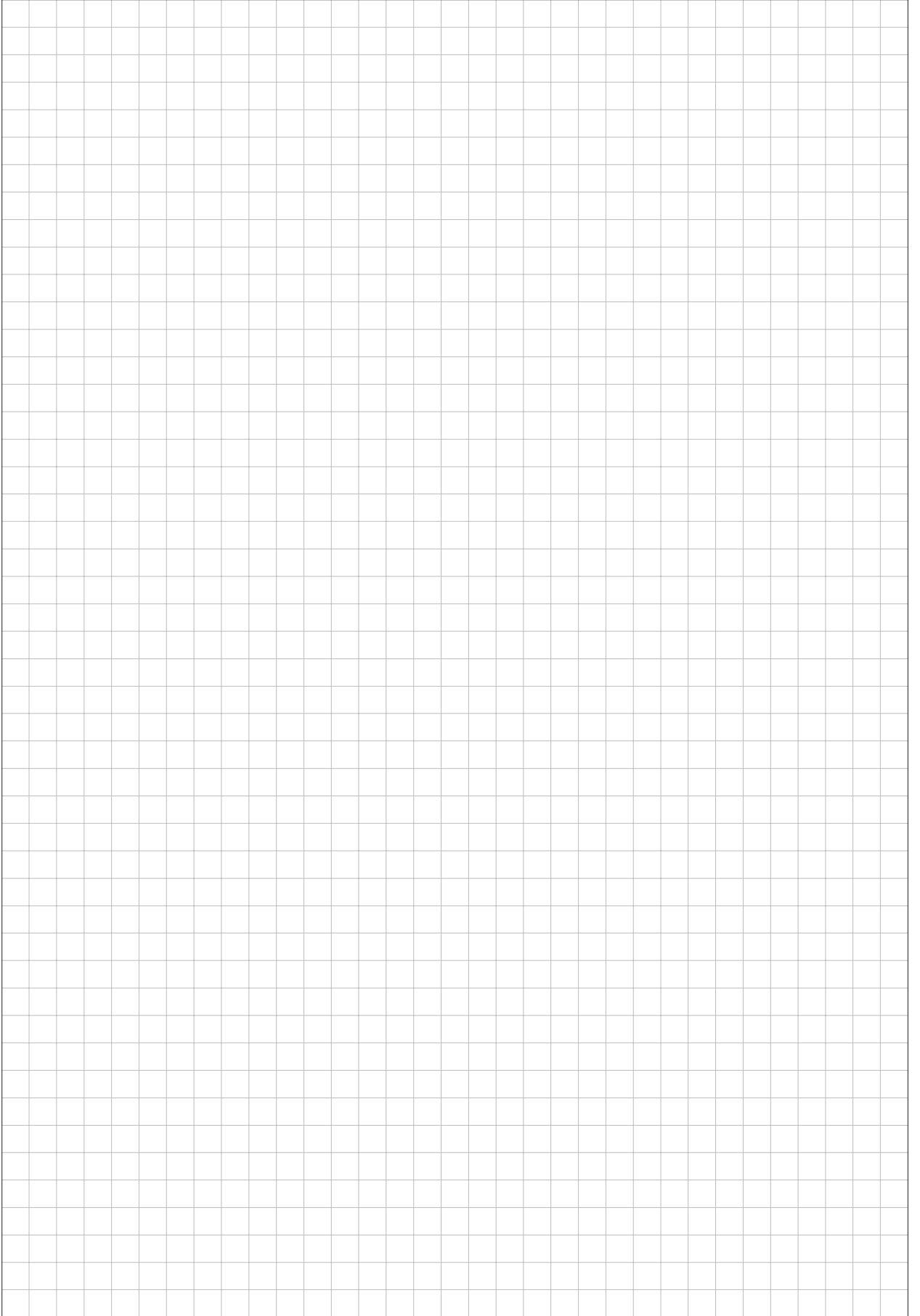
Inserts engraveable

Label size 42 x 16mm for insertholders 45 x 50 mm black/red, text white no text	BZSUB	148061	1	Label size 27 x 16mm for insertholders 30 x 50 mm black/red, text white no text	BZSOB	148060	1
				With text on black label (red label please state) extra price.			

Label insert

For contact blocks and lamp units white	BZSKL	148243	1	-	-	-	1
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Notes



- I.2 Series **Mbs25**
- I.3 Accessories for series Mbs25

- I.5 Series **Mbs32**
- I.6 Series **Ms32**

- I.7 Series **Mbs63**
- I.8 Series **Ms63**

- I.9 Auxiliaries for series Mbs32/63
- I.11 Accessories for series Mbs32/63

- I.12 Enclosures for series Mbs32/63

- I.14 Coordination tables for fuseless starters

Miniature circuit breakers A

Residential current circuit breakers B

Busbar systems C

Comfort functions/Energy control D

Residential enclosures E

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units H

Manual motor starters I

Moulded case circuit breakers J

Air circuit breakers K

Fuse systems/Loadbreak disconnectors L

General purpose enclosures M

System enclosures N

Numerical index X

Manual motor starters

Series Mbs25



Basic breaker
without auxiliary
switches

b-release [A]	s-release [A]	Cat. No.	Ref. No.	Pack.
0.1 - 0.16	1.9	Mbs25-001	254168	1
0.16 - 0.25	3	Mbs25-002	254174	1
0.25 - 0.4	4.8	Mbs25-004	254180	1
0.4 - 0.63	7.5	Mbs25-006	254189	1
0.63 - 1	12	Mbs25-010	254198	1
1 - 1.6	19	Mbs25-016	254209	1
1.6 - 2.5	30	Mbs25-025	254220	1
2.5 - 4	48	Mbs25-040	254231	1
4 - 6.3	75	Mbs25-063	254244	1
6.3 - 10	120	Mbs25-100	254256	1
10 - 16	190	Mbs25-160	254266	1
16 - 20	240	Mbs25-200	254275	1
20 - 25	300	Mbs25-250	254282	1

Version for transformer
without auxiliary
switches

0.1 - 0.16	3.4	Mbs25-001T	254169	1
0.16 - 0.25	5.5	Mbs25-002T	254175	1
0.25 - 0.4	8.8	Mbs25-004T	254183	1
0.4 - 0.63	13	Mbs25-006T	254191	1
0.63 - 1	21	Mbs25-010T	254200	1
1 - 1.6	33	Mbs25-016T	254212	1
1.6 - 2.5	56	Mbs25-025T	254222	1
2.5 - 4	80	Mbs25-040T	254234	1
4 - 6.3	120	Mbs25-063T	254247	1
6.3 - 10	190	Mbs25-100T	254258	1
10 - 16	300	Mbs25-160T	254268	1
16 - 20	390	Mbs25-200T	254276	1
20 - 25	390	Mbs25-250T	254284	1

Motor protective circuit breaker Mbs25

Short-circuit breaking capacity acc. to IEC 947-2

b-release setting range [A]	230 V			400 V			415 V			500 V			690 V		
	Icu [kA]	Ics [kA]	max. fuse (gL/gG) [kA]	Icu [kA]	Ics [kA]	max. fuse (gL/gG) [kA]	Icu [kA]	Ics [kA]	max. fuse (gL/gG) [kA]	Icu [kA]	Ics [kA]	max. fuse (gL/gG) [kA]	Icu [kA]	Ics [kA]	max. fuse (gL/gG) [kA]
0.1 - 0.16	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	42	42	(1)
0.16 - 0.25	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	42	42	(1)
0.25 - 0.4	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	42	42	(1)
0.4 - 0.63	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	42	42	(1)
0.63 - 1.0	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	1	1	20
1.0 - 1.6	65	65	(1)	65	65	(1)	65	65	(1)	65	65	(1)	1	1	20
1.6 - 2.5	65	65	(1)	65	65	(1)	10	5	25	3	1.5	25	1	0.5	20
2.5 - 4	65	65	(1)	10	5	35	10	5	35	3	1.5	35	1	0.5	25
4 - 6.3	65	37.5	(1)	10	5	50	10	5	50	3	1.5	50	1	0.5	35
6.3 - 10	10	5	80	4	2	80	4	2	80	3	1.5	50	1	0.5	35
10 - 16	6	3	80	4	2	80	3.5	1.7	80	3	1.5	63	1	0.5	35
16 - 20	6	3	80	4	2	80	2.5	1.2	80	1.5	0.7	63	1	0.5	50
20 - 25	6	3	80	4	2	80	2.5	1.2	80	1.5	0.7	63	1	0.5	50

(1) No fuse necessary up to the indicated current values of Icu bzw. Ics.

If the short circuit current is higher than the short-circuit breaking capacity, it is necessary to use a fuse.

To increase the short circuit breaking capacity, the manual motor starter Mbs25 can be combined with the limiter type id 50.

Following are the values for the short-circuit capacity with this combinator:





Motor protective circuit breaker Mbs25 + Rapid module id50

Short-circuit breaking capacity acc. to IEC 947-2

Short-circuit breaking capacity In [A]	230 V		400 V	
	Icu [A]	Ics [A]	Icu [A]	Ics [A]
< 2.5	65	65	65	65
< 6.3	65	65	50	50
< 25	50	50	50	50




Manual motor starters

Accessories for series Mbs25

	Description	Cat. No.	Ref. No.	Pack.
 <p>Aux. switch block type HS 9</p>	For side mounting			
	1NO, 1NC	HS 9.11-Mbs25	254488	1
	2NO	HS 9.20-Mbs25	254495	1
	1NO (early make), 1NC	HS 9V.11-Mbs25	254499	1
	2NO (early make)	HS 9V.20-Mbs25	254502	1
	To increase contact reliability with small voltages 4 - 30V and 4 - 100mA, 1 C/O	HS 9K.001-Mbs25	254519	1
 <p>Aux. switch block type HS 10</p>	For internal mounting			
	1NO, 1NC	HS 10.11-Mbs25	254515	1
<p>Trip indication switch type HS 10R</p>	For internal mounting			
	1NO	HS10R.10-Mbs25	254504	1
	1NC	HS10R.01-Mbs25	254511	1
<p>PE- and Neutral conductor block</p>	For side mounting			
	Complete with through PE and N conductors Wiring cross section 0.75 - 2.5mm ²	PE/N-Mbs25	254459	1
 <p>Shunt trip type a</p>	For internal mounting			
	AC 220/230V 50Hz, 240V 60Hz	a51-Mbs25	254413	1
	AC 380/400V 50Hz, 440V 60Hz	a52-Mbs25	254414	1
	AC 110V 50Hz, 120V 60Hz	a53-Mbs25	254415	1
<p>Terminal clamps</p>	For side mounting			
	4 terminals for a- or r-release	KPS-Mbs25	254460	1
<p>Undervoltage release type r</p>	For internal mounting			
	AC 220/230V 50Hz, 240V 60Hz	r51-Mbs25	254396	1
	AC 380/400V 50Hz, 440V 60Hz	r52-Mbs25	254397	1
	AC 110V 50Hz, 120V 60Hz	r53-Mbs25	254398	1
 <p>Rapid-Module type id 50</p>	For individual or group protection			
	increases the breaking capacity of the Mbs25 up to I _{cu} 42kA/3~ 400 V; I _u = 32A in combination with Mbs25	id50-Mbs25	254525	1
<p>3 phase insulated busbar section type d</p>	Fully insulated, U_i = 690 V; I_u = 63 A, for Mbs25 with HS 9			
	with 2 devices 3-phase, 99mm long	d21-Mbs25	254540	1
	with 3 devices 3-phase, 154mm long	d31-Mbs25	254545	1
	with 4 devices 3-phase, 208mm long	d41-Mbs25	254533	1
	with 5 devices 3-phase, 262mm long	d51-Mbs25	254535	1

Manual motor starters

Accessories for series Mbs25

	Description	Cat. No.	Ref. No.	Pack.
Protective cover	3-pole for unused busbar terminations	d-BSK	254542	1
Terminal block type db	Fully insulated, U_i = 690 V; I_u = 63 A 3-pole for 3-phase insulated busbar section type d	db	254537	1
 Moulded enclosure type i	Surface mounting Protection degree IP41	i41	254430	1
	Protection degree IP55	i55	254435	1
	Kit IP 55 for enclosure IP41	i-IP41/55	254452	1
Enclosure type gi	Especially for the American and Canadian market Protection grade IP 55 with NPT-threads 2 x 1/2" and 2 x 3/4"	gi55	254522	1
 Moulded front plate type it	Flush mounting Protection degree IP41	it41	254441	1
	Protection degree IP55	it55	254445	1
	Kit IP 55 for front plate IP41	it-IP41/55	254455	1
Neutral conductor	For enclosure and front plate	i/it-N	254449	1
Padlocking device	For enclosure IP41 and front plate (colour yellow) for 3 padlocks in the OFF position	i/it-SV	254422	1
 Emergency OFF device	For enclosure IP41 and front plate IP41 Mushroom head latched, pull to release	i/it-PTZ	254424	1
	For enclosure IP41 and front plate IP41, protection degree IP55, red pushbutton with yellow backplate Mushroom head key lockable (fact. ass.), release with key	i/it-PTS	254427	1
	For enclosure IP41 and front plate IP41 Mushroom head transient	i/it-PTT	254428	1

Thermal and magnetic motor protection circuit breakers

Series Mbs32 - Standard breaking capacity

CLASS 10



Rated power 3 phase motors at 400Vac Pn	Rated current In ⁽¹⁾	Thermal current setting range	Instantaneous short-circuit release	Rated ultimate short-circuit breaking capaci- ty at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
kW	A	A	A					
0.02	0.16	0.1 - 0.16	2.1	100	100	Mbs32SG001	107395	5
0.06	0.25	0.16 - 0.25	3.3	100	100	Mbs32SG002	107396	5
0.09	0.4	0.25 - 0.4	5.2	100	100	Mbs32SG004	107397	5
0.12/0.18	0.63	0.4 - 0.63	8.2	100	100	Mbs32SG006	107398	5
0.25	1	0.63 - 1	13	100	100	Mbs32SG010	107399	5
0.37/0.55	1.6	1 - 1.6	20.8	100	100	Mbs32SG016	107400	5
0.75	2.5	1.6 - 2.5	32.5	100	100	Mbs32SG025	107401	5
1.5	4	2.5 - 4	52	100	100	Mbs32SG040	107402	5
2.2	6.3	4 - 6.3	81.9	100	100	Mbs32SG063	107403	5
3/4	10	6.3 - 10	130	100	100	Mbs32SG100	107404	5
5.5	13	9 - 13	169	50	38	Mbs32SG130	107405	5
7.5	16	11 - 16	208	25	19	Mbs32SG160	107406	5
10	20	14 - 20	260	25	19	Mbs32SG200	107407	5
11	25	19 - 25	325	25	19	Mbs32SG250	107408	5
15	32	24 - 32	416	25	19	Mbs32SG320	107409	5

(1) Rated current: highest thermal current setting range value.

Series Mbs32 - High breaking capacity

CLASS 10



Rated power 3 phase motors at 400Vac Pn	Rated current In ⁽¹⁾	Thermal current setting range	Instantaneous short-circuit release	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
kW	A	A	A					
0.02	0.16	0.1 - 0.16	2.1	100	100	Mbs32HG001	107419	5
0.06	0.25	0.16 - 0.25	3.3	100	100	Mbs32HG002	107420	5
0.09	0.4	0.25 - 0.4	5.2	100	100	Mbs32HG004	107421	5
0.12/0.18	0.63	0.4 - 0.63	8.2	100	100	Mbs32HG006	107422	5
0.25	1	0.63 - 1	13	100	100	Mbs32HG010	107423	5
0.37/0.55	1.6	1 - 1.6	20.8	100	100	Mbs32HG016	107424	5
0.75	2.5	1.6 - 2.5	32.5	100	100	Mbs32HG025	107425	5
1.5	4	2.5 - 4	52	100	100	Mbs32HG040	107426	5
2.2	6.3	4 - 6.3	81.9	100	100	Mbs32HG063	107427	5
3/4	10	6.3 - 10	130	100	100	Mbs32HG100	107428	5
5.5	13	9 - 13	169	100	100	Mbs32HG130	107429	5
7.5	16	11 - 16	208	50	38	Mbs32HG160	107430	5
10	20	14 - 20	260	50	38	Mbs32HG200	107431	5
11	25	19 - 25	325	50	38	Mbs32HG250	107432	5
15	32	24 - 32	416	50	38	Mbs32HG320	107433	5

(1) Rated current: highest thermal current setting range value.

Magnetic motor protection circuit breakers

Series Mss32 - Standard breaking capacity



Rated power 3 phase motors at 400Vac Pn kW	Rated current In A	Thermal current setting range (1) A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
0.02	0.16	-	2.1	100	100	Ms32SG001	107443	5
0.06	0.25	-	3.3	100	100	Ms32SG002	107444	5
0.09	0.4	-	5.2	100	100	Ms32SG004	107445	5
0.12/0.18	0.63	-	8.2	100	100	Ms32SG006	107446	5
0.25	1	-	13	100	100	Ms32SG010	107447	5
0.37/0.55	1.6	-	20.8	100	100	Ms32SG016	107448	5
0.75	2.5	-	32.5	100	100	Ms32SG025	107449	5
1.5	4	-	52	100	100	Ms32SG040	107450	5
2.2	6.3	-	81.9	100	100	Ms32SG063	107451	5
3/4	10	-	130	100	100	Ms32SG100	107452	5
5.5	13	-	169	50	38	Ms32SG130	107453	5
7.5	16	-	208	25	19	Ms32SG160	107454	5
10	20	-	260	25	19	Ms32SG200	107455	5
11	25	-	325	25	19	Ms32SG250	107456	5
15	32	-	416	25	19	Ms32SG320	107457	5

(1) Select appropriate thermal overload relay for the starter. See chapter G, pages G.3-G.6

Series Mss32 - High breaking capacity



Rated power 3 phase motors at 400Vac Pn kW	Rated current In A	Thermal current setting range (1) A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capaci- ty at 400V Icu kA	Rated service short-circuit breaking capaci- ty at 400V Ics kA	Cat. No.	Ref. No.	Pack.
0.02	0.16	-	2.1	100	100	Ms32HG001	107467	5
0.06	0.25	-	3.3	100	100	Ms32HG002	107468	5
0.09	0.4	-	5.2	100	100	Ms32HG004	107469	5
0.12/0.18	0.63	-	8.2	100	100	Ms32HG006	107470	5
0.25	1	-	13	100	100	Ms32HG010	107471	5
0.37/0.55	1.6	-	20.8	100	100	Ms32HG016	107472	5
0.75	2.5	-	32.5	100	100	Ms32HG025	107473	5
1.5	4	-	52	100	100	Ms32HG040	107474	5
2.2	6.3	-	81.9	100	100	Ms32HG063	107475	5
3/4	10	-	130	100	100	Ms32HG100	107476	5
5.5	13	-	169	100	100	Ms32HG130	107477	5
7.5	16	-	208	50	38	Ms32HG160	107478	5
10	20	-	260	50	38	Ms32HG200	107479	5
11	25	-	325	50	38	Ms32HG250	107480	5
15	32	-	416	50	38	Ms32HG320	107481	5

(1) Select appropriate thermal overload relay for the starter. See chapter G, pages G.3-G.6

Thermal and magnetic motor protection circuit breakers

Series Mbs63 - Standard breaking capacity

CLASS 10



Rated power 3 phase motors at 400Vac Pn kW	Rated current In ⁽¹⁾ A	Thermal current setting range A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
3/4	10	6.3 - 10	130	100	100	Mbs63SG100	107410	1
5.5	13	9 - 13	169	25	19	Mbs63SG130	107411	1
7.5	16	11 - 16	208	25	19	Mbs63SG160	107412	1
10	20	14 - 20	260	25	19	Mbs63SG200	107413	1
11	25	19 - 25	325	25	19	Mbs63SG250	107414	1
15	32	24 - 32	416	25	19	Mbs63SG320	107415	1
18.5	40	28 - 40	520	25	19	Mbs63SG400	107416	1
22	50	35 - 50	650	25	19	Mbs63SG500	107417	1
30	63	45 - 63	819	25	19	Mbs63SG630	107418	1

(1) Rated current: highest thermal current setting range value.

Series Mbs63 - High breaking capacity

CLASS 10



Rated power 3 phase motors at 400Vac Pn kW	Rated current In ⁽¹⁾ A	Thermal current setting range A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
3/4	10	6.3 - 10	130	100	100	Mbs63HG100	107434	1
5.5	13	9 - 13	169	50	38	Mbs63HG130	107435	1
7.5	16	11 - 16	208	50	38	Mbs63HG160	107436	1
10	20	14 - 20	260	50	38	Mbs63HG200	107437	1
11	25	19 - 25	325	50	38	Mbs63HG250	107438	1
15	32	24 - 32	416	50	38	Mbs63HG320	107439	1
18.5	40	28 - 40	520	50	38	Mbs63HG400	107440	1
22	50	35 - 50	650	50	38	Mbs63HG500	107441	1
30	63	45 - 63	819	50	38	Mbs63HG630	107442	1

(1) Rated current: highest thermal current setting range value.

Magnetic motor protection circuit breakers

Series Ms63 - Standard breaking capacity



Rated power 3 phase motors at 400Vac Pn kW	Rated current In A	Thermal current setting range ⁽¹⁾ A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
3/4	10	-	130	100	100	Ms63SG100	107458	1
5.5	13	-	169	25	19	Ms63SG130	107459	1
7.5	16	-	208	25	19	Ms63SG160	107460	1
10	20	-	260	25	19	Ms63SG200	107461	1
11	25	-	325	25	19	Ms63SG250	107462	1
15	32	-	416	25	19	Ms63SG320	107463	1
18.5	40	-	520	25	19	Ms63SG400	107464	1
22	50	-	650	25	19	Ms63SG500	107465	1
30	63	-	819	25	19	Ms63SG630	107466	1

(1) Select appropriate thermal overload relay for the starter. See chapter G, pages G.3-G.6

Series Ms63 - High breaking capacity

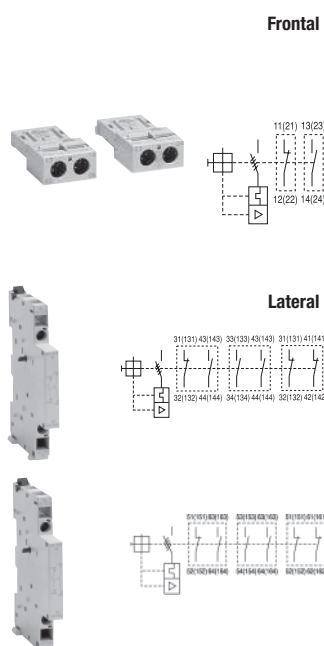


Rated power 3 phase motors at 400Vac Pn kW	Rated current In A	Thermal current setting range ⁽¹⁾ A	Instantaneous short-circuit release A	Rated ultimate short-circuit breaking capacity at 400V Icu kA	Rated service short-circuit breaking capacity at 400V Ics kA	Cat. No.	Ref. No.	Pack.
3/4	10	-	130	100	100	Ms63HG100	107482	1
5.5	13	-	169	50	38	Ms63HG130	107483	1
7.5	16	-	208	50	38	Ms63HG160	107484	1
10	20	-	260	50	38	Ms63HG200	107485	1
11	25	-	325	50	38	Ms63HG250	107486	1
15	32	-	416	50	38	Ms63HG320	107487	1
18.5	40	-	520	50	38	Ms63HG400	107488	1
22	50	-	650	50	38	Ms63HG500	107489	1
30	63	-	819	50	38	Ms63HG630	107490	1

(1) Select appropriate thermal overload relay for the starter. See chapter G, pages G.3-G.6

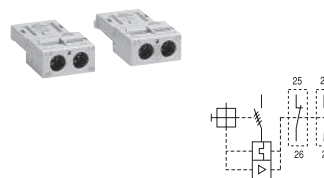
Auxiliaries for series Mbs32/63

Auxiliary contact blocks



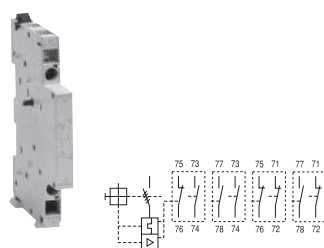
Description	For use with	Type	Cat. No.	Ref. No.	Pack.
Maximum 2 auxiliary contact blocks per manual motor starter	M(b)s32... and M(b)s63...	1 NO	MAHS10FB	136160	5
	M(b)s32... and M(b)s63...	1 NC	MAHS01FB	136161	5
Two contacts Side mounting on the left	M(b)s32... and M(b)s63...	1 NO + 1 NC	MAHS11LL	136162	10
	M(b)s32... and M(b)s63...	2 NO	MAHS20LL	136163	10
	M(b)s32... and M(b)s63...	2 NC	MAHS02LL	136164	10
Two contacts Side mounting on the right	M(b)s32... and M(b)s63...	1 NO + 1 NC	MAHS11LR	136165	10
	M(b)s32... and M(b)s63...	2 NO	MAHS20LR	136166	10
	M(b)s32... and M(b)s63...	2 NC	MAHS02LR	136167	10

Alarm contact block



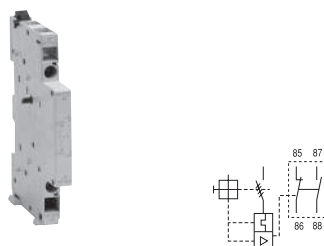
Description	For use with	Type	Cat. No.	Ref. No.	Pack.
Frontal mounting on the right	M(b)s32... and M(b)s63...	1 NO	MAHSb10FR	136157	5
Single contact	M(b)s32... and M(b)s63...	1 NC	MAHSb01FR	136158	5

Auxiliary / alarm contact block



Description	For use with	Type	Cat. No.	Ref. No.	Pack.
Side mounting on the left (front alarm contact block can not be used at the same time)	M(b)s32... and M(b)s63...	1 NO (Alarm) + 1 NO (Aux.)	MAHSd1010LL	136168	10
	M(b)s32... and M(b)s63...	1 NO (Alarm) + 1 NC (Aux.)	MAHSd1001LL	136169	10
	M(b)s32... and M(b)s63...	1 NC (Alarm) + 1 NO (Aux.)	MAHSd0110LL	136170	10
Two contacts	M(b)s32... and M(b)s63...	1 NC (Alarm) + 1 NC (Aux.)	MAHSd0101LL	136171	10

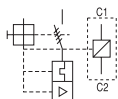
Short-circuit alarm contact block



Description	For use with	Type	Cat. No.	Ref. No.	Pack.
Side mounting on the left Two contacts NO + NC Mechanical indication marking	M(b)s32... and M(b)s63...	1 NO + 1 NC	MAHSs11LL	136172	10

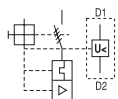
Auxiliaries for series Mbs32/63

Shunt trip device



Description	For use with	Coil voltage	Cat. No.	Ref. No.	Pack.
Side mounting on the right Can not be used together with the undervoltage trip device	M(b)s32... and M(b)s63...	24V 50/60Hz	MAaLRA1	136173	5
	M(b)s32... and M(b)s63...	48V 60Hz	MAaLRAF	136174	5
	M(b)s32... and M(b)s63...	48V 50Hz / 60V 60Hz	MAaLRAG	136175	5
	M(b)s32... and M(b)s63...	110/127V 50Hz / 120V 60Hz	MAaLRAJ	136176	5
	M(b)s32... and M(b)s63...	208V 60Hz	MAaLRAM	136177	5
	M(b)s32... and M(b)s63...	220/230V 50Hz / 240/260V 60Hz	MAaLRAN	136178	5
	M(b)s32... and M(b)s63...	240V 50Hz / 277V 60Hz	MAaLRAR	136179	5
	M(b)s32... and M(b)s63...	380/400V 50Hz	MAaLRAU	136180	5
	M(b)s32... and M(b)s63...	415/440V 50Hz / 460/480V 60Hz	MAaLRAW	136181	5
	M(b)s32... and M(b)s63...	500V 50Hz / 600V 60Hz	MAaLRAY	136182	5
	M(b)s32... and M(b)s63...	24 to 60Vdc	MAaLRDD	136183	5
	M(b)s32... and M(b)s63...	110 to 240Vdc	MAaLRDJ	136184	5

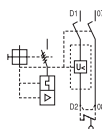
Undervoltage trip device



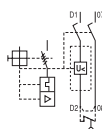
Description	For use with	Coil voltage	Cat. No.	Ref. No.	Pack.
Side mounting on the right Can not be used together with the shunt trip device	M(b)s32... and M(b)s63...	24V 50Hz	MArLRAD	136185	5
	M(b)s32... and M(b)s63...	24V 60Hz	MArLRAC	136186	5
	M(b)s32... and M(b)s63...	48V 50Hz	MArLRAG	136187	5
	M(b)s32... and M(b)s63...	48V 60Hz	MArLRAF	136188	5
	M(b)s32... and M(b)s63...	110/127V 50Hz / 120V 60Hz	MArLRAJ	136189	5
	M(b)s32... and M(b)s63...	208V 60Hz	MArLRAM	136190	5
	M(b)s32... and M(b)s63...	220/230V 50Hz / 240/260V 60Hz	MArLRAN	136191	5
	M(b)s32... and M(b)s63...	240V 50Hz / 277V 60Hz	MArLRAR	136192	5
	M(b)s32... and M(b)s63...	380/400V 50Hz	MArLRAU	136193	5
	M(b)s32... and M(b)s63...	415/440V 50Hz / 460/480V 60Hz	MArLRAW	136194	5
	M(b)s32... and M(b)s63...	500V 50Hz / 600V 60Hz	MArLRAY	136195	5



With **2NO** early make auxiliary contacts



Description	For use with	Coil voltage	Cat. No.	Ref. No.	Pack.
Side mounting on the right Can not be used together with the shunt trip device	M(b)s32*S...	24V 50Hz	MAr20LTAD	136196	5
	M(b)s32*S...	24V 60Hz	MAr20LTAC	136197	5
	M(b)s32*S...	48V 50Hz	MAr20LTAG	136198	5
	M(b)s32*S...	48V 60Hz	MAr20LTAF	136199	5
	M(b)s32*S...	110/127V 50Hz / 120V 60Hz	MAr20LTAJ	136200	5
	M(b)s32*S...	208V 60Hz	MAr20LTAM	136201	5
	M(b)s32*S...	220/230V 50Hz / 240/260V 60Hz	MAr20LTAN	136202	5
	M(b)s32*S...	240V 50Hz / 277V 60Hz	MAr20LTAR	136203	5
	M(b)s32*S...	380/400V 50Hz	MAr20LTAU	136204	5
	M(b)s32*S...	415/440V 50Hz / 460/480V 60Hz	MAr20LTAW	136205	5
	M(b)s32*S...	500V 50Hz / 600V 60Hz	MAr20LTAY	136206	5



Description	For use with	Coil voltage	Cat. No.	Ref. No.	Pack.
Side mounting on the right Can not be used together with the shunt trip device	M(b)s32H and M(b)s63...	24V 50Hz	MAr20LCAD	136207	5
	M(b)s32H and M(b)s63...	24V 60Hz	MAr20LCAC	136208	5
	M(b)s32H and M(b)s63...	48V 50Hz	MAr20LCAG	136209	5
	M(b)s32H and M(b)s63...	48V 60Hz	MAr20LCAF	136210	5
	M(b)s32H and M(b)s63...	110/127V 50Hz / 120V 60Hz	MAr20LCAJ	136211	5
	M(b)s32H and M(b)s63...	208V 60Hz	MAr20LCAM	136212	5
	M(b)s32H and M(b)s63...	220/230V 50Hz / 240/260V 60Hz	MAr20LCAN	136213	5
	M(b)s32H and M(b)s63...	240V 50Hz / 277V 60Hz	MAr20LCAR	136214	5
	M(b)s32H and M(b)s63...	380/400V 50Hz	MAr20LCAU	136215	5
	M(b)s32H and M(b)s63...	415/440V 50Hz / 460/480V 60Hz	MAr20LCAW	136216	5
	M(b)s32H and M(b)s63...	500V 50Hz / 600V 60Hz	MAr20LCAZ	136217	5

Terminal protector

Description	For use with	Cat. No.	Ref. No.	Pack.
Protection against accidental finger touch (IP20) for GPS2 manual motor starters	M(b)s63..	MArTP63	107183	50

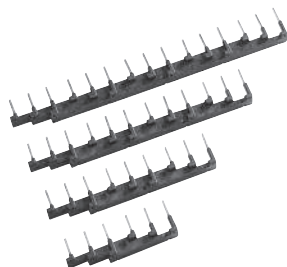
Accessories for series Mbs32/63

External handle operator



Description	For use with	Type	Cat. No.	Ref. No.	Pack.
Used for distance mounting on a panel	M(b)s32*H...	Standard (black)	MA32HB	136218	5
	M(b)s32*H ...	Emergency (red/yellow)	MA32HR	136219	5
Lockable with 1, 2 or 3 padlocks diameter 4 to 8 mm	M(b)s63...	Standard (black)	MA63HB	136220	5
	M(b)s63 ...	Emergency (red/yellow)	MA63HR	136221	5
Two types: standard and emergency applications ON/OFF/TRIPPING position marking Protection degree: IP55 Shaft mounting depths: 139.8 - 289.8 mm for MA32HB, MA32HR 161 - 311.1 mm for MA63HB, MA63HR Package parts and quantities: 1 handle unit 1 shaft 1 shaft guide 1 latch (screws) 4 mounting screws					

Busbar system




3-phase feed-in terminals







Description	For use with	Connection	Cat. No.	Ref. No.	Pack.	
Main feeding terminal Upper connection	M(b)s32...	Terminal capacity: 25 mm ²	Md32F	107188	10	
	M(b)s63...	Terminal capacity: 50 mm ²	Md63F	107189	1	
Main busbar	Modular spacing 45 mm	for 2 M(b)s32... + frontal auxiliaries	Pin	Md32B02	107035	5
		for 3 M(b)s32... + frontal auxiliaries	Pin	Md32B03	107036	5
		for 4 M(b)s32... + frontal auxiliaries	Pin	Md32B04	107037	5
		for 5 M(b)s32... + frontal auxiliaries	Pin	Md32B05	107038	5
	Modular spacing 54 mm	for 2 M(b)s32... + 9mm lateral auxiliary	Pin	Md32B12	107039	5
		for 3 M(b)s32... + 9mm lateral auxiliary	Pin	Md32B13	107040	5
		for 4 M(b)s32... + 9mm lateral auxiliary	Pin	Md32B14	107041	5
		for 5 M(b)s32... + 9mm lateral auxiliary	Pin	Md32B15	107042	5
	Modular spacing 63 mm	for 2 M(b)s32... + 18mm lateral auxiliary or 2 x 9mm lateral auxiliary	Fork	Md32B22	107043	10
		for 4 M(b)s32... + 18mm lateral auxiliary or 2 x 9mm lateral auxiliary	Fork	Md32B24	107044	10
	Modular spacing 55 mm	for 2 M(b)s63... + frontal auxiliaries	Pin	Md63B02	107045	1
		for 3 M(b)s63... + frontal auxiliaries	Pin	Md63B03	107046	1
for 4 M(b)s63... + frontal auxiliaries		Pin	Md63B04	107047	1	
Modular spacing 64 mm	for 2 M(b)s63... + 9mm lateral auxiliary	Pin	Md63B12	107048	1	
	for 3 M(b)s63... + 9mm lateral auxiliary	Pin	Md63B13	107049	1	
	for 4 M(b)s63... + 9mm lateral auxiliary	Pin	Md63B14	107050	1	
Modular spacing 73 mm	for 2 M(b)s63... + 18mm lateral auxiliary or 2 x 9mm lateral auxiliary	Pin	Md63B22	107051	1	
	for 4 M(b)s63... + 18mm lateral auxiliary or 2 x 9mm lateral auxiliary	Pin	Md63B24	107052	1	
Busbar cover Touch guard for non used space	M(b)s32...	-	Md32G	107054	10	
	M(b)s63...	-	Md63G	107055	10	

Enclosures for series Mbs32/63

Enclosures for M(b)s32SG

	Plastic enclosures	Description	Cat. No.	Ref. No.	Pack.
		Surface mounting IP41	Mi41	136222	1
		Surface mounting IP55	Mi55	136223	1
		Flush mounting IP41	MIT41	136224	1
		Flush mounting IP55	MIT55	136225	1

Accessories for enclosures

		Description	Cat. No.	Ref. No.	Pack.
	Neutral connection	To be used inside the enclosure	MIN	136226	1
	Adaptor set	For enclosures used with M(b)s32*SG and undervoltage release with 2 NO auxiliary contacts	MiAS	107108	1
	Padlocking device	For three padlocks with max. 8 mm shackle diameter Not to be used with emergency stop handle	MiD	136227	1
	Conversion kit IP41 to IP55		MiC	136228	1
	Emergency mushroom push-button	Mushroom with impulse functions	MiPM	136229	1
		Mushroom self latching, unlatching by turning	MiPL	136230	1
		Mushroom self latching, unlatching with a key	MiPK	136231	1
	Indicator lamps	Green 110/220V	MiLGJ	136232	1
		Green 220/240V	MiLGN	136233	1
		Green 380/440V	MiLGU	136234	1
		Green 480/500V	MiLGX	136235	1
		Green 600V	MiLGY	136236	1
		Red 110/220V	MiLRJ	136237	1
		Red 220/240V	MiLRN	136238	1
		Red 380/440V	MiLRU	136239	1
		Red 480/500V	MiLRX	136240	1
		Red 600V	MiLRY	136241	1
		Transparent 110/220V	MiLCJ	136242	1
		Transparent 220/240V	MiLCN	136243	1
		Transparent 380/440V	MiLCU	136244	1
		Transparent 480/500V	MiLCX	136245	1
		Transparent 600V	MiLCY	136246	1

Manual motor starters - Coordination tables

Coordination type 1 65kA at 380/400V and 415V

MOTOR(1)			MANUAL MOTOR STARTER				CONTACTOR			LINKS
Rated power	Rated current		Cat. No.	Rated current In	Thermal current	Magnetic current	Series	Smallest wire Cu (PVC)(2)	Minimum frontal electrical safety clearance	Cat. No. (3)
	380/400V (A)	415V (A)								
0.06	0.23	0.21	Mbs32SG002	0.25	0.16 - 0.25	3.2	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.09	0.34	0.31	Mbs32SG004	0.4	0.25 - 0.4	5.2	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.12	0.44	0.4	Mbs32SG006	0.63	0.4 - 0.63	8.2	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.18	0.65	0.63	Mbs32SG010	1	0.63 - 1	13	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.25	0.9	0.8	Mbs32SG010	1	0.63 - 1	13	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.37	1.25	1.1	Mbs32SG016	1.6	1 - 1.6	20.5	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.55	1.6	1.5	Mbs32SG016	1.6	1 - 1.6	20.5	LS02K / LS4K	1	20	MF32L05B/MF32L7*
0.75	2	1.9	Mbs32SG025	2.5	1.6 - 2.5	32.5	LS02K / LS4K	1	20	MF32L05B/MF32L7*
1.1	2.6	2.5	Mbs32SG040	4	2.5 - 4	52	LS02K / LS4K	1	20	MF32L05B/MF32L7*
1.5	3.5	3.4	Mbs32SG040	4	2.5 - 4	52	LS02K / LS4K	1	20	MF32L05B/MF32L7*
2.2	5	4.5	Mbs32SG063	6.3	4 - 6.3	82	LS02K / LS4K	1	20	MF32L05B/MF32L7*
3	7	6.5	Mbs32SG100	10	6.3 - 10	130	LS05 / LS4K	1.5	20	MF32L05B/MF32L7*
4	9	8	Mbs32SG100	10	6.3 - 10	130	LS05 / LS4K	1.5	20	MF32L05B/MF32L7*
5.5	12	11	Mbs32HG130	13	9 - 13	169	LS5K	2.5	20	MF32L7*
7.5	16	14	Mbs32HG160	16	11 - 16	208	LS7K	2.5	20	MF32L7*
11	22.5	21	Mbs32HG250	25	19 - 25	325	LS11K	4	20	MF32L11*
15	30	28	Mbs32HG320	32	24 - 32	416	LS15K	6	20	MF32L16*
11	22.5	21	Mbs63HG250	25	19 - 25	325	LS15K	4	20	MF63L16*
15	30	28	Mbs63HG320	32	24 - 32	416	LS15K	6	20	MF63L16*
18.5	37	35	Mbs63HG400	40	28 - 40	520	LS18K	10	20	MF63L18*
22	44	41	Mbs63HG500	50	35 - 50	650	LS22K	10	25	MF63L30A
30	60	55	Mbs63HG630	63	45 - 63	820	LS30K	16	25	MF63L30A

Coordination type 2 65kA at 380/400V and 415V

MOTOR(1)			MANUAL MOTOR STARTER				CONTACTOR			LINKS
Rated power	Rated current		Cat. No.	Rated current In	Thermal current	Magnetic current	Series	Smallest wire Cu (PVC)(2)	Minimum frontal electrical safety clearance	Cat. No. (3)
	380/400V (A)	415V (A)								
0.06	0.23	0.21	Mbs32HG002	0.25	0.16 - 0.25	3.2	LS4K	1	20	MF32L7*
0.09	0.34	0.31	Mbs32HG004	0.4	0.25 - 0.4	5.2	LS4K	1	20	MF32L7*
0.12	0.44	0.4	Mbs32HG006	0.63	0.4 - 0.63	8.2	LS4K	1	20	MF32L7*
0.18	0.65	0.63	Mbs32HG010	1	0.63 - 1	13	LS4K	1	20	MF32L7*
0.25	0.9	0.8	Mbs32HG010	1	0.63 - 1	13	LS4K	1	20	MF32L7*
0.37	1.25	1.1	Mbs32HG016	1.6	1 - 1.6	20.5	LS4K	1	20	MF32L7*
0.55	1.6	1.5	Mbs32HG016	1.6	1 - 1.6	20.5	LS4K	1	20	MF32L7*
0.75	2	1.9	Mbs32HG025	2.5	1.6 - 2.5	32.5	LS4K	1	20	MF32L7*
1.1	2.6	2.5	Mbs32HG040	4	2.5 - 4	52	LS11K	1	20	MF32L11*
1.5	3.5	3.4	Mbs32HG040	4	2.5 - 4	52	LS11K	1	20	MF32L11*
2.2	5	4.5	Mbs32HG063	6.3	4 - 6.3	82	LS11K	1	20	MF32L11*
3	7	6.5	Mbs32HG100	10	6.3 - 10	130	LS11K	1.5	20	MF32L11*
4	9	8	Mbs32HG100	10	6.3 - 10	130	LS11K	1.5	20	MF32L11*
5.5	12	11	Mbs32HG130	13	9 - 13	169	LS11K	2.5	20	MF32L11*
7.5	16	14	Mbs32HG160	16	11 - 16	208	LS11K	2.5	20	MF32L11*
11	22.5	21	Mbs32HG250	25	19 - 25	325	LS11K	4	20	MF32L11*
15	30	28	Mbs32HG320	32	24 - 32	416	LS15K	6	20	MF32L16*
11	22.5	21	Mbs63HG250 (4)	25	19 - 25	325	LS15K	4	20	MF63L16*
15	30	28	Mbs63HG320 (4)	32	24 - 32	416	LS15K	6	20	MF63L16*
18.5	37	35	Mbs63HG400 (4)	40	28 - 40	520	LS18K	10	20	MF63L18*
22	44	41	Mbs63HG500 (4)	50	35 - 50	650	LS22K	10	25	MF63L30A
30	60	55	Mbs63HG630 (4)	63	45 - 63	820	LS30K	16	25	MF63L30A

(1) Currents are relevant to four pole motors not having special characteristics of torque.

Inrush currents: 8 time rated current for 1s.

(2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air.

Cables are to withstand the maximum let-through energy and the motor rated current. Besides the user should consider the drop voltage on the cables, the type of laying and the ambient temperature.

(3) Complete cat. nrs., see page I.13

(4) Test running.

Manual motor starters - Coordination tables

Coordination type 1 50kA at 500V and 525V

MOTOR(1)			MANUAL MOTOR STARTER			CONTACTOR	LINKS			
Rated power (kW)	Rated current		Cat. No.	Rated current In (A)	Thermal current Setting range (A)	Magnetic current (A)	Series	Smallest wire Cu (PVC)(2) 380/415V (mm ²)	Minimum frontal electrical safety clearance (mm)	Cat. No. (3)
	500V	525V								
	(A)	(A)								
0.06	0.17	0.16	Mbs32SG002	0.25	0.16 - 0.25	3.2	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.09	0.24	0.22	Mbs32SG002	0.25	0.16 - 0.25	3.2	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.12	0.33	0.3	Mbs32SG004	0.4	0.25 - 0.4	5.2	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.18	0.48	0.46	Mbs32SG006	0.63	0.4 - 0.63	8.2	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.25	0.66	0.64	Mbs32SG010	1	0.63 - 1	13	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.37	0.9	0.85	Mbs32SG010	1	0.63 - 1	13	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.55	1.2	1.15	Mbs32SG016	1.6	1 - 1.6	20.5	LS02K/LS4K	1	20	MF32L05B/MF32L7*
0.75	1.5	1.45	Mbs32SG016	1.6	1 - 1.6	20.5	LS02K/LS4K	1	20	MF32L05B/MF32L7*
1.1	2.1	1.9	Mbs32SG025	2.5	1.6 - 2.5	32.5	LS02K/LS4K	1	20	MF32L05B/MF32L7*
1.5	2.8	2.6	Mbs32SG040	4	2.5 - 4	52	LS02K/LS4K	1	20	MF32L05B/MF32L7*
2.2	3.9	3.6	Mbs32SG040	4	2.5 - 4	52	LS02K/LS4K	1	20	MF32L05B/MF32L7*
3	5.3	5	Mbs32SG063	6.3	4 - 6.3	82	LS02K/LS4K	1	20	MF32L05B/MF32L7*
4	6.8	6.5	Mbs32HG100	10	6.3 - 10	130	LS05/LS4K	1	20	MF32L05B/MF32L7*
5.5	9.1	8.6	Mbs32HG100	10	6.3 - 10	130	LS4K	1.5	20	MF32L7*
7.5	12	11.4	Mbs32HG130	13	9 - 13	169	LS5K	2.5	20	MF32L11*
10	15.5	14.8	Mbs32HG160	16	11 - 16	208	LS7K	2.5	20	MF32L11*
11	17.6	17	Mbs32HG200	20	14 - 20	260	LS11K	2.5	20	MF32L11*
15	23	22	Mbs32HG250	25	19 - 25	325	LS11K	4	20	MF32L11*
18.5	28.5	27	Mbs32HG320	32	24 - 32	416	LS15K	6	20	MF63L16*
11	17.6	17	Mbs63HG200	20	14 - 20	260	LS15K	2.5	20	MF63L16*
15	23	22	Mbs63HG250	25	19 - 25	325	LS15K	4	20	MF63L16*
18.5	28.5	27	Mbs63HG320	32	24 - 32	416	LS15K	6	20	MF63L16*
22	33	31.5	Mbs63HG400	40	28 - 40	520	LS18K	6/10	20	MF63L18*
30	45	43	Mbs63HG500	50	35 - 50	650	LS22K	10	25	MF63L30A
37	53	52	Mbs63HG630	63	45 - 63	820	LS30K	16	25	MF63L30A

Coordination type 2 50kA at 500V and 525V

MOTOR(1)			MANUAL MOTOR STARTER			CONTACTOR	LINKS			
Rated power (kW)	Rated current		Cat. No.	Rated current In (A)	Thermal current Setting range (A)	Magnetic current (A)	Series	Smallest wire Cu (PVC)(2) 380/415V (mm ²)	Minimum frontal electrical safety clearance (mm)	Cat. No. (3)
	500V	525V								
	(A)	(A)								
0.06	0.17	0.16	Mbs32S/HG002	0.25	0.16 - 0.25	3.2	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.09	0.24	0.22	Mbs32S/HG002	0.25	0.16 - 0.25	3.2	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.12	0.33	0.3	Mbs32S/HG004	0.4	0.25 - 0.4	5.2	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.18	0.48	0.46	Mbs32S/HG006	0.63	0.4 - 0.63	8.2	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.25	0.66	0.64	Mbs32S/HG010	1	0.63 - 1	13	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.37	0.9	0.85	Mbs32S/HG010	1	0.63 - 1	13	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.55	1.2	1.15	Mbs32S/HG016	1.6	1 - 1.6	20.5	LS05/LS4K	1	20	MF32L05B/MF32L7*
0.75	1.5	1.45	Mbs32S/HG016	1.6	1 - 1.6	20.5	LS05/LS4K	1	20	MF32L05B/MF32L7*
1.1	2.1	1.9	Mbs32S/HG025	2.5	1.6 - 2.5	32.5	LS5K	1	20	MF32L7*
1.5	2.8	2.6	Mbs32S/HG040	4	2.5 - 4	52	LS11K	1	20	MF32L11*
2.2	3.9	3.6	Mbs32S/HG040	4	2.5 - 4	52	LS11K	1	20	MF32L11*
3	5.3	5	Mbs32S/HG063	6.3	4 - 6.3	82	LS11K	1	20	MF32L11*
4	6.8	6.5	Mbs32HG100	10	6.3 - 10	130	LS11K	1	20	MF32L11*
5.5	9.1	8.6	Mbs32HG100	10	6.3 - 10	130	LS11K	1.5	20	MF32L11*
7.5	12	11.4	Mbs32HG130	13	9 - 13	169	LS11K	2.5	20	MF32L11*
10	15.5	14.8	Mbs32HG160	16	11 - 16	208	LS11K	2.5	20	MF32L11*
11	17.6	17	Mbs32HG200	20	14 - 20	260	LS11K	2.5	20	MF32L11*
15	23	22	Mbs32HG250	25	19 - 25	325	LS15K	4	20	MF32L16*
18.5	28.5	27	Mbs32HG320	32	24 - 32	416	LS15K	6	20	MF32L16*
11	17.6	17	Mbs63HG200	20	14 - 20	260	LS15K	2.5	20	MF63L16*
15	23	22	Mbs63HG250	25	19 - 25	325	LS15K	4	20	MF63L16*
18.5	28.5	27	Mbs63HG320	32	24 - 32	416	LS18K	6	20	MF63L18*
22	33	31.5	Mbs63HG400	40	28 - 40	520	LS22K	6/10	25	MF63L30A
30	45	43	Mbs63HG500	50	35 - 50	650	LS22K	10	25	MF63L30A
37	53	52	Mbs63HG630	63	45 - 63	820	LS30K	16	25	MF63L30A

- (1) Currents are relevant to four pole motors not having special characteristics of torque.
Inrush currents: 8 time rated current for 1s.
- (2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air.
Cables are to withstand the maximum let-through energy and the motor rated current. Besides the user should consider the drop voltage on the cables, the type of laying and the ambient temperature.
- (3) Complete cat. nrs., see page I.13

Manual motor starters - Coordination tables

Coordination Type 1 65kA at 380/400V and 415V

MOTOR(1)			MANUAL MOTOR STARTER			CONTACTOR	OVERLOAD RELAY				
Rated power	Rated current		Cat. No.	Rated current In	Thermal current	Magnetic current	Series	Series	Setting range	Smallest wire Cu (PVC)(2)	Minimum frontal safety clearance
	380/400V (A)	415V (A)									
0.06	0.23	0.21	Ms32S/HG002	0.25	-	3.3	LS4K	b18K	0.16 - 0.26	1	20
0.09	0.34	0.31	Ms32S/HG004	0.4	-	5.2	LS4K	b18K	0.25 - 0.41	1	20
0.12	0.44	0.4	Ms32S/HG006	0.63	-	8.2	LS4K	b18K	0.4 - 0.65	1	20
0.18	0.65	0.63	Ms32S/HG010	1	-	13	LS4K	b18K	0.4 - 0.65	1	20
0.25	0.9	0.8	Ms32S/HG010	1	-	13	LS4K	b18K	0.65 - 1.1	1	20
0.37	1.25	1.1	Ms32S/HG016	1.6	-	20.8	LS4K	b18K	1 - 1.5	1	20
0.55	1.6	1.5	Ms32S/HG016	1.6	-	20.8	LS4K	b18K	1.3 - 1.9	1	20
0.75	2	1.9	Ms32S/HG025	2.5	-	32.5	LS4K	b18K	1.8 - 2.7	1	20
1.1	2.6	2.5	Ms32S/HG040	4	-	52	LS4K	b18K	2.5 - 4	1	20
1.5	3.5	3.4	Ms32S/HG040	4	-	52	LS4K	b18K	2.5 - 4	1	20
2.2	5	4.5	Ms32S/HG063	6.3	-	81.9	LS4K	b18K	4 - 6.3	1	20
3	7	6.5	Ms32S/HG100	10	-	130	LS4K	b18K	5.5 - 8.5	1.5	20
4	9	8	Ms32S/HG100	10	-	130	LS4K	b18K	8 - 12	1.5	20
5.5	12	11	Ms32HG130	13	-	169	LS5K	b18K	10 - 16	2.5	20
7.5	-	14	Ms32HG160	16	-	208	LS7K	b18K	10 - 16	2.5	20
7.5	16	-	Ms32HG160	16	-	208	LS7K	b18K	14.5 - 18	2.5	20
11	22.5	21	Ms32HG250	25	-	325	LS11K	b18K	21 - 26	4	20
15	30	28	Ms32HG320	32	-	416	LS11K	b18K	25 - 32	6	20
11	22.5	21	Ms63HG250	25	-	325	LS11K	b18K	21 - 26	4	20
15	30	28	Ms63HG320	32	-	416	LS15K	b18K	25 - 32	6	20
18.5	37	35	Ms63HG400	40	-	520	LS18K	b18K	30 - 40	10	20
22	-	40	Ms63HG500	50	-	650	LS22K	b55K	30 - 43	10	25
22	44	-	Ms63HG500	50	-	650	LS22K	b55K	42 - 55	10	25
30	60	55	Ms63HG630	63	-	819	LS30K	b55K	54 - 65	16	25

Ms32/63

Coordination Type 2 65kA at 380/400V and 415V

MOTOR(1)			MANUAL MOTOR STARTER			CONTACTOR	OVERLOAD RELAY				
Rated power	Rated current		Cat. No.	Rated current In	Thermal current	Magnetic current	Series	Series	Setting range	Smallest wire Cu (PVC)(2)	Minimum frontal safety clearance
	380/400V (A)	415V (A)									
0.06	0.23	0.21	Ms32S/HG002	0.25	-	3.3	LS4K	b18K	0.16 - 0.26	1	20
0.09	0.34	0.31	Ms32S/HG004	0.4	-	5.2	LS4K	b18K	0.25 - 0.41	1	20
0.12	0.44	0.4	Ms32S/HG006	0.63	-	8.2	LS4K	b18K	0.4 - 0.65	1	20
0.18	0.65	0.63	Ms32S/HG010	1	-	13	LS4K	b18K	0.4 - 0.65	1	20
0.25	0.9	0.8	Ms32S/HG010	1	-	13	LS4K	b18K	0.65 - 1.1	1	20
0.37	1.25	1.1	Ms32S/HG016	1.6	-	20.8	LS4K	b18K	1 - 1.5	1	20
0.55	1.6	1.5	Ms32S/HG016	1.6	-	20.8	LS4K	b18K	1.3 - 1.9	1	20
0.75	2	1.9	Ms32S/HG025	2.5	-	32.5	LS4K	b18K	1.8 - 2.7	1	20
1.1	2.6	2.5	Ms32S/HG040	4	-	52	LS5K	b18K	2.5 - 4	1	20
1.5	3.5	3.4	Ms32S/HG040	4	-	52	LS5K	b18K	2.5 - 4	1	20
2.2	5	4.5	Ms32S/HG063	6.3	-	81.9	LS7K	b18K	4 - 6.3	1	20
3	7	6.5	Ms32S/HG100	10	-	130	LS11K	b18K	5.5 - 8.5	1.5	20
4	9	8	Ms32S/HG100	10	-	130	LS11K	b18K	8 - 12	1.5	20
5.5	12	11	Ms32HG130	13	-	169	LS11K	b18K	10 - 16	1.5	20
7.5	-	14	Ms32HG160	16	-	208	LS11K	b18K	10 - 16	2.5	20
7.5	16	-	Ms32HG160	16	-	208	LS11K	b18K	14.5 - 18	2.5	20
11	22.5	21	Ms32HG250	25	-	325	LS11K	b18K	21 - 26	4	20
15	30	28	Ms32HG320	32	-	416	LS15K	b18K	25 - 32	6	20
11	22.5	21	Ms63HG250	25	-	325	LS15K	b18K	21 - 26	4	20
15	30	28	Ms63HG320	32	-	416	LS15K	b18K	25 - 32	6	20
18.5	37	35	Ms63HG400	40	-	520	LS18K	b18K	30 - 40	6	20
22	-	40	Ms63HG500	50	-	650	LS22K	b55K	30 - 43	10	25
22	44	-	Ms63HG500	50	-	650	LS22K	b55K	42 - 55	10	25
30	60	55	Ms63HG630	63	-	819	LS30K	b55K	54 - 65	16	25

(1) Currents are relevant to four pole motors not having special characteristics of torque.

Inrush currents: ≤ 8 time rated current for ≤ 1s.

(2) The minimum cycle cross-sections are referred to an ambient temperature of 30°C max. in free air and are selected to withstand the maximum let-through energy and the motor rated current. Besides the user has to consider the drop voltage, the type of laying and ambient temperature.

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page's content area.

Record Plus

- J.3 General overview
- J.4 **Frame size FD - Series MM 169**
- J.5 Technical data
- J.6 Order codes

- J.10 **Frame size FE - Series MC 169 / 259**
- J.11 Technical data
- J.12 Order codes

- J.16 **Frame size FG - Series MC 409 / 639**
- J.17 Technical data
- J.18 Order codes

- J.26 **Frame size FK - Series MC 809 / 1259 / 1609**
- J.27 Technical data
- J.28 Order codes

Miniature circuit breakers A

Residential current circuit breakers B

Busbar systems C

Comfort functions/Energy control D

Residential enclosures E

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units H

Manual motor starters I

Moulded case circuit breakers J

Air circuit breakers K

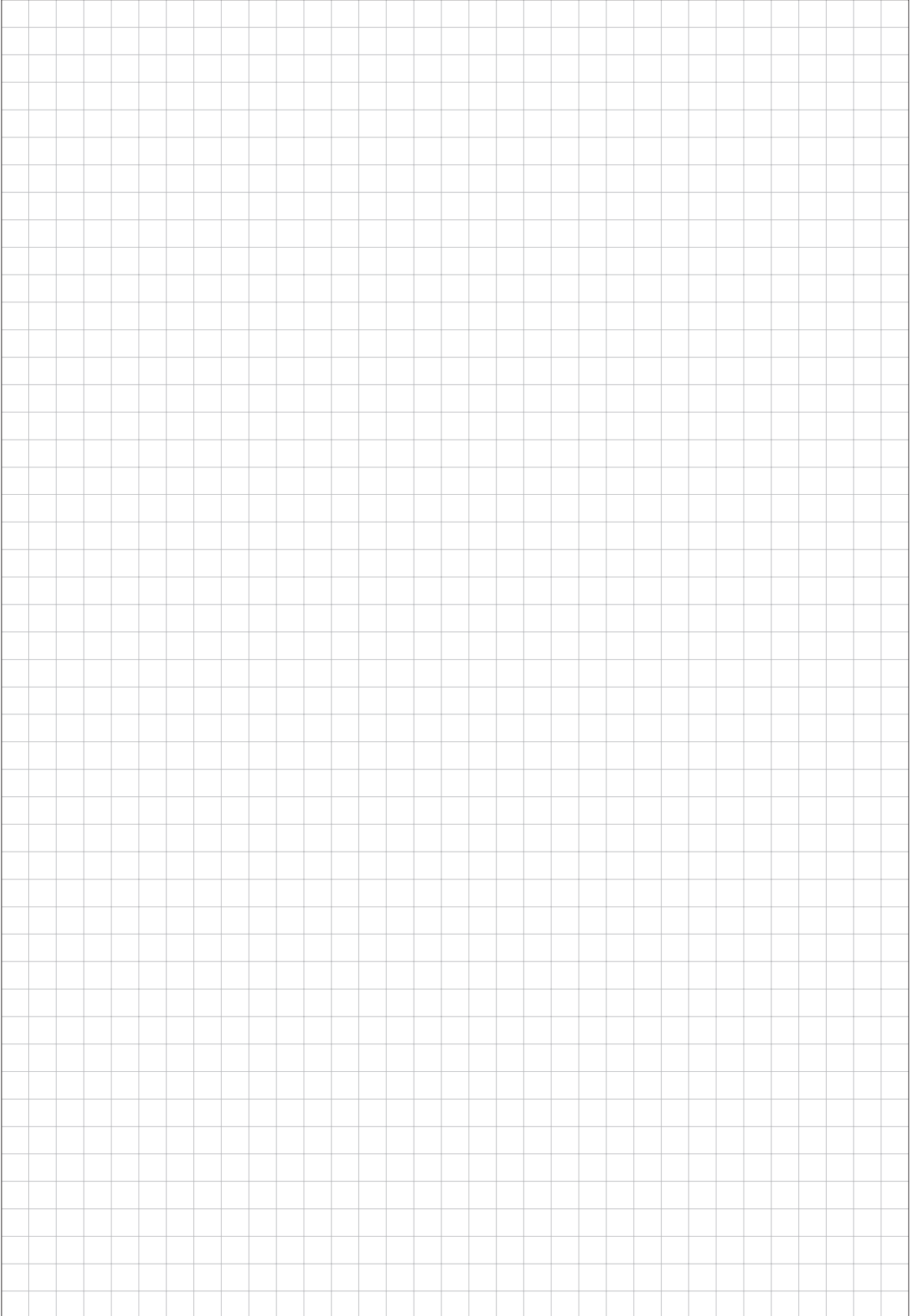
Fuse systems/Loadbreak disconnectors L

General purpose enclosures M

System enclosures N

Numerical index X

Notes



MCCBs Record Plus

Certification

The **Record Plus™** line of moulded case circuit breakers has been designed to comply with the following standards.

EN 60947 Low-voltage switchgear and controlgear

EN 60947-1: General rules

EN 60947-2: Circuit-breakers

EN 60947-3: Switches, disconnectors, switch-disconnectors and fuse-combination units

EN 60947-4-1: Contactors and motorstarters
Section One: Electromechanical contactors and motorstarters

EN 60947-5-1: Control circuit devices and switching elements. Section One: Electromechanical control circuit devices

In order to meet the international standards mentioned above, the following European standards had to be fulfilled: **BS, VDE, UTE, KEMA, CEI**

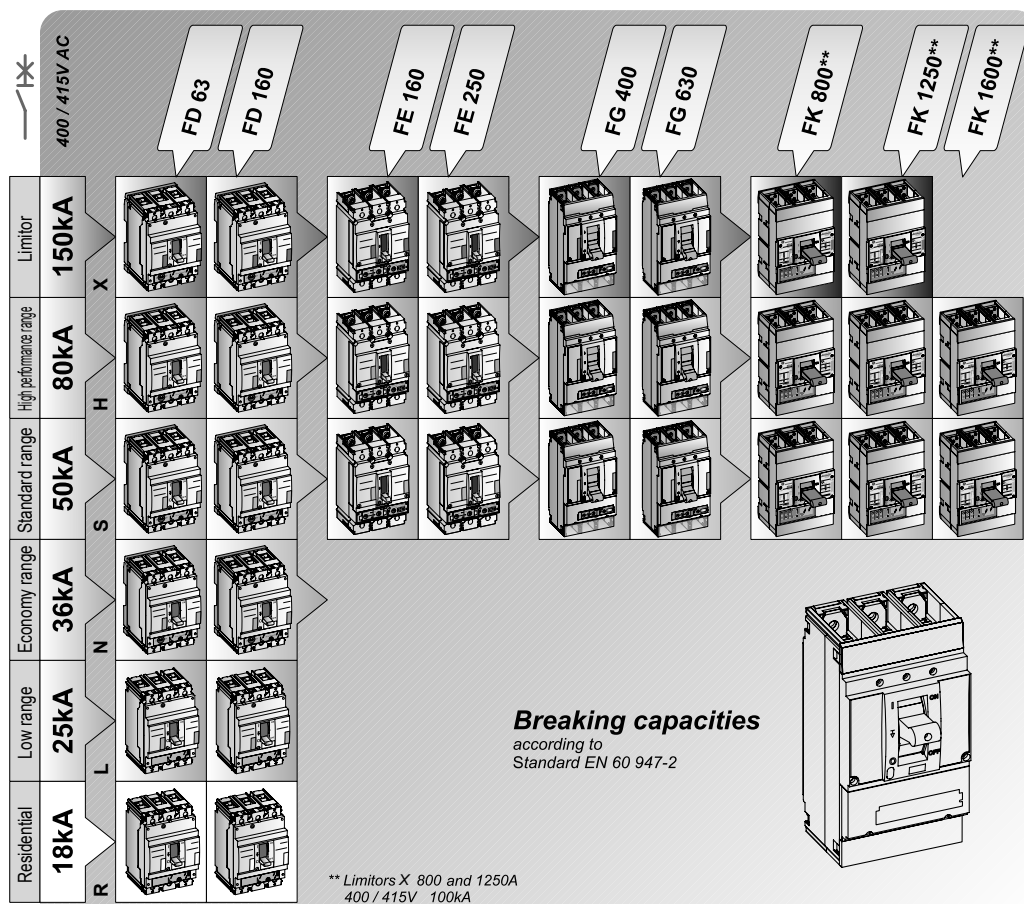
Further tests are being undertaken at the moment to meet the requirements of the following regulatory authorities:

UL (R) (489, 486 standards)	CCC (China)
CSA (Canada)	Bureau Veritas
Det Norske Veritas	JIS (Japan)
NEMA (USA)	Germanischer Lloyd
Lloyd's Register of Shipping	NOM RINA

Please contact us to check the availability of individual certificates.

This has been verified by two testing authorities: LOVAG and KEMA/Dekra (appropriate certificates are available on request)

Overview frame sizes



- Frame size FD 63 / 160 = circuit breaker type MM 169
- Frame size FE 160 / 250 = circuit breaker type MC 169 / 259
- Frame size FG 400 / 630 = circuit breaker type MC 409 / 639
- Frame size FK 800 / 1250 / 1600 = circuit breaker type MC 809 / 1259 / 1609



L (LTM)

Line protection
thermal / magnetic protection

S (LTMD)

selective protection
thermal / magnetic protection

G (GTM)

Generator protection
thermal / magnetic protection

M (Mag. Break)

Magnetic protection only

T (Y)

non automatic, switch only
not mentioned in schedule

MCCB Record Plus type MM 169

Frame size FD

Breaking capacities

Icu = 400 / 415 V/AC

Breaker type	MM. 169R	MM. 169L	MM. 169N	MM. 169S	MM. 169H	MM. 169X
Denomination	R	L	N	S	H	X
Icu (kAeff)	18	25	36	50	80	150

Protection

Rated current (A)	Frame size	Trip unit	Trip unit	Trip unit	Trip unit
		L	S	G	M
8	FD 160				S, H, X
12,5					S, H, X
16		R, L	N, S, H, X		
20		R, L	N, S, H, X		S, H, X
25		R, L	N, S, H, X	S, H	
30					S, H, X
32		R, L	N, S, H, X	S, H	
40		R, L	N, S, H, X	S, H	
50		R, L	N, S, H, X	S, H	S, H, X
63		R, L	N, S, H, X	S, H	
80		R, L	N, S, H, X	S, H	S, H, X
100		R, L	N, S, H, X	S, H	S, H, X
125		R, L	N, S, H, X	S, H	
160		R, L	N, S, H, X	S, H	

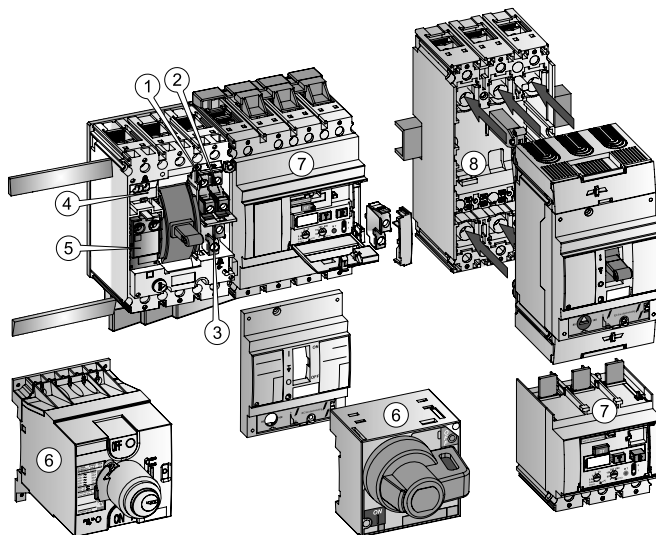
No of poles

Rated current	Trip unit	Trip unit	Trip unit	Trip unit
	L	S	G	M
3 pole / 3 trips	R, L	N, S, H, X	S, H	S, H, X
4 pole / 3 trips				S, H, X
4 pole / 4 trips	R, L	N, S, H, X	S, H	

J

- ① Auxiliary contact left mounted (NO or NC)
- ② Auxiliary contact right mounted (NO or NC)
- ③ Bell Alarm trip unit (NO or NC)
- ④ Bell Alarm mechanism (CO)⁽¹⁾
- ⑤ Shunt or Undervoltage release
- ⑥ Operators
Rotary handle
Electrical operator
- ⑦ RCD, side or bottom mounted (Insert indicates Bell alarm contact mounting)
- ⑧ Plug in system⁽¹⁾

(1) Not applicable for type MM.169R and MM.169L



Technical data MCCBs type MM 169

Circuit breaker type		MM 169					
Denomination		R	L	N	S	H	X
EN 60947-2 standard							
Poles	Number of	3.4			3.4		
Rated insulation voltage	Ui (Volts)	500	500	690	750		
Rated impulse withstand voltage	Uimp (Kilovolt)	6	6	8	8		
Rated operational voltage Ue	Volts AC	500	500	500	690		
	Volts DC	-	-	440	500		
Line protection device							
Category of use		A			A		
Suitable for use as a isolator	Positive ON & OFF	yes			yes		
Rated current Ith = Ie	A at 40°C	63 or 160			63 or 160		
Ultimate breaking capacity Icu (kA)	230/240V AC	25	40	50	85	100	200
	400/415V AC	18	25	36	50	80	150
	440V AC	12	14	25	30	65	130 ⁽²⁾
	500V AC	10	12	18	22	36	50 ⁽²⁾
	690V AC	-	-	2	4.5	6	10
	250V DC Single pole	-	-	25	40	65	100
	440V DC Two pole	-	-	25	40	65	100 ⁽¹⁾
	500V DC Two pole	-	-	-	40	65 ⁽¹⁾	100 ⁽¹⁾
	Service breaking capacity Ics (%Icu)	≤ 500V	100%	75%	100%	100%	100%
Single phase breaking capacity I _{TP} (kA)	690V AC	-	-	-	100%	75%	50%
	230V AC	16	25	30	50	80	150
Endurance (CO operations)	400/415V AC	-	-	-	4.5	6	10
	Mechanical	10000			25000		
	Electrical at In	5000			10000		
Endurance (On-Tripped operations)	Electrical at In/2	10000			20000		
	Mechanical	4000			10000		
Trip Units	Interchangeable	no			no		
	Thermal Magnetic line	LTM					
	Thermal Magnetic generator				GTM		
	Thermal Magnetic selective				LTMD		
	Magnetic Only				Mag Break™		
	Electronic selective						
	Electronic Enhanced						
Circuit breaker type and denomination		MMT 169			MMT 169		
EN 60947-3 standard							
Non automatic breaker (Switch)							
Rated current In (class AC23)	220V AC to 690V AC	63			160		
Rated making capacity	Icm (kA peak)	1.7			2.8		
Short-term withstand current Icw (kA)	Icw eff. 1 second	1.2			2		
	Icw eff. 3 seconds	1.2			2		
Circuit breaker type					S	H	X
Denomination					S	H	X
EN 60947-4 standard							
Use in motor circuits							
Rated current Ith	A at 65°C				FD63-50 FD160-100		
Endurance (CO operations)	Mechanical				25000		
	Electrical at In class AC23				10000		
	Operations per hour				120		
Protection	Short-circuit only (separate overload device)				Mag Break™		
	Overload class 10 and Short-circuit						
	Max In (A) class 10				FD63-50 FD160-100		
	Max In (A) class 30				FD63-50 FD160-80		
	Earth fault unit (differential)				type DG / DD / DB		
Circuit breaker / Switch type					MM 169		
Installation							
Mounting	On symmetrical DIN Rail	yes			yes		
	Fixed	yes			yes		
	Plug in	yes			yes		
	Draw out	no			no		
Connection	Front	yes			yes		
	Rear	no			yes		
Dimensions (w x h x d) mm	3 pole, fixed front connection	81 x 130 x 85			81 x 130 x 85		
	4 pole, fixed front connection	108 x 130 x 85			108 x 130 x 85		
Weights (kg)	3 pole, fixed front connection	0.9			0.9		
	4 pole, fixed front connection	1.3			1.3		

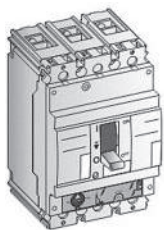
(1) Use 3 poles.

(2) 160A rating only; derate to 65kA at 440V and 36kA at 500V.

MCCBs Record Plus MML 169 for line protection

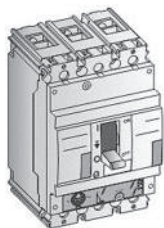
RESIDENTIAL RANGE / Icu = 18 kA / "R"

With fixed (18 kA execution) adjustable (25 kA execution) thermal overload trip and fixed short-circuit trip "L"



Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160	16	10 x In	MML 169R 3016	432503	MML 169R 4016	432644
FD 160	20	10 x In	MML 169R 3020	432506	MML 169R 4020	432647
FD 160	25	10 x In	MML 169R 3025	432611	MML 169R 4025	432650
FD 160	32	10 x In	MML 169R 3032	432614	MML 169R 4032	432653
FD 160	40	10 x In	MML 169R 3040	432617	MML 169R 4040	432656
FD 160	50	10 x In	MML 169R 3050	432626	MML 169R 4050	432659
FD 160	63	10 x In	MML 169R 3063	432629	MML 169R 4063	432662
FD 160	80	10 x In	MML 169R 3080	432632	MML 169R 4080	432671
FD 160	100	10 x In	MML 169R 3100	432635	MML 169R 4100	432674
FD 160	125	10 x In	MML 169R 3125	432638	MML 169R 4125	432677
FD 160	160	8 x In	MML 169R 3160	432641	MML 169R 4160	432680

LOW RANGE / Icu = 25 kA / "L"



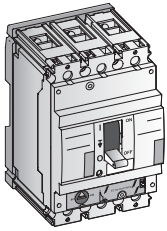
FD 160	12,8-16	10 x In	MML 169L 3016	436653	MML 169L 4016	436727
FD 160	16-20	10 x In	MML 169L 3020	436654	MML 169L 4020	436728
FD 160	20-25	10 x In	MML 169L 3025	436669	MML 169L 4025	436729
FD 160	26-32	10 x In	MML 169L 3032	436670	MML 169L 4032	436730
FD 160	32-40	10 x In	MML 169L 3040	436671	MML 169L 4040	436731
FD 160	40-50	10 x In	MML 169L 3050	436672	MML 169L 4050	436732
FD 160	50-63	10 x In	MML 169L 3063	436677	MML 169L 4063	436733
FD 160	64-80	10 x In	MML 169L 3080	436679	MML 169L 4080	436734
FD 160	80-100	10 x In	MML 169L 3100	435490	MML 169L 4100	436735
FD 160	100-125	10 x In	MML 169L 3125	436724	MML 169L 4125	436736
FD 160	128-160	8 x In	MML 169L 3160	436725	MML 169L 4160	436737

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MML 169 for line protection

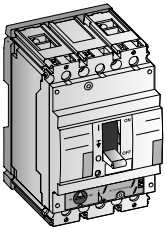
ECONOMY RANGE / $I_{cu} = 36 \text{ kA}$ / "N"

With selective adjustable thermal overload trip and fixed short-circuit trip "S"



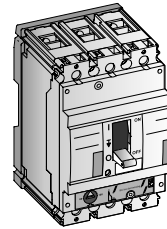
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160	12,8-16	10 x In	MML 169N 3016	430162	MML 169N 4016	430225
FD 160	16-20	10 x In	MML 169N 3020	430164	MML 169N 4020	430227
FD 160	20-25	10 x In	MML 169N 3025	430166	MML 169N 4025	430229
FD 160	25,6-32	10 x In	MML 169N 3032	430168	MML 169N 4032	430231
FD 160	32-40	10 x In	MML 169N 3040	430170	MML 169N 4040	430233
FD 160	40-50	10 x In	MML 169N 3050	430180	MML 169N 4050	430242
FD 160	50,4-63	10 x In	MML 169N 3063	432951	MML 169N 4063	432963
FD 160	64-80	10 x In	MML 169N 3080	432954	MML 169N 4080	432966
FD 160	80-100	10 x In	MML 169N 3100	432957	MML 169N 4100	432969
FD 160	100-125	10 x In	MML 169N 3125	432960	MML 169N 4125	432972
FD 160	128-160	8 x In	MML 169N 3160	433603	MML 169N 4160	433605

STANDARD RANGE / $I_{cu} = 50 \text{ kA}$ / "S"



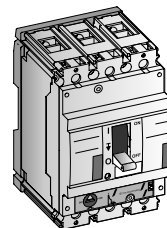
FD 160	12,8-16	10 x In	MML 169S 3016	430617	MML 169S 4016	430739
FD 160	16-20	10 x In	MML 169S 3020	430619	MML 169S 4020	430741
FD 160	20-25	10 x In	MML 169S 3025	430621	MML 169S 4025	430743
FD 160	26-32	10 x In	MML 169S 3032	430623	MML 169S 4032	430745
FD 160	32-40	10 x In	MML 169S 3040	430625	MML 169S 4040	430747
FD 160	40-50	10 x In	MML 169S 3050	430627	MML 169S 4050	430749
FD 160	50-63	10 x In	MML 169S 3063	430629	MML 169S 4063	430751
FD 160	64-80	10 x In	MML 169S 3080	430632	MML 169S 4080	430754
FD 160	80-100	10 x In	MML 169S 3100	430635	MML 169S 4100	430757
FD 160	100-125	10 x In	MML 169S 3125	430638	MML 169S 4125	430760
FD 160	128-160	8 x In	MML 169S 3160	433574	MML 169S 4160	433592

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA}$ / "H"



FD 160	12,8-16	10 x In	MML 169H 3016	430325	MML 169H 4016	430447
FD 160	16-20	10 x In	MML 169H 3020	430327	MML 169H 4020	430449
FD 160	20-25	10 x In	MML 169H 3025	430329	MML 169H 4025	430451
FD 160	26-32	10 x In	MML 169H 3032	430331	MML 169H 4032	430453
FD 160	32-40	10 x In	MML 169H 3040	430333	MML 169H 4040	430455
FD 160	40-50	10 x In	MML 169H 3050	430335	MML 169H 4050	430457
FD 160	50-63	10 x In	MML 169H 3063	430337	MML 169H 4063	430459
FD 160	64-80	10 x In	MML 169H 3080	430340	MML 169H 4080	430462
FD 160	80-100	10 x In	MML 169H 3100	430343	MML 169H 4100	430465
FD 160	100-125	10 x In	MML 169H 3125	430346	MML 169H 4125	430468
FD 160	128-160	8 x In	MML 169H 3160	435823	MML 169H 4160	435841

LIMITOR RANGE / $I_{cu} = 150 \text{ kA}$ / "X"



FD 160	20-25	10 x In	MML 169X 3025	430509	MML 169X 4025	430582
FD 160	26-32	10 x In	MML 169X 3032	430511	MML 169X 4032	430584
FD 160	32-40	10 x In	MML 169X 3040	430513	MML 169X 4040	430586
FD 160	40-50	10 x In	MML 169X 3050	430515	MML 169X 4050	430588
FD 160	50-63	10 x In	MML 169X 3063	430517	MML 169X 4063	430590
FD 160	64-80	10 x In	MML 169X 3080	430520	MML 169X 4080	430593
FD 160	80-100	10 x In	MML 169X 3100	430523	MML 169X 4100	430596
FD 160	100-125	10 x In	MML 169X 3125	430526	MML 169X 4125	430599
FD 160	128-160	8 x In	MML 169X 3160	435847	MML 169X 4160	435856

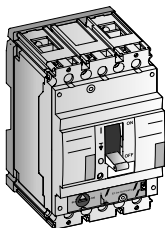
(1) Neutral on the left. If neutral on the right is needed, please contact us.

Frame size FD

J

MCCBs Record Plus MMG 169 for generator protection

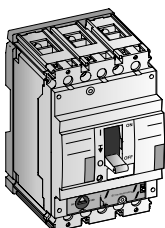
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$



With adjustable thermal overload trip and fixed short-circuit trip "G"

Frame size	Ir A	Irm A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160	20-25	5 x In	MMG 169S 3025	430640	MMG 169S 4025	430762
FD 160	25.6-32	5 x In	MMG 169S 3032	430642	MMG 169S 4032	430764
FD 160	32-40	5 x In	MMG 169S 3040	430644	MMG 169S 4040	430766
FD 160	40-50	5 x In	MMG 169S 3050	430646	MMG 169S 4050	430768
FD 160	50.4-63	5 x In	MMG 169S 3063	430648	MMG 169S 4063	430770
FD 160	64-80	4 x In	MMG 169S 3080	430651	MMG 169S 4080	430773
FD 160	80-100	4 x In	MMG 169S 3100	430654	MMG 169S 4100	430776
FD 160	100-125	4 x In	MMG 169S 3125	430657	MMG 169S 4125	430779
FD 160	128-160	4 x In	MMG 169S 3160	433577	MMG 169S 4160	433595

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$

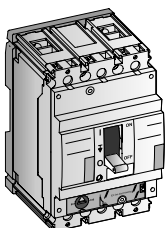


FD 160	20-25	5 x In	MMG 169H 3025	430348	MMG 169H 4025	430470
FD 160	26-32	5 x In	MMG 169H 3032	430350	MMG 169H 4032	430472
FD 160	32-40	5 x In	MMG 169H 3040	430352	MMG 169H 4040	430474
FD 160	40-50	5 x In	MMG 169H 3050	430354	MMG 169H 4050	430476
FD 160	50-63	5 x In	MMG 169H 3063	430356	MMG 169H 4063	430478
FD 160	64-80	4 x In	MMG 169H 3080	430359	MMG 169H 4080	430481
FD 160	80-100	4 x In	MMG 169H 3100	430362	MMG 169H 4100	430484
FD 160	100-125	4 x In	MMG 169H 3125	430365	MMG 169H 4125	430487
FD 160	128-160	4 x In	MMG 169H 3160	435826	MMG 169H 4160	435844

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MMM 169 for motor starter

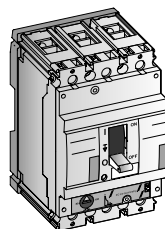
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$



With adjustable short-circuit trip only "M"

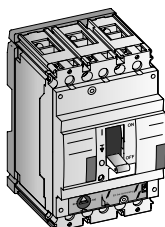
Frame size	Ir A	Irm A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160	8	10-15 x In	MMM 169S 3007	430601	MMM 169S 4007	430659
FD 160	12,5	10-15 x In	MMM 169S 3012	430603	MMM 169S 4012	430661
FD 160	20	10-15 x In	MMM 169S 3020	430605	MMM 169S 4020	430663
FD 160	30	10-15 x In	MMM 169S 3030	430607	MMM 169S 4030	430665
FD 160	50	10-15 x In	MMM 169S 3050	430609	MMM 169S 4050	430667
FD 160	80	10-15 x In	MMM 169S 3080	430612	MMM 169S 4080	430670
FD 160	100	10-15 x In	MMM 169S 3100	430615	MMM 169S 4100	430673

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$



FD 160	8	10-15 x In	MMM 169H 3007	430309	MMM 169H 4007	430367
FD 160	12,5	10-15 x In	MMM 169H 3012	430311	MMM 169H 4012	430369
FD 160	20	10-15 x In	MMM 169H 3020	430313	MMM 169H 4020	430371
FD 160	30	10-15 x In	MMM 169H 3030	430315	MMM 169H 4030	430373
FD 160	50	10-15 x In	MMM 169H 3050	430317	MMM 169H 4050	430375
FD 160	80	10-15 x In	MMM 169H 3080	430320	MMM 169H 4080	430378
FD 160	100	10-15 x In	MMM 169H 3100	430323	MMM 169H 4100	430381

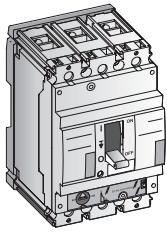
LIMITOR RANGE / $I_{cu} = 150 \text{ kA} / "X"$



FD 160	20	10-15 x In	MMM 169X 3020	430493	MMM 169X 4020	430532
FD 160	30	10-15 x In	MMM 169X 3030	430495	MMM 169X 4030	430534
FD 160	50	10-15 x In	MMM 169X 3050	430497	MMM 169X 4050	430536
FD 160	80	10-15 x In	MMM 169X 3080	430500	MMM 169X 4080	430539
FD 160	100	10-15 x In	MMM 169X 3100	430503	MMM 169X 4100	430542

(1) Neutral on the left. If neutral on the right is needed, please contact us.

Non-automatic MCCBs Record Plus MMT 169



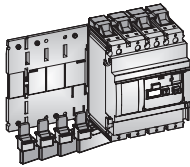
Without trip unit "T"

Frame size	I _r A	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160	63	MMT 169 3063	430804	MMT 169 4063	430809
FD 160	160	MMT 169 3160	430807	MMT 169 4160	430812

(1) Neutral on the left. If neutral on the right is needed, please contact us.

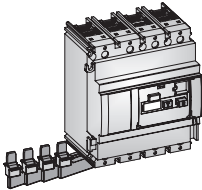
Residual current devices to fit to MCCBs Record Plus MM 169

Standard for RCD side mounting,
includes DIN-rail mounting kit
& multidirectional supply kit



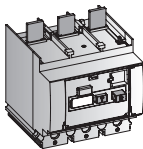
Frame size	Rated voltage V AC	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FD 160 ⁽¹⁾	220 / 440	DG3 / MM9-2	431098	DG4 / MM9-2	431113
	400 / 690	DG3 / MM9-4	431092	DG4 / MM9-4	431102

RCD for side connection only,
includes DIN-rail mounting kit
& interconnection kit for top or bottom use



FD 160 ⁽¹⁾	220 / 440	DD3 / MM9-2	431087	DD4 / MM9-2	431089
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RCD for bottom mounting
below the trip unit area



FD 160 ⁽¹⁾	220 / 440	DB3 / MM9-2	431079	DB4 / MM9-2	431085
	400 / 690	DB3 / MM9-4	431077	DB4 / MM9-4	431081

Accessories



Bell alarm RCD device	1 NO	FAB AT10	430818	-	-
	1 NC	FAB AT01	430815	-	-

(1) Not possible on MML 169R and MML 169L types from page J.6



L (LTM)

Line protection
thermal / magnetic protection

S (LTMD)

selective protection
thermal / magnetic protection

G (GTM)

Generator protection
thermal / magnetic protection

M (Mag. Break)

Magnetic protection only

E (PremEon)

selective electronic trip unit

T (Y)

non automatic, switch only
not mentioned in schedule

MCCB Record Plus type MC 169 / 259

Frame size FE

Breaking capacities

Icu = 400 / 415 V/AC

Breaker type	MC. 169S MC. 259S	MC. 169H MC. 259H	MC. 169X MC. 259X
Denomination	S	H	X
Icu (kAeff)	50	80	150

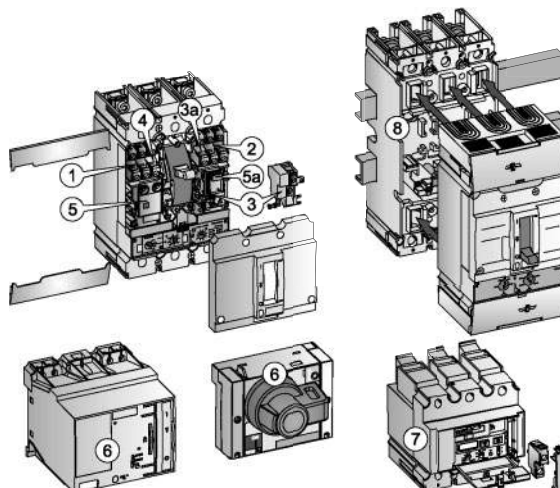
Protection

Rated current (A)	Frame size	Trip unit				
		L	S	G	M	E
8	FE 160				S, H, X	
12,5					S, H, X	
16						
20					S, H, X	
25		S, H, X				S, H, X
30					S, H, X	
32		S, H, X				
40		S, H, X				
50		S, H, X			S, H, X	
63		S, H, X				S, H, X
80		S, H, X			S, H, X	
100		S, H, X	S, H, X	S, H, X	S, H, X	
125		S, H, X	S, H, X	S, H, X		S, H, X
160		S, H, X	S, H, X	S, H, X	S, H, X	S, H, X
125	FE 250		S, H, X			S, H, X
160			S, H, X	S, H, X	S, H, X	S, H, X
200			S, H, X	S, H, X	S, H, X	
250			S, H, X	S, H, X	S, H, X	S, H, X

No of poles

Rated current	Trip unit				
	L	S	G	M	E
3 pole / 3 trips	S, H, X	S, H, X	S, H, X	S, H, X	S, H, X
4 pole / 3 trips				S, H, X	
4 pole / 4 trips	S, H, X	S, H, X	S, H, X		S, H, X

- ① Auxiliary contact left mounted (NO or NC) 1 or 2 pcs.
- ② Auxiliary contact right mounted (NO or NC) 1 or 2 pcs.
- ③ Bell Alarm thermal magnetic trip unit (NO or NC)
- ③a Bell Alarm electronic trip unit (NO or NC)
- ④ Bell Alarm mechanism (NO or NC)
- ⑤ Shunt or Undervoltage release
- ⑤a Actuator for electronic trip unit
- ⑥ Operators
Rotary handle
Electrical operator
- ⑦ Bottom mounted RCD (below trip unit) (Insert indicates Bell alarm contact mounting)
- ⑧ Plug-in or draw-out system



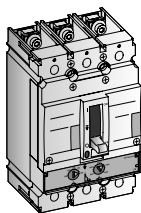
Technical data MCCBs type MC 169 / 259

Circuit breaker type		MC 169			MC 259		
Denomination		S	H	X	S	H	X
EN 60947-2 standard							
Poles	Number of	3,4			3,4		
Rated insulation voltage	Ui (Volts)	750			750		
Rated impulse withstand voltage	Uimp (Kilovolt)	8			8		
Rated operational voltage Ue	Volts AC	690			690		
	Volts DC	500			500		
Line protection device							
Category of use		A			A		
Suitable for use as a isolator	Positive ON & OFF	yes			yes		
Rated current Ith = Ie	A at 40°C	160			250		
Ultimate breaking capacity Icu (kA)	230/240V AC	85	100	200	85	100	200
	400/415V AC	50	80	150	50	80	150
	440V AC	42	65	130	42	65	130
	500V AC	30	50	100	30	50	100
	690V AC	10	22	75	10	15	22
	250V DC Single pole	50	85	100	50	85	100
	440V DC Two pole	50	85	100 ⁽¹⁾	50	85	100 ⁽¹⁾
	500V DC Two pole	50	85 ⁽¹⁾	100 ⁽¹⁾	50	85 ⁽¹⁾	100 ⁽¹⁾
Service breaking capacity Ics (%Icu)	≤ 500V	100%	100%	100%	100%	100%	100%
	690V AC	100%	75%	25%	100%	75%	50%
Single phase breaking capacity I _{TP} (kA)	230V AC	50	80	150	50	80	150
	400/415V AC	15	22	36	10	15	22
Endurance (CO operations)	Mechanical	40000			25000		
	Electrical at In	20000			10000		
	Electrical at In/2	30000			20000		
Endurance (On-Tripped operations)	Mechanical	16000			10000		
Trip Units	Interchangeable	yes			yes		
	Thermal Magnetic line	LTM					
	Thermal Magnetic generator	GTM			GTM		
	Thermal Magnetic selective	LTMD			LTMD		
	Magnetic Only	Mag Break™			Mag Break™		
	Electronic selective	PremEon™			PremEon™		
	Electronic Enhanced						
Circuit breaker type and denomination		MCT 169			MCT 259		
EN 60947-3 standard							
Non automatic breaker (Switch)							
Rated current In (class AC23)	220V AC to 690V AC	160			250		
Rated making capacity	I _{cm} (kA peak)	4,9			6,4		
Short-term withstand current I _{sw} (kA)	I _{sw} eff. 1 second	3			4		
	I _{sw} eff. 3 seconds	3			4		
Circuit breaker type		MCM 169			MCM 259		
Denomination		S	H	X	S	H	X
EN 60947-4 standard							
Use in motor circuits							
Rated current Ith	A at 65°C	150			225		
Endurance (CO operations)	Mechanical	40000			25000		
	Electrical at In class AC23	10000			20000		
	Operations per hour	120			120		
Protection	Short-circuit only (separate overload device)	Mag Break™			Mag Break™		
	Overload class 10 and Short-circuit	PremEon™			PremEon™		
	Max In (A) class 10	150			225		
	Max In (A) class 30	150			225		
	Earth fault unit (differential)	type DB 3 / DB 4			type DB 3 / DB 4		
Circuit breaker / Switch type		MC 169			MC 259		
Installation							
Mounting	On symmetrical DIN Rail	no			yes		
	Fixed	yes			yes		
	Plug in	yes			yes		
	Draw out	no			no		
Connection	Front	yes			yes		
	Rear	no			yes		
Dimensions (w x h x d) mm	3 pole, fixed front connection	105 x 170 x 95			105 x 170 x 95		
	4 pole, fixed front connection	140 x 170 x 95			140 x 170 x 95		
Weights (kg)	3 pole, fixed front connection	1,5			1,6		
	4 pole, fixed front connection	2,0			2,1		

(1) Use 3 poles.

MCCBs Record Plus MCL 169 for line protection

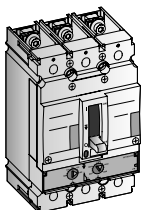
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$



With adjustable thermal overload trip and fixed (up to $I_r = 80 \text{ A}$) / adjustable short-circuit trip "L"

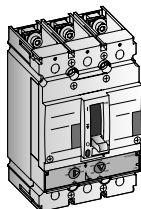
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	20-25	8 x I _r	MCL169S 3025	435105	MCL169S 4025	435216
FE 160	26-32	8 x I _r	MCL169S 3032	435108	MCL169S 4032	435219
FE 160	32-40	8 x I _r	MCL169S 3040	435111	MCL169S 4040	435222
FE 160	40-50	8 x I _r	MCL169S 3050	435114	MCL169S 4050	435225
FE 160	50-63	8 x I _r	MCL169S 3063	435117	MCL169S 4063	435228
FE 160	64-80	8 x I _r	MCL169S 3080	431753	MCL169S 4080	431951
FE 160	80-100	5-10 x I _r	MCL169S 3100	431759	MCL169S 4100	431957
FE 160	100-125	5-10 x I _r	MCL169S 3125	431765	MCL169S 4125	431963
FE 160	128-160	5-10 x I _r	MCL169S 3160	431771	MCL169S 4160	431969

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$



FE 160	20-25	8 x I _r	MCL 169H 3025	434774	MCL 169H 4025	434885
FE 160	26-32	8 x I _r	MCL 169H 3032	434777	MCL 169H 4032	434888
FE 160	32-40	8 x I _r	MCL 169H 3040	434780	MCL 169H 4040	434891
FE 160	40-50	8 x I _r	MCL 169H 3050	434783	MCL 169H 4050	434894
FE 160	50-63	8 x I _r	MCL 169H 3063	434786	MCL 169H 4063	434897
FE 160	64-80	8 x I _r	MCL 169H 3080	431167	MCL 169H 4080	431365
FE 160	80-100	5-10 x I _r	MCL 169H 3100	431173	MCL 169H 4100	431371
FE 160	100-125	5-10 x I _r	MCL 169H 3125	431179	MCL 169H 4125	431377
FE 160	128-160	5-10 x I _r	MCL 169H 3160	431185	MCL 169H 4160	431383

LIMITOR RANGE / $I_{cu} = 150 \text{ kA} / "X"$

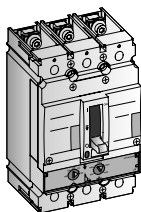


FE 160	20-25	8 x I _r	MCL 169X 3025	434972	MCL 169X 4025	435051
FE 160	26-32	8 x I _r	MCL 169X 3032	434975	MCL 169X 4032	435054
FE 160	32-40	8 x I _r	MCL 169X 3040	434978	MCL 169X 4040	435057
FE 160	40-50	8 x I _r	MCL 169X 3050	434981	MCL 169X 4050	435060
FE 160	50-63	8 x I _r	MCL 169X 3063	434984	MCL 169X 4063	435063
FE 160	64-80	8 x I _r	MCL 169X 3080	431460	MCL 169X 4080	431658
FE 160	80-100	5-10 x I _r	MCL 169X 3100	431466	MCL 169X 4100	431664
FE 160	100-125	5-10 x I _r	MCL 169X 3125	431472	MCL 169X 4125	431670
FE 160	128-160	5-10 x I _r	MCL 169X 3160	431478	MCL 169X 4160	431676

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCS 169 / 259 for line protection

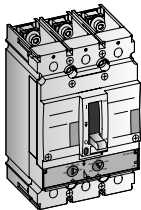
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$



With selective adjustable thermal overload trip and adjustable short-circuit trip "S"

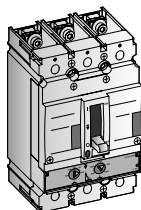
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	80-100	5-10 x I _r	MCS 169S 3100	432947	MCS 169S 4100	433063
FE 160	100-125	5-10 x I _r	MCS 169S 3125	432959	MCS 169S 4125	433069
FE 160	128-160	5-10 x I _r	MCS 169S 3160	432975	MCS 169S 4160	433075
FE 250	100-125	5-10 x I _r	MCS 259S 3125	432968	MCS 259S 4125	433072
FE 250	128-160	5-10 x I _r	MCS 259S 3160	432978	MCS 259S 4160	433078
FE 250	160-200	5-10 x I _r	MCS 259S 3200	432981	MCS 259S 4200	433081
FE 250	200-250	5-10 x I _r	MCS 259S 3250	432984	MCS 259S 4250	433084

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$



FE 160	80-100	5-10 x I _r	MCS 169H 3100	431009	MCS 169H 4100	432290
FE 160	100-125	5-10 x I _r	MCS 169H 3125	431115	MCS 169H 4125	432299
FE 160	128-160	5-10 x I _r	MCS 169H 3160	431979	MCS 169H 4160	432305
FE 250	100-125	5-10 x I _r	MCS 259H 3125	431964	MCS 259H 4125	432302
FE 250	128-160	5-10 x I _r	MCS 259H 3160	432002	MCS 259H 4160	432310
FE 250	160-200	5-10 x I _r	MCS 259H 3200	432078	MCS 259H 4200	432314
FE 250	200-250	5-10 x I _r	MCS 259H 3250	432098	MCS 259H 4250	432319

LIMITOR RANGE / $I_{cu} = 150 \text{ kA} / "X"$



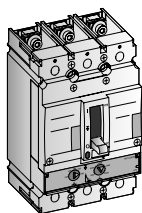
FE 160	80-100	5-10 x I _r	MCS 169X 3100	432335	MCS 169X 4100	432917
FE 160	100-125	5-10 x I _r	MCS 169X 3125	432343	MCS 169X 4125	432923
FE 160	128-160	5-10 x I _r	MCS 169X 3160	432352	MCS 169X 4160	432929
FE 250	100-125	5-10 x I _r	MCS 259X 3125	432347	MCS 259X 4125	432926
FE 250	128-160	5-10 x I _r	MCS 259X 3160	432356	MCS 259X 4160	432932
FE 250	160-200	5-10 x I _r	MCS 259X 3200	432359	MCS 259X 4200	432935
FE 250	200-250	5-10 x I _r	MCS 259X 3250	432364	MCS 259X 4250	432938

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCG 169 / 259 for generator protection

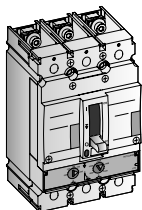
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$

With adjustable thermal overload trip and fixed (up to $I_r = 100 \text{ A}$) / adjustable short-circuit trip "G"



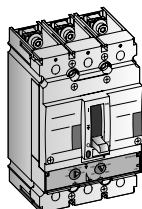
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	80-100	4 x I _r	MCG 169S 3100	435141	MCG 169S 4100	435252
FE 160	100-125	3-5 x I _r	MCG 169S 3125	435144	MCG 169S 4125	435255
FE 160	128-160	3-5 x I _r	MCG 169S 3160	435150	MCG 169S 4160	435261
FE 250	120 -160	3-5 x I _r	MCG 259S 3160	435153	MCG 259S 4160	435264
FE 250	160 -200	3-5 x I _r	MCG 259S 3200	435156	MCG 259S 4200	435267
FE 250	200-250	3-5 x I _r	MCG 259S 3250	435159	MCG 259S 4250	435270

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$



FE 160	80-100	4 x I _r	MCG 169H 3100	434810	MCG 169H 4100	434921
FE 160	100-125	3-5 x I _r	MCG 169H 3125	434813	MCG 169H 4125	434924
FE 160	128-160	3-5 x I _r	MCG 169H 3160	434819	MCG 169H 4160	434930
FE 250	120 -160	3-5 x I _r	MCG 259H 3160	434822	MCG 259H 4160	434933
FE 250	160 -200	3-5 x I _r	MCG 259H 3200	434825	MCG 259H 4200	434936
FE 250	200-250	3-5 x I _r	MCG 259H 3250	434828	MCG 259H 4250	434939

LIMITOR RANGE / $I_{cu} = 150 \text{ kA} / "X"$



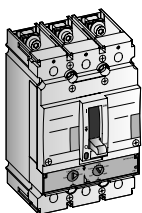
FE 160	80-100	4 x I _r	MCG 169X 3100	435925	MCG 169X 4100	435994
FE 160	100-125	3-5 x I _r	MCG 169X 3125	435928	MCG 169X 4125	435997
FE 160	128-160	3-5 x I _r	MCG 169X 3160	435934	MCG 169X 4160	436004
FE 250	120 -160	3-5 x I _r	MCG 259X 3160	435937	MCG 259X 4160	436007
FE 250	160 -200	3-5 x I _r	MCG 259X 3200	435940	MCG 259X 4200	436010
FE 250	200-250	3-5 x I _r	MCG 259X 3250	435943	MCG 259X 4250	436013

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCM 169 / 259 for motor starter

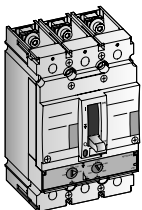
STANDARD RANGE / $I_{cu} = 50 \text{ kA} / "S"$

With adjustable short-circuit trip only "M"



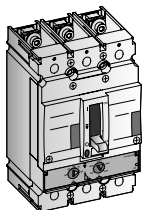
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 4 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	50	7-15 x I _n	MCM 169S 3050	435087	MCM 169S 4050	435162
FE 160	80	10-15 x I _n	MCM 169S 3080	435901	-	-
FE 160	100	10-15 x I _n	MCM 169S 3100	435090	MCM 169S 4100	435165
FE 160	160	10-15 x I _n	MCM 169S 3160	435096	MCM 169S 4160	435171
FE 250	160	10-15 x I _n	MCM 259S 3160	435099	MCM 259S 4160	435174
FE 250	200	10-15 x I _n	MCM 259S 3200	436793	MCM 259S 4200	436796
FE 250	250	10-15 x I _n	MCM 259S 3250	435102	MCM 259S 4250	435177

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA} / "H"$



FE 160	50	7-15 x I _n	MCM 169H 3050	434756	MCM 169H 4050	434831
FE 160	80	7-15 x I _n	MCM 169H 3080	435895	-	-
FE 160	100	10-15 x I _n	MCM 169H 3100	434759	MCM 169H 4100	434834
FE 160	160	10-15 x I _n	MCM 169H 3160	434765	MCM 169H 4160	434840
FE 250	160	10-15 x I _n	MCM 259H 3160	434768	MCM 259H 4160	434843
FE 250	200	10-15 x I _n	MCM 259H 3200	436780	MCM 259H 4200	435906
FE 250	250	10-15 x I _n	MCM 259H 3250	434771	MCM 259H 4250	434846

LIMITOR RANGE / $I_{cu} = 150 \text{ kA} / "X"$

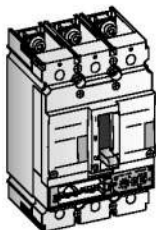


FE 160	50	10-15 x I _n	MCM 169X 3050	434954	MCM 169X 4050	434996
FE 161	80	10-15 x I _n	MCM 169X 3080	435898	-	-
FE 160	100	10-15 x I _n	MCM 169X 3100	434957	MCM 169X 4100	435000
FE 160	160	10-15 x I _n	MCM 169X 3160	434963	MCM 169X 4160	435006
FE 250	160	10-15 x I _n	MCM 259X 3160	434966	MCM 259X 4160	435009
FE 250	200	10-15 x I _n	MCM 259X 3200	436791	MCM 259X 4200	436792
FE 250	250	10-15 x I _n	MCM 259X 3250	434969	MCM 259X 4250	435012

(1) Neutral on the left. If neutral on the right is needed, please contact us.

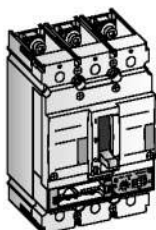
MCCBs Record Plus MCA 169 / 259 with PremEon™ S electronic trip units

STANDARD RANGE / Icu = 50 kA / "S"



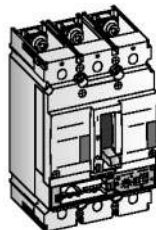
Frame size	Ir A	Irm A	3 pole		4 pole ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	25	2 - 13 x Ir	MCA169S3025	437633	MCA169S4025	437637
FE 160	63	2 - 13 x Ir	MCA169S3063	437641	MCA169S4063	437645
FE 160	125	2 - 13 x Ir	MCA169S3125	437649	MCA169S4125	437653
FE 160	160	2 - 13 x Ir	MCA169S3160	437657	MCA169S4160	437661
FE 250	125	2 - 13 x Ir	MCA259S3125	437886	MCA259S4125	437890
FE 250	160	2 - 13 x Ir	MCA259S3160	437665	MCA259S4160	437669
FE 250	250	2 - 13 x Ir	MCA259S3250	437673	MCA259S4250	437677

HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FE 160	25	2 - 13 x Ir	MCA169H3025	437634	MCA169H4025	437638
FE 160	63	2 - 13 x Ir	MCA169H3063	437642	MCA169H4063	437646
FE 160	125	2 - 13 x Ir	MCA169H3125	437650	MCA169H4125	437654
FE 160	160	2 - 13 x Ir	MCA169H3160	437658	MCA169H4160	437662
FE 250	125	2 - 13 x Ir	MCA259H3125	437887	MCA259H4125	437891
FE 250	160	2 - 13 x Ir	MCA259H3160	437666	MCA259H4160	437670
FE 250	250	2 - 13 x Ir	MCA259H3250	437674	MCA259H4250	437678

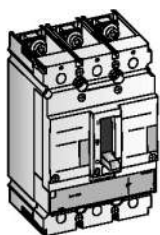
LIMITOR RANGE / Icu = 150 kA / "X"



FE 160	25	2 - 13 x Ir	MCA169X3025	437635	MCA169X4025	437639
FE 160	63	2 - 13 x Ir	MCA169X3063	437643	MCA169X4063	437647
FE 160	125	2 - 13 x Ir	MCA169X3125	437651	MCA169X4125	437655
FE 160	160	2 - 13 x Ir	MCA169X3160	437659	MCA169X4160	437663
FE 250	125	2 - 13 x Ir	MCA259X3125	437888	MCA259X4125	437892
FE 250	160	2 - 13 x Ir	MCA259X3160	437667	MCA259X4160	437671
FE 250	250	2 - 13 x Ir	MCA259X3250	437675	MCA259X4250	437679

(1) Neutral on the left. If neutral on the right is needed, please contact us.

Non-automatic MCCBs Record Plus MCT 169 / 259



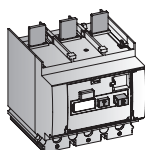
Without trip unit "T"

Frame size	I _r A	3 pole		4 pole ⁽¹⁾	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	160	MCT 169 3160	431990	MCT 169 4160	431996
FE 250	250	MCT 259 3250	431993	MCT 259 4250	431999

(1) Neutral on the left. If neutral on the right is needed, please contact us.

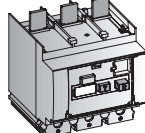
Residual current devices to fit to MCCBs Record Plus MC 169 / 259

RCD for bottom mounting



Frame size	Rated voltage V AC	3 pole		4 pole	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FE 160	220 / 440	DB3 / M91-2	431137	DB4 / M91-2	431160
FE 160	400 / 690	DB3 / M91-4	431121	DB4 / M91-4	431148

RCD for bottom mounting



FE 250	220 / 440	DB3 / M92-2	431142	DB4 / M92-2	431162
FE 250	400 / 690	DB3 / M92-4	431127	DB4 / M92-4	431154



Accessories

Bell alarm RCD device	1 NO	FAB AT10	430818
	1 NC	FAB AT01	430815



MCCB Record Plus type MC 409 / 639

Frame size FG

Breaking capacities

Icu = 400 / 415 V/AC

Breaker type	MC. 409S MC. 639S	MC. 409H MC. 639H	MC. 409X MC. 639X
Denomination	S	H	X
Icu (kAeff)	50	80	150

Protection

Rated current (A)	Frame size	Trip unit	Trip unit	Trip unit
		M	E	F
250	FG 400		S, H, X	S, H, X
		S, H, X	S, H, X	S, H, X
			S, H, X	S, H, X
400	FG 630		S, H, X	S, H, X
		S, H, X	S, H, X	S, H, X
			S, H, X	S, H, X

No of poles

Rated current	Trip unit	Trip unit	Trip unit
	M	E	F
3 pole / 3 trips	S, H, X	S, H, X	
4 pole / 3 trips	S, H, X		
4 pole / 4 trips		S, H, X	

L (LTM)

Line protection
thermal / magnetic protection

M (Mag. Break)

Magnetic protection only

E (SMR1)

selective electronic trip unit

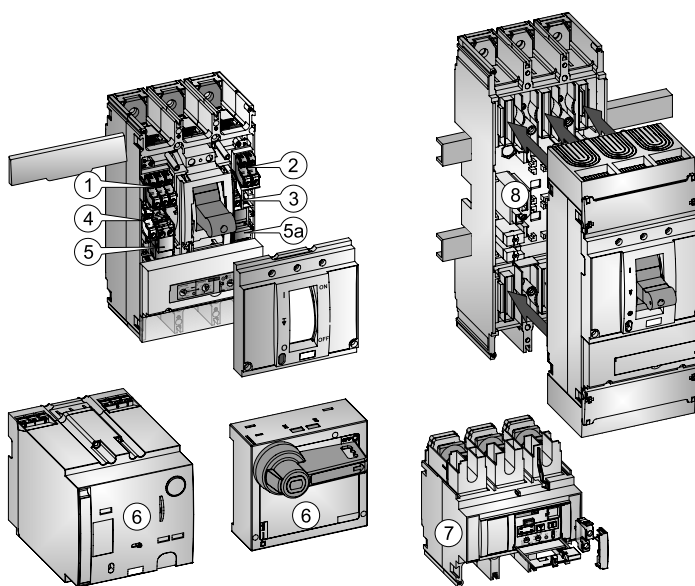
F (PremEon)

Modular electronic protection
with enhanced functionality

T (Y)

non automatic, switch only
not mentioned in schedule

- ① Auxiliary contact left mounted (NO or NC) 1, 2 or 3 pcs.
- ② Auxiliary contact right mounted (NO or NC) 1 or 2 pcs.
- ③ Bell Alarm thermal magnetic trip unit (NO or NC)
- ③a Bell Alarm electronic trip unit (NO or NC)
- ④ Bell Alarm mechanism (NO or NC)
- ⑤ Shunt or Undervoltage release
- ⑤a Actuator for electronic trip unit
- ⑥ Operators
Rotary handle
Electrical operator
- ⑦ Bottom mounted RCD (below trip unit) (Insert indicates Bell alarm contact mounting)
- ⑧ Plug-in or draw-out system



Technical data MCCBs type MC 409 / 639

Circuit breaker type		MC 409			MC 639		
Denomination		S	H	X	S	H	X
EN 60947-2 standard							
Poles	Number of	3,4			3,4		
Rated insulation voltage	Ui (Volts)	750			750		
Rated impulse withstand voltage	Uimp (Kilovolt)	8			8		
Rated operational voltage Ue	Volts AC	690			690		
	Volts DC	-			-		
Line protection device							
Category of use		B ⁽¹⁾			B ⁽¹⁾		
Suitable for use as a isolator	Positive ON & OFF	yes			yes		
Rated current Ith = Ie	A at 40°C	400			630		
Ultimate breaking capacity Icu (kA)	230/240V AC	85	100	200	85	100	200
	400/415V AC	50	80	150	50	80	150
	440V AC	42	65	130	42	65	130
	500V AC	30	50	100	30	50	100
	690V AC	10 ⁽²⁾	22 ⁽²⁾	75 ⁽²⁾	10	22	40 ⁽²⁾
	250V DC Single pole						
	440V DC Two pole						
Service breaking capacity Ics (%Icu)	≤ 500V	100%	100%	100%	100%	100%	100%
	690V AC	100%	45%	25%	100%	45%	25%
Single phase breaking capacity I _{TP} (kA)	230V AC	50	80	150	50	80	150
	400/415V AC	10	(3)	(3)	10	(3)	(3)
Endurance (CO operations)	Mechanical	20000			20000		
	Electrical at In	7500			5000		
	Electrical at In/2	15000			10000		
Endurance (On-Tripped operations)	Mechanical	8000			18000		
	Trip Units	Interchangeable			yes		
	Thermal Magnetic line						
	Thermal Magnetic generator						
	Thermal Magnetic selective						
	Magnetic Only				Mag Break™		
	Electronic selective				PremEon™		
	Electronic Enhanced				SMR2		
Circuit breaker type and denomination		MCT 409			MCT 639		
EN 60947-3 standard							
Non automatic breaker (Switch)							
Rated current In (class AC23)	220V AC to 690V AC	400			630		
Rated making capacity	Icm (kA peak)	8,5			11,3		
Short-term withstand current Icw (kA)	Icw eff. 1 second	5			6,5		
	Icw eff. 3 seconds	5			6,5		
Circuit breaker type							
Denomination		S	H	X	S	H	X
EN 60947-4 standard							
Use in motor circuits							
Rated current Ith	A at 65°C	350			500		
Endurance (CO operations)	Mechanical	20000			20000		
	Electrical at In class AC23	7500			5000		
	Operations per hour	120			60		
Protection	Short-circuit only (separate overload device)	Mag Break™			Mag Break™		
	Overload class 10 and Short-circuit	PremEon™ or SMR2			PremEon™ or SMR2		
	Max In (A) class 10	350			500		
	Max In (A) class 30	350			500		
	Earth fault unit (differential)	type DB 3 / DB 4			type DB 3 / DB 4		
Circuit breaker / Switch type		MC 409			MC 639		
Installation							
Mounting	On symmetrical DIN Rail	no			no		
	Fixed	yes			yes		
	Plug in	yes			yes		
	Draw out	yes			yes		
Connection	Front	yes			yes		
	Rear	yes			yes		
Dimensions (w x h x d) mm	3 pole, fixed front connection	140 x 265 x 115			140 x 265 x 115		
	4 pole, fixed front connection	185 x 265 x 115			185 x 265 x 115		
Weights (kg)	3 pole, fixed front connection	4,5			4,5		
	4 pole, fixed front connection	6,0			6,0		

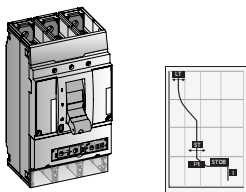
(1) 350A and 500A executions only.

(2) On use of FG 400 and FG 630L type at 690V, one long and widened terminal shield is required.

(3) Please contact us.

MCCBs Record Plus MCB 409 / 639 for motorstarter

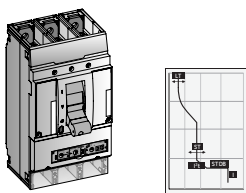
STANDARD RANGE / Icu = 50 kA / "S"



With electronic adjustable short-circuit trip only incl. rating plug "M"

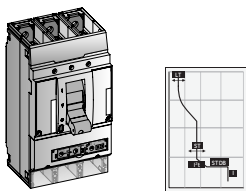
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400	350	2-13 x I _r	MCB409S3400	438568	MCB409S4400	438572
FG 630	500	2-13 x I _r	MCB639S3500	438584	MCB639S4500	438588

HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FG 400	350	2-13 x I _r	MCB639H3500	438585	MCB409H4400	438573
FG 630	500	2-13 x I _r	MCB639H3500	438585	MCB639H4500	438589

LIMITOR RANGE / Icu = 150 kA / "X"

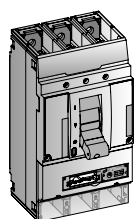


FG 400	350	2-13 x I _r	MCB409X3400	438570	MCB409X4400	438574
FG 630	500	2-13 x I _r	MCB639X3500	438586	MCB639X4500	438590

(1) Neutral on the left. If neutral on the right is needed, please contact us.

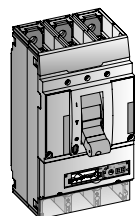
MCCBs Record Plus MCA 409 / 639 with PremEon™ S electronic trip units

STANDARD RANGE / Icu = 50 kA / "S"



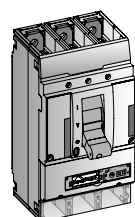
Frame size	I _r A	I _{rm} A	3 pole		4 pole ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400	250	2-13 x I _r	MCA409S3250	438528	MCA409S4250	438532
FG 400	400	2-10 x I _r	MCA409S3400	438536	MCA409S4400	438540
FG 630	400	2-13 x I _r	MCA639S3400	438544	MCA639S4400	438548
FG 630	630	2-10 x I _r	MCA639S3630	438552	MCA639S4630	438556

HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FG 400	250	2-13 x I _r	MCA409H3250	438529	MCA409H4250	438533
FG 400	400	2-10 x I _r	MCA409H3400	438569	MCA409H4400	438541
FG 630	400	2-13 x I _r	MCA639H3400	438545	MCA639H4400	438549
FG 630	630	2-10 x I _r	MCA639H3630	438553	MCA639H4630	438557

LIMITOR RANGE / Icu = 150 kA / "X"

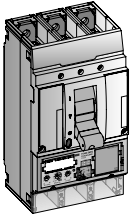


FG 400	250	2-13 x I _r	MCA409X3250	438530	MCA409X4250	438534
FG 400	400	2-10 x I _r	MCA409X3400	438570	MCA409X4400	438542
FG 630	400	2-13 x I _r	MCA639X3400	438546	MCA639X4400	438550
FG 630	630	2-10 x I _r	MCA639X3630	438554	MCA639X4630	438558

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCF 409 / 639 with selective electronic trip unit type SMR2

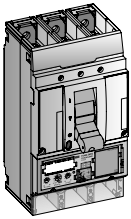
STANDARD RANGE / $I_{cu} = 50 \text{ kA}$ / "S"



Without rating plug "F"

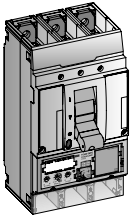
Frame size	I _r A	I _{rm} A	3 pole		4 pole ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400	250	2-13 x I _r	MCF 409S 3250	434161	MCF 409S 4250	434177
FG 400	350	2-13 x I _r	MCF 409S 3350	434485	MCF 409S 4350	435291
FG 400	400	2-10 x I _r	MCF 409S 3400	434162	MCF 409S 4400	434178
FG 630	400	2-13 x I _r	MCF 639S 3400	434163	MCF 639S 4400	434179
FG 630	500	2-13 x I _r	MCF 639S 3500	434827	MCF 639S 4500	434875
FG 630	630	2-10 x I _r	MCF 639S 3630	434164	MCF 639S 4630	434180

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA}$ / "H"



FG 400	250	2-13 x I _r	MCF 409H 3250	434113	MCF 409H 4250	436221
FG 400	350	2-13 x I _r	MCF 409H 3350	434395	MCF 409H 4350	434422
FG 400	400	2-10 x I _r	MCF 409H 3400	434114	MCF 409H 4400	436222
FG 630	400	2-13 x I _r	MCF 639H 3400	436219	MCF 639H 4400	434131
FG 630	500	2-13 x I _r	MCF 639H 3500	434608	MCF 639H 4500	434635
FG 630	630	2-10 x I _r	MCF 639H 3630	436220	MCF 639H 4630	434132

LIMITOR RANGE / $I_{cu} = 150 \text{ kA}$ / "X"

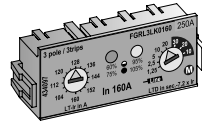
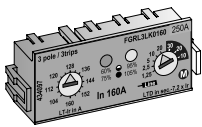


FG 400	250	2-13 x I _r	MCF 409X 3250	434137	MCF 409X 4250	434153
FG 400	350	2-13 x I _r	MCF 409X 3350	435283	MCF 409X 4350	434470
FG 400	400	2-10 x I _r	MCF 409X 3400	434138	MCF 409X 4400	434154
FG 630	400	2-13 x I _r	MCF 639X 3400	434139	MCF 639X 4400	434155
FG 630	500	2-13 x I _r	MCF 639X 3500	434653	MCF 639X 4500	434797
FG 630	630	2-10 x I _r	MCF 639X 3630	434140	MCF 639X 4630	434156

(1) Neutral on the left. If neutral on the right is needed, please contact us.

Rating plugs for trip unit type SMR2 for MCCBs Record Plus MCF 409 / 639

FOR LINE PROTECTION, ADJUSTABLE $I_r = 0,64 - 1 \times I_n$ AND SWITCHABLE FOR LINE OR MOTOR PROTECTION



Frame size FG 400 / 630

Frame size	I _r A	3 pole 3 trips		4 pole 4 trips	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400	160	RPM43250-160	436749	RPM44250-160	434559
FG 400	250	RPM43250-250	436656	RPM44250-250	434562
FG 400	250	RPM43400-250	436747	RPM44400-250	434568
FG 400	350	RPM43400-350	436748	RPM44400-350	434582
FG 400	400 ⁽²⁾	RPM43400-400	436721	RPM44400-400	434584
FG 630	250	RPM63400-250	436739	RPM64400-250	434492
FG 630	400	RPM63400-400	436746	RPM64400-400	434493
FG 630	400	RPM63630-400	436726	RPM64630-400	434496
FG 630	500	RPM63630-500	436738	RPM64630-500	434502
FG 630	630 ⁽³⁾	RPM63630-630	436722	RPM64630-630	434532

(1) Neutral on the left. If neutral on the right is needed, please contact us.

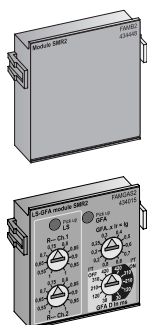
(2) 400 A unit for line protection only.

(3) Motor protection mode limited to 500 A.

Frame size FG

J

Extension modules for the trip unit SMR2



1 piece only, replaced the filler module of the trip unit

For trip unit	Description	Cat. No.	Ref. No.
SMR 2	Groundfault Protection + Fault type indicators	FAM GFT2	436190
SMR 2	2 channel load shedding device + Modbus communication Rtu + Fault type indicators	FAM SM2 FAM ST2	436192 436197
SMR 2	Fault type indicators + Modbus communication Rtu	FAM MT2	436191
SMR 2	Spare filler module	FAM B2	434448

Non-automatic MCCBs Record Plus MCT 409 / 639

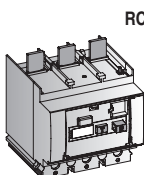


Without trip unit "T"

Frame size	I _r A	3 pole 3 trips		4 pole ⁽¹⁾	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400	300	MCT 409 3400	431661	MCT 409 4400	431673
FG 630	630	MCT 639 3630	431667	MCT 639 4630	431689

(1) Neutral on the left. If neutral on the right is needed, please contact us.

Residual current devices to fit to MC 409 / 639



RCD for bottom mounting

Frame size	Rated voltage V / AC	3 pole		4 pole	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 400 / 630	220 / 440	DB3 / M96-2	431169	DB4 / M96-2	431180
	400 / 690	DB3 / M96-4	431164	DB4 / M96-4	431176



Accessories

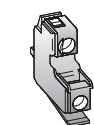
bell alarm RCD device	1 NO			FAB AT10	430818
	1 NC			FAB AT01	430815

(1) Neutral on the left. If neutral on the right is needed, please contact us.

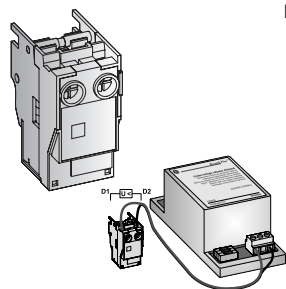
Accessories for MCCBs Record Plus MM 169, MC 169 / 259 / 409 / 639

INTERNAL ACCESSORIES

For mounting with circuit breaker type

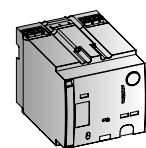
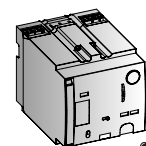
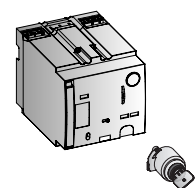


Description	MM 169 FD 160		MC 169 / 259 FE 160/250		MC 409 / 639 FG 400/630		
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Contacts	Aux. switch / right mounted						
	1NO	FAS 10R	430837	FAS 10R	430837	FAS 10R	430837
	1NO	FAS 01R	430831	FAS 01R	430831	FAS 01R	430831
	Aux. switch / left mounted						
	1NO	FAS 10L	430834	FAS 10L	430834	FAS 10L	430834
	1NO	FAS 01L	430828	FAS 01L	430828	FAS 01L	430828
Bell alarm RCD device							
1NO	FAB AT10	430818	FAB AT10	430818	FAB AT10	430818	
1NO	FAB AT01	430815	FAB AT01	430815	FAB AT01	430815	
Bell alarm mechanism ⁽¹⁾							
1CO	FDB AM11	430880	-	-	-	-	
1NO	-	-	FAB AT10	430818	FAB AT10	432003	
1NO	-	-	FAB AT01	430815	FAB AT01	432000	



Releases	Shunt trip						
	12 V DC	FAS HTB	431960	FAS HTB	431960	FAS HTB	431960
	24 V AC/DC	FAS HTD	430843	FAS HTD	430843	FAS HTD	430843
	48 V AC/DC	FAS HTF	430846	FAS HTF	430846	FAS HTF	430846
	110/130 V AC/DC	FAS HTJ	430849	FAS HTJ	430849	FAS HTJ	430849
	220/240 V AC 250 V DC	FAS HTN	430852	FAS HTN	430852	FAS HTN	430852
	400/480 V AC	FAS HTU	430855	FAS HTU	430855	FAS HTU	430855
	Undervoltage relay						
	24 V AC/DC	FAU VRD	430861	FAU VRD	430861	FAU VRD	430861
	48 V AC/DC	FAU VRF	430864	FAU VRF	430864	FAU VRF	430864
110/130 V AC/DC	FAU VRJ	430867	FAU VRJ	430867	FAU VRJ	430867	
220/240 V AC 250 V DC	FAU VRN	430870	FAU VRN	430870	FAU VRN	430870	
400/480 V AC	FAU VRU	430873	FAU VRU	430873	FAU VRU	430873	
220/240 V AC	FAU VDN	430858	FAU VDN	430858	FAU VDN	430858	

OPERATORS

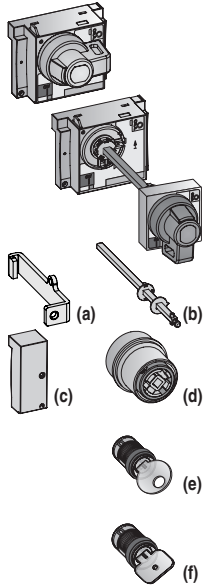


Electrical operators	24 V AC/DC	F/MM9-24U	430928	F/M92-24U	432054	F/M96-24U	432819
	48 V AC/DC	F/MM9-48U	430931	F/M92-48U	432057	F/M96-48U	432822
	60 V AC/DC	F/MM9-60U	430934	F/M92-60U	432060	F/M96-60U	432825
	110 V AC/DC	F/MM9-110U	430937	F/M92-110U	432063	F/M96-110U	432828
	220/250 V AC/DC	F/MM9-220U	430940	F/M92-220U	432066	F/M96-220U	432831
	400/440 V AC	F/MM9-400A	430922	F/M92-400A	435814	F/M96-400A	432813
	Keylock type Ronis for operator⁽²⁾						
		FD1 BRE	430877	FE1 BRE	430877	FD1 BRE	430877
	Keylock type Profalux for operator⁽²⁾						
		FD1 BPE	430876	FD1 BPE	430876	FD1 BPE	430876

Accessories for MCCBs Record Plus MM 169, MC 169 / 259 / 409 / 639

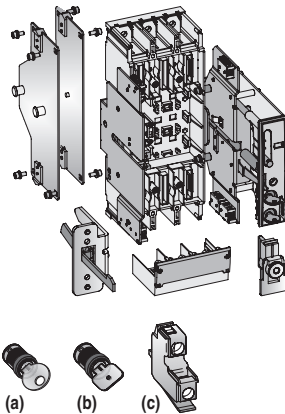
ROTARY HANDLES

For mounting with circuit breaker type



Description	For mounting with circuit breaker type						
	MM 169 FD 160		MC 169 / 259 FE 160/250		MC 409 / 639 FG 400/630		
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Contacts	Direct on device						
	Grey	MDG / MM9	436538	MDG / M92	436552	MDG / M96	436567
	Red	MDR / MM9	436540	MDR / M92	436555	MDR / M96	436568
Rotary handle for use through door/cover ⁽³⁾							
Grey	MDBG / MM9	436532	MDBG / M92	436547	MDBG / M96	436562	
Red	MDBR / MM9	436535	MDBR / M92	436548	MDBR / M96	436564	
Grey + aux. contact 2 x NO ⁽⁴⁾	MDBHG / MM9	436541	MDBHG / M92	436560	MDBHG / M96	436576	
Red + aux. contact 2 x NO ⁽⁴⁾	MDBHR / MM9	436542	MDBHR / M92	436561	MDBHR / M96	436577	
Panel or door mounted							
Grey (max. 350 mm)	MRBG / MM9	436536	MRBG / M92	436550	MRBG / M96	436565	
Red (max. 350 mm)	MRBR / MM9	436537	MRBR / M92	436551	MRBR / M96	436566	
Grey + aux. contact 2 x NO ⁽⁴⁾	MRBHG / MM9	436545	MRBHG / M92	436560	MRBHG / M96	436576	
Red + aux. contact 2 x NO ⁽⁴⁾	MRBHR / MM9	436546	MRBHR / M92	436561	MRBHR / M96	436577	
Accessories	Flex operator adaptor push to trip, 2 pcs (a) ⁽⁵⁾						
		-	-	FEN FT	433531	-	-
	Extension shaft kid (max. 600mm) (b) ⁽⁵⁾						
		FDN RE	430986	FDN RE	430986	FGNRE	434735
	Side-by-side installation adapter kit (c) ⁽⁶⁾						
		FDN R4	430971	FEN R4	432099	-	-
	Adapter for drawout (d)						
		-	-	ADW / M96	432122	ADW / M96	433894
	Keylock type Ronis 1104B nr. 1027 (e) ⁽²⁾						
	1053 (e) ⁽²⁾	FA1 BR1	430088	FA1 BR1	430088	FA1 BR1	430088
2932 (e) ⁽²⁾	FA1 BR2	430089	FA1 BR2	430089	FA1 BR2	430089	
2911 (e) ⁽²⁾	FA1 BR3	430504	FA1 BR3	430504	FA1 BR3	430504	
2936 (e) ⁽²⁾	FA1 BR4	430505	FA1 BR4	430505	FA1 BR4	430505	
2940 (e) ⁽²⁾	FA1 BR5	430506	FA1 BR5	430506	FA1 BR5	430506	
	FA1 BR6	430507	FA1 BR6	430507	FA1 BR6	430507	
Ronis lock with random key (e) ⁽²⁾							
	FA1 BRH	430068	FA1 BRH	430068	FA1 BRH	430068	
Profalux lock with random key (f) ⁽²⁾							
	FA1 BPH	430813	FA1 BPH	430813	FA1 BPH	430813	

DRAW-OUT SYSTEM

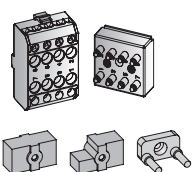
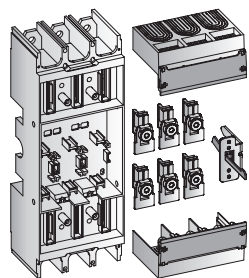


Complete set, 3 pole (fixed and moveable part)					EE3 / M96	432912
Complete set, 4 pole (fixed and moveable part)					EE4 / M96	432915
Accessories for aux. disconnects see plug-in system						
Key-lock system Ronis in draw-out position (a)			FE1 BRW	432188	FG1 BRW	433407
Key-lock system Profalux in draw-out position (b)			FE1 BPW	432184	FG1 BPW	433406
Position indication contact						
1NC (c)			FAS 01L	430828	FAS 01L	430828
1NO (c)			FAS 10L	430834	FAS 10L	430834

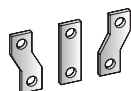
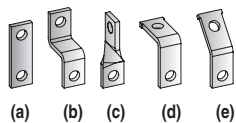
- (1) For Type MM 169 rated current max. 125 A
- (2) Key included.
- (3) Add door flange FD FH to allow use of the door interlock opinions.
- (4) On request 1NO + 1NC is available.
- (5) Only for use with panel or door mounted type.
- (6) Not for use with panel or door mounted type.

Accessories for MCCBs Record Plus MM 169, MC 169 / 259 / 409 / 639

PLUG-IN SYSTEM



Description		For mounting with circuit breaker type						
		MM 169 FD 160		MC 169 / 259 FE 160/250		MC 409 / 639 FG 400/630		
		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
	Complete set for breaker, 3 pole ⁽¹⁾	RC3 / MM9	430895	RC3 / M92	432036	RC3 / M96	431057	
	Fixed part for breaker, 3 pole ⁽¹⁾	RF3 / MM9	430901	RF3 / M92	432042	RF3 / M96	431985	
	Mobile part for breaker, 3 pole ⁽¹⁾	RM3 / MM9	430907	RM3 / M92	432048	RM3 / M96	432798	
	Fixed part for breaker, 3 pole & RCD ⁽¹⁾	RFR3 / MM9	433491	RFR3 / M92	431841	-	-	
	Mobile part for breaker, 3 pole & RCD ⁽¹⁾	RM3 / MM9	430907	RM3 / M92	432048	-	-	
	Complete set for breaker, 4 pole ⁽¹⁾	RC4 / MM9	430898	RC4 / M92	432039	RC4 / M96	431066	
	Fixed part for breaker, 4 pole ⁽¹⁾	RF4 / MM9	430904	RF4 / M92	432045	RF4 / M96	432795	
	Mobile part for breaker, 4 pole ⁽¹⁾	RM4 / MM9	430910	RM4 / M92	432051	RM4 / M96	432801	
	Fixed part for breaker, 4 pole & RCD ⁽¹⁾	RFR4 / MM9	433495	RFR4 / M92	431847	-	-	
	Mobile part for breaker, 4 pole & RCD ⁽¹⁾	RM4 / MM9	430910	RM4 / M92	432051	-	-	
	Auxiliary disconnects complete set, 8 pole	FAP FM	430824	FAP FM	430824	FAP FM	430824	
	Auxiliary disconnects fixed part set, 8 pole	FAP F8	430823	FAP F8	430823	FAP F8	430823	
	Auxiliary disconnects mobile part set, 8 pole	FAP M8	430826	FAP M8	430826	FAP M8	430826	
	Plug and socket, 10 pole	FAP PS	430827	FAP PS	430827	FAP PS	430827	
	Insertion prevention lit (of wrong A rating)	FAP IP	430825	FAP IP	430825	FAP IP	430825	
CONNECTIONS								
Extenders	3 pole	standard flat type (a)	FDB ES3	430887	FEB ES3	432026	FGB ES3	431696
		heightened type (b)	FDB EH3	430885	FEB EH3	432024	FGB EH3	431691
		twisted 90° type (c)	FDB EA3	430883	FEB EA3	432022	FGB EA3	431686
		angled 45° type (d)	-	-	FEB E43	432018	-	-
		angled 90° type (e)	-	-	FEB E93	432020	-	-
	4 pole	standard flat type (a)	FDB ES4	430888	FEB ES4	432027	FGB ES4	431697
		heightened type (b)	FDB EH4	430886	FEB EH4	432025	FGB EH4	431695
		twisted 90° type (c)	FDB EA4	430884	FEB EA4	432023	FGB EA4	431690
		angled 45° type (d)	-	-	FEB E44	432019	-	-
		angled 90° type (e)	-	-	FEB E94	432021	-	-
Spreaders flat	3 pole,	pole spacing 35 mm	FDB SS3	430891	-	-	-	-
		pole spacing 45 mm	-	-	FEB SS3	432032	-	-
		pole spacing 70 mm	-	-	-	-	FGB SS3	431981
	3 pole,	pole spacing 35 mm	FDB SS4	430892	-	-	-	-
		pole spacing 45 mm	-	-	FEB SS4	432033	-	-
		pole spacing 70 mm	-	-	-	-	FGB SS4	431982

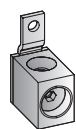


(1) For Type MM 169 rated current max. 125 A

Accessories for MCCBs Record Plus MM 169, MC 169 / 259 / 409 / 639

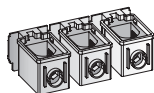
CONNECTIONS

For mounting with circuit breaker type



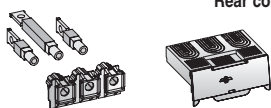
External box clamps

Description	MM 169 FD 160		MC 169 / 259 FE 160/250		MC 409 / 639 FG 400/630	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.
3 pole set, cable Cu/Al 95 mm ²	FDT CA1316	433400	-	-	-	-
4 pole set, cable Cu/Al mm ²	FDT CA1416	433401	-	-	-	-
3 pole set, cable Cu/Al 70 -185 mm ²	-	-	FET CA1323	432160	-	-
4 pole set, cable Cu/Al 70 - 185 mm ²	-	-	FET CA1423	432158	-	-



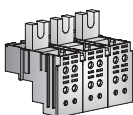
Internal box clamps

3 pole set, cable Cu/Al 2,5 - 95 mm ²	-	-	FET CA1316	432156	-	-
4 pole set, cable Cu/Al 2,5 - 95 mm ²	-	-	FET CA1416	432158	-	-
3 pole set, cable Cu/Al 16 -150 mm ²	-	-	FET CA1320	432157	-	-
4 pole set, cable Cu/Al 16 -150 mm ²	-	-	FET CA1420	432159	-	-
3 pole set, cable Cu/Al 1x240 & 1x300 mm ²	-	-	-	-	FGT CA230B	433412
4 pole set, cable Cu/Al 1x240 & 1x300 mm ²	-	-	-	-	FGT CA240B	433413



Rear connections

3 pole set, 2 short & 1 long	FDB RC3	430889	FEB RC3	432028	FGB RC3	431701
4 pole set, 2 short & 1 long	FDB RC4	430890	FEB RC4	432029	FGB RC4	431702
3 pole set, 3 short	-	-	FEB RCS3	432190	FGB RCS3	432193
4 pole set, 4 short	-	-	FEB RCS4	432191	FGB RCS4	432194

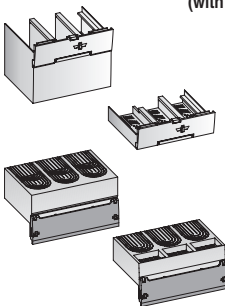


External connections

3 pole set, 6 x 25 or 6 x 35 mm ²	-	-	FET CA630A	880954	-	-
4 pole set, 6 x 25 or 6 x 35 mm ²	-	-	FET CA640A	880955	-	-

INSTALLATION ACCESSORIES

Terminal shields (with finishing cover)

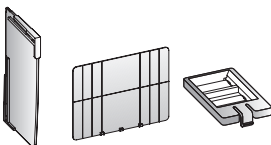


Long, set of 2 pcs, 3 pole	FDJ L3	430951	FEJ L3	432079	-	-
Long, set of 2 pcs, 4 pole	FDJ L4	430954	FEJ L4	432082	-	-

Medium, set of 2 pcs, 3 pole	-	-	-	-	FGJ M3	432846
Medium, set of 2 pcs, 4 pole	-	-	-	-	FGJ M4	432849

Short, set of 2 pcs 3 pole	FDJ S3	430960	FEJ S3	432088	FGJ S3	432855
Short, set of 2 pcs 4 pole	FDJ S4	430963	FEJ S4	432091	FGJ S4	432858

Specific to connection area



Phase separators, set of 12 pcs	FDJ P	430957	FEJP	432085	FGJ P	432852
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Backplate, set of 2 pcs (3 or 4 pole)	FDJ B	430945	FEJB	432073	FGJ B	432840
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Finger protection IP XXB, set of 12 pcs	FDJ K	430069	-	-	-	-
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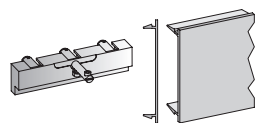
Accessories for MCCBs Record Plus MM 169, MC 169 / 259 / 409 / 639

PLUG-IN SYSTEM

For mounting with circuit breaker type

MM 169 FD 160		MC 169 / 259 FE 160/250		MC 409 / 639 FG 400/630	
Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.

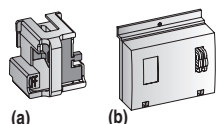
Description



Covers

Cut-out adaptor, breaker + trip unit, 3pole	FDU F3	430830	-	-	-	-
Cut-out adaptor, breaker + trip unit, 4pole	FDU F4	430832	-	-	-	-
Cut-out filler for cover plate(64mm) length 1,2 m	FBF6	883970	FBF6	883970	-	-

Padlocking devices for toggle operator



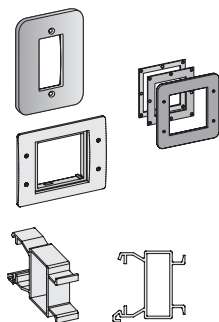
Padlocking removeable (a)	FD1 PR	430879	FD1 PR	430879	FG1 PR	431409
Padlocking fixed (b)	FD1 PF	430878	FE1 PF	432017	FG1 PF	431408

Circuit indication/coding



Set 20 blank labels	FAC	430821	FAC	430821	FAC	430821
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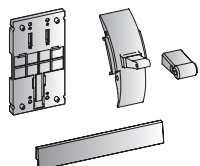
Door flanges



Breaker front face or RCD, 3pole	DFD F3	430941	-	-	-	-
Breaker front face or RCD, 4pole	DFD FF4	430942	-	-	-	-
Breaker front face, 3 pole	-	-	FEF F3	432067	-	-
Breaker front face, 4 pole	-	-	FEF F4	432068	-	-
RCD unit face for 3 and 4 pole	-	-	FDF3	430941	FDF3	430941
Front face toggle handle area	-	-	FEFT	432071	FGFT	432836
Rotary handle (through cover plate model)	FDFH	430829	FDFH	430829	FDFH	430829
Electrical operator	FDFE	432010	FEFE	430943	FGFE	430544

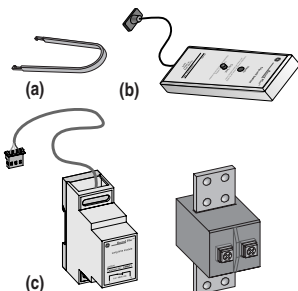
Heightning set (18 modules) for mcb's ELFA plus	FDKE	617947	-	-	-	-
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Spare parts



DIN rail adaptor kit, 3 pole	FDK3	430966	-	-	-	-
DIN rail adaptor kit, 4 pole	FDK4	430967	-	-	-	-
Finishing cover, set of 2 pcs, 3 pole	FUA3	431025	FUA3	432162	FUA3	432908
Finishing cover, set of 2 pcs, 4 pole	FUA4	431026	FUA4	432163	FUA4	432909
Spare toggle handle, set of 5 pcs	FDUT	433539	FEUT	433540	FGUT	433541

ACCESSORIES FOR ELECTRONIC TRIP UNITS TYPE SMR1 AND SMR2



Rating plug tool for type SMR1 and SMR2 (a)	-	-	FAR	433500	FAR	433500
Battery test device for type SMR1 and SMR2 (b)	-	-	FAT	431402	FAT	431402
Long time module for type SMR1 and SMR2 (c)	-	-	LTM / M92	433005	LTM / M92	433005
Ground fault sensor 250 A for type SMR2	-	-	-	-	FGG S0250	431870
Ground fault sensor 400 A for type SMR2	-	-	-	-	FGG S0400	432838
Ground fault sensor 630 A for type SMR2	-	-	-	-	FGG S0630	432839



MCCB Record Plus type MC 809/1259/1609

Frame size FK

Breaking capacities

Icu = 400 / 415 V/AC

Breaker type	MC. 809S MC. 1259S MC. 1609S	MC. 809H MC. 1259H MC. 1609H	MC. 809X MC. 1259X MC. 1609X
Denomination	S	H	X
Icu (kAeff)	50	80	100

Protection

Icu = 400 / 415 Vac

Rated current (A)	Frame size	Trip unit	Trip unit	Trip unit	Trip unit	Trip unit
		L	M	E	E...D	E...G
60	FG 800	S, H, X				
		S, H, X	S, H, X	S, H, X	S, H	S, H
1000	FG 1250	S, H, X		S, H, X	S, H	S, H
		S, H, X	S, H, X	S, H, X	S, H	S, H
1600	FG 1600			S, H	S, H	S, H

L (LTM)

Line protection
thermal / magnetic protection

M (Mag. Break)

Magnetic protection only

E (SMR1e)

selective electronic trip unit

E...D (SMR1s)

Modular electronic protection
with enhanced functionality

E...G (SMR1s)

Modular electronic protection
with enhanced functionality
and ground fault

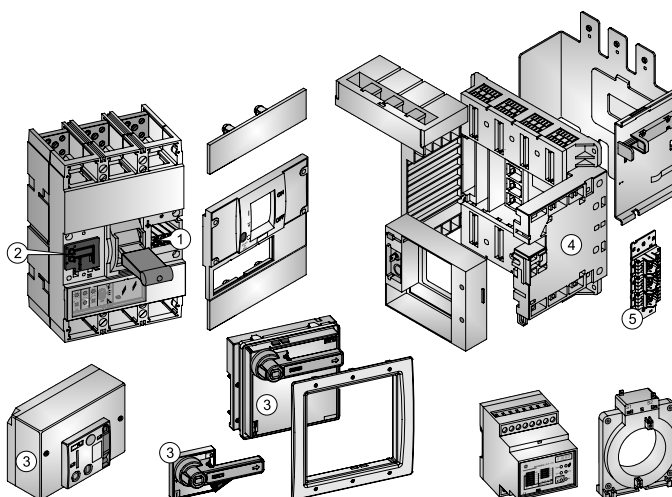
T (Y)

non automatic, switch only
not mentioned in schedule

No of poles

Rated current	Trip unit	Trip unit	Trip unit	Trip unit	Trip unit
	L	M	E	E...D	E...G
3 pole / 3 trips	S, H, X	S, H, X	S, H, X	S, H	S, H
4 pole / 3 trips	S, H, X	S, H, X	S, H, X	S, H	S, H

- ① Bell Alarm contact with a maximum of: 3 aux. contacts (CO)
- ② Shunt or Undervoltage release
- ③ Operators
Rotary handle
Electrical operator
- ④ Draw out system
- ⑤ Connectors for auxiliary wiring
- ⑥ RCD with separate sensor



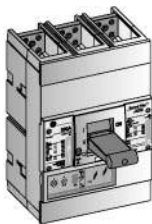
Technical data MCCBs type MC 809 / 1259 / 1609

Circuit breaker type Denomination		MC 809			MC 639			MC 1609	
		S	H	X	S	H	X	S	H
EN 60947-2 standard									
Poles	Number of	3.4			3.4			3.4	
Rated insulation voltage	Ui (Volts)	1000			1000			1000	
Rated impulse withstand voltage	Uimp (Kilovolt)	8			8			8	
Rated operational voltage Ue	Volts AC	690			690			690	
	Volts DC	500			500			500	
Line protection device									
Category of use		B			B			B	
Suitable for use as a isolator	Positive ON & OFF	yes			yes			yes	
Rated current Ith = Ie	A at 40°C	800			1250			1600	
Ultimate breaking capacity Icu (kA)	230/240V AC	85	100	170	85	100	170	85	100
	400/415V AC	50	80	100	50	80	100	50	80
	440V AC	42	65	80	42	65	80	42	65
	500V AC	36	42	50	36	42	50	36	42
	690V AC	20	25	30	20	25	30	20	25
	250V DC Single pole	50 ⁽²⁾	60 ⁽²⁾	80 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	80 ⁽²⁾	-	-
	440V DC Two pole	36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	-	-
Service breaking capacity Ics (%Icu)	500V DC Two pole	36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	36 ⁽²⁾	50 ⁽²⁾	60 ⁽²⁾	-	-
	≤ 500V	100%	75%	50%	100%	75%	50%	100%	75%
Single phase breaking capacity I _{TP} (kA)	690V AC	100%	75%	50%	100%	75%	50%	100%	75%
	230V AC	50	80	100	50	80	100	50	80
Endurance (CO operations)	400/415V AC	20	25	30	20	25	30	20	25
	Mechanical	10000			10000			10000	
	Electrical at In	4000			3000			2000	
Endurance (On-Tripped operations)	Electrical at In/2	8000			6000			4000	
	Mechanical	4000			3000			2000	
	Trip Units	no			no			no	
Thermal Magnetic line	Interchangeable	no			no			no	
	Thermal Magnetic generator	LTM			LTM				
	Thermal Magnetic selective								
	Magnetic Only								
	Electronic selective				SMR1e				
	Electronic Enhanced				SMR1s&g				
Circuit breaker type and denomination		MCT 809			MCT 1259			MCT 1609	
EN 60947-3 standard									
Non automatic breaker (Switch)									
Rated current In (class AC23)	220V AC to 690V AC	800			1250			1600	
Rated making capacity	I _{cm} (kA peak)	14.1			21.2			28.3	
Short-term withstand current I _{sw} (kA)	I _{sw} eff. 1 second	10			15			20	
	I _{sw} eff. 3 seconds	10			15			20	
EN 60947-4 standard									
Use in motor circuits									
Rated current Ith	A at 65°C	720			1000				
Endurance (CO operations)	Mechanical	10000			10000				
	Electrical at In class AC23	4000			3000				
	Operations per hour	60			60				
Protection	Short-circuit only (separate overload device)	Mag Break™			Mag Break™				
	Overload class 10 and Short-circuit								
	Max In (A) class 10	720			1000				
	Max In (A) class 30	720			1000				
	Earth fault unit (differential)								
Circuit breaker type / Switch type		MC 809			MC 1259			MC 1609	
Installation									
Mounting	On symmetrical DIN Rail	no			no			no	
	Fixed	yes			yes			yes	
	Plug-in	no			no			no	
	Drawout	yes			yes			yes	
Connection	Front	yes			yes			yes	
	Rear	yes			yes			yes	
Dimensions (w x h x d) mm	3 pole, fixed front connection	210 x 320 x 160			210 x 320 x 160			210 x 320 x 160	
	4 pole, fixed front connection	280 x 320 x 160			280 x 320 x 160			280 x 320 x 160	
Weights (kg)	3 pole, fixed front connection	12.2			18.0			18.0	
	4 pole, fixed front connection	15.1			23.4			23.4	

(1) Use 3 poles.
(2) Use 2 poles.

MCCBs Record Plus MCL 809 / 1259 for line protection

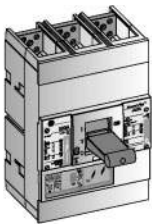
STANDARD RANGE / Icu = 50 kA / "S"



With adjustable thermal overload trip and adjustable short-circuit trip "L"

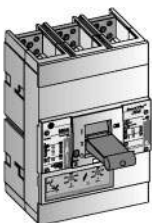
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FK 800	504 - 630	5-10 x I _r	MCL 809S 3630	435385	MCL 809S 4630	435404
	640 - 800	5-10 x I _r	MCL 809S 3800	435317	MCL 809S 4800	435379
FK 1250	800 - 1000	5-10 x I _r	MCL 1259S 31000	436312	MCL 1259S 41000	435413
	1000 - 1250	5-10 x I _r	MCL 1259S 31250	434717	MCL 1259S 41250	435681

HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FK 800	504 - 630	5-10 x I _r	MCL 809H 3630	435734	MCL 809H 4630	435817
	640 - 800	5-10 x I _r	MCL 809H 3800	435736	MCL 809H 4800	435885
FK 1250	800 - 1000	5-10 x I _r	MCL 1259H 31000	435532	MCL 1259H 41000	435756
	1000 - 1250	5-10 x I _r	MCL 1259H 31250	435407	MCL 1259H 41250	435815

LIMITOR RANGE / Icu = 150 kA / "X"

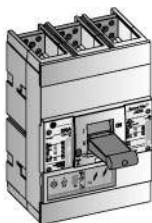


FK 800	504 - 630	5-10 x I _r	MCL 809X 3630	435920	MCL 809X 4630	435983
	640 - 800	5-10 x I _r	MCL 809X 3800	435922	MCL 809X 4800	435985
FK 1250	800 - 1000	5-10 x I _r	MCL 1259X 31000	435917	MCL 1259X 41000	435980
	1000 - 1250	5-10 x I _r	MCL 1259X 31250	435919	MCL 1259X 41250	435982

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCM 809 / 1259 for motorstarter

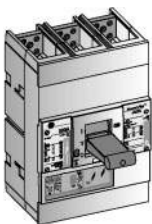
STANDARD RANGE / Icu = 50 kA / "S"



With adjustable short-circuit trip only "M"

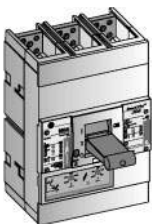
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FK 800	800	10-15 x I _n	MCM 809S 3800	436128	MCM 809S 4800	436134
FK 1250	1250	10-15 x I _n	MCM 1259S 31250	436127	MCM 1259S 41250	436132

HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FK 800	800	10-15 x I _n	MCM 809H 3800	435518	MCM 809H 4800	435753
FK 1250	1250	10-15 x I _n	MCM 1259H 31250	435517	MCM 1259H 41250	435756

LIMITOR RANGE / Icu = 150 kA / "X"

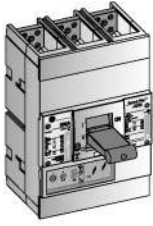


FK 800	800	10-15 x I _n	MCM 809X 3800	435916	MCM 809X 4800	435931
FK 1250	1250	10-15 x I _n	MCM 1259X 31250	435914	MCM 1259X 41250	435929

(1) Neutral on the left. If neutral on the right is needed, please contact us.

MCCBs Record Plus MCE 809 / 1259 / 1609 for line and motor protection

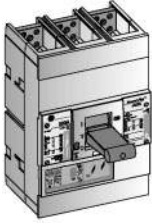
STANDARD RANGE / $I_{cu} = 50 \text{ kA}$ / "S"



With selective, adjustable electronic trip unit type SMR1e "E"

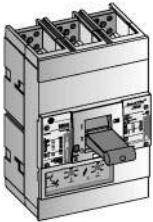
Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FK 800	800	2 - 13 x In	MCE 809S 3800	435395	MCE 809S 4800	435449
FK 1250	1000	2 - 13 x In	MCE 1259S 31000	435398	MCE 1259S 41000	435452
FK 1250	1250	2 - 13 x In	MCE 1259S 31250	435386	MCE 1259S 41250	435440
FK 1600	1600	2 - 13 x In	MCE 1609S 31600	435389	MCE 1609S 41600	435443

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA}$ / "H"



FK 800	800	2 - 13 x In	MCE 809H 3800	436485	MCE 809H 4800	435341
FK 1250	1000	2 - 13 x In	MCE 1259H 31000	435290	MCE 1259H 41000	435344
FK 1250	1250	2 - 13 x In	MCE 1259H 31250	433462	MCE 1259H 41250	435332
FK 1600	1600	2 - 13 x In	MCE 1609H 31600	436486	MCE 1609H 41600	435335

LIMITOR RANGE / $I_{cu} = 150 \text{ kA}$ / "X"

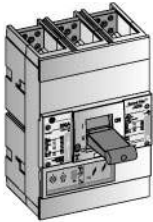


FK 800	800	2 - 13 x In	MCE 809X 3800	435913	MCE 809X 4800	435989
FK 1250	1000	2 - 13 x In	MCE 1259X 31000	435891	MCE 1259X 41000	435986
FK 1250	1250	2 - 13 x In	MCE 1259X 31250	435911	MCE 1259X 41250	435988

(1) Neutral on the left, neutral protection selectable 0% or 50% or 100%

MCCBs Record Plus MCE 809 / 1259 / 1609 for all kind of protection

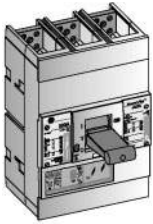
STANDARD RANGE / $I_{cu} = 50 \text{ kA}$ / "S"



With enhanced selective, adjustable electronic trip unit type SMR1, "E..D"

Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FK 800	800	2 - 13 x In	MCE 809S 3800D	435431	MCE 809S 4800D	435485
FK 1250	1000	2 - 13 x In	MCE 1259S 31250D	436131	MCE 1259S 41250D	435488
FK 1250	1250	2 - 13 x In	MCE 1259S 31250D	436286	MCE 1259S 41250D	435476
FK 1600	1600	2 - 13 x In	MCE 1609S 31600D	435425	MCE 1609S 41600D	435479

HIGH PERFORMANCE RANGE / $I_{cu} = 80 \text{ kA}$ / "H"

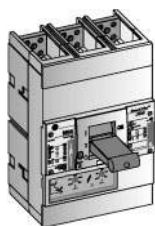


FK 800	800	2 - 13 x In	MCE 809H 3800D	435687	MCE 809H 4800D	435377
FK 1250	1000	2 - 13 x In	MCE 1259H 31000D	435519	MCE 1259H 41000D	435380
FK 1250	1250	2 - 13 x In	MCE 1259H 31250D	435524	MCE 1259H 41250D	435368
FK 1600	1600	2 - 13 x In	MCE 1609H 31600D	435281	MCE 1609H 41600D	435371

(1) Neutral on the left, neutral protection selectable 0% or 50% or 100%

MCCBs Record Plus MCE 809 / 1259 / 1609 for all kind of protection

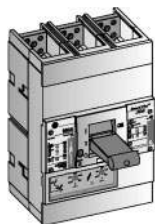
STANDARD RANGE / Icu = 50 kA / "S"



With enhanced selective, adjustable electronic trip unit type SMR1g incl. ground fault "E..G"

Frame size	I _r A	I _{rm} A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
			Cat. No.	Ref. No.	Cat. No.	Ref. No.
FK 800	800	2 - 13 x In	MCE 809S 3800G	436001	MCE 809S 4800G	435467
FK 1250	1000	2 - 13 x In	MCE 1259S 31250G	435991	MCE 1259S 41250G	435470
FK 1250	1250	2 - 13 x In	MCE 1259S 31250G	435998	MCE 1259S 41250G	435458
FK 1600	1600	2 - 13 x In	MCE 1609S 31600G	435999	MCE 1609S 41600G	435461

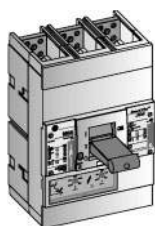
HIGH PERFORMANCE RANGE / Icu = 80 kA / "H"



FK 800	800	2 - 13 x In	MCE 809H 3800G	435516	MCE 809H 4800G	435359
FK 1250	1000	2 - 13 x In	MCE 1259H 31000G	435513	MCE 1259H 41000G	435362
FK 1250	1250	2 - 13 x In	MCE 1259H 31250G	435514	MCE 1259H 41250G	435350
FK 1600	1600	2 - 13 x In	MCE 1609H 31600G	435515	MCE 1609H 41600G	435353

(1) Neutral on the left, neutral protection selectable 0% or 50% or 100%

Non-automatic MCCBs Record Plus MCT 809 / 1259 / 1609



Without trip unit "T"

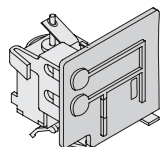
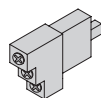
Frame size	I _r A	3 pole 3 trips		4 pole 3 trips ⁽¹⁾	
		Cat. No.	Ref. No.	Cat. No.	Ref. No.
FG 800	800	MCT 809 3800	435497	MCT 8094800	435506
FG 1250	1000	MCT 1259 31000	436135	MCT 1259 41000	435278
	1250	MCT 1259 31250	435491	MCT 1259 41250	435500
FG 1600	1600	MCT 1609 31600	435494	MCT 1609 41600	435503

(1) Neutral on the left side.

Accessories for MCCBs Record Plus MC 809 / 1259 / 1609

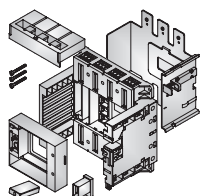
INTERNAL ACCESSORIES

For mounting with circuit breaker type

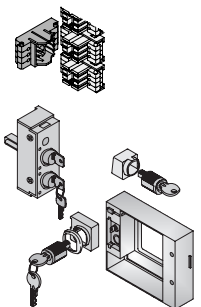


Description	For mounting with circuit breaker type						
	MC 809 FK 800		MC 1259 FK 1250		MC 1609 FK 1600		
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
Contacts Aux. switch / right mounted /	1CO	FNS11R	436401	FNS11R	436401	FNS 11R	436401
	Bell alarm contact, right mounted	1CO	FNBA11R	435761	FNBA11R	435761	FNB A11R
Releases Shunt trip	24 V AC/DC	FNSHTD	435693	FNSHTD	435693	FNS HTD	435693
	48 V AC/DC	FNSHTF	435694	FNSHTF	435694	FNS HTF	435694
	110/130 V AC/DC	FNSHTJ	435695	FNSHTJ	435695	FNS HTJ	435695
	220/240 V AC 220/250 V DC	FNSHTN	435696	FNSHTN	435696	FNS HTN	435696
	380/440 V AC/DC	FNSHT8	435692	FNSHT8	435692	FNS HT8	435692
	Undervoltage relays						
	24 V AC	FNUVR1	435698	FNUVR1	435698	FNU VR1	435698
	24 V DC	FNUVRD	435701	FNUVRD	435701	FNU VRD	435701
48 V DC	FNUVRF	435702	FNUVRF	435702	FNU VRF	435702	
230 V AC	FNUVR6	435699	FNUVR6	435699	FNU VR6	435699	
400 V AC	FNUVR8	435700	FNUVR8	435700	FNU VR8	435700	
Undervoltage relay delayed	FNUVD6	435697	FNUVD6	435697	FNU VD6	435697	

DRAW-OUT SYSTEM

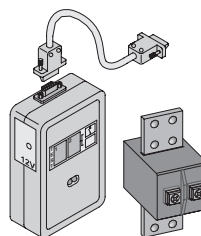


Main system with front connection	Complete set	EEA3/M98	436149	EEA4/M9K	436208	EEA4/M9K	436260
	3 pole (fixed and moveable part)	EEA4/M98	436217	EEA3/M9K	433453	EEA3/M9K	436483
	4 pole (fixed and moveable part)						



Main system with rear connection	Complete set	EEP3/M98	433450	EEP3/M9K	436484	EEP3/M9K	436484
	3 pole (fixed and moveable part)	EEP4/M98	436483	EEP4/M9K	433453	EEP4/M9K	433453
	4 pole (fixed and moveable part)						
	Auxilliary disconnects, complete set, 6 pole	FNPFM	435758	FNPFM	435758	FNPFM	435758
	Keylock in chasispos. 1, Ronis key 1104 pos. 2, Ronis key 1104	FN1BRW1	435575	FN1BRW1	435575	FN1BRW1	435575
		FN1BRW2	435577	FN1BRW2	435577	FN1BRW2	435577
	Position indication contact 1CO	FNS11L	435760	FNS11L	435760	FNS11L	435760
	Doorflange specific for draw-out type	FNFW	435578	FNFW	435578	FNFW	435578
	Keylock in doorflangepos. 1, Ronis key 1104 pos. 2, Ronis key 1104	FN1BRY1	433415	FN1BRY1	433415	FN1BRY1	433415
		FN1BRY2	435574	FN1BRY2	435574	FN1BRY2	435574

ACCESSORIES FOR ELECTRONIC TRIP UNITS TYPE SMR1 AND SMR2

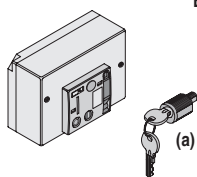


Battery test device	FNT	435704	FNT	435704	FNT	435704
Ground fault sensor 800 A	FNGS0800	433419	FNGS0800	433419	FNGS0800	433419
Ground fault sensor 1000 A	FNGS1000	433421	FNGS1000	433421	FNGS1000	433421
Ground fault sensor 1250 A	FNGS1250	435709	FNGS1250	435709	FNGS1250	435709

Accessories for MCCBs Record Plus MC 809 / 1259 / 1609

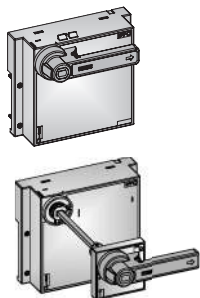
OPERATORS

For mounting with circuit breaker type



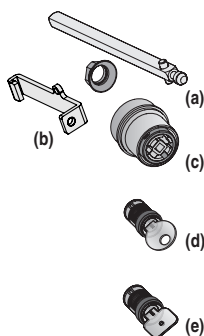
Electrical operators

Description	For mounting with circuit breaker type					
	MM 809 FK 800		MM 1259 FK 1250		MM 1609 FK 1600	
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.
Electrical operators						
24 V AC / DC	F / M9K - 24U	435682	F / M9K - 24U	435682	F / M9K - 24U	435682
48 V AC / DC	F / M9K - 48U	436136	F / M9K - 48U	436136	F / M9K - 48U	436136
110 V AC / DC	F / M9K - 110U	435688	F / M9K - 110U	435688	F / M9K - 110U	435688
230 V AC / DC	F / M9K - 230U	435691	F / M9K - 230U	435691	F / M9K - 230U	435691
Keylock type Ronis for operator (a)	FN1 BRE	435679	FN1 BRE	435679	FN1 BRE	435679



Rotary handles

Direct on device, grey standard	MDG / M9K	436538	MDG / M9K	436538	MDG / M9K	436538
Direct on device, red / yellow	MDR / M9K	436540	MDR / M9K	436540	MDR / M9K	436540
Rotary handle for use through door/cover (1)						
Grey standard	MDBG / M9K	436532	MDBG / M9K	436532	MDBG / M9K	436532
Red / yellow	MDBR / M9K	436535	MDBR / M9K	436535	MDBR / M9K	436535
Grey + aux. contact 2 x NO ⁽²⁾	MDBHG / M9K	436541	MDBHG / M9K	436541	MDBHG / M9K	436541
Red + aux. contact 2 x NO ⁽²⁾	MDBHR / M9K	436542	MDBHR / M9K	436542	MDBHR / M9K	436542
Panel or door mounted						
Grey (max. 350 mm)	MRBG / M9K	436536	MRBG / M9K	436536	MRBG / M9K	436536
Red (max. 350 mm)	MRBR / M9K	436537	MRBR / M9K	436537	MRBR / M9K	436537
Grey + aux. contact 2 x NO ⁽²⁾	MRBHG / M9K	436545	MRBHG / M9K	436545	MRBHG / M9K	436545
Red + aux. contact 2 x NO ⁽²⁾	MRBHR / M9K	436546	MRBHR / M9K	436546	MRBHR / M9K	436546



Accessories

Extension shaft kid (max. 600mm) (a) ⁽³⁾	FNN RE	435738	FNN RE	435738	FNN RE	435738
Flex operator adaptor push to trip (b) ⁽³⁾	FGN FT	432867	FGN FT	432867	FGN FT	432867
Adapter for drawout (c)	ADW / M9K	436138	ADW / M9K	436138	ADW / M9K	436138
Keylock type Ronis 1104B nr.						
1027 (d)	FA1 BR1	430088	FA1 BR1	430088	FA1 BR1	430088
1053 (d)	1027 (d)	430089	FA1 BR2	430089	FA1 BR2	430089
2932 (d)	FA1 BR3	430504	FA1 BR3	430504	FA1 BR3	430504
2911 (d)	FA1 BR4	430505	FA1 BR4	430505	FA1 BR4	430505
2936 (d)	FA1 BR5	430506	FA1 BR5	430506	FA1 BR5	430506
2940 (d)	FA1 BR6	430507	FA1 BR6	430507	FA1 BR6	430507
Ronis lock with random key (d)	FA1 BRH	430068	FA1 BRH	430068	FA1 BRH	430068
Profalux lock with random key (e)	FA1 BPH	430813	FA1 BPH	430813	FA1 BPH	430813

(1) Add door flange FG FH to allow use of the door interlock opinions.

(2) On request 1NO + 1NC is available.

(3) Only for use with panel or door mounted type.

Accessories for MCCBs Record Plus MC 809 / 1259 / 1609

CONNECTIONS

For mounting with circuit breaker type

		MC 809 FK 800		MC 1259 FK 1250		MC 1609 FK 1600	
Description		Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.

Description

Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.
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Terminal extenders	3 pole standard flat type (a)	FNB ES3P	435706	FNB ES3P	435706	FNB ES3R	435706
	4 pole standard flat type (a)	FNB ES4P	435707	FNB ES4P	435707	FNB ES4R	435707

Terminal spreader flat	3 pole, pole spacing	FNB SS3P	435708	FNB SS3P	435708	FNB SS3R	435708
	4 pole, pole spacing	FNB SS4P	435711	FNB SS4P	435711	FNB SS4R	435711

Rear connections	3 pole set, 2 short & 1 long	FNB RC3	433423	FNB RC3	433423	FNB RC3	433423
	4 pole set, 2 short & 1 long	FNB RC4	433425	FNB RC4	433425	FNB RC4	433425

	3 pole set, 3 short	FNB RCS3	433426	FNB RCS3	433426	FNB RCS3	433426
	4 pole set, 4 short	FNB RCS4	433427	FNB RCS4	433427	FNB RCS4	433427

Internal box clamps	3 pole set, cable Cu/Al 2 x 70-240 mm ²	FNT CA2327	433424	FNT CA2327	433424	FNT CA2327	433424
	4 pole set, cable Cu/Al 2 x 70-240 mm ²	FNT CA2427	433437	FNT CA2427	433437	FNT CA2427	433437

	3 pole set, cable Cu/Al 4 x 70-240 mm ²	FNT CA4327	433438	FNT CA4327	433438	FNT CA4327	433438
	4 pole set, cable Cu/Al 4 x 70-240 mm ²	FNT CA4427	433439	FNT CA4427	433439	FNT CA4427	433439

Terminal shields (with finishing cover)	Long, set of 2 pcs, 3 pole	FN JL3	435716	FN JL3	435716	FN JL3	435716
	Long, set of 2 pcs, 4 pole	FN JL4	435719	FN JL4	435719	FN JL4	435719

Specific to connection area	Phase separators, set of 12 pcs	FN JP	435722	FN JP	435722	FN JP	435722
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Padlocking devices for toggle operator	Padlocking removable	FN 1PR	433417	FN 1PR	433417	FN 1PR	433417
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Circuit indication / coding	Set 20 blank labels	FAC	430821	FAC	430821	FAC	430821
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Door flanges	Front face toggle handle area	FN FT	435715	FN FT	435715	FN FT	435715
	Rotary handle (through cover plate model)	FN FH	435714	FN FH	435714	FN FH	435714
	Electrical operator	FN FE	435713	FN FE	435713	FN FE	435713

Spare parts	Finishing cover, set of 2 pcs						
	3 pole	FN UA3	435762	FN UA3	435762	FN UA3	435762
	4 pole	FN UA4	435763	FN UA4	435763	FN UA4	435763

	Spare toggle handle, set of 5 pcs	FN UT	435764	FN UT	435764	FN UT	435764
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Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 40 rows of small squares.

Technical data	
K.2	Air circuit breakers - Series ME07
K.3	Standard range S1, S, 500/690V/AC
K.4	High performance range H, 500/690V/AC
K.5	High performance range H/S, 1000V/AC
K.6	Disconnecting switch MET
K.7	DC circuit breaker ME 6T up to 1500V/DC
Order codes	
Circuit breakers Series ME07	
K.8	Standard range S1, 500V/AC
K.8	Standard range S1/S, 690V/AC
K.9	High performance range H, 500V/AC
K.9	High performance range H, 690V/AC
K.9	High performance range H/S, 1000V/AC
Disconnecting switches Series MET	
K.10	Standard range S1, 500V/AC
K.10	Standard range S1/S, 690V/AC
K.11	High performance range H, 500V,
K.11	High performance range H, 690V/AC
K.11	High performance range H, 1000V/AC
K.12	DC disconnecting breaker range MEGT 1000V/DC
K.12	DC disconnecting breaker range MEGT 1500V/DC
Accessories	
K.13	Electronic trip unit for AC
K.15	Operating mechanism
K.16	Accessories for Series ME and MET
Withdrawable technique	
K.17	Craddles and accessories
K.18	Replacement parts

<i>Miniature circuit breakers</i>	A
<i>Residential current circuit breakers</i>	B
<i>Busbar systems</i>	C
<i>Comfort functions/Energy control</i>	D
<i>Residential enclosures</i>	E
<i>Contactors/Soft starters/Speed drives</i>	F
<i>Overload relays</i>	G
<i>Control and signalling units</i>	H
<i>Manual motor starters</i>	I
<i>Moulded case circuit breakers</i>	J
<i>Air circuit breakers</i>	K
<i>Fuse systems/Loadbreak disconnectors</i>	L
<i>General purpose enclosures</i>	M
<i>System enclosures</i>	N
<i>Numerical index</i>	X



Certifications

ABS	American Bureau of Shipping
BV	Bureau Veritas
DNV	Det Norske Veritas
GL	German Lloyd
LRoS	Lloyd's Register of Shipping
RINA	Registro Italiano Navale
RMRoS	Russian Maritime Register of Shipping

Conformity

The circuit breakers Series ME07 comply with the standard "Low-voltage switchgear and controlgear" VDE 0660 Part 101, respectively IEC 947-2 and VDE 0113.

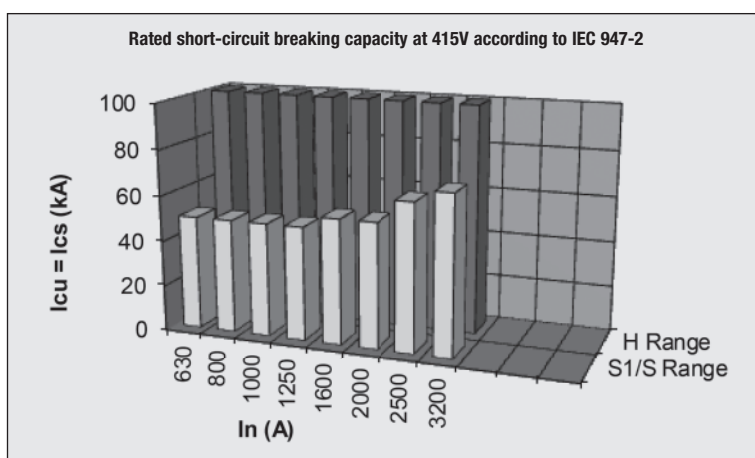
The disconnecting switches Series MET are in accordance with the standard "Low-voltage switchgear and controlgear" VDE 0660 Part 107, respectively IEC 947-3 and VDE 0113.

Air circuit breakers

Series ME07 690V/AC 630 up to 3200A

Description

Two ranges of circuit breakers Series ME for time delayed selectivity with different breaking capacities in each frame size offer a compact and economic solution for all installations.



Standard range S1

The solution for heavy power distribution requirements with sufficiently high breaking capacity for complete time selective discrimination.

High performance range H

The compact solution for distribution of extremely high power levels up to 100 kA in industrial and marine installations in each frame size.

Complete line

- Compact, robust steel frame construction which reduces the space requirements within enclosures.
- Circuit breakers and disconnecting switches.
- Fixed and withdrawable versions.
- Appearance of the operator control panel in a modern industry design is identical for the complete productline.
- Drive mechanisms, trip units and accessories e.g. undervoltage trip, shunt trip and auxiliary contacts are common for all frame sizes.
- Manual or motor operated stored energy drive mechanism for direct and remote actuation.
- Microprocessor controlled trip units for advanced protection.
- Bus connection.

Design and specifications are subject to change without notice.

Technical data

Series ME07S1 - Standard range - Frame size 10-40 - 3 poles - 630 up to 3200 A 500/690V/AC

Frame size	10				20		30	40	
Series ME	637S1	807S1	1007S1	1257S1	1607S1	2007S1	2507S1	3207S1	
Rated insulation voltage Ui	AC 1000V								
Rated impulse withstand voltage Uimp	8kV								
Pollution degree	3								
Rated voltage Ue	Up to 3 AC 690V								
Rated current Ie	Fixed and withdrawable								
Pollution degree IP00	Temperature								
For use in enclosures with interior temperatures of 40 to 60°C, the relevant IP00 values can be applied basically. Connection cross sections are to be rated to the rated current of the equipment.	40°C (A)	630	800	1000	1250	1600	2000	2500	3200
	45°C (A)	630	800	1000	1250	1600	1980	2500	3200
	50°C (A)	630	800	1000	1250	1600	1920	2400	3200
	55°C (A)	630	800	1000	1250	1600	1840	2360	3200
	60°C (A)	630	800	1000	1250	1600	1760	2250	3100
Rated breaking capacity Icn according to IEC 947-2 (RMS values)									
Power supply to top or bottom									
Icu = Ics	3 AC 400/415V (kA)	50	50	50	50	55	55	65	70
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.2	0.2
	3 AC 500V (kA)	50	50	50	50	55	55	65	70
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.2	0.2
	3 AC 690V ⁽¹⁾ (kA)	50	50	50	50	55	55	65	70
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.2	0.2
Rated making capacity Icm									
Peak values	3 AC 400/415V (kA)	105	105	105	105	121	121	143	154
	3 AC 500V (kA)	105	105	105	105	121	121	143	154
	3 AC 690V ⁽¹⁾ (kA)	105	105	105	105	121	121	143	154
Rated short time current Icw	0.3s (kA)	50	50	50	50	55	55	65	70
	1.0s (kA)	50	50	50	50	55	55	65	65
	3.0s (kA)	20	20	20	20	30	30	35	40
Selectivity when "Switching ON"	(kA)	23	23	23	23	30	30	35	40
RMS values	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
(making current trip type kse)									
Setting value kse-trip (RMS value)	(kA)	35	35	35	35	45	45	52	60
Selectivity with breaker "ON"	(kA)	50	50	50	50	55	55	65	70
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Total breaking time									
via kse trip	(ms)	20	20	20	20	20	20	20	20
via bse trip unit - s channel	(ms)	65	65	65	65	65	65	65	65
via bse trip unit - k channel	(ms)	45	45	45	45	45	45	45	45
Number of poles		3	3	3	3	3	3	3	3
Mechanical endurance									
without maintenance	x10 ³ ops.	10	10	10	10	10	10	5	5
with maintenance	x10 ³ ops.	20	20	20	20	20	20	10	10
Switching frequency	ops. /h	60	60	60	60	60	60	30	30
Total power losses at rated current and breaker at operating temperature									
fixed version	(W)	75	105	145	205	230	325	405	445
withdrawable version	(W)	110	162	234	344	444	503	600	708

(1) Values for 690V version

Technical data

Series ME07H - High performance range - 3 poles - 630 up to 3200 A

500/690 V/AC

Air circuit breakers

Frame size	10				20		30	40	
Series ME	673H	807H	1007H	1257H	1607H	2007H	2507H	3207H	
Rated insulation voltage Ui	AC 1000V								
Rated impulse withstand voltage Uimp	8kV								
Pollution degree	3								
Rated voltage Ue	Up to 3 AC 1000V up to DC 750V ⁽¹⁾								
Rated current Ie	Fixed and withdrawable								
Pollution degree IP00	Temperature								
<i>For use in enclosures with interior temperatures of 40 to 60°C, the relevant IP00 values can be applied basically. Connection cross sections are to be rated to the rated current of the equipment.</i>	40°C (A)	630	800	1000	1250	1600	2000	2500	3200
	45°C (A)	630	800	1000	1250	1600	1980	2500	3200
	50°C (A)	630	800	1000	1250	1600	1920	2400	3200
	55°C (A)	630	800	1000	1250	1600	1840	2360	3200
60°C (A)	630	800	1000	1250	1600	1760	2250	3100	
Rated breaking capacity Icn according to IEC 947-2 (RMS values)									
Power supply to top or bottom									
Icu = Ics	3 AC 400/415V (kA)	100 ⁽²⁾	100 ⁽²⁾	100 ⁽²⁾	100 ⁽²⁾	100	100	100	100
	cos φ	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	3 AC 440V (kA)	100 ⁽²⁾	100 ⁽²⁾	100 ⁽²⁾	100 ⁽²⁾	100	100	100	100
	cos φ	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	3 AC 500V (kA)	70	70	70	70	80	80	90	90
	cos φ	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	3 AC 690V (kA)	50	50	50	50	60	60	75	80
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.2
	3 AC 1000V (kA)	25	25	25	25	35	35	40	50
	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
DC 220V, T = L/R = 15 ms ⁽¹⁾	(kA)	50	50	50	50	60	60	60	65
DC 440V, T = L/R = 15 ms ⁽¹⁾	(kA)	40	40	40	40	45	45	45	50
DC 750V, T = L/R = 15 ms ⁽¹⁾	(kA)	20	20	20	20	20	20	30	30
Rated making capacity Icm									
Peak values	3 AC 400/415V (kA)	220	220	220	220	220	220	220	220
	3 AC 440V (kA)	220	220	220	220	220	220	220	220
	3 AC 500V (kA)	154	154	154	154	176	176	198	198
	3 AC 690V (kA)	105	105	105	105	132	132	165	176
	3 AC 1000V (kA)	52.5	52.5	52.5	52.5	73.5	73.5	84	105
Rated short time current Icw	0.3s (kA)	50	50	50	50	55	55	65	70
	1.0s (kA)	50	50	50	50	55	55	55	65
	3.0s (kA)	20	20	20	20	30	30	35	40
Selectivity up to (at ON operation as well)		23	23	23	23	30	30	35	40
RMS values	cos φ	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Instantaneous short circuit trip type ks									
RMS values	(kA)	35	35	35	35	45	45	52	60
Peak values	(kA)	50	50	50	50	63	63	74	85
Total breaking time									
via ks trip	(ms)	20	20	20	20	20	20	20	20
via bse trip unit - s channel	(ms)	65	65	65	65	65	65	65	65
via bse trip unit - k channel	(ms)	45	45	45	45	45	45	45	45
Number of poles		3	3	3	3	3	3	3	3
Mechanical endurance									
without maintenance	x10 ³ ops.	10	10	10	10	10	10	5	5
with maintenance	x10 ³ ops.	20	20	20	20	20	20	10	10
Switching frequency	ops./h	60	60	60	60	60	60	30	30
Total power losses (3-pole) at rated current and breaker at operating temperature									
fixed version	(W)	75	105	145	205	230	325	405	445
withdrawable version	(W)	110	162	234	344	444	503	600	708

(1) For DC applications see section Air circuit breakers Series ME07 for DC Applications on pages K.6, K.7

(2) Withdrawable version - Icu 80kA



Air circuit breakers - Special versions

Series ME07 1000V/AC 630 up to 3200A

Description

The air circuit breakers are suitable for use in distributions of high power levels up to a rated voltage of AC 1000V. For these applications the standard types ME07H are provided with modified heightened arc chutes to cover the requirements at the higher rated voltage.

Terminations are rear side suitable only for horizontal plane.

Power supply can be either on upper or lower terminals.

The fixed version of the circuit breaker can be mounted on the base without additional parts.

A withdrawable version is not available.

For accessories eg. motor drives, trip units, auxiliary trips please refer to the pages K.13-17.

Conformity

The circuit breakers type ME07 comply with the standard "Low-voltage switchgear and controlgear"

VDE 0660 Part 101, respectively IEC 947-2.

Technical data

Frame size	10				20		40	
Series ME	637H	807H	1007H	1257H	1607H	2007H	3207H	
Rated insulation voltage U_i	AC 1000V							
Rated impulse withstand voltage U_{imp}	8kV							
Pollution degree	3							
Rated voltage U_e	Up to 3 AC 1000V							
Rated current I_e	Fixed							
Pollution degree IP00	Temperature							
<i>For use in enclosures with interior temperatures of 40 to 60°C, the relevant IP00 values can be applied basically. Connection cross sections are to be rated to the rated current of the equipment.</i>	40°C (A)	630	800	1000	1250	1600	2000	3200
	45°C (A)	630	800	1000	1250	1600	1980	3200
	50°C (A)	630	800	1000	1250	1600	1920	3200
	55°C (A)	630	800	1000	1250	1600	1840	3200
	60°C (A)	630	800	1000	1250	1600	1760	3100
Rated breaking capacity I_{cn} according to IEC 947-2 (RMS values)								
Power supply to top								
$I_{cu} = I_{cs}$	3 AC 1000V (kA)	25	25	25	25	35	35	50
	$\cos \varphi$	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Rated making capacity I_{cm} Peak values	3 AC 1000V (kA)	52.5	52.5	52.5	52.5	73.5	73.5	105

(1) Power supply only on upper terminals.



Air circuit breakers - Special versions

Series MET07H 750V/DC 630 up to 3200A

Conformity

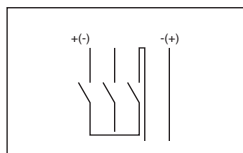
The disconnecting switch MET07 comply with the standard "Low-voltage switchgear and control gear" VDE 0660 Part 107, respectively IEC 947-3.

Description

For DC applications up to DC 750 V the standard 3-pole types MET07H - 690V version can be selected. Due to identical dimensions the circuit breakers are available as fixed and withdrawable types. For accessories e.g. motordrives, auxiliary trips, cradles, please refer to the pages K.15-19.

Installation

The three pole disconnecting switch must be connected in the DC network as shown in the diagram.



Power supply

Power supply can be either on upper or lower terminals.

Technical data

Frame size	10				20		30	40
Series MET07H	637H	807H	1007H	1257H	1607H	2007H	2507H	3207H
Rated insulation voltage U_i	DC 1000V							
Rated impulse withstand voltage U_{imp}	8kV							
Pollution degree	3							
Rated voltage U_e	Up to DC 750V							
Rated current I_e	Fixed and withdrawable							
Pollution degree IP00	Temperature							
For use in enclosures with interior temperatures of 40 to 60°C, the relevant IP00 values can be applied basically. Connection cross sections are to be rated to the rated current of the equipment.	40°C (A)	45°C (A)	50°C (A)	55°C (A)	60°C (A)			
	630	800	1000	1250	1600	2000	2500	3200
	630	800	1000	1250	1600	1980	2500	3200
	630	800	1000	1250	1600	1920	2400	3200
	630	800	1000	1250	1600	1840	2360	3200
	630	800	1000	1250	1600	1760	2250	3100
Rated breaking capacity I_{cn} according to IEC 947-2	DC 220V,T=L/R=15ms (kA)	50	50	50	50	60	60	65
Power supply to top or bottom	DC 440V,T=L/R=15 ms (kA)	40	40	40	40	45	45	50
$I_{cu} = I_{cs}$	DC 750V,T=L/R=15 ms (kA)	20	20	20	20	20	20	30

Air circuit breakers - Special versions

Series MEGT07 1200V/1500V/DC 1250 up to 5000 A



Description

The air circuit breakers MEGT07 are suitable for use as disconnecting switch in DC distributions up to a rated voltage of DC 1200V (single pole breaking) and DC 1500V (two pole breaking in series). For these applications the standard 3-pole types MET07H are provided with modified heightened arc chutes to cover the requirements. For accessories e.g. motordrives, auxiliary trips please refer to pages K.15-17.

Conformity

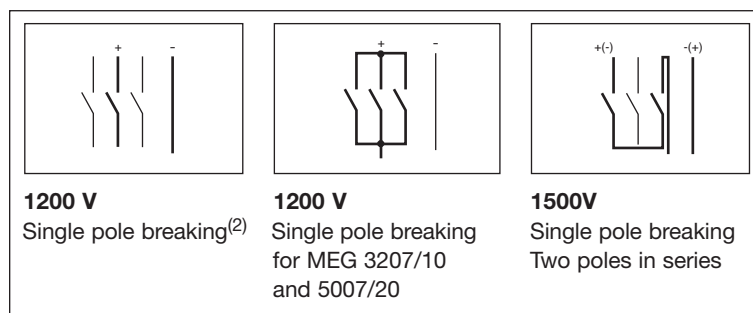
The disconnecting switch MEGT07 comply with the standard "Low-voltage switchgear and control gear" VDE 0660 Part 107, respectively IEC 947-3.

Installation

Terminations are rear side suitable only for horizontal plane. The circuit breaker can be mounted on the base without additional parts. A withdrawable version is not available.

Power supply

1200V: upper terminals / 1500V: either on upper or lower terminals. The disconnecting switch must be connected in the DC network as shown in the diagrams below.



Technical data

Frame size		10	20	40	10	20
Series MEGT		1257	2007	3207	3207/10	5007/20
Rated insulation voltage U_i		DC 1500V			DC 1200V ⁽²⁾	
Rated impulse withstand voltage U_{imp}		8kV			3	
Pollution degree		Up to DC 1500V			DC 1200V ⁽²⁾	
Rated voltage U_e		Fixed				
Rated current I_e	Temperature					
For use in enclosures with interior temperatures of 40 to 60°C	40°C (A)	1250	2000	3200	3200	5000
the relevant IP00 values can be applied basically. Connection cross sections are to be rated to the rated current of the equipment.	45°C (A)	1250	1980	3200	3200	5000
	50°C (A)	1250	1920	3200	3200	5000
	55°C (A)	1250	1840	3200		
	60°C (A)	1250	1760	3100		
Rated breaking capacity I_{cn} according to IEC 947-2	DC 750 ⁽²⁾ (kA)	-	-	-	10	10
Power supply to top	DC 1200V (kA)	30	30	35	30	20
$I_{cu} = I_{cs}$	DC 1500V (kA)	20	20	25	-	-

(1) Two pole breaking on request

(2) Version for stationary railway application acc. to EN 50123-2 and -3, only type MEGT for DC 750V

Order codes

Series ME07S1 - 3 poles, 630 up to 3200 A 500 V/AC

STANDARD RANGE



Circuit breaker 3-pole
equipped with:

- current transformer,
- electronic trip unit type bse 3-3 rms⁽¹⁾
- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC

Frame size	Rated current of breaker I _n [A]	Rated current of current transformer I _{CT} [A]	Type	Horizontal terminals		Vertical terminals		Pack.	
				Ref. No.	kg	Ref. No.	kg		
3P	10	630	250	ME637S1	758140	44	758141	47	1
	10	630	400	ME637S1	758142	44	758143	47	1
	10	630	630	ME637S1	758144	44	758145	47	1
	10	800	800	ME800S1	758146	45	758147	48	1
	10	1000	1000	ME1007S1	758148	45	758149	50	1
	10	1250	1250	ME1257S1	758150	46	758151	53	1
	20	1600	1600	ME1607S1	758152	52	758153	62	1
	20	2000	2000	ME2007S1	758154	52	758155	62	1
	30	2500	2500	ME2507S1	758156	76	758157	90	1
	40	3200	3200	ME3207S1	758158	89	758159	109	1

Series ME07S1/S - 3 poles, 630 up to 3200 A 690 V/AC

STANDARD RANGE



Circuit breaker 3-pole
equipped with:

- current transformer,
- electronic trip unit type bse 3-3 rms⁽¹⁾
- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC

Frame size	Rated current of breaker I _n [A]	Rated current of current transformer I _{CT} [A]	Type	Horizontal terminals		Vertical terminals		Pack.	
				Ref. No.	kg	Ref. No.	kg		
3P	10	630	250	ME637S1	758570	44	758571	47	1
	10	630	400	ME637S1	758572	44	758573	47	1
	10	630	630	ME637S1	758574	44	758575	47	1
	10	800	800	ME800S1	758576	45	758577	48	1
	10	1000	1000	ME1007S1	758578	45	758579	50	1
	10	1250	1250	ME1257S1	758580	46	758581	53	1
	20	1600	1600	ME1607S1	758582	52	758583	62	1
	20	2000	2000	ME2007S1	758584	52	758585	62	1
	30	2500	2500	ME2507S1	758586	76	758587	90	1
	40	3200	3200	ME3207S1	758588	89	758589	109	1

(1) For other trip unit types please refer to table on page K.13

Order codes

Series ME07H - 3 poles, 630 up to 3200 A

500 V/AC

HIGH PERFORMANCE RANGE



Circuit breaker 3-pole equipped with:

- current transformer
- electronic trip unit type bse 3-3 rms⁽¹⁾
- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC

3P	Frame size	Rated current of breaker I _n [A]	Rated current of current transformer I _{CT} [A]	Type	Horizontal terminals		Vertical terminals		Pack.
					Ref. No.	kg	Ref. No.	kg	
	10	630	250	ME637H	758190	44	758191	47	1
	10	630	400	ME637H	758192	44	758193	47	1
	10	630	630	ME637H	758194	44	758195	47	1
	10	800	800	ME800H	758196	45	758197	48	1
	10	1000	1000	ME1007H	758198	45	758199	50	1
	10	1250	1250	ME1257H	758200	46	758201	53	1
	20	1600	1600	ME1607H	758202	52	758203	62	1
	20	2000	2000	ME2007H	758204	52	758205	62	1
	30	2500	2500	ME2507H	758206	76	758207	90	1
	40	3200	3200	ME3207H	758208	89	758209	109	1

Series ME07H - 3 poles, 630 up to 3200 A

690 V/AC

HIGH PERFORMANCE RANGE



Circuit breaker 3-pole equipped with:

- current transformer
- electronic trip unit type bse 3-3 rms⁽¹⁾
- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC

3P	Frame size	Rated current of breaker I _n [A]	Rated current of current transformer I _{CT} [A]	Type	Horizontal terminals		Vertical terminals		Pack.
					Ref. No.	kg	Ref. No.	kg	
	10	630	250	ME637H	758630	44	758633	47	1
	10	630	400	ME637H	758688	44	758633	47	1
	10	630	630	ME637H	758634	44	758635	47	1
	10	800	800	ME800H	758636	45	758637	48	1
	10	1000	1000	ME1007H	758638	45	758639	50	1
	10	1250	1250	ME1257H	758640	46	758641	53	1
	20	1600	1600	ME1607H	758642	52	758643	62	1
	20	2000	2000	ME2007H	758644	52	758645	62	1
	30	2500	2500	ME2507H	758646	76	758647	90	1
	40	3200	3200	ME3207H	758648	89	758649	109	1

Series ME07H/S - 3 pole, 630 up to 3200 A

1000 V/AC

HIGH PERFORMANCE RANGE



Circuit breaker 3-pole equipped with:

- current transformer
- electronic trip unit type bse 3-3 rms⁽¹⁾
- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC

3P	Frame size	Rated current of breaker I _n [A]	Rated current of current transformer I _{CT} [A]	Type	Horizontal terminals		Pack.
					Heightened arc chute (extended breaking capacity) Ref. No.	kg	
	10	630	250	ME637H	784161	57	1
	10	630	400	ME637H	784162	57	1
	10	630	630	ME637H	784163	57	1
	10	800	800	ME800H	784164	58	1
	10	1000	1000	ME1007H	784165	58	1
	10	1250	1250	ME1257H	784166	59	1
	20	1600	1600	ME1607H	784167	65	1
	20	2000	2000	ME2007H	784168	65	1
	40	3200	3200	ME3207H	784169	113	1

(1) For other trip unit types please refer to table on page, K.13

Order codes

Disconnecting switches - Series MET07S1 - 3 poles, 630 up to 3200 A 500 V/AC

STANDARD RANGE



Disconnecting switch
equipped with:

- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC
(without current transformer
and electronic trip unit)

Frame size	Rated current of breaker lu [A]	Type	Horizontal terminals		Vertical terminals		Pack.	
			Ref. No.	kg	Ref. No.	kg		
3P	10	630	MET637S1	758016	40	758017	43	1
	10	800	MET800S1	758018	41	758019	44	1
	10	1000	MET1007S1	758020	41	758021	46	1
	10	1250	MET1257S1	758022	42	758023	48	1
	20	1600	MET1607S1	758024	48	758025	58	1
	20	2000	MET2007S1	758026	48	758027	58	1
	30	2500	MET2507S1	758028	71	758029	85	1
	40	3200	MET3207S1	758030	83	758031	102	1

Disconnecting switches - Series MET07S1/S - 3 poles, 630 up to 3200 A 690 V/AC

STANDARD RANGE



Disconnecting switch
equipped with:

- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC
(without current transformer
and electronic trip unit)

Frame size	Rated current of breaker lu [A]	Type	Horizontal terminals		Vertical terminals		Pack.	
			Ref. No.	kg	Ref. No.	kg		
3P	10	630	MET637S1	759306	40	758471	43	1
	10	800	MET800S1	759307	41	758473	44	1
	10	1000	MET1007S1	758474	41	758475	46	1
	10	1250	MET1257S1	758476	42	758477	48	1
	20	1600	MET1607S1	758478	48	758479	58	1
	20	2000	MET2007S1	759308	48	758481	58	1
	30	2500	MET2507S1	759309	71	758483	85	1
	40	3200	MET3207S1	758484	83	758485	103	1

Order codes

Disconnecting switches - Series MET07H - 3 poles, 630 up to 3200 A 500 V/AC

HIGH PERFORMANCE RANGE



Disconnecting switch
equipped with:

- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC
(without current transformer
and electronic trip unit)

3P	Frame size	Rated current of breaker I _n [A]	Type	Horizontal terminals		Vertical terminals		Pack.
				Ref. No.	kg	Ref. No.	kg	
	10	630	MET637H	758036	40	758037	43	1
	10	800	MET800H	758038	41	758039	44	1
	10	1000	MET1007H	758040	41	758041	46	1
	10	1250	MET1257H	758042	42	758043	48	1
	20	1600	MET1607H	758044	48	758045	58	1
	20	2000	MET2007H	758046	48	758047	58	1
	30	2500	MET2507H	758048	71	758049	85	1
	40	3200	MET3207H	758050	83	758051	102	1

Disconnecting switches - Series MET07H - 3 poles, 630 up to 3200 A 690 V/AC

HIGH PERFORMANCE RANGE



Disconnecting switch
equipped with:

- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC
(without current transformer
and electronic trip unit)

3P	Frame size	Rated current of breaker I _n [A]	Type	Horizontal terminals		Vertical terminals		Pack.
				Ref. No.	kg	Ref. No.	kg	
	10	630	MET637H	758520	40	758521	43	1
	10	800	MET800H	758522	41	758523	44	1
	10	1000	MET1007H	758524	41	758525	46	1
	10	1250	MET1257H	758526	42	758527	48	1
	20	1600	MET1607H	758528	48	758529	58	1
	20	2000	MET2007H	758530	48	758531	58	1
	30	2500	MET2507H	758532	71	758533	85	1
	40	3200	MET3207H	758534	83	758535	102	1

Order codes

Disconnecting switches - Series MET07H/S - 3 poles, 630 up to 3200 A 1000 V/AC

HIGH PERFORMANCE RANGE
STANDARD RANGEDisconnecting switch
equipped with:

- handoperated mechanism type X2
- 11 auxiliary contacts 5 NO, 6 NC
(without current transformer and electronic trip unit)

3P

Frame size	Rated current of switch lu [A]	Type	Horizontal terminals Heightened arc chute		Pack.
			Ref. No.	kg	
10	630	MET637H	784173	53	1
10	800	MET800H	784174	54	1
10	1000	MET1007H	784175	54	1
10	1250	MET1257H	784176	55	1
20	1600	MET1607H	784177	61	1
20	2000	MET2007H	784178	61	1
30	2500	MET2507H	784184	96	1
40	3200	MET3207H	784179	107	1

Disconnecting switches - Series MEGT07 - 1 pole⁽¹⁾ - 630 up to 3200 A 1500 V/DC

DC - RANGE

- Disconnecting switch
equipped with:
- handoperated mechanism type X2
 - 11 auxiliary contacts 5 NO, 6 NC
(without external overcurrent release, shunt trip 230V AC)

Frame size	Rated current of switch lu [A]	Type	Horizontal terminals		Horizontal terminals		Pack.
			Ref. No. Up to 1200V	kg Up to 1200V	Ref. No. Up to 1500V	kg Up to 1500V	
10	1250	MEGT1257	784144	43	784152	49	1
20	2000	MEGT2007	784145	49	784153	55	1
40	3200	MEGT3207	784146	84	784154	96	1
10	3200	MEGT3207/10	784147	84	-	-	1

(1) Multiple pole types for DC 1200V on request.

Accessories

Electronic trip unit type bse ...rms for AC



	Type bse 3-x rms	Auxiliary Voltage	Aux. Switches	Cat. No.
3P	bse 3-3 rms-24D	24V DC	5NO+5NC	bse3-3 rms-24D-XX
	bse 3-3 rms-125A	60-125V AC	5NO+5NC	bse3-3 rms-125A-XX
	bse 3-3 rms-230A	125-230V AC	5NO+5NC	bse3-3 rms-230A-XX
	bse 3-4 rms-24D	24V DC	4NO+4NC	bse3-4 rms-24D-XX

Selection code for Cat. No. suffix bse... -XX

Frame size	Current transformer	3-pole bse 3-x rms
10	250A	02
10	400A	04
10	630A	06
10	800A	08
10	1000A	10
10	1250A	12
20	1600A	16
20	2000A	20
30	2500A	25
40	3200A	32

Settings

	Overload channel b		
bse 3-3 and 3-4	$I_b = 0.40 \dots 1 \times I_{ct}$ $I_b = 0.45 \dots 1 \times I_{ct}$		
	Short-circuit channel s	Short-circuit channel k	Short-circuit channel k
$I_{ct} = 250$ to $1250A$	$I_s = 1.5 \dots 14 \times I_{ct}$	$I_k = 4 \dots 18 \times I_{ct}$	$I_k = 18 \times I_{ct}$
$I_{ct} = 1600$ to $2500A$	$I_s = 1.5 \dots 8 \times I_{ct}$	$I_k = 4 \dots 10 \times I_{ct}$	$I_k = 10 \times I_{ct}$
$I_{ct} = 3200A$	$I_s = 1.5 \dots 5 \times I_{ct}$	$I_k = 4 \dots 7 \times I_{ct}$	$I_k = 7 \times I_{ct}$
	Earth fault channel g		
$I_{ct} = 250$ - $6400A$	$I_g = 0.2 \dots 0.8 \times I_{ct}$		
$t_g = 100$ - $300ms$			
	Short time delay for short-circuit channel s		
$t_s = 30$ - $300ms$			

Accessories

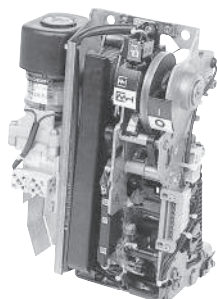
Functions of the electronic trip units type bse ... rms

Type	bse 3-3 rms	bse 3-4 rms
b-Channel adjustable	•	•
Long time delay adjustable within 5...40 sec	•	•
Contact for indication TRIPPED	•	•
s-Channel adjustable	•	•
Time delay adjustable	•	•
Contact for indication TRIPPED	•	•
Contact for immediate indication of s-channel threshold	•	•
k-Channel (ON/OFF)	•	•
Setting fixed	•	•
Contact for indication TRIPPED	•	•
g-Channel (Earth fault) (ON/OFF)	–	•
Time delay adjustable	–	•
Contact for indication TRIPPED	–	•
Indications		
b-Channel with LED indication and contact (1 NO) for indication TRIPPED	•	•
s-Channel with LED indication and contact (1 NO) for indication TRIPPED	•	•
k-Channel with LED indication and contact (1 NO) for indication TRIPPED	•	•
g-Channel with LED indication and contact (1NO) for indication TRIPPED	–	•
Anti-pumping device		
RESET button	•	•
Auxiliary voltage 24 V DC \pm 15%	•	•
Test socket	•	•

Order codes

Operating mechanism for Series ME and MET

DRIVES



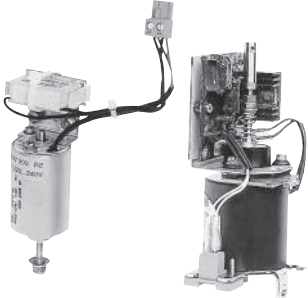
Type	Description	Ref. No.	Pack.
Type x2 Manual operated mechanism with storage operation by manual ON/OFF button		Standard	
Type xv Manual operated mechanism with storage, closing coil	42V, AC 50/60Hz	758730	1
	110V, AC 50/60Hz	758731	1
	220V, AC 50/60Hz	758732	1
	230V, AC 50/60Hz	758733	1
	240V, AC 50/60Hz	758734	1
	24V, DC	758735	1
	48V, DC	758736	1
	60V, DC	758737	1
	110V, DC	758738	1
	125V, DC	758739	1
	220V, DC	758740	1
Type fv1 All type fv with automatic control unit Motor operated mechanism with storage Separate command for charging and closing	42V, AC 50/60Hz	758741	1
	110V, AC 50/60Hz	758742	1
	220V, AC 50/60Hz	758743	1
	230V, AC 50/60Hz	758744	1
	240V, AC 50/60Hz	758745	1
	24V, DC	758746	1
	48V, DC	758747	1
	60V, DC	758748	1
	110V, DC	758749	1
	125V, DC	758750	1
	220V, DC	758751	1
Type fv2 Automatic charging after circuit breaker is opened	42V, AC 50/60Hz	758752	1
	110V, AC 50/60Hz	758753	1
	220V, AC 50/60Hz	758754	1
	230V, AC 50/60Hz	758755	1
	240V, AC 50/60Hz	758756	1
	24V, DC	758757	1
	48V, DC	758758	1
	60V, DC	758759	1
	110V, DC	758760	1
	125V, DC	758761	1
	220V, DC	758762	1
Type fv3.1 Automatic charging after circuit breaker is closed, with manual first charging	42V, AC 50/60Hz	758763	1
	110V, AC 50/60Hz	758764	1
	220V, AC 50/60Hz	758765	1
	230V, AC 50/60Hz	758766	1
	240V, AC 50/60Hz	758767	1
	24V, DC	758768	1
	48V, DC	758769	1
	60V, DC	758770	1
	110V, DC	758771	1
	125V, DC	758772	1
	220V, DC	758773	1
Type fv3.2 Automatic charging after circuit breaker is opened or closed, with automatic first charging	42V, AC 50/60Hz	758774	1
	110V, AC 50/60Hz	758775	1
	220V, AC 50/60Hz	758776	1
	230V, AC 50/60Hz	758777	1
	240V, AC 50/60Hz	758778	1
	24V, DC	758779	1
	48V, DC	758780	1
	60V, DC	758781	1
	110V, DC	758782	1
	125V, DC	758783	1
	220V, DC	758784	1
Type fv4 Automatic closing when spring is charged	42V, AC 50/60Hz	758785	1
	110V, AC 50/60Hz	758786	1
	220V, AC 50/60Hz	758787	1
	230V, AC 50/60Hz	758788	1
	240V, AC 50/60Hz	758789	1
	24V, DC	758790	1
	48V, DC	758791	1
	60V, DC	758792	1
	110V, DC	758793	1
	125V, DC	758794	1
	220V, DC	758795	1

Accessories

K

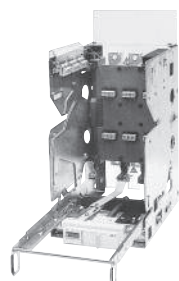
Order codes

Accessories for Series ME and MET

AUXILIARY TRIPS		Type	Description	Ref. No.	Pack.	
	Shunt trip type a		42V, AC 50/60Hz	758818	1	
			110V, AC 50/60Hz	758819	1	
			220V, AC 50/60Hz	758820	1	
			230V, AC 50/60Hz	758821	1	
			240V, AC 50/60Hz	758822	1	
			24V, DC	758823	1	
			48V, DC	758824	1	
			60V, DC	758825	1	
			110V, DC	758826	1	
			125V, DC	758827	1	
			220V, DC	758828	1	
		Undervoltage release type r		42V, AC 50/60Hz	758829	1
				110V, AC 50/60Hz	758830	1
				220V, AC 50/60Hz	758831	1
			230V, AC 50/60Hz	758832	1	
			240V, AC 50/60Hz	758833	1	
			24V, DC	758834	1	
			48V, DC	758835	1	
	60V, DC		758836	1		
	110V, DC		758837	1		
	125V, DC		758838	1		
	220V, DC		758839	1		
ACCESSORIES FOR AUXILIARY TRIPS			Time delay unit type c	AC 50/60Hz, 220...240V, 220V DC	758843	1
			For undervoltage trip (undervoltage trip "r" 220V DC required)			
			Rated operating voltage:			
INDICATION SWITCHES						
		Type		Kg	Ref. No. Pack.	
		Indication switch type m3				
		"Spring energy system charged" for hand operated mechanism. With motor operated mechanism and automatic control unit indication always supplied, not available with microswitch controlled mechanism		0.15	758851 1	
		Indication switch type m4				
		"Breaker ready for closure". Indication: Breaker OFF, spring energy system charged, undervoltage trip if available energised for hand and motor operated mechanism, standard with microswitch controlled mechanism.		0.15	758852 1	
LOCKING FACILITIES						
		Type y1	ON and OFF push-button locked key removable in both positions	-	758853 1	
		Type y2	ON push-button locked key removable in both positions	-	758854 1	
		Type y3	ON push-button locked key removable in both positions	-	On request 1	
		Type y7	ON and OFF push-button locked key removable when locked	-	758855 1	
		Type y8	ON push-button locked key removable when locked	-	758856 1	
		Type y9	ON push-button locked key removable when locked	-	On request 1	
		Type y4	ON and OFF push-button locked	-	758857 1	
		Type y5	ON push-button locked	-	758858 1	
		Type y6	ON push-button locked	-	On request 1	
		Protection against unauthorized actuation of ON and OFF push-button		-	758859 1	
ACCESSORIES						
		Clear cover for trip unit type k				
		For trip unit bse		-	564243 1	
		Door adjustment frame type ù				
		Compensation of tolerances between door cutout and front cover		-	758860 1	
		Sealing kit type d				
		Mounting kit to achieve IP54 in door cutout, for pumping handle and trip unit cover		-	758861 1	
		Door interlock type q				
		Prevents opening of door when circuit breaker is closed (fixed version only)		0.3	758862 1	
		Angular spacer type AW				
		For rear mounting in combination with vertical termination (2 pieces required)		-	758863 1	
		Bowden wire interlock type g1				
		Mounting kit for mechanical interlock of 2 circuit breakers (fixed version), supplementary provide electrical interlock		-	758864 1	
		Ceramic inserts				
		For arc chutes to reduce clearance distances (only for range S1 and H 500V)				
		Frame sizes 10 ... 30		-	758840 1	
		Frame size 40		-	758841 1	

Order codes

Withdrawable technique - Cradles for Series ME & MET, 3 poles



Conversion kit for circuit breaker

Cradle for circuit breaker type	Cradle type	Shortcircuit capacity kA	Termination	kg	Ref. No.	Pack.
ME637 to ME1257				1	758296	1
ME1607 to ME3207				1	759547	1

3P

ME637 to 1007 S1	T10v1	105	Upper and lower vertical	40	759305	1
ME637 to 1257 H,S1	T10v2	176	Upper and lower vertical	40	758241	1
ME1607 H, S1	T20v1	220	Upper and lower vertical	47	758242	1
ME2007 H, S1	T20v2	220	Upper and lower vertical	47	758243	1
ME2507 H, S1	T30v	220	Upper and lower vertical	55	758244	1
ME3207 H, S1	T40v	220	Upper and lower vertical	80	758245	1
ME637 to 1007 S1	T10w1	105	Upper and lower horizontal	40	758250	1
ME637 to 1257 H,S1	T10w2	176	Upper and lower horizontal	40	758251	1
ME1607 H, S1	T20w1	220	Upper and lower horizontal	47	758252	1
ME2007 H, S1	T20w2	220	Upper and lower horizontal	47	758253	1
ME2507 H, S1	T30w	220	Upper and lower horizontal	55	758254	1
ME3207 H, S1	T40w	220	Upper and lower horizontal	80	758255	1
ME637 to 1007 S1	T10k1	105	Upper horizontal, lower vertical	40	758260	1
ME637 to 1257 H,S1	T10k2	176	Upper horizontal, lower vertical	40	758261	1
ME1607 H, S1	T20k1	220	Upper horizontal, lower vertical	47	758262	1
ME2007 H, S1	T20k2	220	Upper horizontal, lower vertical	47	758263	1
ME2507 H, S1	T30k	220	Upper horizontal, lower vertical	55	758264	1
ME3207 H, S1	T40k	220	Upper horizontal, lower vertical	80	758265	1

Cradle provided with personnel protection by positively activated shutter, positive mechanical indication of functional position of breaker. ME637 to 3207: Integrated telescopic extension rails, padlocking facility against insertion of cranking handle, 3 socket connectors = 48 contacts for control circuit connection. In version "v" and "k" the terminals are accessible from the front.

Withdrawable technique - Accessories for cradle

POSITION INDICATION SWITCH

Description	Ref. No.	Pack.
Alternatively for indication of disconnected-, test- and connected position		
Frame sizes 10...40		
1 switch 1 CO	758302	1
2 switches 2 CO	758303	1
3 switches 3 CO	758304	1
4 switches 4 CO	759549	1
5 switches 5 CO	759306	1
6 switches 6 CO	759550	1

DOOR INTERLOCKS

Prevents door opening when circuit breaker is in ON and TEST position		
Frame sizes 10...40		
Type Ily		
Door (hinged left side) defeatable	758308	1
Type Iln		
Door (hinged left side) not defeatable	758309	1
Type Iry		
Door (hinged right side) defeatable	758310	1
Type Irn		
Door (hinged right side) not defeatable	758311	1

LOCKING FACILITY TYPE WL

Cradle provided with cylindrical lock against insertion of cranking handle		
Frame sizes 10...40	758312	1

LOCKING FACILITY TYPE WE

Mechanical interlock against insertion of cranking handle when circuit breaker is in ON position		
Frame sizes 10...40	758313	1

Withdrawable technique - Accessories for circuit breaker

BOWDEN WIRE INTERLOCK TYPE G2

Description	Ref. No.	Pack.
Mounting kit for mechanical interlock of 2 circuit breakers		
Supplementary provide an electrical interlock		
Frame size 10...40	758314	1

Order codes

Replacement parts

		Description	Suitable for circuit breaker	kg	Ref. No.	Sets per pole
Contacts	Set of main contacts ⁽¹⁾	ME637 to 1257 H, S1	1.5	750351	1	
		ME1607 to 2507 H, S1	2.1	750352	1	
		ME2507 H, S1	2.9	750353	1	
		ME3207 H, S1	4.2	750352	2	
	Set of arcing contacts ⁽¹⁾ applicable up to 690V AC and 750 V DC	ME637 to 1257 H, S1	0.2	758350	1	
		ME1607 to 2507 H, S1	0.2	758350	2	
		ME3207 H, S1	0.2	758350	4	
	Set of arcing contacts ⁽¹⁾ applicable up to 1000V AC 1200V/1500V DC	ME637 to ME1257H, MEG1257			Please refer to spare part catalogue	1
		ME1607 to ME2007H, MEG2007				1
		ME3207H, MEG3207				2
	Arc chutes	Arc chute without ceramic inserts, applicable up to 500V AC	ME637 to 1257 H, S1	2.4	760608	1
			ME1607 to 2007 H, S1	2.6	760609	1
ME2507 H, S1			3.7	760610	1	
ME3207 H, S1			2.6	760609	2	
Arc chute with ceramic inserts, applicable up to 690V AC		ME637 to 1257 H, S1	2.6	760575	1	
		ME1607 to 2007 H, S1	2.8	760576	1	
		ME2507 H, S1	3.9	760577	1	
		ME3207 H, S1	2.8	760576	2	
Arc chute adaptor applicable up to 1000V AC, 1200V/1500V DC		ME637 to ME1257H, MEG1257			Please refer to spare part catalogue	1
		ME1607 to ME2007H, MEG2007				2
		ME3207H, MEG3207				3
		ME4007S, MEG4007				4
		MEG5007				4
Arc chute heightend applicable up to 1000V AC, 1200V/1500V DC		ME637 to ME1257H, MEG1257			Please refer to spare part catalogue	1
		ME1607 to ME2007H, MEG2007				1
		ME3207H, MEG3207				2

(1) Set consists all fitting parts, e.g. fixed and movable contacts, contact springs and screws

Fuse systems

- K.2 Fuse links
- K.3 Fuse bases
- K.4 Semiconductor protection fuses
- K.5 Fuse loadbreak switch disconnectors and strips
- K.5 Accessories

Disconnecter loadbreak switches DILOS

- K.6 Dilos 00 - Dilos 0 - 16A up to 63A
- K.9 Dilos 1 - Dilos 2 - 40A up to 200A
- K.11 Elos - 63A up to 125A
- K.12 Dilos 1H - Dilos 3 - Dilos 4 - 40A up to 630A
- K.18 Dilos 6S - 800A up to 1250A
- K.20 Dilos 7S - Dilos 8S - 1600A up to 2500A
- K.22 Dilos 9S - Dilos 9 - 3150A/4000A

Fused disconnector loadbreak switches FULOS

- K.24 Fulos 000 DIN - NF - BS - 100A/125A
- K.26 Fulos 00 DIN - BS - 160A/200A
- K.28 Fulos 1 DIN - BS - 250A/200A
- K.29 Fulos 2 DIN - BS - 400A
- K.31 Fulos 3S DIN - BS - 630A
- K.33 Fulos 4 DIN - BS - 800A up to 1250A

Miniature circuit breakers A

Residential current circuit breakers B

Busbar systems C

Comfort functions/Energy control D

Residential enclosures E

Contactors/Soft starters/Speed drives F

Overload relays G

Control and signalling units J

Manual motor starters I

Moulded case circuit breakers J

Air circuit breakers K

Fuse systems/Loadbreak disconnectors L

General purpose enclosures M

System enclosures N

Numerical index X

Fuse systems

Fuse links - Handle lugs live

Fuse systems



NT000 / NT00

Iu (A)

500V AC

690V AC

Cat. No.

Ref. No.

Cat. No.

Ref. No.

Pack.

2	NT000-2/5	779650	NT00-2/6	779417	3
4	NT000-4/5	779651	NT00-4/6	779418	3
6	NT000-6/5	779652	NT00-6/6	779419	3
10	NT000-10/5	779653	NT00-10/6	779420	3
16	NT000-16/5	779654	NT00-16/6	779421	3
20	NT000-20/5	779655	NT00-20/6	779422	3
25	NT000-25/5	779656	NT00-25/6	779423	3
32	NT000-32/5	779657	NT00-32/6	779424	3
35	NT000-35/5	779656	NT00-35/6	779425	3
40	NT000-40/5	779659	NT00-40/6	779426	3
50	NT000-50/5	779660	NT00-50/6	779427	3
63	NT000-63/5	779661	NT00-63/6	779428	3
80	NT000-80/5	779662	NT00-80/6	779429	3
100	NT000-100/5	779663	NT00-100/6	779430	3

NT00

125	NT00-125/5	779459	NT00-125/6	779431	3
160	NT00-160/5	779460	NT00-160/6	779478	3

NT1

80	NT1-80/5	779496	NT1-80/6	779432	3
100	NT1-100/5	779497	NT1-100/6	779433	3
125	NT1-125/5	779498	NT1-125/6	779434	3
160	NT1-160/5	779499	NT1-160/6	779435	3
200	NT1-200/5	779500	NT1-200/6	779436	3
224	NT1-224/5	779502	NT1-224/6	779622	3
250	NT1-250/5	779501	NT1-250/6	779437	3

NT2

125	NT2-125/5	779503	NT2-125/6	779625	3
160	NT2-160/5	779504	NT2-160/6	779438	3
200	NT2-200/5	779505	NT2-200/6	779648	3
224	NT2-224/5	779509	NT2-224/6	779649	3
250	NT2-250/5	779506	NT2-250/6	779439	3
300	NT2-300/5	779510	NT2-300/6	779440	3
315	NT2-315/5	779507	NT2-315/6	779441	3
355	NT2-355/5	779511	NT2-355/6	779689	3
400	NT2-400/5	779508	NT2-400/6	779533	3

NT3

315	NT3-315/5	779512	NT3-315/6	779690	3
355	NT3-355/5	779517	NT3-355/6	779691	3
400	NT3-400/5	779513	NT3-400/6	779442	1
425	NT3-425/5	779516	NT3-425/6	779692	1
500	NT3-500/5	779514	NT3-500/6	779443	1
630	NT3-630/5	779515	NT3-630/6	779539	1

NT4a

630	-	-	NT4a-630/6	779693	1
800	-	-	NT4a-800/6	779444	1
1000	-	-	NT4a-1000/6	779445	1

L

Fuse systems

Fuse bases



	Size	Cat. No.	Ref. No.	Pack.
1-pole	00	SiSt 101/I	779578	1
	00 with box type terminals for multistrand cables up to 70 mm ²	SiSt 101R/I	779579	1
	1	SiSt 201/I	779590	1
	2	SiSt 401/I	779594	1
	3	SiSt 601/I	779596	1
	4a	SiSt 1251/I	779597	1
3-pole	00	SiSt 101/III	779704	1
	1	SiSt 201/III	779610	1
	2	SiSt 401/III	779611	1
	3	SiSt 601/III	779613	1

Accessories

	Size	Cat. No.	Ref. No.	Pack.
Separation wall 2 pieces with holder	00	TW00/SW00	779591	1
	1	TW1	779593	1
	2	TW2	776732	1
	3	TW3	776733	1
Clip-on handle		AG	779600	1
Clip-on handle with arm cuff		AGS	779601	1
Isolating links	00/0	TL 00/0	779724	1
	1	TL 1	779725	1
	2	TL 2	779726	1
	3	TL 3	779727	1

Fuse systems

Semiconductor protection fuses

Iu (A)	160V AC		500V AC		800V AC		Pack.
	Cat. No.	Ref. No.	Cat. No.	Ref. No.	Cat. No.	Ref. No.	
80	NG0-80/1	779543	NG1-80/5	779550	-	-	1
120	NG0-120/1	779544	NG1-120/5	779552	-	-	1
160	NG0-160/1	779545	NG1-160/5	779551	NG1-160/8	779558	1
240	NG1-240/1	779546	NG2-240/5	779553	-	-	1
300	-	-	NG2-300/5	779554	-	-	1
320	NG1-320/1	779547	-	-	-	-	1
350	-	-	NG3-350/5	779556	NG3-350/8	779562	1
400	-	-	NG3-400/5	779555	-	-	1
600	-	-	NG3-1600/5	779557	-	-	1

Fuse systems

Fuse loadbreak switch disconnectors

Fuse loadbreak switch disconnectors for standard applications



Description	Cat. No.	Ref. No.	Pack.
Size NH-00 with terminal screws M8	LTSiSt 168	779677	1
Size NH-1 with terminal screws M10	LTSiSt 258	779678	1
Size NH-2 with terminal screws M10	LTSiSt 408	779679	1
Size NH-3 with terminal screws M10	LTSiSt 638	779680	1

Accessories


Size		Cat. No.	Ref. No.	Pack.
LTSiSt 168	Clamp-type terminals 1.5-70 mm ² Cu	Set of 3 SK168/70	777689	1
	Terminal cover above/below	GOU168	778733	1
	Striker indicator switch	SM168	779623	1
	Cover indicator switch	DM168	779407	1
	DIN support rail fixing	TB168	253446	1
	Masking frame	BL168	779624	1
	Fuse-monitoring kit			
LTSiSt 258	Clamp-type terminals 25-150 mm ² Cu	Set of 3 SK258/150	779410	1
	Prism-shaped terminals 70-150 mm ² Al/Cu	Set of 3 PK258/150	779626	1
	Double prism-shaped terminals 70-150 mm ² Al/Cu	Set of 3 DPK258/150	779627	1
	Terminal cover above	G0258	779628	1
	Terminal cover below	GU258	779629	1
	Fuse-link contact cover	SG258	779630	1
	Striker indicator switch	SM258	779631	1
	Masking frame	BL258	779632	1
	Fuse-monitoring kit			
LTSiSt 408	Clamp-type terminals 25-240 mm ² Cu	Set of 3 SK408/240	779633	1
	Prism-shaped terminals 120-240 mm ² Al/Cu	Set of 3 PK408/240	779634	1
	Double prism-shaped terminals 120-150 mm ² Al/Cu	Set of 3 DPK408/150	779635	1
	Terminal cover above	G0408	779636	1
	Terminal cover below	GU408	779637	1
	Fuse-link contact cover	SG408	779638	1
	Striker indicator switch	SM408	779639	1
	Masking frame	BL408	779640	1
	Fuse-monitoring kit			
LTSiSt 638	Clamp-type terminals for flat copper	Set of 3 SK638	779641	1
	Prism-shaped terminals 120-240 mm ² Al/Cu	Set of 3 PK638/240	779642	1
	Double prism-shaped terminals 120-150 mm ² Al/Cu	Set of 3 DPK638/150	779643	1
	Terminal cover above	G0638	779644	1
	Terminal cover below	GU638	779645	1
	Striker indicator switch	SM638	779646	1
	Masking frame	BL638	779647	1
Fuse-monitoring kit				

Common accessories








Size		Cat. No.	Ref. No.	Pack.
Terminal cover locking device	for LTSiSt 168-638	BV168-638	779408	1
Cover indicator switch	for LTSiSt 1258-638	DM258-638	779411	1

Dilos

Dilos 00 - DIN-rail disconnectors - 2 modules

Standard grey	Description	In (A)	Cat. No.	Ref. No.	Pack
	3-pole	16	D/061301-201	730984	1
	With padlockable rotary handle	25	D/061302-201	730986	1
		32	D/061303-201	730988	1
		40	D/061304-201	730990	1
Safety	3-pole	16	D/061301-203	731404	1
	Red/yellow, according to DIN VDE 0113 Teil 1	25	D/061302-203	731407	1
	With padlockable rotary handle	32	D/061303-203	731410	1
		40	D/061304-203	731413	1

Accessories

	Description	In (A)	Cat. No.	Ref. No.	Pack
	Switched neutral module - To be added on one side	16	D/061903-104	731004	1
		25	D/061903-204	731006	1
		32	D/061903-304	731012	1
		40	D/061903-404	731014	1
	Fixed neutral module - To be added on one side	16 - 40	D/061903-205	731007	1
	Earth module - To be added on one side	16 - 40	D/061903-206	731008	1
	Auxiliary contact - To be added on one side 1NO/NC - I _{th} = 10A at 230V		D/061901-202	731000	1
	Handles for cover or hinged door IP65, with door interlock Black padlockable rotary handle. Extension shaft of 305 mm Red/yellow padlockable rotary handle. Extension shaft of 305 mm		D/061900-601	730996	1
			D/061900-603	730997	1
	Handle for cover or hinged door IP54, without door interlock Black rotary handle. Extension shaft of 305 mm. Not to be used as main switch		D/061900-501	730992	1
	Terminal covers				
	3-pole		D/061902-220	731002	1
	1-pole		D/061902-221	730003	1

Dilos 00 - Disconnectors for door mounting - 2 modules



Standard grey

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole - Without handle	16	D/061301-251	730985	1
	25	D/061302-251	730987	1
	32	D/061303-251	730989	1
	40	D/061304-251	730991	1

Accessories



Description	In (A)	Cat. No.	Ref. No.	Pack
Switched neutral module - To be added on one side	16	D/061903-154	731005	1
	25	D/061903-254	731009	1
	32	D/061903-354	731013	1
	40	D/061903-454	731015	1



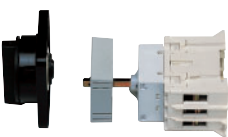
Fixed neutral module - To be added on one side	16 - 40	D/061903-255	731010	1
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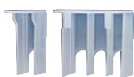
Earth module - To be added on one side	16 - 40	D/061903-256	731011	1
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Auxiliary contact - To be added on one side 1NO/NC - Ith = 10A at 230V		D/061901-252	731001	1
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Handles IP65 Black padlockable rotary handle Red/yellow padlockable rotary handle		D/061900-651	730998	1
		D/061900-653	730999	1



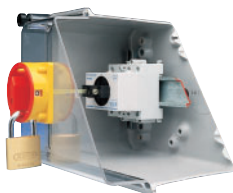
Terminal covers				
3-pole		D/061902-220	731002	1
1-pole		D/061902-221	730003	1

Rear view Dilos 00 +
switch neutral module (4th pole)



Dilos**Dilos 0 - Disconnectors for door mounting - 2 modules**

Description	In (A)	Cat. No.	Ref. No.	Pack
2-pole	32	V/333-013732	652017	1
	40	V/333-013742	652021	1
	63	V/333-013762	652025	1
3-pole	32	V/333-013733	652018	1
	40	V/333-013743	652022	1
	63	V/333-013763	652026	1
4-pole	32	V/333-013734	652019	1
	40	V/333-013744	652023	1
	63	V/333-013764	652027	1
3-pole + fixed neutral	32	V/333-013736	652020	1
	40	V/333-013746	652024	1
	63	V/333-013766	652028	1

Accessories

Description	Cat. No.	Ref. No.	Pack
Handles for cover or hinged door IP65 - Standard rotary handle. Extension shaft of 238 mm	V/333-013721	652062	1
Red/yellow padlockable rotary handle (max. three padlocks Ø 9 mm) Extension shaft of 238 mm and frontplate	V/333-013723	652063	1
Terminal covers Sealable. Set of 2 pieces	V/333-013760	652016	1



Dilos 1 - DIN-rail disconnectors - 5 modules

Standard transparent
with padlockable rotary handle



Description	In (A)	Cat. No.	Ref. No.	Pack
2-pole	40	D/061212-201	730004	1
	63	D/061214-201	730008	1
	80	D/061215-201	730012	1
	100	D/061216-201	730016	1
	125	D/061217-201	730020	1
3-pole	40	D/061312-201	730049	1
	63	D/061314-201	730055	1
	80	D/061315-201	730061	1
	100	D/061316-201	730067	1
	125	D/061317-201	730073	1
4-pole	40	D/061412-201	730117	1
	63	D/061414-201	730123	1
	80	D/061415-201	730129	1
	100	D/061416-201	730135	1
3-pole + fixed neutral	40	D/061512-201	730141	1
	63	D/061514-201	730185	1
	80	D/061515-201	730189	1
	100	D/061516-201	730193	1
	125	D/061517-201	730197	1

Safety



Red/yellow, according to DIN VDE 0113 Teil 1 3-pole	40	D/061312-203	730050	1
	63	D/061314-203	730056	1
	100	D/061316-203	730068	1
	125	D/061317-203	730074	1
Red/yellow, according to DIN VDE 0113 Teil 1 4-pole	40	D/061412-203	730118	1
	63	D/061414-203	730124	1
	100	D/061416-203	730136	1
	125	D/061417-203	730142	1

Accessories



Description	Cat. No.	Ref. No.	Pack
Handles for cover of hinged door - IP65 - Padlockable			
H = 55 mm. Extension shaft L = 200 mm - Black	D/061910-002	730255	1
H = 55 mm. Extension shaft L = 200 mm - Red/yellow	D/061910-012	730257	1
H = 55mm. Extension shaft L = 400 mm - Black	D/061910-004	730256	1
H = 55 mm. Extension shaft L = 400 mm- Red/yellow	D/061910-014	730258	1



Padlocking device (Ø max 8 mm) For three padlocks	D/061900-020	730250	1
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Terminal covers Transparent, sealable. Set of 2 pieces (not for additional Al-cable terminals)	D/061912-020	731024	1
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Terminals - Al/Cu 35 mm² Set of 3 terminals Set of 4 terminals	D/061912-013 D/061912-014	731415 731416	1
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Auxiliary contacts - To mount on the right side			
1-pole CO	D/061901-001	730252	1
2-pole CO	D/061901-002	730253	1



Bar or cable lug connection Conv. set 4-pole + terminal cover. For connecting cable lugs or bars. Max. W = 15 mm	D/061912-004	730260	1
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Inbus key Insulated S5 - L = 200 mm	D/061000-097	730000	1
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Dilos

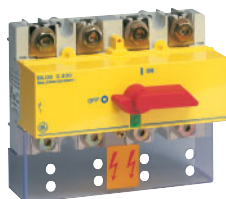
Dilos 2 - DIN-rail loadbreak disconnectors - 8 modules

Transparent with padlockable rotary handle incl. terminal covers 1h.



Description	In (A)	Cat. No.	Ref. No.	Pack
2-pole	160	D/061224-201	730034	1
	200	D/061226-201	730042	1
3-pole	160	D/061324-201	730088	1
	200	D/061326-201	730096	1
4-pole	160	D/061424-201	730157	1
	200	D/061426-201	730165	1
3-pole + fixed neutral	160	D/061524-201	730215	1
	200	D/061526-201	730223	1

Safety with padlockable rotary handle incl. terminal covers 1h.



Red/yellow, according to DIN VDE 0113 Teil 1	160	D/061324-203	730089	1
	200	D/061326-203	730097	1
Red/yellow, according to DIN VDE 0113 Teil 1	160	D/061424-203	730158	1
	200	D/061426-203	730166	1

Accessories



Description	Cat. No.	Ref. No.	Pack
Handles for cover of hinged door - IP65 - Padlockable			
H = 55 mm. Extension shaft L = 200 mm - Black	D/061910-002	730255	1
H = 55 mm. Extension shaft L = 200 mm - Red/yellow	D/061910-012	730257	1
H = 55 mm. Extension shaft L = 400 mm - Black	D/061910-004	730256	1
H = 55 mm. Extension shaft L = 400 mm - Red/yellow	D/061910-014	730258	1



Padlocking device (Ø max 8 mm) For three padlocks	D/061900-020	730250	1
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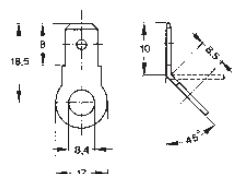
Terminal cover	D/061922-020	730263	1
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Mantle terminals - Ø max 14 mm			
Set of 3 pieces	D/061922-003	730261	1
Set of 4 pieces	D/061922-004	730262	1



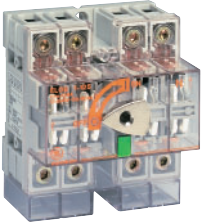
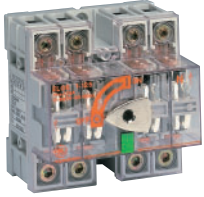
Auxiliary contacts - To mount on the right side			
1-pole CO	D/061901-001	730252	1
2-pole CO	D/061901-002	730253	1



Wire connections			
10 Faston tabs 6.3 x 0.8 mm for 2.5 mm ² connections	D/061922-030	730281	1



Inbus key			
Insulated S5 - L = 200 mm	D/061000-097	730000	1

Elos - DIN-rail loadbreak disconnectors - 5 modulesTransparent
without rotary handle

Description	In (A)	Cat. No.	Ref. No.	Pack
4-pole - For electricity boards	63	D/061421-200	730806	1
	100	D/061420-200	730805	1
	125	D/061419-000	730144	1
4-pole - With bottom cable protection IP20	125	D/061419-021	731466	1

Accessories

Description	Cat. No.	Ref. No.	Pack
Cable protection IP20	D/061912-021	731467	1



Padlocking device (Ø max 8 mm) For three padlocks	D/061900-020	730250	1
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Inbus key Insulated S5 - L = 200 mm	D/061000-097	730000	1
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Dilos

Dilos 1H - Loadbreak disconnectors for wall mounting

Standard transparent



Description

In (A)

Cat. No.

Ref. No.

Pack

3-pole
Without handle

40

D/061330-201

730454

1

63

D/061331-201

730457

1

125

D/061333-201

730460

1

3-pole + neutral
Without handle

40

D/061430-201

730482

1

63

D/061431-201

730485

1

125

D/061433-201

730488

1

3-pole + fixed neutral
Without handle

40

D/061530-201

730510

1

63

D/061531-201

730513

1

125

D/061533-201

730516

1

Safety



3-pole,
Yellow label, according to DIN VDE 0113 Teil 1
without handle

40

D/061330-203

730455

1

63

D/061331-203

730458

1

125

D/061333-203

730461

1

3-pole,
Yellow label, according to DIN VDE 0113 Teil 1
without handle

40

D/061430-203

730483

1

63

D/061431-203

730486

1

125

D/061433-203

730489

1

Accessories

Description

Cat. No.

Ref. No.

Pack

Direct handles



Low grey

D/061940-252

731538

1

Low red

D/061940-253

731539

1

Grey, padlockable

D/061940-211

730649

1

Red, padlockable

D/061940-213

730650

1

Grey, keylockable and padlockable (Keylock not included)

D/061940-231

730651

1

Red, keylockable and padlockable (Keylock not included)

D/061940-233

730652

1

Handles for inner door



IP65 - Padlockable - With extension shaft 300 mm
Reduced height = 55 mm

Black

D/062927-202

731056

1

Red/yellow

D/062927-203

731351

1

Keylock



Plug-in for handles (Ronis 1104)

D/769080-000

769080

1

Handles for cover or hinged door



IP65 - Padlockable - Defeat - With extension shaft 300 mm (8/8)

Black

D/062920-201

730661

1

Red/yellow

D/062920-203

730662

1

Black with keylockable plug-in (Ronis 1104)

D/062920-221

730663

1

Red/yellow with keylockable plug-in (Ronis 1104)

D/062920-223

730664

1

Special set for disconnector with neutral on the right, black

D/062920-281

730853

1

Special set for disconnector with neutral on the right, red/yellow

D/062920-283

730854

1

Inbus key







Insulated S5 - L = 200 mm

D/061000-097

730000



1

Accessories Dilos 1H (continued)

	Description	Cat. No.	Ref. No.	Pack
	Changeover system (I-O-II) With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - defeat			
	With grey handle	D/062910-205	730655	1
	With red handle	D/062910-207	731347	1
	As above but with handle 55 mm height - for inner door			
	With black handle	D/062927-265	731453	1
	With red handle	D/062927-267	731552	1
	6P/8P-system (I-O) With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - defeat			
	With grey handle	D/062910-206	730656	1
	Standard auxiliary contacts			
	To be added on the right side			
	1P CO	D/061901-001	730252	1
	2P CO	D/061901-002	730253	1
	Max. current rating for AC 15 and DC 13 AC: 3A at 380V 5A at 220V DC: 0.5A at 220V 0.7A at 110V 1A at 60V 2A at 48V 4A at 24V			

Dilos

Dilos 3 - Loadbreak disconnectors for wall mounting

	Standard transparent	Description	In (A)	Cat. No.	Ref. No.	Pack
	3-pole Without rotary handle	160	D/061334-201	730463	1	
		200	D/061335-201	730466	1	
		250	D/061336-201	730469	1	
		315	D/061337-201	730472	1	
	3-pole + neutral Without rotary handle	160	D/061434-201	730491	1	
		200	D/061435-201	730494	1	
		250	D/061436-201	730497	1	
		315	D/061437-201	730500	1	
	3-pole + fixed neutral Without rotary handle	160	D/061534-201	730519	1	
		200	D/061535-201	730522	1	
		250	D/061536-201	730525	1	
		315	D/061537-201	730528	1	
	3-pole, Yellow label, according to DIN VDE 0113 Teil 1 without rotary handle	160	D/061334-203	730464	1	
		200	D/061335-203	730467	1	
		250	D/061336-203	730470	1	
	3-pole, Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	160	D/061434-203	730492	1	
		200	D/061435-203	730495	1	
		250	D/061436-203	730498	1	

Accessories Dilos 3

	Description	Cat. No.	Ref. No.	Pack
	Direct handles			
	Low grey	D/061940-252	731538	1
	Low red	D/061940-253	731539	1
	Grey, padlockable	D/061940-211	730649	1
	Red, padlockable	D/061940-213	730650	1
	Grey, keylockable and padlockable (Keylock not included)	D/061940-231	730651	1
Red, keylockable and padlockable (Keylock not included)	D/061940-233	730652	1	
	Handles for inner door			
	IP65 - Padlockable - With extension shaft 300 mm Reduced height = 55 mm			
	Black	D/062927-202	731056	1
Red/yellow	D/062927-203	731351	1	
	Keylock			
	Plug-in for handles (Ronis 1104)	D/769080-000	769080	1
	Handles for cover or hinged door			
	IP65 - Padlockable - Defeat - With extension shaft 300 mm (8/8)			
	Black	D/062920-201	730661	1
	Red/yellow	D/062920-203	730662	1
	Black with keylockable plug-in (Ronis 1104)	D/062920-221	730663	1
	Red/yellow with keylockable plug-in (Ronis 1104)	D/062920-223	730664	1
	Special set for disconnector with neutral on the right, black	D/062920-281	730853	1
Special set for disconnector with neutral on the right, red/yellow	D/062920-283	730854	1	
	Inbus key			
	Insulated S5 - L = 200 mm	D/061000-097	730000	1

Accessories Dilos 3 (continued)

	Description	Cat. No.	Ref. No.	Pack
	Changeover system (I-O-II) With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - defeat With grey handle With red/yellow handle	D/062920-265 D/062920-267	730665 731348	1 1
	As above but with handle 55 mm height - for inner door With black handle With red/yellow handle	D/062937-265 D/062937-267	731455 731554	1 1
	6P/8P-system (I-O) With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - defeat With grey handle	D/062920-266	730666	1
	Terminals (Cu or Al 185 mm²) Set of 3 V box terminals with cover Set of 4 V box terminals with cover Set of 3 terminals with cover Set of 4 terminals with cover	D/062922-213 D/062922-214 D/062922-203 D/062922-204	730627 730628 730625 730626	1 1 1 1
	Rear connections with cover Set of 3 pieces Set of 4 pieces	D/062922-253 D/062922-254	730629 730630	1 1
	Standard auxiliary contacts To be added on the right side 1P CO 2P CO Max. current rating for AC 15 and DC 13 AC: 3A at 380V 5A at 220V DC: 0.5A at 220V 0.7A at 110V 1A at 60V 2A at 48V 4A at 24V	D/061901-001 D/061901-002	730252 730253	1 1
	Anticipated auxiliary contacts (early make and early break) To be mounted inside 1 CO 2 CO	D/062921-201 D/062921-202	730610 730611	1 1
	Terminal covers Set of 2 long covers 4P, boxed - Sealable	D/062922-220	730615	1
	Set of 2 short covers 4P, boxed - IP20 and sealable	D/062922-226	731459	1
	Set of 2 connection bolt covers 4P	D/062922-221	730616	1

Dilos

Dilos 4 - Loadbreak disconnectors for wall mounting

Transparent	Description	In (A)	Cat. No.	Ref. No.	Pack
	3-pole	400	D/061344-201	730474	1
	With padlockable rotary handle	500	D/061345-201	730476	1
		630	D/061346-201	730478	1
	3-pole + neutral	400	D/061444-201	730502	1
	With padlockable rotary handle	500	D/061445-201	730504	1
		630	D/061446-201	730506	1
	3-pole + fixed neutral	400	D/061544-201	730530	1
	With padlockable rotary handle	500	D/061545-201	730532	1
		630	D/061546-201	730534	1

Accessories Dilos 4

	Description		Cat. No.	Ref. No.	Pack
	Direct handles				
	Low black		D/061950-252	731540	1
	With keylock possibility (keylock not included)		D/061950-251	730653	1
	Handles for cover or hinged door				
	IP54 - Defeat - Padlockable				
	With extension shaft 300 mm (14/14)				
	Grey		D/062940-241	730667	1
	Set for discon. with N on the right: grey		D/062940-281	730855	1
	Handles for inner door				
	IP65 - Padlockable				
	Black, reduced height 55 mm - With extension shaft 300 mm		D/062947-202	731352	1
	Keylock				
	Plug-in for handles		D/769080-000	769080	1
	Changeover system (I-O-II)				
	With extension shaft 300 mm, padlockable handle, gasket, flange and template				
	With handle IP54 - defeat		D/062940-265	730669	1
	As above but with handle 55 mm height - for inner door				
	With black handle IP65		D/062947-265	731457	1
	Standard auxiliary contacts				
	To be added on the right side				
	1P CO		D/061901-001	730252	1
	2P CO		D/061901-002	730253	1
	Max. current rating for AC 15 and DC 13				
	AC 3A at 380V				
	5A at 220V				
	DC 0.5A at 220V				
	0.7A at 110V				
	1A at 60V				
	2A at 48V				
	4A at 24V				

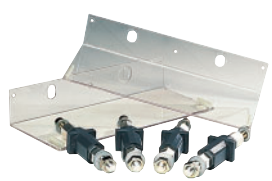
Accessories Dilos 4 (continued)



Description	Cat. No.	Ref. No.	Pack
Anticipated auxiliary contacts (early make and early break) - To be mounted inside			
1P NO	P9B10VN	187002	1
1P NC	P9B01VR	187003	1



Terminals (Cu or Al 240 mm²)			
Set of 3 V box terminals with cover	D/062942-213	730633	1
Set of 4 V box terminals with cover	D/062942-214	730634	1



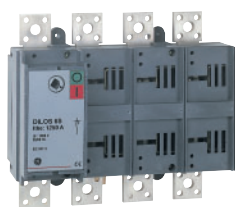
Rear connections with cover			
Set of 3 pieces	D/062942-253	730635	1
Set of 4 pieces	D/062942-254	730636	1



Terminal covers			
Set of 2 long terminal covers 4P - boxed	D/062942-220	730618	1
Set of 2 short terminal covers 4P - IP20 - box terminal - sealable	D/062942-226	731461	1
Set of 2 connection bolt covers 4P	D/062942-221	730619	1

Dilos

Dilos 6S - Loadbreak disconnectors for wall mounting



35kA

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole Visible contacts. Without handle	800	D/661365-231	731570	1
	1000	D/661366-231	731584	1
	1250	D/661367-231	731557	1
4-pole Visible contacts. Without handle	800	D/661465-231	731662	1
	1000	D/661466-231	731677	1
	1250	D/661467-231	731691	1
3-pole + fixed neutral Visible contacts. Without handle	800	D/661565-231	731733	1
	1000	D/661566-231	731737	1
	1250	D/661567-231	731741	1

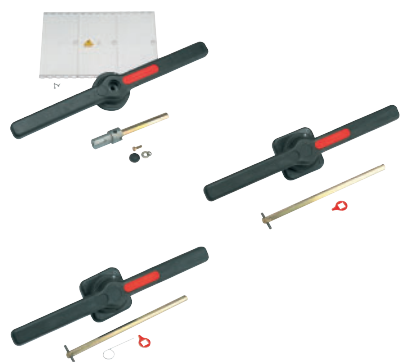
50kA

3-pole With padlockable rotary handle	800	D/661365-251	731571	1
	1000	D/661366-251	731585	1
	1250	D/661367-251	731601	1
4-pole + neutral With padlockable rotary handle	800	D/661465-251	731663	1
	1000	D/661466-251	731678	1
	1250	D/661467-251	731692	1
3-pole + fixed neutral With padlockable rotary handle	800	D/661565-251	731734	1
	1000	D/661566-251	731738	1
	1250	D/661567-251	731742	1

Accessories Dilos 6S



Description	Cat. No.	Ref. No.	Pack
Single handles for 35kA version Direct black with transparent main contact cover shield (3P)	D/661960-231	731786	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting - IP65 Padlockable in OFF position (3 padlocks 6.3 mm) and keylockable (Keylock not included)	D/662960-231	731882	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3mm) with defeat mechanism and keylockable (Keylock not included)	D/662960-232	731883	1




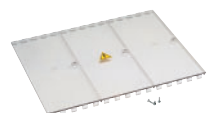
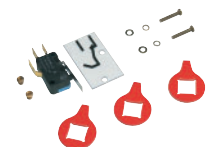



Double handles for 50kA version Direct black with transparent main contact cover shield (3P)	D/661960-251	731788	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) keylockable (Keylock not included)	D/662960-251	731884	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) with defeat mechanism - keylockable (Keylock not included)	D/662960-252	731885	1



Keylock Plug-in, Fiat key (code H235) Lockable in OFF position Key removable in OFF position	D/062960-240	730857	1
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Accessories Dilos 6S (continued)

	Description	Cat. No.	Ref. No.	Pack
	Padlock system For direct handle	D/661960-245	731787	1
	Covers			
	1 upper box terminal cover - transparent	D/662962-223	731895	1
	1 lower box terminal cover - transparent	D/662962-224	731896	1
	Transparent main contact cover shield (3P)	D/662962-227	731898	1
	Auxiliary contacts (CO)			
	1NO+1NC	D/661971-201	731794	1
	2NO+2NC	D/661971-202	731795	1

Dilos

Dilos 7S - Loadbreak disconnectors for wall mounting



1600A

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole - Visible contacts. Without handle	1600	D/661371-251	731618	1
3-pole + neutral 50% - Visible contacts. Without handle	1600	D/661771-251	731752	1
4-pole - Visible contacts. Without handle	1600	D/661471-251	731706	1

Dilos 8S - Loadbreak disconnectors for wall mounting



2000A

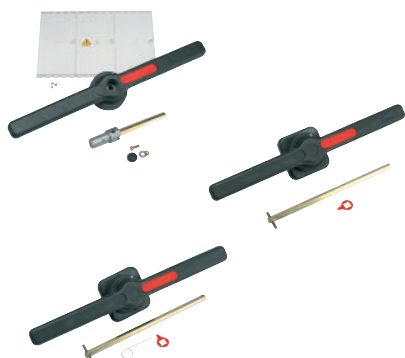
Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole - Visible contacts. Without handle	2000	D/661382-251	731632	1
3-pole + neutral 50% - Visible contacts. Without handle	2000	D/661782-251	731754	1
4-pole - Visible contacts. Without handle	2000	D/661482-251	731719	1



2500A



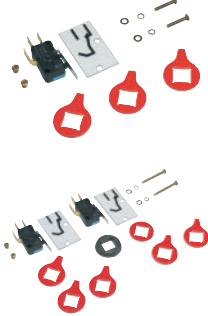
3-pole - Visible contacts. Without handle	2500	D/661385-251	731646	1
3-pole + neutral 50% - Visible contacts. Without handle	2500	D/661785-251	731761	1
4-pole - Visible contacts. Without handle	2500	D/661485-251	731728	1

Accessories - Dilos7S / Dilos8S



Description	Cat. No.	Ref. No.	Pack
Double handles Direct black with transparent main contact cover shield (3P)	D/661960-251	731788	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) keylockable (Keylock not included)	D/662960-251	731884	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) with defeat mechanism - keylockable (Keylock not included)	D/662960-252	731885	1
Contact cover Transparent main contact cover shield (3P)	D/662962-227	731898	1

Accessories - Dilos7S / Dilos8S (continued)

	Description	Cat. No.	Ref. No.	Pack
	Keylock Plug-in, Fiat key (code H235) Lockable in OFF position Key removable in OFF position	D/062960-240	730857	1
	Padlock system For direct handles Dilos 7S and Dilos 8S 2000A	D/661970-245	731792	1
	For direct handle Dilos 8S 2500A	D/661980-245	731798	1
	Auxiliary contacts (CO) 1NO+1NC	D/661971-201	731794	1
	2NO+2NC	D/661971-202	731795	1

Dilos

Dilos 9S - Loadbreak disconnectors for wall mounting



3P
3P+N 50%

Description	In (A)	Cat. No.	Ref. No.	Pack
Visible contacts. Without handle	3150	D/661393-251	731654	1
Visible contacts. Without handle	3150	D/661793-251	731769	1

Accessories



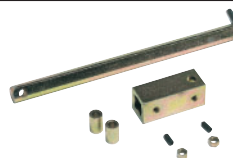
Description	Cat. No.	Ref. No.	Pack
Double handles Direct black and transparent main contact cover shield (3P)	D/661960-251	731788	1



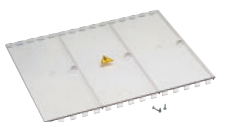
Black with extension shaft (300 mm - 12x12 mm) for door mounting - IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) - keylockable (Keylock not included)	D/662960-251	731884 ⁽¹⁾	1
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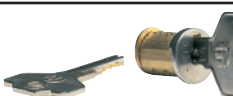
Black with extension shaft (300 mm - 12x12 mm) for door mounting - IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) with defeat mechanism - keylockable (Keylock not included)	D/662960-252	731885 ⁽¹⁾	1
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Extension shaft 200 mm (12/12)	D/662960-200	731881	1
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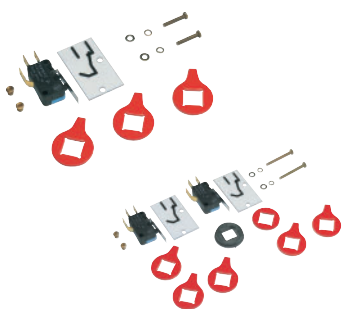
Contact cover Transparent main contact cover shield (3P)	D/662962-227	731898	1
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Keylock With plug-in Fiat key (code H235) Lockable in OFF position Key removable in OFF position	D/062960-240	730857	1
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Padlock system For direct handle	D/661990-245	731800	1
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Auxiliary contacts (CO) 1NO+1NC	D/661971-201	731794	1
2NO+2NC	D/661971-202	731795	1

(1) Depth between the rear of the disconnector and the front of the enclosures door: max 423 mm.)

Dilos 9 - Loadbreak disconnectors for wall mounting



Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole Visible contacts. Without handle	4000 ⁽¹⁾	D/061394-201	730743	1
3-pole + neutral Visible contacts. Without handle	4000	D/061494-201	730757	1

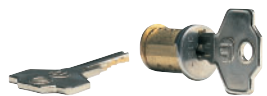
Accessories



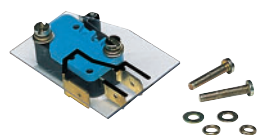
Description	Cat. No.	Ref. No.	Pack
Double handles Direct black with metal coupling insert	D/061990-271	731357	1
Black with extension shaft (300 mm - 12x12 mm) for door mounting - IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) with defeat mechanism - keylockable plug-in (Fiat), with metal coupling insert	D/062990-261	731359⁽²⁾	1



Contact cover Transparent main contact cover shield (3P)	D/062972-227	731498	1
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Keylock Plug-in, Fiat key (code H235) Lockable in OFF position Key removable in OFF position	D/062960-240	730857	1
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Auxiliary contacts (CO) 1NO+1NC	D/062961-201	730860	1
2NO+2NC	D/062961-202	730861	1

(1) Not under load
(2) Depth between the rear of the disconnector and the front of the enclosures door: max 520 mm.

Fulos

Fulos 000 - Fused loadbreak disconnectors



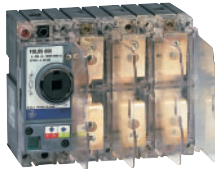
According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole NH 000 - NH 00. Without rotary handle	125	D/062311-201	730560	1
3-pole + neutral NH 000 - NH 00. Without rotary handle	125	D/062411-201	730576	1
3-pole + fixed neutral NH 000 - NH 00. Without rotary handle	125	D/062511-201	730592	1



According to NF

3-pole NF 22 x 58. Without rotary handle	125	D/062314-201	730821	1
3-pole + neutral NF 22 x 58. Without rotary handle	125	D/062414-201	730833	1
3-pole + fixed neutral NF 22 x 58. Without rotary handle	125	D/062514-201	730845	1



According to BS

3-pole BS A3 (TIS / OS - 440V) (OS 100 M125). Without rotary handle	100	D/062312-232	731919	1
3-pole + neutral BS A3 (TIS / OS - 440V) (OS 100 M125). Without rotary handle	100	D/062412-232	731921	1
3-pole + fixed neutral BS A3 (TIS / OS - 440V) (OS 100 M125). Without rotary handle	100	D/062512-232	731923	1

Fulos 000 - Safety fused loadbreak disconnectors



According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole / NH 000 - NH 00 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	125	D/062311-201	730561	1
3-pole + neutral / NH 000 - NH 00 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	125	D/062411-203	730577	1

Accessories Fulos 000



Description	Cat. No.	Ref. No.	Pack
Direct handles			
Low grey	D/062910-251	731436	1
Low red	D/062910-253	731437	1



Handles for inner door			
Reduced height 55 mm			
With extension shaft 300 mm			
P65 - Padlockable			
Black	D/062927-202	731056	1
Red/yellow	D/062927-203	731351	1

Accessories Fulos 000 (continued)

	Description	Cat. No.	Ref. No.	Pack
	Handles for cover or hinged door IP65 - Padlockable - Defeat With extension shaft 300 mm (8/8) Black Red/yellow Black and keylockable (Keylock not included) Red/yellow and keylockable (Keylock not included) Special set for disconnector with neutral on the right, black Special set for disconnector with neutral on the right, red/yellow	D/062920-201 D/062920-203 D/062920-221 D/062920-223 D/062920-281 D/062920-283	730661 730662 730663 730664 730853 730854	1 1 1 1 1 1
	Keylock Plug-in for handles (Ronis 1104)	D/769080-000	769080	1
	Fuse protection cover 3P	D/062912-225	730614	1
	Inbus key Insulated S5 - L = 200 mm	D/061000-097	730000	1
	Changeover system (I-0-II) With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - Defeat With grey handle	D/062910-205	730655	1
	With red/yellow handle	D/062910-207	731347	1
	As above but with handle 55 mm height - for inner door With black handle IP65	D/062927-265	731453	1
	With red/yellow handle	D/062927-267	731552	1
	6P/8P-system (I-0) With extension shaft 300 mm, handle, gasket, flange and template IP65 - defeat With grey handle	D/062910-206	730656	1
	Standard auxiliary contacts To be added on the right side 1P CO 2P CO	D/061901-001 D/061901-002	730252 730253	1 1

Fulos

Fulos 00 - Fused loadbreak disconnectors



According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole NH 00. Without rotary handle	160	D/062321-201	730563	1
3-pole + neutral NH 00. Without rotary handle	160	D/062421-201	730579	1
3-pole + fixed neutral NH 00. Without rotary handle	160	D/062521-201	730595	1



According to BS

3-pole BS A4 (TCP Ø 26 - 690V). Without rotary handle	100	D/062322-241	730822	1
BS A4 (TCP / TFP Ø 33.7 - 690V). Without rotary handle	200	D/062322-242	731925	1
3-pole + neutral BS A4 (TCP Ø 26 - 690V). Without rotary handle	100	D/062422-241	730834	1
BS A4 (TCP / TFP Ø 33.7 - 690V). Without rotary handle	200	D/062422-242	731927	1
3-pole + fixed neutral BS A4 (TCP Ø 26 - 690V). Without rotary handle	100	D/062522-241	730846	1
BS A4 (TCP / TFP Ø 33.7 - 690V). Without rotary handle	200	D/062522-242	731929	1

Fulos 00 - Safety fused loadbreak disconnectors



According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole / NH 00 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	160	D/062321-203	730564	1
3-pole + neutral / NH 00 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	160	D/062421-203	730580	1

Accessories Fulos 00



Description	Cat. No.	Ref. No.	Pack
Direct handles			
Low grey	D/062910-251	731436	1
Low red	D/062910-253	731437	1



Handles for inner door			
Reduced height 55 mm			
With extension shaft 300 mm			
P65 - Padlockable			
Black	D/062927-202	731056	1
Red/yellow	D/062927-203	731351	1

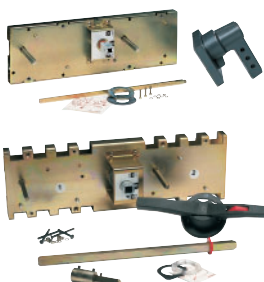



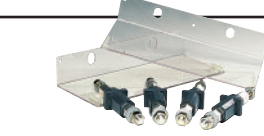


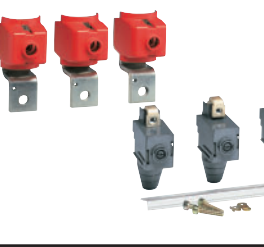







Keylock			
Plug-in for handles (Ronis 1104)	D/769080-000	769080	1



Handles for cover or hinged door			
IP65 - Defeat - Padlockable			
With extension shaft 300 mm (8/8)			
Black	D/062920-201	730661	1
Red/yellow	D/062920-203	730662	1
Black and keylockable (Keylock Ronis 1104 not included)	D/062920-221	730663	1
Red/yellow and keylockable (Keylock Ronis 1104 not included)	D/062920-223	730664	1
Special set for disconnector with neutral on the right, black	D/062920-281	730853	1
Special set for disconnector with neutral on the right, red/yellow	D/062920-283	730854	1

Accessories Fulos 00 (continued)

	Description	Cat. No.	Ref. No.	Pack
	Changeover system (I-O-II)			
	With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - Defeat	D/062920-265	730665	1
	With grey handle	D/062920-267	731348	1
	With red/yellow handle			
	As above but with handle 55 mm height - for inner door			
	With black handle	D/062937-265	731455	1
	With red/yellow handle	D/062937-267	731554	1
	6P/8P-system (I-O)			
	With extension shaft 300 mm, padlockable handle, gasket, flange and template IP65 - Defeat			
	With grey handle	D/062920-266	730666	1
	Standard auxiliary contacts			
	To be added on the right side			
	1P CO	D/061901-001	730252	1
	Anticipated auxiliary contacts			
	(early make and early break) To be mounted inside			
	1 CO	D/062921-201	730610	1
	2 CO	D/062921-202	730611	1
	Rear connection with cover			
	Set of 3 pieces	D/062922-253	730629	1
	Set of 4 pieces	D/062922-254	730630	1
	Inbus key			
	Insulated S5 - L = 200 mm	D/061000-097	730000	1
	Fuse protection cover			
	3P	D/062922-225	730617	1
	Terminals (Cu or Al 185 mm²)			
	Set of 3 V box terminals with cover	D/062922-213	730627	1
	Set of 4 V box terminals with cover	D/062922-214	730628	1
	Set of 3 terminals with cover	D/062922-203	730625	1
	Set of 4 terminals with cover	D/062922-204	730626	1
	Terminal covers 4P			
	Set of 2 long terminal covers, boxed	D/062922-220	730615	1
	Sealable			
	Set of 2 short box terminal covers,	D/062922-226	731459	1
	IP20 - sealable			
	Set of 2 connection bolt covers	D/062922-221	730616	1

Fulos

Fulos 1 - Fused loadbreak disconnectors



According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole NH 1. Without rotary handle	250	D/062341-201	730569	1
3-pole + neutral NH 1. Without rotary handle	250	D/062441-201	730585	1
3-pole + fixed neutral NH 1. Fixed neutral. Without rotary handle	250	D/062541-201	730601	1



According to BS

3-pole BS B1-B2 (TC / TF Ø 33.7 - 690V). Without rotary handle	200	D/062342-221	730823	1
BS B4 (GTMF Ø 40.4 - 415V). Without rotary handle	400	D/062342-222	731931	1
3-pole + neutral BS B1-B2 (TC / TF Ø 33.7 - 690V). Without rotary handle	200	D/062442-221	730835	1
BS B4 (GTMF Ø 40.4 - 415V). Without rotary handle	400	D/062442-222	731933	1
3-pole + fixed neutral BS B1-B2 (TC / TF Ø 33.7 - 690V). Without rotary handle	200	D/062542-221	730847	1
BS B4 (GTMF Ø 40.4 - 415V). Without rotary handle - Fixed neutral	400	D/062542-222	731935	1

Fulos 1 - Safety fused loadbreak disconnectors



According to DIN

Description	In (A)	Cat. No.	Ref. No.	Pack
3-pole / NH 1 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	250	D/062341-203	730570	1
3-pole + neutral / NH 1 Yellow label, according to DIN VDE 0113 Teil 1 Without rotary handle	250	D/062441-203	730586	1

Accessories Fulos 1



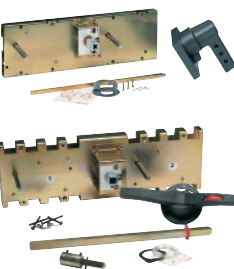
Description	Cat. No.	Ref. No.	Pack
Direct handles			
Low grey	D/062930-251	731420	1
Low red	D/062930-253	731421	1



Handles for cover or hinged door			
IP54 - Defeat - Padlockable			
With extension shaft 300 mm (14/14)			
Grey	D/062940-241	730667	1
Red/yellow	D/062940-243	730668	1
Special set for disconnector with neutral on the right - grey	D/062940-281	730855	1



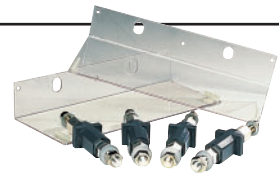




Handles for inner door			
IP65 - With extension shaft 300 mm			
Reduced height 55 mm - Padlockable			
Black	D/062947-202	731352	1
Red/yellow	D/062947-203	731353	1




Changeover system (I-O-II)			
With extension shaft 300 mm, padlockable handle, gasket, flange and template			
Padlockable			
With handle IP54 - Defeat mechanism	D/062940-265	730669	1
As above but with handle 55 mm height - for inner door			
With black handle IP65	D/062947-265	731457	1

Accessories Fulos 1 (continued)

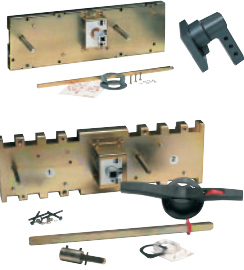

	Description	Cat. No.	Ref. No.	Pack
	Standard auxiliary contacts To be added on the right side			
	1P CO	D/061901-001	730252	1
	2P CO	D/061901-002	730253	1
	Max. current rating for AC 15 and DC 13 AC 3A at 380V / AC 5A at 220V DC 0.5A at 220V / DC 0.7A at 110V / DC 1A at 60V / DC 2A at 48V / DC 4A at 24V			
	Anticipated auxiliary contacts (early make and early break) To be mounted inside			
	1P NO	P9B10VN	187002	1
	1P NC	P9B01VR	187003	1
	Terminals (Cu or Al 240 mm²) (early make and early break) Set of 3 V box terminals with cover Set of 4 V box terminals with cover	D/062942-213 D/062942-214	730633 730634	1 1
	Rear connections with cover Set of 3 pieces Set of 4 pieces	D/062942-253 D/062942-254	730635 730636	1 1
	Fuse protection cover 3P	D/062942-225	730620	1
	Terminal covers - 4P Set of 2 long box terminal covers Set of 2 short box terminal covers - IP20 - sealable Set of 2 connection bolt covers	D/062942-220 D/062942-226 D/062942-221	730618 731461 730619	1 1 1

Fulos 2 - Fused loadbreak disconnectors

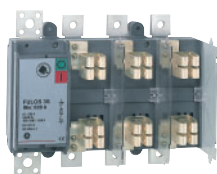
	Description	In (A)	Cat. No.	Ref. No.	Pack
According to DIN	3-pole / NH 2. Without rotary handle	400	D/062351-201	730572	1
	3-pole + neutral / NH 2. Without rotary handle	400	D/062451-201	730588	1
	3-pole + fixed neutral / NH 2. Without rotary handle	400	D/062551-201	730604	1
According to DIN	BS B3-B4 (TKF / TMF - 690V). Without rotary handle	400	D/062352-241	730824	1
	BS B3-B4 (TKF / TMF - 690V). Without rotary handle	400	D/062452-241	730836	1
	BS B3-B4 (TKF / TMF - 690V). Without rotary handle	400	D/062552-241	730848	1

Fulos

Accessories Fulos 2

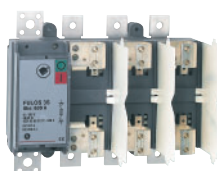
	Description	Cat. No.	Ref. No.	Pack
	Direct handles With grey handle	D/062930-251	731420	1
	Handles for cover or hinged door IP65 - Padlockable Grey Special set for disconnectors with neutral on the right - grey	D/062940-241 D/062940-281	730667 730855	1 1
	Handles for inner door (early make and early break) To be mounted inside Black, reduced height 55 mm / With extension shaft 300 mm	D/062947-202	731352	1
	Standard auxiliary contacts To be added on the right side 1P CO 2P CO Max. current rating for AC 15 and DC 13 AC 3A at 380V / AC 5A at 220V DC 5A at 220V / DC 0.7A at 110V / DC 1A at 60V / DC 2A at 48V / DC 4A at 24V	D/061901-001 D/061901-002	730252 730253	1 1
	Anticipated auxiliary contacts (early make and early break) To be mounted inside 1P NO 1P NC	P9B10VN P9B01VR	187002 187003	1 1
	Fuse protection cover 3P	D/062942-225	730620	1
	Changeover system (I-O-II) With extension shaft 300 mm, padlockable handle, gasket, flange and template Padlockable With handle IP54 - defeat As above but with handle 55 mm height for inner door With black handle IP65	D/062940-265 D/062947-265	730669 731457	1 1
	Terminals (Cu or Al 240 mm²) Set of 3 box terminals with cover Set of 4 box terminals with cover	D/062942-213 D/062942-214	730633 730634	1 1
	Rear connections with cover Set of 3 pieces Set of 4 pieces	D/062942-253 D/062942-254	730635 730636	1 1
	Terminal covers - 4P Set of 2 long box terminal covers Set of 2 short box terminal covers / IP20 - sealable Set of 2 connection bolt covers	D/062942-220 D/062942-226 D/062942-221	730618 731461 730619	1 1 1

Fulos 3S - Fused loadbreak disconnectors



According to DIN

Description		Cat. No.	Ref. No.	Pack
3-pole NH 3. Without rotary handle	630	D/662361-231	731815	1
3-pole + neutral NH 3. Without rotary handle	630	D/662461-231	731845	1



According to BS

3-pole BS C1-C2 (TM / TTM - 690V). Without rotary handle	630	D/662362-231	731825	1
3-pole + neutral BS C1-C2 (TM / TTM - 690V). Without rotary handle	630	D/662462-231	731855	1

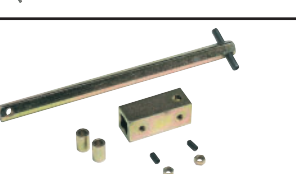
Accessories Fulos 3S



Description		Cat. No.	Ref. No.	Pack
Single handles Direct black with fuse cover (3P)		D/662970-231	731903	1



Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) keylockable (Keylock not included)		D/662960-231	731882	1
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Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) with defeat mechanism - keylockable (keylock not included)		D/662960-232	731883	1
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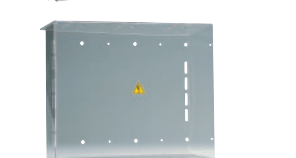
Extension shaft 200 mm		D/662960-200	731881	1
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Keylock Plug-in, Fiat key (code H235) Lockable in OFF / Lockable in OFF		D/062960-240	730857	1
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Padlock system With handle IP54 - Defeat mechanism		D/661960-245	731787	1
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Covers - transparent 1 upper box terminal cover		D/662962-223	731895	1
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1 lower box terminal cover		D/662962-224	731896	1
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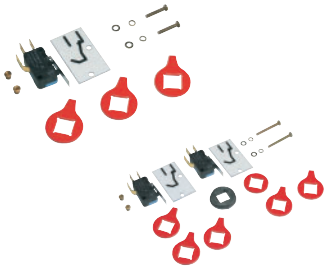
Sealable fuse cover (3P)		D/662962-225	731897	1
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Fulos

Accessories Fulos 3S (continued)



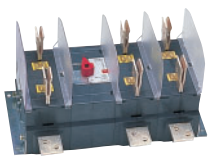
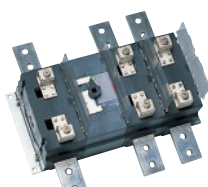
Description	Cat. No.	Ref. No.	Pack
Connection set For fuse detection	D/662972-229	731906	1



Auxiliary contacts (GO) 1NO+1NC	D/661971-201	731794	1
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2NO+2NC	D/661971-202	731795	1
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Fulos 4 - Fused loadbreak disconnectors

	Description	In (A)	Cat. No.	Ref. No.	Pack
 <p>According to DIN</p>	3-pole NH 4. Without rotary handle	1000	D/062371-201	730773	1
	3-pole + neutral NH 4. Without rotary handle	1000	D/062471-201	730777	1
 <p>According to BS</p>	3-pole BS D1 (TLU / TXU - 690V). Without rotary handle	1250	D/062372-211	730827	1
	3-pole + neutral BS D1 (TLU / TXU - 690V). Without rotary handle	1250	D/062472-211	730839	1

Accessories Fulos 4

	Description		Cat. No.	Ref. No.	Pack
	Double handles Direct black		D/061980-271	730975	1
	Black with extension shaft (300 mm - 12x12 mm) for door mounting IP65 - Padlockable in OFF position (3 padlocks 6.3 mm) standard with defeat mechanism and keylockable (Keylock not included)		D/062970-261	730865	1
	Keylock Plug-in, Fiat key (code H235) Lockable in OFF position / Key removable in OFF position		D/062960-240	730857	1
	Terminal cover kit Set of 3 covers (1 cover/pole) for Fulos 4		D/062972-223	730867	1
	Set of 4 covers (1 cover/pole) for Fulos 4		D/062972-224	730868	1
	Fuse protection cover Transparent (1 pole)		D/062972-225	730869	1
	Connection set For fuse detection		D/662972-229	731906	1
	Auxiliary contacts (CO) 1NO+1NC		D/062961-201	730860	1
	2NO+2NC		D/062961-202	730861	1

Notes

A large grid area for taking notes, consisting of a 20x20 grid of small squares. The grid is empty and occupies the majority of the page.

General purpose boxes in plastic

L.2 MultiBox

L.7 APO

L.12 VMS

General purpose cabinets in plastic

L.19 ARIA

L.22 PolySafe

Cabinets for underground cable distribution

Pedestals

L.28 EH1

L.29 EH2

L.30 EH3/F - EH3/AP

L.32 EH3/GD-AP

<i>Miniature circuit breakers</i>	<i>A</i>
<i>Residential current circuit breakers</i>	<i>B</i>
<i>Busbar systems</i>	<i>C</i>
<i>Comfort functions/Energy control</i>	<i>D</i>
<i>Residential enclosures</i>	<i>E</i>
<i>Contactors/Soft starters/Speed drives</i>	<i>F</i>
<i>Overload relays</i>	<i>G</i>
<i>Control and signalling units</i>	<i>H</i>
<i>Manual motor starters</i>	<i>I</i>
<i>Moulded case circuit breakers</i>	<i>J</i>
<i>Air circuit breakers</i>	<i>K</i>
<i>Fuse systems/Loadbreak disconnectors</i>	<i>L</i>
<i>General purpose enclosures</i>	<i>M</i>
<i>System enclosures</i>	<i>N</i>
<i>Numerical index</i>	<i>X</i>



MultiBox - Small multipurpose boxes

Applications

- Ideal for automation and control applications in industry, machinery, tool-shop and OEM.
- Electronic applications in data and telecom industry.
- Also suitable for use as commercial and industrial distribution boxes.

Standards

IEC 60529
 EN 60529
 IEC 62262
 EN 62208
 DIN VDE 0606 Teil 1/11.84

Approvals



(only for polycarbonate boxes,
 available on request)

Features and benefits

- 11 different basic enclosures (from 65x65mm up to 361x254mm) with up to 3 different cover depths.
- Material: made of polystyrene or glass-fibre reinforced polycarbonate.
- Colour: Grey RAL 7035
- High protection degree, IP66-IK07 for polystyrene, and IP66-IK08 for polycarbonate, by means of injected polyurethane seal.
- Polycarbonate boxes are available with smooth side walls (only one entry) or with several metric knock-outs. Polystyrene boxes are available with smooth side walls or with several metric knock-outs.
- Opaque grey or transparent covers.
- Designed for surface mounting.
- Combinations of heights and widths optional.
- Polystyrene boxes (650°C glow wire test) are suitable for use in temperatures up to +70°C, polycarbonate boxes (960°C glow wire test) are suitable for use in temperatures up to +120°C.
- Total insulation \square
- High resistance to chemical and aggressive influences.
- Halogen-free.
- Self-extinguishing (UL94-V2).
- Rated insulation voltage $U_i = 1000V$

MultiBox

Small polycarbonate boxes

IP66 - IK08



Size	with transparent cover	with grey cover RAL 7035	Pack.
	Ref. No.	Ref. No.	
MB11 65 x 65 x 57 - With metric knock-outs	861501	861500	1
MB11 65 x 65 x 81 - With metric knock-outs	861503	861502	1
MB11 65 x 65 x 57 - Smooth	861557	861556	1
MB11 65 x 65 x 81 - Smooth	861559	861558	1
MB21 94 x 65 x 57 - With metric knock-outs	861505	861504	1
MB21 94 x 65 x 81 - With metric knock-outs	861507	861506	1
MB21 94 x 65 x 57 - Smooth	861561	861560	1
MB21 94 x 65 x 81 - Smooth	861563	861562	1
MB22 94 x 94 x 57 - With metric knock-outs	861509	861508	1
MB22 94 x 94 x 81 - With metric knock-outs	861511	861510	1
MB22 94 x 94 x 57 - Smooth	861565	861564	1
MB22 94 x 94 x 81 - Smooth	861567	861566	1
MB33 110 x 110 x 66 - With metric knock-outs	861513	861512	1
MB33 110 x 110 x 90 - With metric knock-outs	861515	861514	1
MB33 110 x 110 x 66 - Smooth	861569	861568	1
MB33 110 x 110 x 90 - Smooth	861571	861570	1
MB42 130 x 94 x 57 - With metric knock-outs	861517	861516	1
MB42 130 x 94 x 81 - With metric knock-outs	861519	861518	1
MB42 130 x 94 x 57 - Smooth	861573	861572	1
MB42 130 x 94 x 81 - Smooth	861575	861574	1
MB44 130 x 130 x 75 - With metric knock-outs	861521	861520	1
MB44 130 x 130 x 99 - With metric knock-outs	861523	861522	1
MB44 130 x 130 x 75 - Smooth	861577	861576	1
MB44 130 x 130 x 99 - Smooth	861579	861578	1
MB52 180 x 94 x 57 - With metric knock-outs	861525	861524	1
MB52 180 x 94 x 81 - With metric knock-outs	861527	861526	1
MB52 180 x 94 x 57 - Smooth	861581	861580	1
MB52 180 x 94 x 81 - Smooth	861583	861582	1
MB53 180 x 110 x 90 - With metric knock-outs	861529	861528	1
MB53 180 x 110 x 111 - With metric knock-outs	861531	861530	1
MB53 180 x 110 x 165 - With metric knock-outs	861533	861532	1
MB53 180 x 110 x 90 - Smooth	861585	861584	1
MB53 180 x 110 x 111 - Smooth	861587	861586	1
MB53 180 x 110 x 165 - Smooth	861589	861588	1
MB65 182 x 180 x 90 - With metric knock-outs	861535	861534	1
MB65 182 x 180 x 111 - With metric knock-outs	861537	861536	1
MB65 182 x 180 x 165 - With metric knock-outs	861539	861538	1
MB65 182 x 180 x 90 - Smooth	861591	861590	1
MB65 182 x 180 x 111 - Smooth	861593	861592	1
MB65 182 x 180 x 165 - Smooth	861595	861594	1
MB75 254 x 180 x 90 - With metric knock-outs	861543	861542	1
MB75 254 x 180 x 111 - With metric knock-outs	861545	861544	1
MB75 254 x 180 x 165 - With metric knock-outs	861547	861546	1
MB75 254 x 180 x 90 - Smooth	861599	861598	1
MB75 254 x 180 x 111 - Smooth	861601	861600	1
MB75 254 x 180 x 165 - Smooth	861603	861602	1
MB87 361 x 254 x 111 - With metric knock-outs	861551	861550	1
MB87 361 x 254 x 165 - With metric knock-outs	861553	861552	1
MB87 361 x 254 x 111 - Smooth	861607	861606	1
MB87 361 x 254 x 165 - Smooth	861609	861608	1

(Smooth = one metric knock-out on short side for power supply cord)

MultiBox

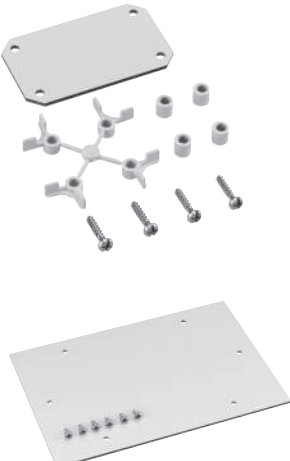


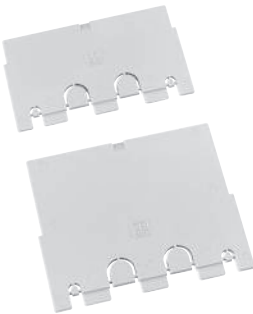
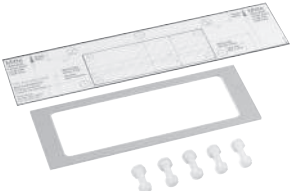
Small polystyrene boxes

IP66 - IK07











Size	with grey cover RAL 7035	
	Ref. No.	Pack.
MB11 65 x 65 x 57 - With metric knock-outs	861612	1
MB11 65 x 65 x 81 - With metric knock-outs	861614	1
MB11 65 x 65 x 57 - Smooth	861668	1
MB11 65 x 65 x 81 - Smooth	861670	1
MB21 94 x 65 x 57 - With metric knock-outs	861616	1
MB21 94 x 65 x 81 - With metric knock-outs	861618	1
MB21 94 x 65 x 57 - Smooth	861672	1
MB21 94 x 65 x 81 - Smooth	861674	1
MB22 94 x 94 x 57 - With metric knock-outs	861620	1
MB22 94 x 94 x 81 - With metric knock-outs	861622	1
MB22 94 x 94 x 57 - Smooth	861676	1
MB22 94 x 94 x 81 - Smooth	861678	1
MB33 110 x 110 x 66 - With metric knock-outs	861624	1
MB33 110 x 110 x 90 - With metric knock-outs	861626	1
MB33 110 x 110 x 66 - Smooth	861680	1
MB33 110 x 110 x 90 - Smooth	861682	1
MB42 130 x 94 x 57 - With metric knock-outs	861628	1
MB42 130 x 94 x 81 - With metric knock-outs	861630	1
MB42 130 x 94 x 57 - Smooth	861684	1
MB42 130 x 94 x 81 - Smooth	861686	1
MB44 130 x 130 x 75 - With metric knock-outs	861632	1
MB44 130 x 130 x 99 - With metric knock-outs	861634	1
MB44 130 x 130 x 75 - Smooth	861688	1
MB44 130 x 130 x 99 - Smooth	861690	1
MB52 180 x 94 x 57 - With metric knock-outs	861636	1
MB52 180 x 94 x 81 - With metric knock-outs	861638	1
MB52 180 x 94 x 57 - Smooth	861692	1
MB52 180 x 94 x 81 - Smooth	861694	1
MB53 180 x 110 x 90 - With metric knock-outs	861640	1
MB53 180 x 110 x 111 - With metric knock-outs	861642	1
MB53 180 x 110 x 165 - With metric knock-outs	861644	1
MB53 180 x 110 x 90 - Smooth	861696	1
MB53 180 x 110 x 111 - Smooth	861698	1
MB53 180 x 110 x 165 - Smooth	861700	1
MB65 182 x 180 x 90 - With metric knock-outs	861646	1
MB65 182 x 180 x 111 - With metric knock-outs	861648	1
MB65 182 x 180 x 165 - With metric knock-outs	861650	1
MB65 182 x 180 x 90 - Smooth	861702	1
MB65 182 x 180 x 111 - Smooth	861704	1
MB65 182 x 180 x 165 - Smooth	861706	1
MB75 254 x 180 x 90 - With metric knock-outs	861654	1
MB75 254 x 180 x 111 - With metric knock-outs	861656	1
MB75 254 x 180 x 165 - With metric knock-outs	861658	1
MB75 254 x 180 x 90 - Smooth	861710	1
MB75 254 x 180 x 111 - Smooth	861712	1
MB75 254 x 180 x 165 - Smooth	861714	1
MB87 361 x 254 x 111 - With metric knock-outs	861662	1
MB87 361 x 254 x 165 - With metric knock-outs	861664	1
MB87 361 x 254 x 111 - Smooth	861718	1
MB87 361 x 254 x 165 - Smooth	861720	1

Accessories

	Size	Ref. No.	Pack.	
Mounting plate (insulated) 	45 x 45 mm	861730	1	
	74 x 45 mm	861731	1	
	74 x 74 mm	861732	1	
	90 x 90 mm	861733	1	
	110 x 74mm	861734	1	
	110 x 110 mm	861734	1	
	160 x 74 mm	861736	1	
	150 x 90 mm	861737	1	
	150 x 150 mm	861738	1	
	220 x 150 mm	861739	1	
331 x 220 mm	861740	1		
DIN profile 35x7.5x1 	L = 81 long/short side	MB 33	861746	1
	L = 106 long side	MB 42	861747	1
	L = 106 long/short side	MB 44	861747	1
	L = 144 long side	MB 52	861748	1
	L = 216 long side	MB 75	861749	1
	L = 336 long side	MB 87	861750	1
DIN profile 15x5x1 	L = 49,5 long/short side	MB 11	861741	1
	L = 49,5 short side	MB 21	861741	1
	L = 80 long side	MB 21	861742	1
	L = 80 long/short side	MB 22	861742	1
	L = 92 long/short side	MB 33	861743	1
	L = 111 long side	MB 42	861744	1
	L = 111 long/short side	MB 44	861744	1
	L = 154 long side	MB 52	861745	1
Partition plates 	For full compartmentalisation in one box 88 x 49 mm - MB 42: inside depth 45 mm - MB 52: inside depth 45 mm	861751	3	
	88 x 73 mm - MB 42: inside depth 69 mm - MB 52: inside depth 69 mm	861752	3	
Combi set 	For joining several boxes horizontal and/or vertical			
	small M20	861753	5	
	small M25	861754	5	
	small M32	861755	5	
lange from MB 53 on	861756	1		

MultiBox

Accessories

		Size	Ref. No.	Pack.
	Hinges	Converts removable covers into hinged covers (incl. drilling template)		
		small up to MB 52 large from MN 53 on	861757 861758	1 1
	Wall mounting brackets	For external mounting of all Multiboxes 1 set = 4 pieces	861759	1
	Padlock	For protection against unauthorised access Available from MB 65 on	861761	1
	Spacers	In plastic (6 + 8 mm), determines the distance between PC-boards or mounting plates and the base of the box 1 set = 8 pieces (incl. fixing screws) Available for all Multiboxes	861762	1
	Thumb grip	On to cover screws. Available for all Multiboxes 1 set = 4 pieces	861763	1
	Carrying handle	Used with Multiboxes for portable purposes (plastic, green).		
		with plastic screws with self-tapping screws	861764 861765	1 1
	Double membrane nipple IP66	Special plastic material (elastic and temperature-resistant) Secure fitting without locknut, two integrated sealing membranes.		
		M16	861724	50
		M20	861725	50
		M25	861726	50
		M32	861727	25
	Air vent (IPx4)	To allow ventilation and prevent condensation. Air vents are preferably mounted in the upper and lower part of the box.		
		M20	861728	100


APO - Modular polyester boxes




Standards

IEC 61439-2	IEC 60529
EN 61439-2	EN 60529
	IEC 62208
	EN 62208

Approvals

-  - Boxes with polyester cover: types 3, 3R, 4, 4X, 6, 6P, 12 and 13
- Boxes with polycarbonate cover: types 3, 3R, 4, 4X, 12 and 13
- Boxes with hinged cover: types 3, 3R, 4, 4X, 6, 12 and 13, available on request

-  - Boxes with polyester cover: types 3, 3R, 4, 4X, 6, 6P, 12 and 13
- Boxes with polycarbonate cover: types 3, 3R, 4, 4X, 12 and 13
- Boxes with hinged cover: types 3, 3R, 4, 4X, 6, 12 and 13, available on request

 Germanischer Lloyd GL



Features

- The range consists of nine boxes based on the 300 and 185 mm modules.
- The bases are made of grey (RAL 7035), hot moulded glass fibre reinforced polyester, dyed in mass. These come complete with M4 threaded inserts (Dodge) for fixing a mounting plate or mounting frame.
- The cover is made of either transparent polycarbonate or opaque grey (RAL 7035) hot moulded glass fibre reinforced polyester, dyed in mass.
- APO-boxes provide optimum security to both operators and equipment because they feature total insulation and protection degree up to IP67 according to EN/IEC 60529
- Protection degree IK10 against external mechanical impacts according to EN/IEC 62262
- Each large box is a multiple of a smaller one. Its fixing points are also a multiple of those of a small box. These fixing points are blind holes for M4 threaded inserts.
- Four to six blind holes for M6 threaded inserts are also provided in each base.
- APO polyester boxes are designed for both wall and pole mounting.
- The box can be readily worked with conventional tools such as drills, cutting mills, saws punches, etc.
- Versatile service conditions: polyester enclosures can withstand continuous temperatures up to 70°C (peak temperatures up to 130°C) and the transparent polycarbonate covers resist service temperature up to 120°C
- Rated insulation voltage $U_i = 1000V$.
- APO boxes are UL listed, as per UL Standard 508
They are also CSA approved as per C22.2 Nr.94.

Applications

- Industry
- Shipyards
- Breweries
- Public utilities
- Oil refineries
- Steel works
- Petro-chemical plants
- Photovoltaic

APO

Modular polyester boxes

IP67/IP66 - IK10



Boxes

With polyester cover - IP67

Size	Ref. No.	Pack.
APO 1 box 185 x 150 x 130	856048	1
APO 31 box 300 x 185 x 175	856049	1
APO 41 box 300 x 300 x 175	856050	1
APO 71 box 370 x 300 x 175	856051	1
APO 51 box 485 x 300 x 175	856052	1
APO 81 box 555 x 300 x 175	856053	1
APO 61 box 600 x 300 x 175	856054	1
APO 11 box 600 x 370 x 175	856055	1
APO 12 box 600 x 600 x 175	856056	1

With polycarbonate cover - IP66

APO 1 box 185 x 150 x 130	856057	1
APO 31 box 300 x 185 x 175	856058	1
APO 41 box 300 x 300 x 175	856059	1
APO 71 box 370 x 300 x 175	856060	1
APO 51 box 485 x 300 x 210	856061	1
APO 81 box 555 x 300 x 210	856062	1
APO 61 box 600 x 300 x 210	856063	1
APO 11 box 600 x 370 x 210	856064	1
APO 12 box 600 x 600 x 210	856065	1

With hinged transparent cover - IP67

APO 31 box 300 x 185 x 175	856066	1
APO 41 box 300 x 300 x 175	856067	1
APO 71 box 370 x 300 x 175	856068	1
APO 51 box 485 x 300 x 175	856069	1
APO 61 box 600 x 300 x 175	856070	1

Bases

With plain sides

APO 1 box 185 x 150 x 85	856000	4
APO 31 box 300 x 185 x 130	856001	4
APO 41 box 300 x 300 x 130	856002	4
APO 71 box 370 x 300 x 130	856003	4
APO 51 box 485 x 300 x 130	856004	2
APO 81 box 555 x 300 x 130	856005	2
APO 61 box 600 x 300 x 130	856006	2
APO 11 box 600 x 370 x 130	856007	2
APO 12 box 600 x 600 x 130	856008	2

With two open sides

APO 31 box 300 x 185 x 130	856009	4
APO 41 box 300 x 300 x 130	856010	4
APO 71 box 370 x 300 x 130	856011	4
APO 51 box 485 x 300 x 130	856012	2
APO 81 box 555 x 300 x 130	856013	2
APO 61 box 600 x 300 x 130	856014	2
APO 11 box 600 x 370 x 130	856015	2
APO 12 box 600 x 600 x 130	856016	2

With four open sides

APO 31 box 300 x 185 x 130	856017	4
APO 41 box 300 x 300 x 130	856018	4
APO 71 box 370 x 300 x 130	856019	4
APO 51 box 485 x 300 x 130	856020	2
APO 81 box 555 x 300 x 130	856021	2
APO 61 box 600 x 300 x 130	856022	2
APO 11 box 600 x 370 x 130	856023	2
APO 12 box 600 x 600 x 130	856024	2

Modular polyester boxes

IP67/IP66 - IK10



Covers

Opaque grey in polyester

Size	Ref. No.	Pack.
APO 1 cover 185 x 150 x 45	856025	4
APO 31 cover 300 x 185 x 45	856026	4
APO 41 cover 300 x 300 x 45	856027	4
APO 71 cover 370 x 300 x 45	856028	4
APO 51 cover 485 x 300 x 45	856029	2
APO 81 cover 555 x 300 x 45	856030	2
APO 61 cover 600 x 300 x 45	856031	2
APO 11 cover 600 x 370 x 45	856032	2
APO 12 cover 600 x 600 x 45	856033	2



Transparent in polycarbonate

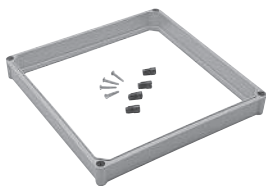
APO 1 cover 185 x 150 x 45	851196	4
APO 31 cover 300 x 185 x 45	851173	4
APO 41 cover 300 x 300 x 45	851277	4
APO 71 cover 370 x 300 x 45	851176	4
APO 51 cover 485 x 300 x 80	852092	2
APO 81 cover 555 x 300 x 80	851193	2
APO 61 cover 600 x 300 x 45	851283	2
APO 61 cover 600 x 300 x 80	851282	2
APO 11 cover 600 x 370 x 80	851290	2
APO 12 cover 600 x 600 x 80	852280	2



Hinged - transparent

APO 31 cover 300 x 185 x 45	856034	4
APO 41 cover 300 x 300 x 45	856035	4
APO 71 cover 370 x 300 x 45	856036	4
APO 51 cover 485 x 300 x 45	856037	2
APO 61 cover 600 x 300 x 45	856038	2
APO 11 cover 600 x 370 x 115	856039	2

Depth extension frames



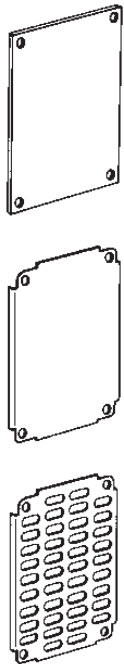
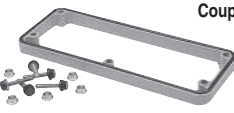
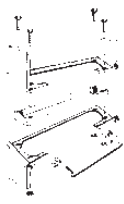


Glass fibre reinforced polyamide PA6

APO 1 185 x 150 x 35	856040	4
APO 31 300 x 185 x 35	856041	4
APO 41 300 x 300 x 35	856042	4
APO 71 370 x 300 x 35	856043	4
APO 81 555 x 300 x 60	856044	2
APO 61 600 x 300 x 60	856045	2
APO 11 600 x 370 x 60	856046	2
APO 12 600 x 600 x 60	856047	2

APO


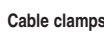


Modular polyester boxes

IP67/IP66 - IK10

	Size	Ref. No.	Pack.
	Mounting plates		
	Pertinax 5 mm		
	APO 1 140 x 105 x 5 APO 31 228 x 139 x 5 APO 41 254 x 228 x 5 APO 71 298 x 254 x 5 APO 51 413 x 254 x 5 APO 81 484 x 254 x 5 APO 61 528 x 254 x 5 APO 11 528 x 324 x 5 APO 12 555 x 555 x 5	851190 851187 851287 851181 852091 851170 851286 851289 852174	1 1 1 1 1 1 1 1 1
Sendzimir zinc coated sheet steel 2 mm			
APO 1 134 x 99 x 2 APO 31 249 x 134 x 2 APO 41 249 x 249 x 2 APO 71 319 x 249 x 2 APO 51 435 x 249 x 2 APO 81 505 x 249 x 2 APO 61 550 x 249 x 2 APO 11 550 x 319 x 2 APO 12 550 x 550 x 2	851191 851188 851279 851185 852095 851171 851287 851292 852178	1 1 1 1 1 1 1 1 1	
Perforated 1.5 mm			
APO 1 134 x 99 x 1.5 APO 31 249 x 134 x 1.5 APO 41 249 x 249 x 1.5 APO 71 319 x 249 x 1.5 APO 51 435 x 249 x 1.5 APO 81 505 x 249 x 1.5 APO 61 550 x 249 x 1.5 APO 11 550 x 319 x 1.5 APO 12 550 x 550 x 1.5	852874 852875 852876 852877 852878 852879 852880 852881 852882	1 1 1 1 1 1 1 1 1	
	Coupling frames		
	For side 185 For side 300 For side 370	856106 856107 856108	1 1 1
	Bridges		
	Fits the 300 mm side Fits the 370 mm side	851103 851112	1 1
	Blind end-plates in polyester		
	For side 185 For side 300 For side 370	856103 856104 856105	1 1 1
	Combi end-plates in polystyrene		
	Characteristics Metric		
	for side 185 - 4 x M20/16 + 1 x M32/25	856096	1
	for side 300 - 2 x M32/25 + 3 x M25/M20 + 4 x M20/16	856131	1
	for side 300 - 9 x M25/20	856097	1
	for side 300 - 2 x M50/40 + 2 x M25/20	856098	1
	for side 300 - 13 x M20/16	856099	1
	for side 300 - 3 x M40/32 + 2 x M20/16	856100	1
	for side 370 - 1 x M40/32 + 10 x M25/20	856101	1
for side 370 - 13 x M25/20	856102	1	

Accessories

IP67/IP66 - IK10

	Size	Ref. No.	Pack.																																													
 Rubber cable sleeves	For use as a sealing gland - max. Ø cable: 75 mm	851106	1																																													
 Cable clamps	For direct mounting to cable-end box - max. Ø cable: 75 mm	851105	1																																													
	Universal stress relieving clamp - max. Ø cable: 75 mm	851110	1																																													
	For mounting to univ. stress relieving att. - max. Ø cable: 75 mm	851111	1																																													
 Hinges	<table border="1"> <thead> <tr> <th rowspan="2">Selection</th> <th colspan="2">Base 31-41-71-51 81-61-11-12</th> <th rowspan="2"></th> <th rowspan="2">Ref. No.</th> <th rowspan="2">Pack.</th> </tr> <tr> <th>APO 1</th> <th></th> </tr> </thead> <tbody> <tr> <td>Polyester cover</td> <td>A</td> <td>A</td> <td>Type A</td> <td>856109</td> <td>1</td> </tr> <tr> <td>Polyester cover + depth extension</td> <td>B</td> <td>C</td> <td>Type B</td> <td>856110</td> <td>1</td> </tr> <tr> <td>Polycarbonate cover</td> <td>D</td> <td>D</td> <td>Type C</td> <td>856111</td> <td>1</td> </tr> <tr> <td>Polycarbonate cover + depth extension</td> <td>E</td> <td>F</td> <td>Type D</td> <td>856112</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Type E</td> <td>856113</td> <td>1</td> </tr> <tr> <td></td> <td></td> <td></td> <td>Type F</td> <td>856114</td> <td>1</td> </tr> </tbody> </table>	Selection	Base 31-41-71-51 81-61-11-12			Ref. No.	Pack.	APO 1		Polyester cover	A	A	Type A	856109	1	Polyester cover + depth extension	B	C	Type B	856110	1	Polycarbonate cover	D	D	Type C	856111	1	Polycarbonate cover + depth extension	E	F	Type D	856112	1				Type E	856113	1				Type F	856114	1			
	Selection		Base 31-41-71-51 81-61-11-12						Ref. No.	Pack.																																						
		APO 1																																														
	Polyester cover	A	A	Type A	856109	1																																										
	Polyester cover + depth extension	B	C	Type B	856110	1																																										
	Polycarbonate cover	D	D	Type C	856111	1																																										
	Polycarbonate cover + depth extension	E	F	Type D	856112	1																																										
				Type E	856113	1																																										
				Type F	856114	1																																										
	 Other accessories	Mounting brackets In glass fibre reinforced polyamide	851266	1																																												
In stainless steel		852025	1																																													
Cover fixing screws		851255	50																																													
Triangular TTR sealing screws		851262	1																																													
Threaded inserts M4 Dodge type		851026	100																																													
M6 Dodge type		851371	100																																													
M4 special tool for securing		851027	1																																													
M6		852003	1																																													
Thumb grip (set of two pieces)		851258	1																																													
Sealing plate		851260	1																																													
Hinge screw (set of two pieces)		851256	100																																													
Padlocking set		852004	1																																													
Spanner for triangle TTR sealing screws		851016	1																																													
Air vents - set of two pieces in polyamide		833677	1																																													
Safety lock With two keys V 2432E		852020	1																																													
With square key 8 mm		852021	1																																													
With triangular key 8 mm		852022	1																																													
With triangular key 11 mm		852024	1																																													
With double-bit yale key 3 mm		852023	1																																													

APO

M



VMS - Modular enclosure system

Applications

- Industry
- Public utilities
- Multi motor panels
- Electronic instrumentation
- Low voltage panelboards

Standards

IEC 60439-1
 IEC 60529
 EN 60439-1
 EN 60529
 IEC 62208
 EN 62208
 DIN VDE 0660 - Teil 500
 (IEC 61439-2 in preparation)

Approvals



- Single boxes: types 2, 3, 3R, 3S, 5, 12 and 12K



- Modular system: types 2, 3, 3R, 3S, 5, 12 and 12K

- Modular system using 853063: types 2 and 3R

- Boxes with internal hinged cover: types 2, 5, 12 and 12K

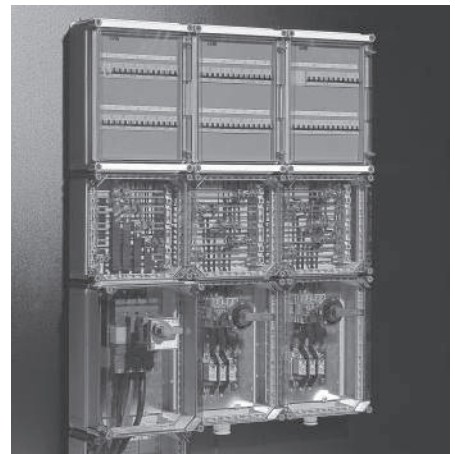
- Boxes with external hinges: type 2



available on request

Features

- The range consists of five boxes based on a 100 mm module.
- The innovative coupling concept allows easy, rapid assembly of any combination of units without the need for tools.
- The open bases offer excellent accessibility and wiring space for installation, mounting and cable connection, even after coupling.
- The side panel openings can be closed by either blind or combi end plates. Once mounted, end plates fit perfectly flush with the side panels of the base.
- Each large box is a multiple of a smaller one. Its fixing points in increments of 25 mm in bottom plate and top end are also a multiple of those of a small box.
- The base and end plates are made of light grey (RAL 7035) glassfiber reinforced polycarbonate. The cover is made of either transparent or opaque light grey (RAL 7035) polycarbonate.
- A multiple of accessories like mounting plates, cover plates, depth extension frame, ... makes the VMS a complete system for electrical distribution and control applications.
- VMS boxes are halogen-free.
- VMS boxes provide optimum security to both operations and equipment because they feature total insulation \square and protection degree IP65 according to EN/IEC 60529.



VMS

Modular plastic enclosures system

IP65 - IK07



Bases

With four open sides

Size	Ref. No.	Pack.
VMS 32 320 x 220 x 130	853000	4
VMS 33 320 x 320 x 130	853001	2
VMS 43 440 x 320 x 130	853002	2
VMS 63 640 x 320 x 130	853003	1
VMS 64 640 x 440 x 130	853004	1



Transparent covers

With slotted screws

VMS 32 320 x 220 x 50	853005	4
VMS 33 320 x 320 x 50	853006	2
VMS 43 440 x 320 x 50	853007	2
VMS 63 640 x 320 x 50	853008	1
VMS 64 640 x 440 x 50	853009	1



Opaque covers

With slotted screws

VMS 32 320 x 220 x 50	853010	4
VMS 33 320 x 320 x 50	853011	2
VMS 43 440 x 320 x 50	853012	2
VMS 63 640 x 320 x 50	853013	1
VMS 64 640 x 440 x 50	853014	1



Hinged covers

With double closure system

VMS 33 320 x 320 x 50	853015	2
VMS 43 440 x 320 x 50	853016	2



Depth extension frames

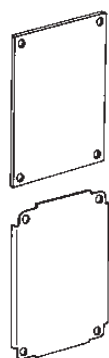
With fixing screws

VMS 32 320 x 220 x 75	853030	4
VMS 33 320 x 320 x 75	853031	2
VMS 43 440 x 320 x 75	853032	2
VMS 63 640 x 320 x 75	853033	1
VMS 64 640 x 440 x 75	853034	1

VMS

Modular plastic enclosures system

IP65 - IK07



Mounting plates

Size

Ref. No.

Pack.

Metal 2 mm

VMS 32	260 x 160 x 2	853068	1/10
VMS 33	260 x 260 x 2	853069	1/10
VMS 43	380 x 260 x 2	853070	1/10
VMS 63	580 x 260 x 2	853071	1/10
VMS 64	580 x 380 x 2	853072	1/10

Pertinax 5 mm

VMS 32	260 x 160 x 5	853113	1/10
VMS 33	260 x 260 x 5	853114	1/10
VMS 43	380 x 260 x 5	853115	1/10
VMS 63	580 x 260 x 5	853116	1/10
VMS 64	580 x 380 x 5	853117	1/10



Plain covers plates

Insulated material 2 mm

VMS 32	301 x 201 x 2	853103	1/10
VMS 33	301 x 301 x 2	853104	1/10
VMS 43	421 x 301 x 2	853105	1/10
VMS 63	621 x 301 x 2	853106	1/10
VMS 64	621 x 421 x 2	853107	1/10

Accessories



End plates

Blind end plates

For side 220 mm	853017	1/10
For side 320 mm	853020	1/10
For side 440 mm	853027	1/10

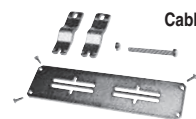
Combi end plates characteristic metric

for side 220 mm - 3 x M32/M25 + 3 x M20	855029	1/10
for side 220 mm - 1 x M50/M40 + 4 x M25/M20	855030	1/10
for side 320 mm - 3 x M50/M40 + 4 x M16	855032	-
for side 320 mm - 17 x M20	855033	1/10
for side 320 mm - 1 x M50/M40 + 2 x M32/M25 + 4 x M25/M20	855034	1/10
for side 320 mm - 12 x M25/M20	855035	1/10
for side 320 mm - 4 x M40/M32 + 3 x M20	855036	1/10
for side 440 mm - 1 x M40/M32 + 16 x M25/M20	855037	1/10
for side 440 mm - 1 x M50/M40 + 2 x M40/M32 + 8 x M25/M20	855038	1/10



Cable entries

Ø max. of cable: 2 x 75 mm	853082	1/5
Ø max. of cable: 3 x 75 mm	853083	1/5



Cable stress releases

With one clamp

For side 320 mm - Ø max. of cable: 75 mm	853036	1/5
For side 440 mm - Ø max. of cable: 75 mm	853037	1/5



Cable clamp

To mount on cable stress release

Ø max. of cable: 75 mm	853035	1
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Bridges

For large cross-section cables

For side 320 mm	853073	1
For side 440 mm	853074	1



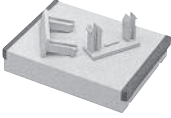
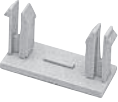











Coupling key

For base coupling
Coupling key

	853059	20
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Accessories

IP65 - IK07

	Size	Ref. No.	Pack.
 Coupling set 2x220	To couple 2 sides of 220 mm to one side of 440 mm With mounting accessories	853063	1
 Coupling clamp	For coupling in special cases Coupling clamp	853062	1
 Universal support	Support	853060	10
 Symmetrical DIN-profiles	Always supplied with two universal supports For side 220 mm For side 320 mm For side 440 mm	853094 853095 853096	1 1 1
 Mounting rails 12x2 mm	To fit connection terminal blocks For side 220 mm - always supplied with two universal supports For side 320 mm - always supplied with two universal supports For side 440 mm - always supplied with two universal supports	853097 853098 853099	1 1 1
 Partition plates	For full compartmentalisation of coupled bases For side 220 mm For side 320 mm For side 440 mm	853065 853066 853067	1 1 1
 Other accessories	Fixing brackets stainless steel	853064	1
 Air vent - set of two pieces	Air vent - set of two pieces	853123	1
 Hinge screw - set of two pieces	Hinge screw - set of two pieces	853061	1
 Hinge - set of two pieces	Hinge - set of two pieces	853340	1
 Thumb grip - set of four pieces	Thumb grip - set of four pieces	853058	1
 Self-tapping screws	Self-tapping screws For fixation in the base 5 x 13 For fixation in the base 5 x 16 For fixation in the base 5 x 22	853100 853101 853102	50 50 50
 Screws	Screws To fasten components to metallic mounting plates 6 x 16 To fasten components to metallic mounting plates 6 x 22	851384 851385	500 500

VMS

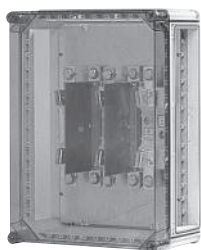
Premounted units for panelboards



Enclosures

For modular equipment

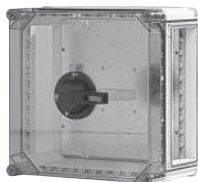
Size	Ref. No.	Pack.
VMS 32 - 14 modules 320 x 220 x 180	853124	1
VMS 33 - 14 modules 320 x 320 x 180	853126	1
VMS 43 - 28 modules 440 x 320 x 180	853128	1
VMS 63 - 42 modules 640 x 320 x 180	853130	1



With H.R.C. fuse plates

VMS 32 - 125A - 3 DIN 00 + N + \pm - 320 x 220 x 180	853132	1
VMS 33 - 125A - 3 DIN 00 + N + \pm - 320 x 320 x 180	853133	1
VMS 43 - 250A - 3 DIN 1 + N + \pm - 440 x 320 x 180	853134	1
VMS 43 - 400A - 3 DIN 2 + N + \pm - 440 x 320 x 180	853135	1
VMS 43 - 630A - 3 DIN 3 + N + \pm - 440 x 320 x 180	853136	1

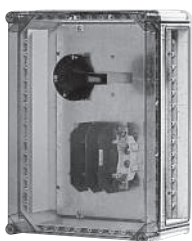
Fuses are to be ordered separately
fuse base are included



For loadbreak switches and fused disconnectors loadbreak switches (Dilos/Fulos)

VMS 32 - Dilos 1 - 40/63/80/100/125A - 3P/4P + \pm	853137	1
VMS 33 - Dilos 2 - 160/200A - 3P/4P + \pm	853138	1
VMS 33 - Dilos 1H - 40/63/125A - 3P/4P + \pm	853874	1
VMS 43 - Dilos 3 - 160/200/250/315A - 3P/4P + \pm	853139	1
VMS 64 - Dilos 4 - 400/500/630A - 3P/4P + \pm	853875	1
VMS 33 - Fulos 000 - 32/63/100A - 3P/4P + \pm	853874	1
VMS 43 - Fulos 00 - 160A - 3P/4P + \pm	853139	1
VMS 64 - Fulos 1 - 250A - 3P/4P + \pm	853875	1
VMS 64 - Fulos 2 - 400A - 3P/4P + \pm	853875	1

Loadbreak switches and fused
disconnectors are to be ordered separately



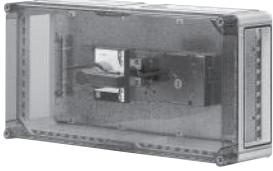
For loadbreak switches and fuse bases

VMS 32 - Dilos 1 - 40/63/80A - 3P/4P + \pm - E27/E33 MCB	853140	1
VMS 43 - Dilos 1 - 63/80/100/125A - 3P/4P + \pm - 3 DIN 00 + N	853141	1
VMS 43 - Dilos 2 - 160A - 3P/4P + \pm - 3 DIN 00 + N	853170	1

Miniature circuit breakers, loadbreak switches
and fuses are to be ordered separately

Premounted units for panelboards

Enclosures



Size	Ref. No.	Pack.	
For changeover switches (Dilos/Fulos)			
VMS 63 - Dilos 1H - 125A - 3P/4P + \pm	853876	1	
VMS 64 - Dilos 3 - 160/200/250/315A - 3P/4P + \pm	853878	1	
VMS 63 - Fulos 000 - 32/63/100A - 3P/4P + \pm	853877	1	
VMS 64 - Fulos 00 - 160A - 3P/4P + \pm	853879	1	
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Dilos and Fulos switches are to be ordered separately </div>			
For MCCB's type Record Plus⁽¹⁾			
VMS 43 - FD160 (+RCD) 3P/4P F	440 x 320 x 254	855085	1
VMS 43 - FE160 3P/4P F	440 x 320 x 254	855087	1
VMS 43 - FE250 3P/4P F	440 x 320 x 254	855087	1
VMS 63 - FE160 + RCD 3P/4P F	640 x 320 x 254	855088	1
VMS 63 - FE250 + RCD 3P/4P F	640 x 320 x 254	855088	1
<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: 10px auto;"> Moulded case circuit breakers are to be ordered separately </div>			

(1) Short-circuit resistance 20kA eff. at 440V.

Notes

A large grid area for taking notes, consisting of a 20x30 grid of small squares. The grid is empty and occupies the majority of the page.



ARIA - Universal polyester cabinets

- Ergonomic closing mechanism
- A two point locking mechanism and operated by swing-handle (for profile half cylinder locks)
- Reducing closing force by 25%
- Patented doorlifter ensuring the door taking the center position during closing (as from ARIA 75)
- Self-adhesive rainhood as a standard accessory with each cabinet

Standards

IEC 61439-2
IEC 60529
EN 61439-2
EN 60529
IEC 62208
EN 62208

Approvals



UL types 3, 3R, 3S, 4, 4X,
12 and 13
available on request



CSA types 3, 3R, 3S, 4, 4X,
12 and 13
available on request



Lloyd's Register of Shipping

Features

- The range is available in seven sizes, ranging from 300 x 200 to 1000 x 800 mm.
- The cabinets are made of light-grey (RAL 7035) hot moulded, glass fibre reinforced polyester, dyed in mass. The enclosure is furnished with four threaded studs and bolts for mounting plate or mounting frame installation.
- The enclosure provides total insulation and a protection degree of **IP65/IP66** following EN/IEC 60529.
- Protection degree IK10 against external mechanical impacts according to EN/IEC 62262. (IK07 for cabinets with glazed door)
- Resists temperatures up to 70°C in continuous use (peak temperatures up to 130°C).
- Self extinguishing and halogen-free.
- Rated insulation voltage $U_i = 1000V$.

Applications

- Heavy industry
- Steel mills
- Petrochemical plants
- Temporary connection (for construction sites)
- Brewery
- Public services
- Street signalisation
- Photovoltaic



ARIA

Universal polyester cabinets

IP65/66/IK7/10

Cabinets IK10



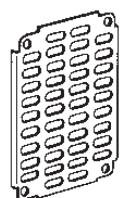
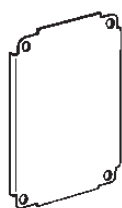
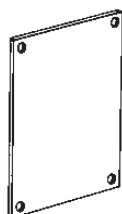
Size	Ref. No.	Pack.
With plain door		
ARIA 32 cabinet 300 x 200 x 170 - with double bit lock 3mm, one point closing system	831025	1
ARIA 43 cabinet 400 x 300 x 170 - with double bit lock 3mm, three point closing system	831036	1
ARIA 43 cabinet 400 x 300 x 170 - with handle, three point closing system	831034	1
ARIA 54 cabinet 500 x 400 x 230 - with double bit lock 3mm, two point closing system	831809	1
ARIA 54 cabinet 500 x 400 x 230 - with double bit lock 3mm, three point closing system	831052	1
ARIA 54 cabinet 500 x 400 x 230 - with handle, three point closing system	831051	1
ARIA 64 cabinet 600 x 400 x 230 - with double bit lock 3mm, two point closing system	831810	1
ARIA 64 cabinet 600 x 400 x 230 - with double bit lock 3mm, three point closing system	831065	1
ARIA 64 cabinet 600 x 400 x 230 - with handle, three point closing system	831064	1
ARIA 75 cabinet 700 x 500 x 270 - with double bit lock 3mm, two point closing system	831811	1
ARIA 75 cabinet 700 x 500 x 270 - with double bit lock 3mm, three point closing system	831081	1
ARIA 75 cabinet 700 x 500 x 270 - with handle, three point closing system	831080	1
ARIA 86 cabinet 800 x 600 x 300 - with double bit lock 3mm, three point closing system	831098	1
ARIA 86 cabinet 800 x 600 x 300 - with handle, three point closing system	831097	1
ARIA 108 cabinet 1000 x 800 x 300 - with double bit lock 3mm, three point closing system	831112	1
ARIA 108 cabinet 1000 x 800 x 300 - with handle, three point closing system	831111	1

IK7



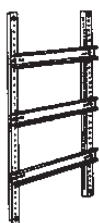
With glazed door		
ARIA 43 cabinet 400 x 300 x 170 - with double bit lock 3mm, three point closing system	831815	1
ARIA 54 cabinet 500 x 400 x 230 - with double bit lock 3mm, two point closing system	831812	1
ARIA 54 cabinet 500 x 400 x 230 - with double bit lock 3mm, three point closing system	831129	1
ARIA 64 cabinet 600 x 400 x 230 - with double bit lock 3mm, two point closing system	831813	1
ARIA 64 cabinet 600 x 400 x 230 - with double bit lock 3mm, three point closing system	831130	1
ARIA 75 cabinet 700 x 500 x 270 - with double bit lock 3mm, two point closing system	831814	1
ARIA 75 cabinet 700 x 500 x 270 - with double bit lock 3mm, three point closing system	831131	1
ARIA 86 cabinet 800 x 600 x 300 - with double bit lock 3mm, three point closing system	831132	1
ARIA 108 cabinet 1000 x 800 x 300 - with double bit lock 3mm, three point closing system	831133	1

Mounting plates



In pertinax 5 mm		
ARIA 32 mounting plate 250 x 150 x 5	831027	1
ARIA 43 mounting plate 350 x 250 x 5	831038	1
ARIA 54 mounting plate 450 x 350 x 5	831054	1
ARIA 64 mounting plate 550 x 350 x 5	831067	1
ARIA 75 mounting plate 650 x 450 x 5	831083	1
ARIA 86 mounting plate 750 x 550 x 5	831100	1
ARIA 108 mounting plate 950 x 750 x 5	831114	1
In sendzimir zinc coated sheet steel 2 mm		
ARIA 32 mounting plate 250 x 150 x 2	831026	1
ARIA 43 mounting plate 350 x 250 x 2	831037	1
ARIA 54 mounting plate 450 x 350 x 2	831053	1
ARIA 64 mounting plate 550 x 350 x 2	831066	1
ARIA 75 mounting plate 650 x 450 x 2	831082	1
ARIA 86 mounting plate 750 x 550 x 2	831099	1
ARIA 108 mounting plate 950 x 750 x 2	831113	1
Perforated sheet steel 1.5 mm		
ARIA 32 mounting plate 250 x 150 x 1.5	831322	1
ARIA 43 mounting plate 350 x 250 x 1.5	831333	1
ARIA 54 mounting plate 450 x 350 x 1.5	831334	1
ARIA 64 mounting plate 550 x 350 x 1.5	831335	1
ARIA 75 mounting plate 650 x 450 x 1.5	831336	1
ARIA 86 mounting plate 750 x 550 x 1.5	831337	1
ARIA 108 mounting plate 950 x 750 x 1.5	831338	1

Mounting frames



ARIA 32 mounting frame 2 rows	831030	1
ARIA 43 mounting frame 2 rows	831041	1
ARIA 54 mounting frame 3 rows	831057	1
ARIA 64 mounting frame 3 rows	831070	1
ARIA 75 mounting frame 4 rows	831086	1
ARIA 86 mounting frame 4 rows	831103	1
ARIA 108 mounting frame 5 rows	831117	1

Universal polyester cabinets

IP65/66/IK7/10

Full cover plates



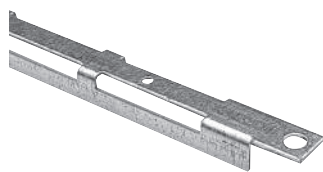
Size	Ref. No.	Pack.
Plain plates		
ARIA 32 cover plate	831028	1
ARIA 43 cover plate	831039	1
ARIA 54 cover plate	831055	1
ARIA 64 cover plate	831068	1
ARIA 75 cover plate	831084	1
ARIA 86 cover plate	831101	1
ARIA 108 cover plate	831115	1
With cut-outs for DIN-rail equipment		
ARIA 32 plate for DIN-rail equipment	831029	1
ARIA 43 plate for DIN-rail equipment	831040	1
ARIA 54 plate for DIN-rail equipment	831056	1
ARIA 64 plate for DIN-rail equipment	831069	1
ARIA 75 plate for DIN-rail equipment	831085	1
ARIA 86 plate for DIN-rail equipment	831102	1
ARIA 108 plate for DIN-rail equipment	831116	1
With cut-outs for individual modular cover plates		
ARIA 43 cover plate	831790	1
ARIA 54 cover plate	831791	1
ARIA 64 cover plate	831792	1
ARIA 75 cover plate	831793	1
ARIA 86 cover plate	831794	1
ARIA 108 cover plate	831795	1

Individual modular cover plates (PVC)
IP20



Plain plates		
ARIA 43 cover plate - 150 x 239	831797	1
ARIA 54 cover plate - 150 x 343	831799	1
ARIA 64 cover plate - 150 x 343	831801	1
ARIA 75 cover plate - 150 x 423	831803	1
ARIA 86 cover plate - 150 x 239	831797	1
ARIA 108 cover plate - 150 x 343	831801	1
With cut-outs for DIN-rail equipment		
ARIA 43 cover plate for DIN-rail equipment - 150 x 239	831796	1
ARIA 54 cover plate for DIN-rail equipment - 150 x 343	831798	1
ARIA 64 cover plate for DIN-rail equipment - 150 x 343	831800	1
ARIA 75 cover plate for DIN-rail equipment - 150 x 423	831802	1
ARIA 86 cover plate for DIN-rail equipment - 150 x 239	831796	1
ARIA 108 cover plate for DIN-rail equipment - 150 x 343	831800	1

Rail for terminal blocks



Rail for terminal blocks ARIA 32	831018	1
Rail for terminal blocks ARIA 43	831019	1
Rail for terminal blocks ARIA 54/64	831020	1
Rail for terminal blocks ARIA 75	831021	1
Rail for terminal blocks ARIA 86	831022	1
Rail for terminal blocks ARIA 108	831023	1

Accessories

Set hinge supports	831010	1
Set fixing lugs polyamide	831001	1
Set fixing lugs stainless steel	831000	1
Set ventilation grids	831009	1
Neutral handle	831003	1
Handle	831004	1
Handle for profile half cylinder	832024	1
Handle for profile half cylinder for padlocking	832023	1
Triangular 8 lock core	831006	1
Square lock 8 mm	831005	1
Triangular 11 lock core	831007	1
Double-bit lock core	831008	1
Nuts M4	831328	1
Nuts M5	831329	1
Nuts M6	831330	1
Pocket for drawing	832000	1

PolySafe - Multipurpose polyester cabinets



- Ergonomic closing mechanism
- Reducing closing force by 25%
- Patented doorlifter ensuring the door taking it's center position during closing (for bigger dimensions)

Applications

Commercial
Industrial
Utilities

Standards

IEC 60529
EN 60529
IEC 62208
EN 62208
IEC 62262
EN 62262

Approvals



- Cabinets with one door:
type 3, 3R, 3S, 4, 4X, 12, 12K and 13
- Cabinets with two doors:
type 3, 3R, 3S, 4, 4X, 12, 12K and 13
- Coupled cabinets:
type 3, 3R, 3S, 12, 12K and 13
Available on request

Features

- 14 standard dimensions (from 500 x 500 up to 1250 x 1000) in one depth 320mm
- Cabinets are standard factory assembled (empty or equipped)
- High protection degree **IP65** or **IP54**-IK10 (20J) according to IEC 60529 and EN 62262 (IP55 - IK07 for cabinets with glazed door)
- Material: self-extinguishing, hot moulded, halogen-free, fiberglass reinforced polyester (environment friendly)
- Colour: grey RAL7035, dyed in mass
- Designed for wall mounting, floor standing and pole fixing
- Coupling possibilities in height, width and depth
- Total insulation
- Door with 5-point latching mechanism
- Execution as pedestal possible
- Rated insulation voltage $U_i = 1000V$
- Easy recyclable: no moulded-in metal parts

Universal polyester cabinets

Factory-assembled cabinet

Complete with handle and wall mounting brackets of AISI 304 stainless steel.
(Without cilinder lock)



Size	IP54		IP65		Pack.
	Ref. No.	Ref. No.	Ref. No.	Ref. No.	
Plain door					
PS 220 cabinet	500 x 500	833745	833000		1
PS 230 cabinet	500 x 750	833746	833004		1
PS 320 cabinet	750 x 500	833747	833008		1
PS 330 cabinet	750 x 750	833748	833012		1
PS 340 cabinet	750 x 1000	833749	833016		1
PS 352 cabinet	750 x 1250	833754	833020		1
PS 420 cabinet	1000 x 500	833750	833024		1
PS 430 cabinet	1000 x 750	833751	833028		1
PS 440 cabinet	1000 x 1000	833752	833032		1
PS 442 cabinet	1000 x 1000	833755	833036		1
PS 452 cabinet	1000 x 1250	833756	833040		1
PS 530 cabinet	1250 x 750	833753	833044		1
PS 542 cabinet	1250 x 1000	833757	833052		1
PS 546 cabinet	1250 x 1000	833758	833056		1
Glazed door⁽¹⁾					
PS 220 cabinet	500 x 500	833850	-		1
PS 230 cabinet	500 x 750	833851	-		1
PS 320 cabinet	750 x 500	833852	-		1
PS 330 cabinet	750 x 750	833853	-		1
PS 340 cabinet	750 x 1000	833854	-		1
PS 352 cabinet	750 x 1250	833855	-		1
PS 420 cabinet	1000 x 500	833856	-		1
PS 430 cabinet	1000 x 750	833857	-		1
PS 442 cabinet	1000 x 1000	833858	-		1
PS 452 cabinet	1000 x 1250	833859	-		1
PS 530 cabinet	1250 x 750	833860	-		1
PS 542 cabinet	1250 x 1000	833861	-		1
PS 546 cabinet	1250 x 1000	833862	-		1

Mounting plates

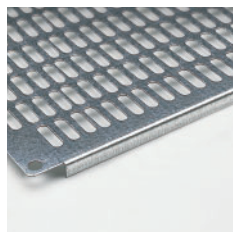


Size	Ref. No.	Pack.	
Sendzimir zinc coated sheet steel 2 mm			
PS 220 mounting plate	500 x 500 (390 x 390)	833500	1
PS 230 mounting plate	500 x 750 (390 x 640)	833501	1
PS 320 mounting plate	750 x 500 (640 x 390)	833501	1
PS 330 mounting plate	750 x 750 (640 x 640)	833502	1
PS 340 mounting plate	750 x 1000 (640 x 890)	833504	1
PS 352 mounting plate	750 x 1250 (640 x 1140)	833506	1
PS 420 mounting plate	1000 x 500 (890 x 390)	833503	1
PS 430 mounting plate	1000 x 750 (890 x 640)	833504	1
PS 440 mounting plate	1000 x 1000 (890 x 890)	833505	1
PS 442 mounting plate	1000 x 1000 (890 x 890)	833505	1
PS 452 mounting plate	1000 x 1250 (890 x 1140)	833507	1
PS 530 mounting plate	1250 x 750 (1140 x 640)	833506	1
PS 542 mounting plate	1250 x 1000 (1140 x 890)	833507	1
PS 546 mounting plate	1250 x 1000 (1140 x 890)	833507	1
Pertinax 5 mm			
PS 220 mounting plate	500 x 500 (390 x 390)	833508	1
PS 230 mounting plate	500 x 750 (390 x 640)	833509	1
PS 320 mounting plate	750 x 500 (640 x 390)	833509	1
PS 330 mounting plate	750 x 750 (640 x 640)	833510	1
PS 340 mounting plate	750 x 1000 (640 x 890)	833512	1
PS 352 mounting plate	750 x 1250 (640 x 1140)	833514	1
PS 420 mounting plate	1000 x 500 (890 x 390)	833511	1
PS 430 mounting plate	1000 x 750 (890 x 640)	833512	1
PS 440 mounting plate	1000 x 1000 (890 x 890)	833513	1
PS 442 mounting plate	1000 x 1000 (890 x 890)	833513	1
PS 452 mounting plate	1000 x 1250 (890 x 1140)	833515	1
PS 530 mounting plate	1250 x 750 (1140 x 640)	833514	1
PS 542 mounting plate	1250 x 1000 (1140 x 890)	833515	1
PS 546 mounting plate	1250 x 1000 (1140 x 890)	833515	1
Pertinax 10 mm			
PS 352 mounting plate	750 x 1250 (640 x 1140)	833385	1
PS 440 mounting plate	1000 x 1000 (890 x 890)	833386	1
PS 442 mounting plate	1000 x 1000 (890 x 890)	833386	1
PS 452 mounting plate	1000 x 1250 (890 x 1140)	833387	1
PS 530 mounting plate	1250 x 750 (1140 x 640)	833385	1
PS 542 mounting plate	1250 x 1000 (1140 x 890)	833387	1
PS 546 mounting plate	1250 x 1000 (1140 x 890)	833387	1

(1) Transparent polycarbonate window.

PolySafe

Mounting plates (continued)



	Size	Ref. No.	Pack.
Sendzimir zinc coated sheet steel perforated 2 mm			
PS 220 mounting plate	500 x 500 (390 x 390)	833516	1
PS 230 mounting plate	500 x 750 (390 x 640)	833517	1
PS 320 mounting plate	750 x 500 (640 x 390)	833518	1
PS 330 mounting plate	750 x 750 (640 x 640)	833519	1
PS 340 mounting plate	750 x 1000 (640 x 890)	833520	1
PS 352 mounting plate	750 x 1250 (640 x 1140)	833521	1
PS 420 mounting plate	1000 x 500 (890 x 390)	833522	1
PS 430 mounting plate	1000 x 750 (890 x 640)	833523	1
PS 440 mounting plate	1000 x 1000 (890 x 890)	833524	1
PS 442 mounting plate	1000 x 1000 (890 x 890)	833524	1
PS 452 mounting plate	1000 x 1250 (890 x 1140)	833525	1
PS 530 mounting plate	1250 x 750 (1140 x 640)	833526	1
PS 542 mounting plate	1250 x 1000 (1140 x 890)	833527	1
PS 546 mounting plate	1250 x 1000 (1140 x 890)	833527	1

Mounting frames in aluminium

Consisting out of: four attachment brackets, two vertical C profiles (horizontal profiles to be ordered separately: see accessories)



	Size	Ref. No.	Pack.
Continuously adjustable			
PS 220 mounting frame	500 x 500	833533	1
PS 230 mounting frame	500 x 750	833533	1
PS 320 mounting frame	750 x 500	833534	1
PS 330 mounting frame	750 x 750	833534	1
PS 340 mounting frame	750 x 1000	833534	1
PS 352 mounting frame	750 x 1250	833534	1
PS 420 mounting frame	1000 x 500	833535	1
PS 430 mounting frame	1000 x 750	833535	1
PS 440 mounting frame	1000 x 1000	833535	1
PS 442 mounting frame	1000 x 1000	833535	1
PS 452 mounting frame	1000 x 1250	833535	1
PS 530 mounting frame	1250 x 750	833536	1
PS 542 mounting frame	1250 x 1000	833536	1
PS 546 mounting frame	1250 x 1000	833536	1
Adjustable in steps 12,5 mm			
PS 220 mounting frame	500 x 500, length of horizontal profile 468	833529	1
PS 230 mounting frame	500 x 750, length of horizontal profile 718	833529	1
PS 320 mounting frame	750 x 500, length of horizontal profile 468	833530	1
PS 330 mounting frame	750 x 750, length of horizontal profile 718	833530	1
PS 340 mounting frame	750 x 1000, length of horizontal profile 968	833530	1
PS 352 mounting frame	750 x 1250, length of horizontal profile 1218	833530	1
PS 420 mounting frame	1000 x 500, length of horizontal profile 468	833531	1
PS 430 mounting frame	1000 x 750, length of horizontal profile 718	833531	1
PS 440 mounting frame	1000 x 1000, length of horizontal profile 968	833531	1
PS 442 mounting frame	1000 x 1000, length of horizontal profile 968	833531	1
PS 452 mounting frame	1000 x 1250, length of horizontal profile 1218	833531	1
PS 530 mounting frame	1250 x 750, length of horizontal profile 718	833532	1
PS 542 mounting frame	1250 x 1000, length of horizontal profile 968	833532	1
PS 546 mounting frame	1250 x 1000, length of horizontal profile 968	833532	1

Depth extension kit

To increase the standard depth 320 mm of the cabinet up to 640 mm. The kit consists out of two side panels, one top and bottom panel, two open backpanels.



	Size	IP54	IP65	Pack.
		Ref. No.	Ref. No.	
PS 220 depth extension kit	500 x 500	833877	833584	1
PS 230 depth extension kit	500 x 750	833878	833585	1
PS 320 depth extension kit	750 x 500	833879	833586	1
PS 330 depth extension kit	750 x 750	833880	833587	1
PS 340 depth extension kit	750 x 1000	833881	833588	1
PS 352 depth extension kit	750 x 1250	833882	833589	1
PS 420 depth extension kit	1000 x 500	833883	833590	1
PS 430 depth extension kit	1000 x 750	833884	833591	1
PS 440 depth extension kit	1000 x 1000	833885	833592	1
PS 442 depth extension kit	1000 x 1000	833885	833592	1
PS 452 depth extension kit	1000 x 1250	833886	833593	1
PS 530 depth extension kit	1250 x 750	833887	833594	1
PS 542 depth extension kit	1250 x 1000	833888	833595	1
PS 546 depth extension kit	1250 x 1000	833888	833595	1

Accessories

Rainhood

For an efficient ventilation (IP44/IP54) in outdoor use by drilling holes in the top panel. As the standard enclosure is IP65 a rainhood is not necessary.



	Size	Ref. No.	Pack.
PS 220 rainhood	500 x 500	833566	1
PS 230 rainhood	500 x 750	833568	1
PS 320 rainhood	750 x 500	833566	1
PS 330 rainhood	750 x 750	833568	1
PS 340 rainhood	750 x 1000	833570	1
PS 352 rainhood	750 x 1250	833572	1
PS 420 rainhood	1000 x 500	833566	1
PS 430 rainhood	1000 x 750	833568	1
PS 440 rainhood	1000 x 1000	833570	1
PS 442 rainhood	1000 x 1000	833570	1
PS 452 rainhood	1000 x 1250	833572	1
PS 530 rainhood	1250 x 750	833568	1
PS 542 rainhood	1250 x 1000	833570	1
PS 546 rainhood	1250 x 1000	833570	1

Other dimensions available on request

Base

Base or floor mounting frame. Cabinet and base are anchored together in the flooring.



PS 220 base	500 x 500	833574	1
PS 230 base	500 x 750	833575	1
PS 320 base	750 x 500	833574	1
PS 330 base	750 x 750	833575	1
PS 340 base	750 x 1000	833576	1
PS 352 base	750 x 1250	833577	1
PS 420 base	1000 x 500	833574	1
PS 430 base	1000 x 750	833575	1
PS 440 base	1000 x 1000	833576	1
PS 442 base	1000 x 1000	833576	1
PS 452 base	1000 x 1250	833577	1
PS 530 base	1250 x 750	833575	1
PS 542 base	1250 x 1000	833576	1
PS 546 base	1250 x 1000	833576	1

Adaptor frame for DIN-base mounting

Cabinet and adaptor frame are anchored together on the DIN base (Polyester or concrete)



PS 230 adaptor frame for DIN-base mounting	500 x 750	833582	1
PS 330 adaptor frame for DIN-base mounting	750 x 750	833582	1
PS 340 adaptor frame for DIN-base mounting	750 x 1000	833583	1
PS 430 adaptor frame for DIN-base mounting	1000 x 750	833582	1
PS 440 adaptor frame for DIN-base mounting	1000 x 1000	833583	1
PS 442 adaptor frame for DIN-base mounting	1000 x 1000	833583	1
PS 530 adaptor frame for DIN-base mounting	1250 x 750	833582	1
PS 542 adaptor frame for DIN-base mounting	1250 x 1000	833583	1
PS 546 adaptor frame for DIN-base mounting	1250 x 1000	833583	1

DIN-base

PS 230 DIN-base	500 x 750	842100	
PS 330 DIN-base	750 x 750	842100	1
PS 340 DIN-base	750 x 1000	842101	1
PS 430 DIN-base	1000 x 750	842100	1
PS 440 DIN-base	1000 x 1000	842101	1
PS 442 DIN-base	1000 x 1000	842101	1
PS 530 DIN-base	1250 x 750	842100	1
PS 542 DIN-base	1250 x 1000	842101	1
PS 546 DIN-base	1250 x 1000	842101	1

Handles



For profile half cylinder locks (as replacement)	833629	1
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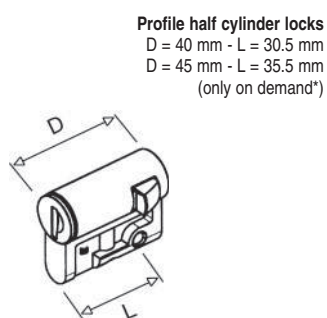
For two profile half cylinder locks	832330	1
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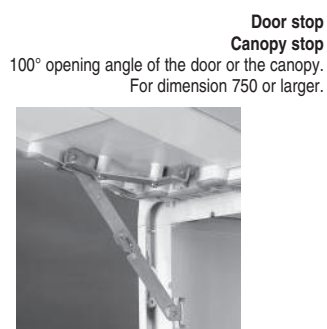
Padlocking handle	833630	1
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PolySafe

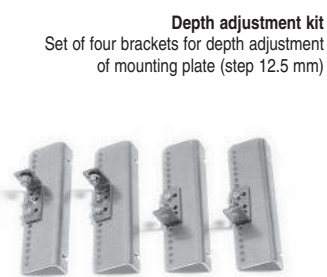
Accessories (continued)



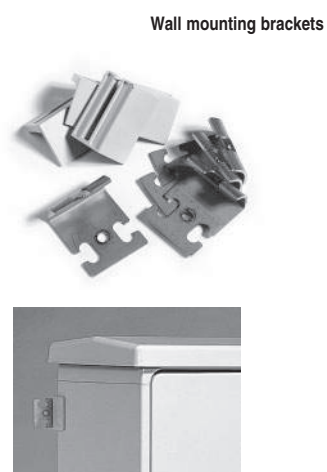
Size	Ref. No.	Pack.
Profile half cylinder lock with 2 keys V2432-E	832030	1
Profile half cylinder lock with 2 keys 1242-E	832031	1
Profile half cylinder lock with 2 keys 455-E	832465	1
Profile half cylinder lock with 2 keys 405-E	832466	1
Profile half cylinder lock with 1 square key 6 mm	843435	1
Profile half cylinder lock with 1 square key 8 mm	832032	1
Profile half cylinder lock with 1 triangular key 8 mm	832033	1
Profile half cylinder lock with 1 triangular key 11 mm	832034	1
Profile half cylinder lock with 1 double-bit key 3 mm	832029	1



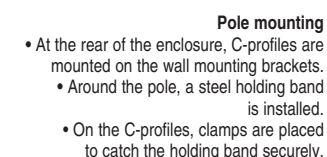
Door/canopy - left	833649	1
Door/canopy - right	833650	1



Depth bracket mounting plate	833528	1
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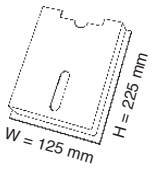








Standard cabinets Kit of four brackets for clip fixation at the rear of the cabinet Made of stainless steel type 304 (as replacement)	833651	1
Cabinets with rainhood Kit of four special brackets for clip fixation at the rear of the cabinet	833624	1



Set for pole mounting 500 mm width	833625	1
Set for pole mounting 750 mm width	833626	1

Accessories (continued)

	Size	Ref. No.	Pack.
<p>Document pocket</p> 	<p>Selfadhesive - for DIN A5 documents W = 155 mm - H = 225 mm</p>	832000	1
<p>Coupling kit Vertical and/or lateral coupling. Package includes the neopreen gasket, coupling bolts and nuts, and the protection profiles.</p> 	<p>Coupling kit vertical and/or lateral 500 D320 Coupling kit vertical and/or lateral 750 D320 Coupling kit vertical and/or lateral 1000 D320 Coupling kit vertical and/or lateral 1250 D320</p>	833608 833610 833612 833614	1 1 1 1
<p>Corner profile</p> 	<p>To fill up the corner between two coupled enclosures. Length = 308 mm Use 2 profiles when coupling 4 enclosures.</p>	833653	1
<p>Innerdoor IP20 Frame and door with 2 double-bit locks. For controls and automation applications.</p> 	<p>Coverplate hinged 500 x 500 Coverplate hinged 500 x 750 Coverplate hinged 750 x 500 Coverplate hinged 750 x 750 Coverplate hinged 1000 x 500 Coverplate hinged 1000 x 750</p>	833556 833557 833558 833559 833561 833562	1 1 1 1 1 1
<p>Louvre plate</p> 	<p>Louvre plate  Fits on ventilation opening. Package includes 2 grids and 4 nylon nails. Louvre plate</p>	832019	1
<p>Air vents</p> 	<p>Air vents Kit of 2 pieces in polyamide. Two air vents must be mounted per enclosure to ensure sufficient air circulation and prevent condensation water. Complete with template and screws. Air vents are preferably mounted in the upper and lower part of the enclosure. Air vents</p>	833677	1



EH1 - Small pedestal

Features

- Small outdoor enclosure with integrated base.
- Hood grey colour RAL 7035
 - ventilated version in thermoplastic engineering polymer
 - non ventilated version in hot moulded, glass fibre reinforced polyester
 - blackened triangular zamac locking screws, vandalproof and for all seasons
- Degrees of protection:
 - IP43 for the non ventilated hoods
 - IP23 for the ventilated hoods.

According to IEC 60529 and BS 5490
- Protection degree IK09 for the polyester cover and IK10 for the Polyethylen cover against external mechanical impacts according to EN/IEC 62262
- Base in high density polyethylene (HDPE) RAL 9005
- Base resists a ground temperature of -50°C
- The upper part of the base serves as a mounting plate and is provided with three slots for fixation points.
- Moulded-in indication of burial depth.
- Easy to install by one person only (weight: 4.5 kg).

Applications

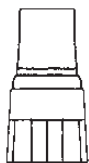
- Cable television distribution (CATV)
- Gas distribution
- Telecommunication (surface terminal cabinet)
- Camping sites

Cable television distribution



Cabinets for underground cable distribution

EH1



Size	Ref. No.	Pack.
Ventilated, Thermoplast	841017	1
Ventilated, Theroplast and lock	841023	1
Ventilated, Polyester	841018	1
Non-ventilated, Polyester	841016	1
Non-ventilated, Polyester and lock	841022	1
Accessories		
Key for triangular screws	851016	1



EH2 - Column cabinets

Features

- Columns made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Protection degree IP44 according to EN/IEC 60529
- Total insulation \square
- Protection degree IK10 against external impacts according to EN/IEC 62262
- Corrosion resistant.
- UV stabilised for outdoor applications, coated version for improved resistance against UV-corrosion.
- Suitable for use in environments from -35°C to $+80^{\circ}\text{C}$. Temporary exceeding temperatures will not be harmful.
- Fully integrated locking clamp, suitable for operation by a half profile cylindric lock.
- The cylindric lock can be fitted in a recessed lock box, protected by a vandal proof plastic cap.
- The enclosure can be accessed by removing the frontal lift-off segments (not hinged).
- Fixing holes for threaded inserts M6 are provided in the rear panel allowing direct mounting of busbars, a frame, a mounting plate or components. Inserts to fix the mounting plate are already installed.
- The base and the rear panel of the column are molded as one part.
- The base allows for stable installation of the column.
- For easy access to the inside of the cabinet, the hinged roof offers an opening angle of 90° .
- The rainhood shape prevents water stagnation on the roof.

Applications

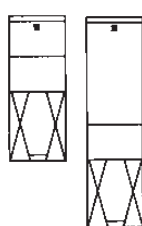
- Power distribution
- Cable TV distribution (CATV)
- Traffic signalling
- Camping sites
- Pump application

Standards

EN 61439-5
IEC 61439-5

Cabinets for underground cable distribution

EH2



Column cabinets
 \square IP43 - IK10



Mounting plates

Size	Ref. No.	Pack.
Uncoated cabinets		
EH2-NA cabinet 1097 x 433 x 240	842072	1
EH2-NB cabinet 1347 x 433 x 240	842073	1
EH2-NC cabinet 1622 x 433 x 240	842074	1
EH2-ND cabinet 1896 x 433 x 240	842075	1
Coated cabinets		
EH2-NA cabinet 1097 x 433 x 240	842082	1
EH2-NB cabinet 1347 x 433 x 240	842083	1
EH2-NC cabinet 1622 x 433 x 240	842084	1
EH2-ND cabinet 1896 x 433 x 240	842085	1
Mounting plates		
EH2-A pertinax 200 x 395 x 5	842002	1
EH2-B pertinax 450 x 395 x 5	842000	1
EH2-C/EH2-D pertinax 700 x 395 x 5	842001	1

Accessories

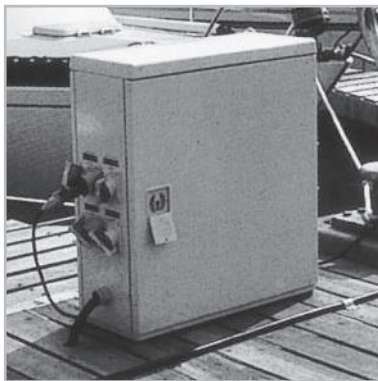


Profile half cylinder lock V2432-E	843001	1
Profile half cylinder lock square 8 mm	843002	1
Profile half cylinder lock triangular 8 mm	843003	1
Profile half cylinder lock A434	843248	1
Vandal proof nameplate holder	843304	1
Threaded inserts M6	890846	100
Tool for securing threaded inserts	852003	1
Support for cable release clamp	842004	1



Applications

- Power distribution
- Water treatment
- Cable television distribution (CATV) in one or two ways
- Camping sites and market places
- Traffic signalling and public lighting



EH3-DIN-Size pedestals

Common features

- Cabinets made of hot moulded, glass fibre reinforced polyester.
- Dyed in mass RAL 7035 light grey.
- Delivered in kit-form (on request: factory assembled).
- Protection degree IP44 according to EN/IEC 60529 and BS 5490
- Total insulation ☐
- Protection degree IK10 against external impacts according to EN/IEC 62262
- Corrosion resistant.
- UV stabilized for outdoor applications, coated cabinets for increased resistance against UV-corrosion on request.
- Suitable for use in environments from -35° C to +80° C. Temporary exceeding temperatures will not be harmful.
- The open door can be manually unhinged to allow free access for maintenance. Door opening angle exceeds 180° C.
- Studs are moulded in the rear panel which can receive M8 inserts to allow direct mounting of busbars, a frame or a mounting plate for components.
- Fixation points at the side panel are foreseen to mount busbars.
- Supplied with open bottom.
- To be mounted on a basement according to DIN 43629 standard dimensions between the fixation points.
- The rainhood shape prevents water stagnation on the roof.
- Cabinets can be coupled together side to side or double deep.
- Removable bottom profile for easy cable access without tools.

Standards

EN 61439-5 • IEC 61439-5

EH3/F

Cabinets with flat surface

- Four sizes in four different widths; all sizes feature the same height and depth.
- Three point locking mechanism, operated by a swing handle.
- The swing handle is designed to receive a half profile cylindric lock.



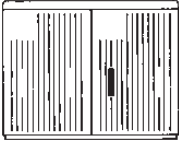


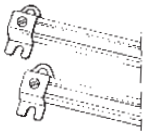
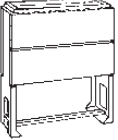
EH3/AP

Cabinets with anti-fly posting surface

- Eight sizes in four different widths and two different heights; all sizes feature the same depth.
- Three point locking mechanism, operated by a solid handle.
- The solid, not recessed handle allows for more usable space inside the cabinet and is designed to receive a half profile cylinder lock.
- Profiled door and rear panels make poster sticking difficult and causes poster to drop off.

DIN-size pedestals

Cabinets for underground cable distribution

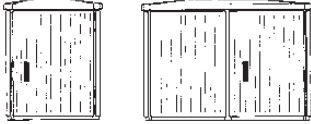

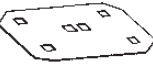
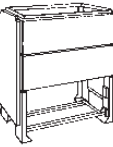
EH3/F		Size	Ref. No.	Pack.
 <p>With flat surface <input type="checkbox"/> IP44 - IK10</p>	Cabinets in kit-form - height 875			
	EH3/F-0 cabinet 875 x 590 x 320 - 1 door		843125	1
	EH3/F-1 cabinet 875 x 785 x 320 - 1 door		843127	1
	EH3/F-2 cabinet 875 x 1115 x 320 - 2 doors		843128	1
	EH3/F-3 cabinet 875 x 1445 x 320 - 2 doors		843129	1
EH3/AP				
 <p>With anti-fly posting surface (ribbed door) <input type="checkbox"/> IP44 - IK10</p> 	Cabinets in kit-form - height 875			
	EH3/AP-0 cabinet 875 x 590 x 320 - 1 door		843150	1
	EH3/AP-1 cabinet 875 x 785 x 320 - 1 door		843151	1
	EH3/AP-2 cabinet 875 x 1115 x 320 - 2 doors		843152	1
	EH3/AP-3 cabinet 875 x 1445 x 320 - 2 doors		843153	1
	Cabinets in kit-form - height 1125			
	EH3/AP-20 cabinet 1125 x 590 x 320 - 1 door		843154	1
	EH3/AP-21 cabinet 1125 x 785 x 320 - 1 door		843155	1
	EH3/AP-22 cabinet 1125 x 1115 x 320 - 2 doors		843156	1
	EH3/AP-23 cabinet 1125 x 1445 x 320 - 2 doors		843157	1
Mounting plates		For cabinets with H = 875 mm		
	EH3/F-0 & EH3/AP-0 pertinax 665 x 485 x 5		843024	1
	EH3/F-1 & EH3/AP-1 pertinax 665 x 680 x 5		843044	1
	EH3/F-2 & EH3/AP-2 pertinax 705 x 1000 x 5		843057	1
	EH3/F-3 & EH3/AP-3 pertinax 705 x 1340 x 5		843067	1
	For cabinets with H = 1125 mm			
EH3/AP-20 pertinax 915 x 485 x 5		843070	1	
EH3/AP-21 pertinax 915 x 680 x 5		843071	1	
EH3/AP-22 pertinax 915 x 1000 x 5		843072	1	
EH3/AP-23 pertinax 915 x 1340 x 5		843256	1	
Bottom plates				
	EH3/F-0 & EH3/AP-0 & EH3/AP-20 polyester 562 x 285 x 3		843300	1
	EH3/F-1 & EH3/AP-1 & EH3/AP-21 polyester 757 x 285 x 3		843301	1
	EH3/F-2 & EH3/AP-2 & EH3/AP-22 polyester 1086 x 285 x 3		843302	1
	EH3/F-3 & EH3/AP-3 & EH3/AP-23 polyester 1416 x 285 x 3		843303	1
Wall fixing units				
	EH3/F-0 & EH3/AP-0 & EH3/AP-20 wall fixing unit W = 710		843441	1
	EH3/F-1 & EH3/AP-1 & EH3/AP-21 wall fixing unit W = 885		843442	1
	EH3/F-2 & EH3/AP-2 & EH3/AP-22 wall fixing unit W = 1215		843443	1
	EH3/F-3 & EH3/AP-3 & EH3/AP-23 wall fixing unit W = 1545		843444	1
Bases - kit-form				
	EH3/F-0 & EH3/AP-0 & EH3/AP-20 polyester 900 x 858 x 310		842099	1
	EH3/F-1 & EH3/AP-1 & EH3/AP-21 polyester 900 x 780 x 310		842100	1
	EH3/F-2 & EH3/AP-2 & EH3/AP-22 polyester 900 x 1100 x 310		842101	1
	EH3/F-3 & EH3/AP-3 & EH3/AP-23 polyester 900 x 1430 x 310		843144	1

Accessories


Profile half cylinder lock V2432-E	843001	1
Profile half cylinder lock square 8 mm	843002	1
Profile half cylinder lock triangular 8 mm	843003	1
Profile half cylinder lock A434	843248	1
Pocket for drawings	832000	1
Louvre plate	832019	1
Vandal proof nameplate holder	843304	1
Clamps for removal of bottom profile	843250	1
Threaded inserts M8	890845	100
Tool for securing threaded inserts M8	844039	1

DIN-size pedestals

EH3 - Cabinets for underground cable distribution

EH3/GD-AP		Size	Ref. No.	Pack.
Cabinets with greater depth IP43 - IK10 	EH3/GD-AP-031 cabinet	875 x 676 x 424	843296	1
	EH3/GD-AP-041 cabinet	875 x 871 x 424	843360	1
	EH3/GD-AP-051 cabinet	875 x 1200 x 424	843359	1
	EH3/GD-AP-233 cabinet	1125 x 676 x 676	843358	1
	EH3/GD-AP-243 cabinet	1125 x 871 x 676	843357	1
	EH3/GD-AP-253 cabinet	1125 x 1200 x 676	843356	1
Mounting plates 	EH3/GD-AP-031 pertinax	665 x 485 x 5	843024	1
	EH3/GD-AP-041 pertinax	665 x 680 x 5	843044	1
	EH3/GD-AP-051 pertinax	705 x 1000 x 5	843057	1
	EH3/GD-AP-233 pertinax	915 x 485 x 5	843070	1
	EH3/GD-AP-243 pertinax	915 x 680 x 5	843071	1
	EH3/GD-AP-253 pertinax	955 x 1000 x 5	843072	1
Bottom plates 	EH3/GD-AP-031 polyester	635 x 380 x 3	843413	1
	EH3/GD-AP-041 polyester	830 x 380 x 3	843411	1
	EH3/GD-AP-051 polyester	1158 x 380 x 3	843409	1
	EH3/GD-AP-233 polyester	635 x 632 x 3	843425	1
	EH3/GD-AP-243 polyester	830 x 632 x 3	843410	1
	EH3/GD-AP-253 polyester	1158 x 632 x 3	843408	1
Bases - kit-form 	EH3/GD-AP-031 polyester	900 x 645 x 393	843394	1
	EH3/GD-AP-041 polyester	900 x 835 x 393	843397	1
	EH3/GD-AP-051 polyester	900 x 1164 x 393	843400	1
	EH3/GD-AP-233 polyester	900 x 645 x 645	843396	1
	EH3/GD-AP-243 polyester	900 x 835 x 645	843399	1
	EH3/GD-AP-253 polyester	900 x 1164 x 645	843402	1

Accessories

	Profile half cylinder lock V2432-E	843001	1
	Profile half cylinder lock square 8 mm	843002	1
	Profile half cylinder lock triangular 8 mm	843003	1
	Profile half cylinder lock A434	843248	1
	Pocket for drawings	832000	1
	Louvre plate	832019	1
	Vandal proof nameplate holder	843304	1
	Clamps for removal of bottom profile	843250	1

	QuiXtra™ 630
	Introduction
N.2	Advantages
N.4	Applications
N.5	Product description
N.7	Features and benefits
N.8	Kit structure
N.10	Main technical characteristics
N.11	Range overview
	Order codes
N.12	Enclosures
N.14	How to order
N.17	Functional units
N.22	Busbars
N.26	Cover plates and accessoires

<i>Miniature circuit breakers</i>	<i>A</i>
<i>Residential current circuit breakers</i>	<i>B</i>
<i>Busbar systems</i>	<i>C</i>
<i>Comfort functions/Energy control</i>	<i>D</i>
<i>Residential enclosures</i>	<i>E</i>
<i>Contactors/Soft starters/Speed drives</i>	<i>F</i>
<i>Overload relays</i>	<i>G</i>
<i>Control and signalling units</i>	<i>H</i>
<i>Manual motor starters</i>	<i>I</i>
<i>Moulded case circuit breakers</i>	<i>J</i>
<i>Air circuit breakers</i>	<i>K</i>
<i>Fuse systems/Loadbreak disconnectors</i>	<i>L</i>
<i>General purpose enclosures</i>	<i>M</i>
System enclosures	N
<i>Numerical index</i>	<i>X</i>

QUICK



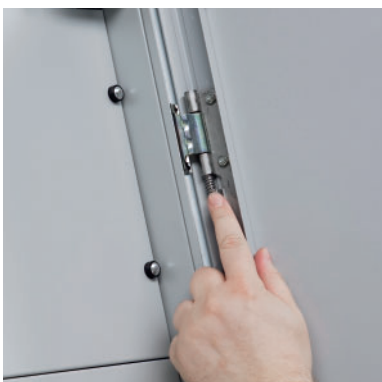
Safe

- Verification tested system enclosure
- Designed according to the new IEC 61439-2
- IP43 with door and IP43 profile
- Internal segregation up to Form 2
- Tempered glass for transparent door



Simple and Flexible

- Enclosures widths for 12, 24 and 36 modules
- Enclosures heights from 3 up to 12 rows of 150mm
- Horizontal coupling
- 1 functional unit = 1 reference, including all parts to mount LV devices
- Modular concept: all functional units in steps of 50mm in height



Door ready to mount

- 1 or 3 point locking system already mounted
- Hinges mounted
- Installation without tools
- 135° open angle



QuiXtra™ 630

Low Voltage panel

SIMPLE



QUICK

Attractive design

- Fits perfectly in commercial environments
- Colours RAL 9006 and RAL 7024



Easy and quick to assemble

- Assembly by a single person
- Pre-assembled captive screws
- 90° screws for cover plates
- Click-in supports for functional units and busbar holders. No tools needed
- Frame to remove all cover plates at once!



Rigid and sturdy

- Rear panel 1.5 mm thick
- Bent to increase rigidity
- Die-cast aluminium corner parts



PowerDesign

New generation of software to help customers with the configuration, design and quotation of low voltage system enclosures



Applications

QuiXtra 630 has been developed as a range of system enclosures, GEs complete solution for low voltage distribution boards up to 630A for commercial and industrial environments.

QuiXtra 630 is delivered as a flat kit, to be assembled, equipped and wired by a panel builder or installer. The QuiXtra 630 range consists of both wall mounting and floor standing sheet steel enclosures, as well as busbars and functional units to easily integrate all types of low voltage electrical devices up to 630A.

The combination of the QuiXtra 630 enclosure and original AEG LV electrical devices are designed according to the new standard IEC 61439-2.

- Industrial
- High commercial
- Low commercial

Industrial

- Plants
- Small factories
- Waste recycling
- OEM
- Components/parts productions
- Printing

High commercial (as a secondary panel)

- Telecommunication
- Datacenters
- Airports
- Hospitals
- Banks
- Public transportation
- Railways
- Subways
- Government buildings

Low commercial (as a main panel)

- Commercial offices
- Shopping malls
- Schools
- Stores
- Gasoline stations
- Restaurants
- Small shops



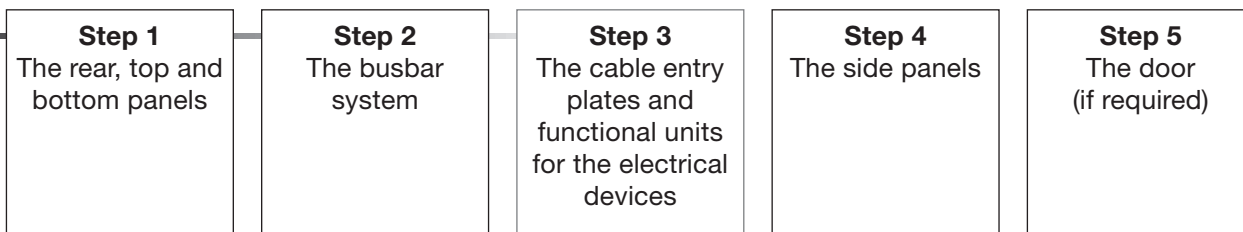
Description

QuiXtra 630 is a range of sheet steel system enclosures, delivered as a flat kit. It is the solution for low voltage distribution boards up to 630A, in commercial and industrial environments.

QuiXtra 630 is designed to be a reliable, simple, flexible and easy to use system enclosure, with the added value of its fresh and attractive design that integrates perfectly into a commercial environment.

The QuiXtra 630 range consists of 24 different enclosures. There are nine enclosure heights available, from 450mm up to 1800mm, and three enclosure widths, for functions of 12, 24 and 36 modules. All enclosures have the same depth (220mm without door and 250mm with door), allowing horizontal coupling and providing the user total flexibility to define the layout of the LV distribution boards.

A QuiXtra 630 system enclosure is assembled in 5 steps!



Assembling the top, bottom and side panels to the back-panel can be done by a single person. To facilitate this, the panel foresees guide ledges to avoid mistakes during assembly. The QuiXtra 630 enclosures can be coupled horizontally to build any required distribution board layout.

QuiXtra 630 can be installed as a wall mounting or as a floor standing enclosure. For the enclosures with a useful height of 1350mm or higher a 100mm high base needs to be added (ordered separately). For the smaller enclosures, the base is available as an option.

The QuiXtra 630 protection degree is either IP30, IP40 or IP43. IP30 is achieved simply using the coverplates delivered with each functional unit, without the need for a door. Simply adding a door to each enclosure increases the protection degree to IP40, without the need for an additional gasket. Adding the IP43 profile and the door, the protection degree is IP43.

The complete solution for low voltage distribution boards up to 630A for commercial and industrial environments.

Description (continued)

QuiXtra 630 offers plain and transparent (tempered glass) doors, for an easy inspection of the devices installed inside the enclosure. The doors are equipped with a one or a three point closing mechanism (depending on the enclosure height), operated by a central handle. The handle is delivered with a standard lock insert for key 2432E.

The opening angle is 135 degrees. Attaching the doors to the enclosure is done without tools, using the simple pin-hinges. The doors are delivered with hinges and locking mechanism already mounted, to reduce assembly time.

All LV electrical devices up to 630A can be easily assembled in QuiXtra 630 using the appropriate functional units. Each functional unit kit includes everything necessary for assembly:

- A mounting plate or DIN rail
- A support to attach to the enclosure
- A coverplate (with precise cut-outs)
- The required screws and other fixation parts.

Attaching the mounting plates or DIN rails does not require tools: they are attached to the rear mounting profile using a “click-in” support. The coverplates are attached to two profiles using captive 90° screws. By removing these profiles, all cover plates can be removed at the same time.

QuiXtra 630 has sufficient wiring space for any possible layout. Each side has room for a vertical 60mm cable-duct. The vertical and the horizontal cable-ducts can be integrated in different depths to suit the users’ needs. QuiXtra 630 offers a variety of different cable entry plates for the top and bottom panels, to assure enough space for the cable entry and to cover all type of panel installations.

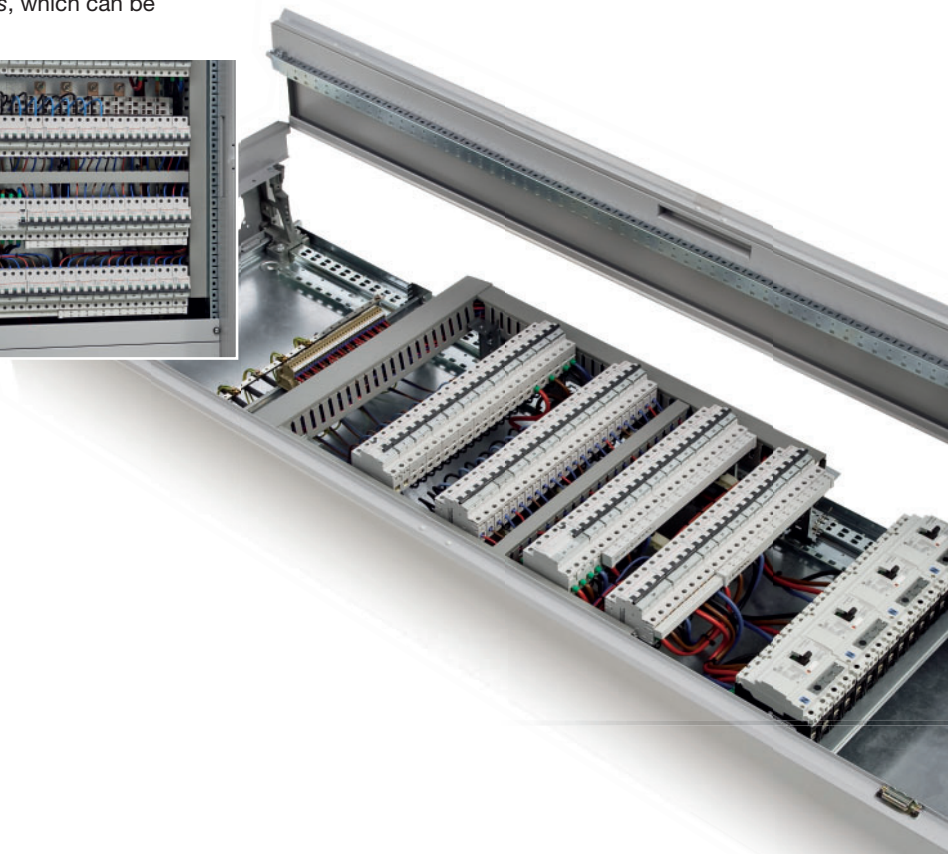
For upgrades and maintenance, the end user has direct access to the *vertical cable ducts* of up to 40 mm (in each side of the functions) in an installed panel, simply by removing the coverplates. If wider space is required, it's necessary to disassemble the *side panels*, which can be separately removed.

The connectivity in QuiXtra 630 is based on rear mounted and staircase busbars. The *rear busbar* can be mounted horizontally or vertically. For the rear mounted busbar, a single insulator type is suitable for different cross sections of copper bars.



The *staircase busbar* can be installed vertically in the 12 module enclosure and horizontally in the 24 and 36 module enclosures. In either case, functions cannot be mounted on top.

The aesthetics of QuiXtra 630 make it particularly suitable for commercial environments. The QuiXtra 630 colour is silver grey, RAL 9006. The external corner parts, the handle and the base are in dark grey, RAL 7024. The tempered glass of the transparent door is lightly smoked grey.



Features and Benefits

Simple and flexible

- Enclosures widths for 12, 24 and 36 modules
- Enclosures heights from 3 up to 12 rows of 150mm
- Horizontal coupling of 2 or more enclosures
- Modular concept. All functions in steps of 50mm in height
- Functional kits for low voltage electrical devices up to 630A.
Mounting of devices in vertical or horizontal position
- The busbars can be assembled in vertically or horizontally
- Accessories to facilitate panel wiring and assembly
- Each functional unit includes all parts necessary for assembly:
mounting plate or DIN rail, supporting brackets, cover plate
(with precise cut-outs) and all required fixation elements.

Easy and quick to assemble

- Assembly by a single person
- “Click-in” supports for functions and busbar holders.
No tools needed
- 90° screws for cover plates
- Pre-assembled captive screws
- Guiding ledges in back panel for top and side panel fixation
- Door assembly without tools. Doors delivered with locking system
and hinges pre-mounted (key 2432E)
- Generous wiring space, enough for vertical cable ducts of 60mm
on each side
- Frame allowing the removal of all cover plates at the same time
- Markings in the fixation profiles to quickly position the functional
units and cover plates
- Pre-punched cable entry glands as option

Safe for users, reliable and sturdy

- Verification tested system enclosure, designed according to
the new IEC 61439-2 standard
- IP43 with door, IP43 profile, wall mounting supports and IP43 kit in the back
- IP40 with door and without IP43 profile
- IP30 without door
- Back panel galvanized sheet steel, 1.5mm
- External panels sheet steel, 1.25mm, power coated
- Aluminium corner parts provide additional rigidity to both
stand-alone and coupled enclosures
- Internal segregation: Form 2
- Tempered glass for the transparent door

Attractive design

- Optimal integration in commercial environments
- Combination of two colours:
RAL 9006 (metallic silver) and
RAL 7024 (silver grey)

Kit structure

QuiXtra 630 is a system enclosure delivered in flat kits, to be assembled, equipped and wired by the panel builder and installer.

1. Basic kit

The kit includes:

- Rear panel
- Top panel
- Bottom panel
- Four die-cast aluminium corner parts
- Two rain profiles
- Two filler plates
- The rear panel already has the two functional mounting profiles integrated, to which the supports for the DIN rails, the mounting plates and the isolators can be attached.
- The filler plates serve to cover the corner parts and receive the door locking mechanism
- The die-cast aluminium corner parts are fixed to the back-panel using two screws.

✓ For enclosures of useful height of 1350, 1500 and 1800mm, the bottom panel is not delivered. It is mandatory to add the floor base of 100mm.

An enclosure is built of 3 main kits

2. Side panel kit

The kit includes:

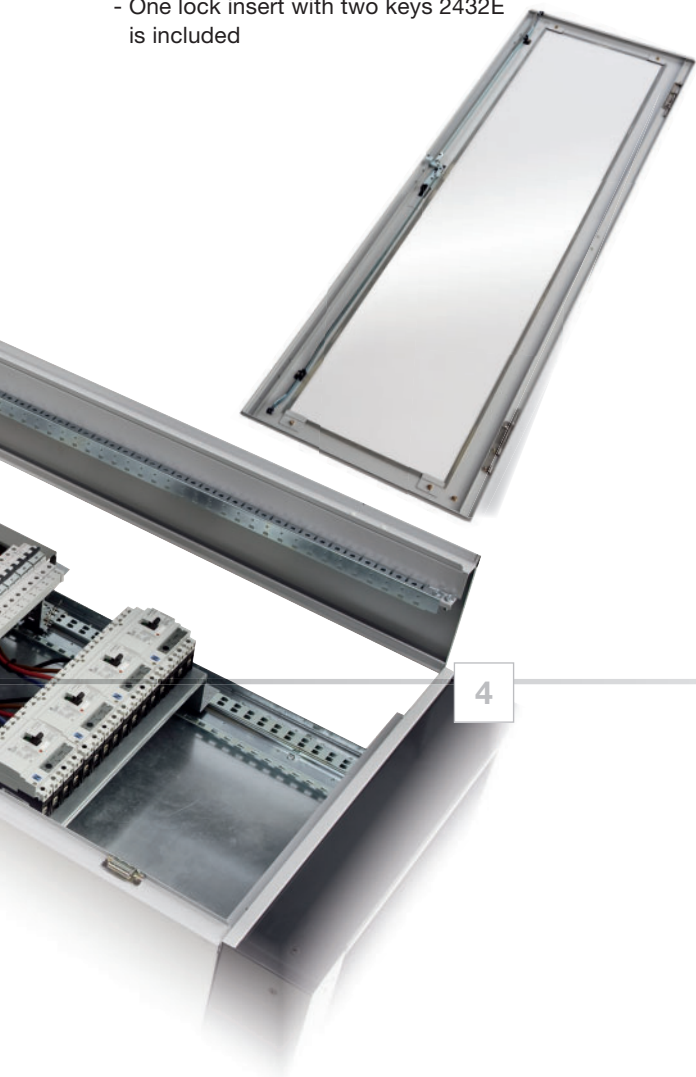
- Two side panels, with two vertical profiles to fix the coverplates
- Four external corner parts for the wall mounting sizes (between 450 and 1200mm)
- Two external corner parts for the floor standing sizes (1350, 1500 and 1800mm)



3. Door

The kit includes:

- Plain door, available for all enclosure sizes
- Transparent door, for enclosure 24 and 36 modules wide
- The locking mechanism, handle and hinges are delivered mounted on the door
- One lock insert with two keys 2432E is included



Additional options

Cable entry plates

Only one cable size entry plate, in 8 different configurations.

Coupling kit

- Vertical profiles to join the rear panels and U parts to join the aluminium corner parts
- A vertical beam for the front, with two vertical profiles to fix the coverplates
- Two plastic parts to join the top and bottom panels. (Photo 7)

Horizontal reinforcement profiles

Two horizontal profiles reinforce coupled enclosures. (Photo 8)

Floor base

Base and fixation elements. Removable front plate to improve accessibility. Rods can be inserted to transport a finished enclosure with a forklift.

Functional units

DIN rail or mounting plate with two supports to mount into the rear vertical profiles. Includes cover plate with precise cut-outs and all the fixation elements. (Photo 9)

Coverplates

Extra blind plates available.

Busbar supports

The kit includes the busbar holders and the support, delivered with all fixation parts.

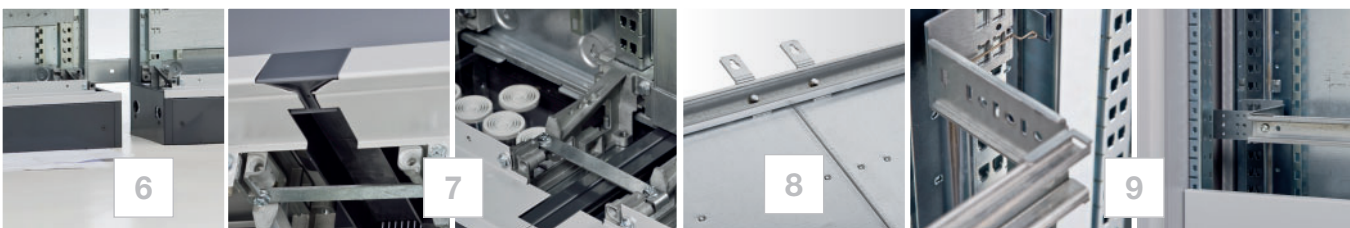
Mounting plates

Includes plain metal mounting plate, supports and fixation elements.

Special functions

Meters, push-buttons P9

- 1 Without the cable entry plates, and with vertical profiles for the coverplates
- 2 Enclosure with floor base included
- 3 Side panels
- 4 Door
- 5 Cable entry plates
- 6 Coupling of enclosures
- 7 Coupling of enclosures (plastic parts)
- 8 Coupling the back panels and wall mounting brackets
- 9 Functional unit



Main technical characteristics



Useful and external dimensions (mm)

External height	Useful height	Rows 150mm	External width			Depth with door
			12 modules	24 modules	36 modules	
600	450	3	-	660	-	250
750	600	4	364	660	-	250
900	750	5	364	660	876	250
1050	900	6	364	660	876	250
1200	1050	7	364	660	876	250
1350	1200	8	364	660	876	250
1600	1350	9	364	660	876	250
1750	1500	10	364	660	876	250
2050	1800	12	364	660	876	250

Material and colour

Rear panel & mounting profiles	Sendzimir zinc plated steel 1.5 mm
Side, top and bottom panel	Epoxy-polyester coated sheet steel 1.25 mm
Plain door	Epoxy-polyester coated sheet steel 1.25 mm
Transparent door	Epoxy-polyester coated sheet steel 1.25 mm and smoked safety glass 3 mm.
Cover plates	Epoxy-polyester coated sheet steel 1 mm
External corner and coupling parts	ABS
Internal corner plates	Die-cast aluminium
Enclosure colour	RAL 9006
Floor base colour	RAL 7024

Protection degree and segregation form

Protection class	I
Pollution degree	2
Segregation	Form 1 & Form 2
Protection degree	
Without door	IP30, IK08
With plain door	IP40, IK09
With plain door, IP43 profile and IP43 kit	IP43, IK09
With transparent door	Same IP as plain door, IK08

Standards and approvals

Standards	IEC 60439-1 EN 60439-1 ⁽¹⁾
Approval	▶ DEKRA with KEMA quality testreport
Certification	▶ DEKRA with KEMA quality testreport
RoHS	Compliant

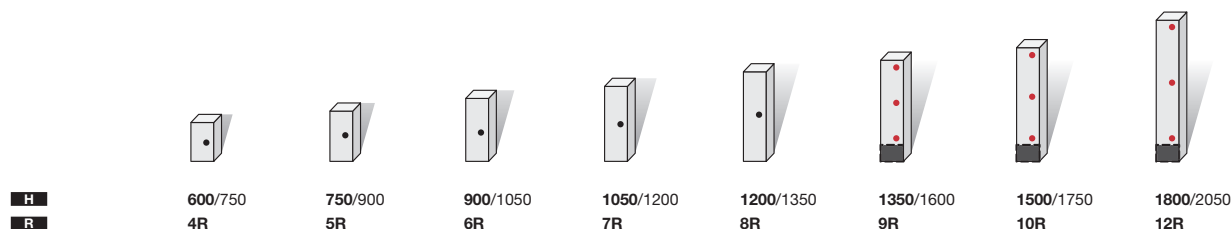
Electrical characteristics

Rated current (In)	630 A
Rated operational voltage (Ue)	415 V
Rated insulation voltage (Ui)	690 V
Rated frequency (fn)	50/60 Hz
Rated short-circuit current (Icw)	30 kA/1s
Rated current of busbar systems	630 A in IP43

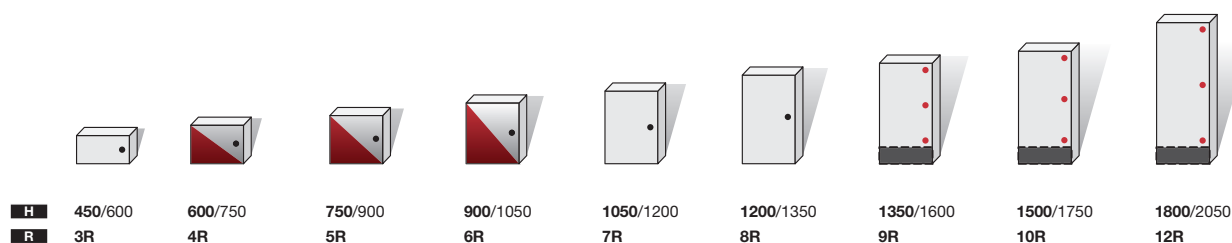
(1) According to EN 61439-2: KEMA approval pending.

Full enclosure range

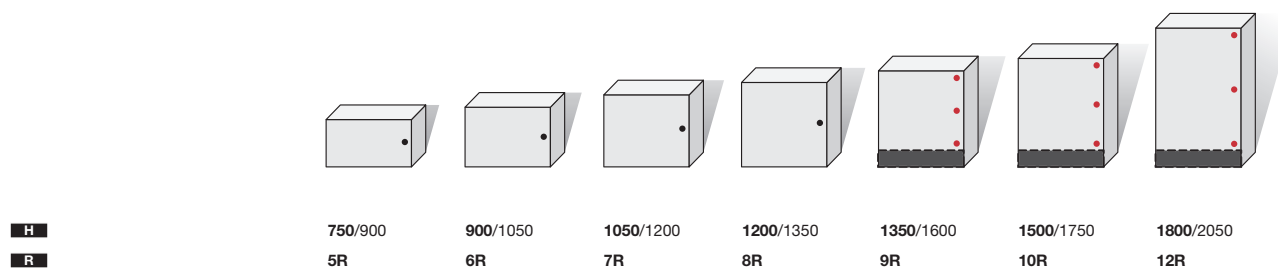
12 modules - width: 364 mm/depth: 250 mm



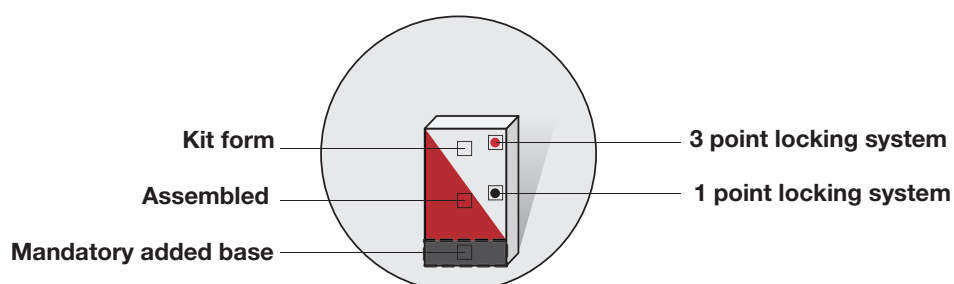
24 modules - width: 660 mm/depth: 250 mm



36 modules - width: 876 mm/depth: 250 mm











- H** Useful height/external height
- R** Number of rows of 150 mm












Order codes enclosures in kit form

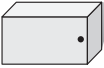
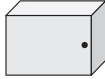
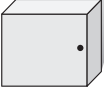
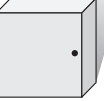
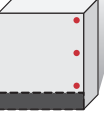
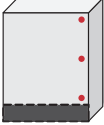

12 modules - width: 364 mm/depth: 250 mm

								
H	600/750	750/900	900/1050	1050/1200	1200/1350	1350/1600	1500/1750	1800/2050
R	4R	5R	6R	7R	8R	9R	10R	12R

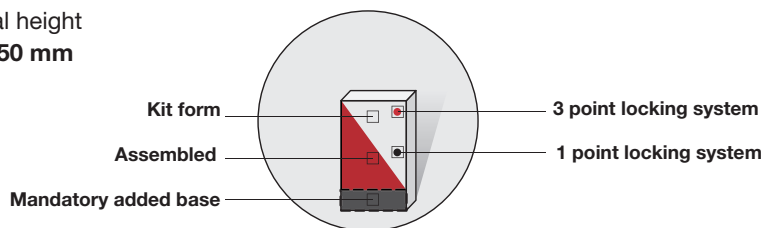
24 modules - width: 660 mm/depth: 250 mm

									
H	450/600	600/750	750/900	900/1050	1050/1200	1200/1350	1350/1600	1500/1750	1800/2050
R	3R	4R	5R	6R	7R	8R	9R	10R	12R

36 modules - width: 876 mm/depth: 250 mm

							
H	750/900	900/1050	1050/1200	1200/1350	1350/1600	1500/1750	1800/2050
R	5R	6R	7R	8R	9R	10R	12R

H Useful height/external height
R Number of rows of 150 mm



Basic kit

- Rear panel
 - Top and bottom panels
 - 2 vertical profiles
 - 4 aluminium corner parts
 - Fixation elements
- ✓ Mandatory to add floor base for enclosures 9, 10 and 12 rows

Side panel kit

- 2 side panels
- 2 profiles to fix coverplates
- Plastic corner parts
 - 4 units for enclosures up to 8 rows
 - 2 units for 9, 10 & 12 rows enclosures
- Fixation elements

12 modules enclosures - width: 364 mm/depth: 250 mm

External height (mm)	Useful height (mm)	# rows 150mm	# modules	12 modules						
				Basic kit ⁽¹⁾	Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾	
600	450	3	36	-	885027		-	-	-	
750	600	4	48	885000	+	885028	+	885044	-	885036
900	750	5	60	885001	+	885029	+	885045	-	885037
1050	900	6	72	885002	+	885030	+	885046	-	885038
1200	1050	7	84	885003	+	885031	+	885047	-	885039
1350	1200	8	96	885004	+	885032	+	885048	-	885040
1600	1350	9	108	885005 ⁽²⁾	+	885033	+	885049	-	885041
1750	1500	10	120	885006 ⁽²⁾	+	885034	+	885050	-	885042
2050	1800	12	144	885007 ⁽²⁾	+	885035	+	885051	-	885043
Floor base	-	-	-	885084	-	-	-	-	-	-

24 modules enclosures - width: 660 mm/depth: 250 mm

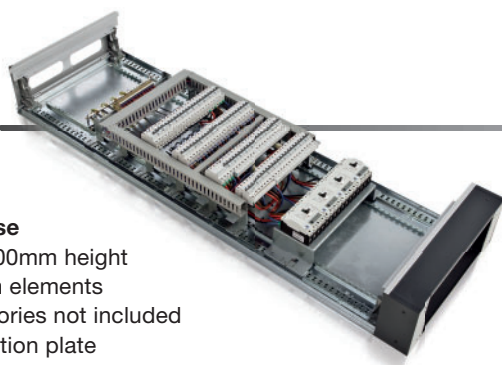
External height (mm)	Useful height (mm)	# rows 150mm	# modules	24 modules						
				Basic kit ⁽¹⁾	Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾	
600	450	3	72	885008	-	885027	-	885052	885068	-
750	600	4	96	885009	+	885028	+	885053	885069	885036
900	750	5	120	885010	+	885029	+	885054	885070	885037
1050	900	6	144	885011	+	885030	+	885055	885071	885038
1200	1050	7	168	885012	+	885031	+	885056	885072	885039
1350	1200	8	192	885013	+	885032	+	885057	885073	885040
1600	1350	9	216	885014 ⁽²⁾	+	885033	+	885058	885074	885041
1750	1500	10	240	885015 ⁽²⁾	+	885034	+	885059	885075	885042
2050	1800	12	288	885016 ⁽²⁾	+	885035	+	885060	885076	885043
Floor base	-	-	-	885085	-	-	-	-	-	-

36 modules enclosures - width: 876 mm/depth: 250 mm

External height (mm)	Useful height (mm)	# rows 150mm	# modules	36 modules						
				Basic kit ⁽¹⁾	Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾	
600	450	3	-	-	885027		-	-	-	
750	600	4	-	-	+	885028	+	-	-	885036
900	750	5	180	885020	+	885029	+	885061	885077	885037
1050	900	6	216	885021	+	885030	+	885062	885078	885038
1200	1050	7	252	885022	+	885031	+	885063	885079	885039
1350	1200	8	288	885023	+	885032	+	885064	885080	885040
1600	1350	9	324	885024 ⁽²⁾	+	885033	+	885065	885081	885041
1750	1500	10	360	885025 ⁽²⁾	+	885034	+	885066	885082	885042
2050	1800	12	432	885026 ⁽²⁾	+	885035	+	885067	885083	885043
Floor base	-	-	-	885086	-	-	-	-	-	-

(1) Includes rear, top and bottom panel (side panels not included).
 (2) Bottom panel not included. Mandatory to order the floor base separately.
 (3) Includes two side panels and external corner parts.
 (4) When coupling 2 or more enclosures, only 2 side panels are necessary.

How to order examples see page M.14



Floor base

- Base 100mm height
- Fixation elements
- Accessories not included
 - Separation plate
 - Cable support

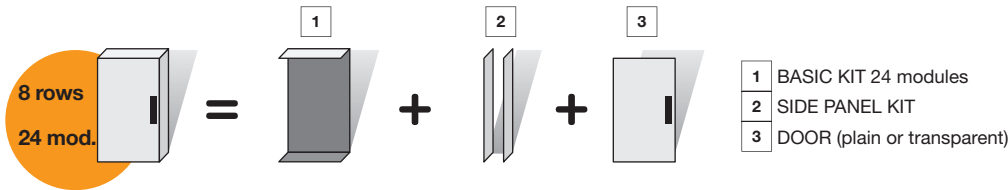


Doors

- Door
- Locking mechanism assembled
- Handle assembled
- Locking insert key 2432E
- Hinges assembled

How to order

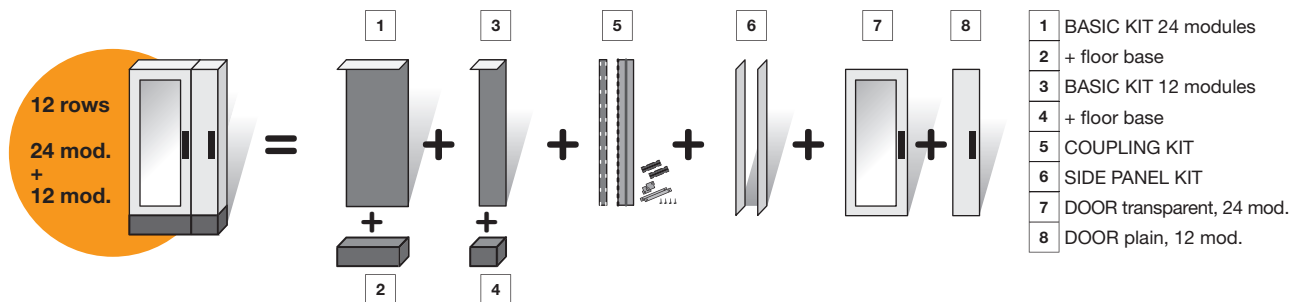
Example of individual 24 modules enclosure



24 modules enclosures - width: 660 mm/depth: 250 mm

External height (mm)	Useful height (mm)	# rows 150mm	# modules	Basic kit ⁽¹⁾		Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾
				24 modules						
600	450	3	72	885008	+	885027	+	885052	885068	-
750	600	4	96	885009	+	885028	+	885053	885069	885036
900	750	5	120	885010	+	885029	+	885054	885070	885037
1050	900	6	144	885011	+	885030	+	885055	885071	885038
1200	1050	7	168	885012	+	885031	+	885056	885072	885039
1350	1200	8	192	885013	+	885032	+	885057	885073	885040
1600	1350	9	216	885014 ⁽²⁾	+	885033	+	885058	885074	885041
1750	1500	10	240	885015 ⁽²⁾	+	885034	+	885059	885075	885042
2050	1800	12	288	885016 ⁽²⁾	+	885035	+	885060	885076	885043
Floor base	-	-	-	885085	-	-	-	-	-	-

Example of coupled 24 and 12 modules enclosures



24 modules enclosures - width: 660 mm/depth: 250 mm

External height (mm)	Useful height (mm)	# rows 150mm	# modules	Basic kit ⁽¹⁾		Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾
				24 modules						
600	450	3	72	885008	+	885027	+	885052	885068	-
750	600	4	96	885009	+	885028	+	885053	885069	885036
900	750	5	120	885010	+	885029	+	885054	885070	885037
1050	900	6	144	885011	+	885030	+	885055	885071	885038
1200	1050	7	168	885012	+	885031	+	885056	885072	885039
1350	1200	8	192	885013	+	885032	+	885057	885073	885040
1600	1350	9	216	885014 ⁽²⁾	+	885033	+	885058	885074	885041
1750	1500	10	240	885015 ⁽²⁾	+	885034	+	885059	885075	885042
2050	1800	12	288	885016 ⁽²⁾	+	885035	+	885060	885076	885043
Floor base	-	-	-	885085	-	-	-	-	-	-

12 modules enclosures - width: 364 mm/depth: 250 mm

External height (mm)	Useful height (mm)	# rows 150mm	# modules	Basic kit ⁽¹⁾		Side panel kit ⁽³⁾		Plain door	Transparent door	Coupling kit ⁽⁴⁾
				12 modules						
600	450	3	36	-	+	885027	+	-	-	-
750	600	4	48	885000	+	885028	+	885044	-	885036
900	750	5	60	885001	+	885029	+	885045	-	885037
1050	900	6	72	885002	+	885030	+	885046	-	885038
1200	1050	7	84	885003	+	885031	+	885047	-	885039
1350	1200	8	96	885004	+	885032	+	885048	-	885040
1600	1350	9	108	885005 ⁽²⁾	+	885033	+	885049	-	885041
1750	1500	10	120	885006 ⁽²⁾	+	885034	+	885050	-	885042
2050	1800	12	144	885007 ⁽²⁾	+	885035	+	885051	-	885043
Floor base	-	-	-	885084	-	-	-	-	-	-

(1) Includes rear, top and bottom panel (side panels not included).
 (2) Bottom panel not included. Mandatory to order the floor base separately.
 (3) Includes two side panels and external corner parts.
 (4) When coupling 2 or more enclosures, only 2 side panels are necessary.



Assembled enclosures

- Rear panel
- Top and bottom panels
- Back profiles
- Front profiles
- Side panels
- ✓ Assembled enclosures are without door

Assembled enclosures - order codes

Useful height (mm)	# rows 150mm	24 modules		
		Door plain	Door transparent	
600	4	885017	885053	885069
750	5	885018	885054	885070
900	6	885019	885055	885071

Reinforcement profiles

Kits to reinforce several coupled enclosures, and to facilitate the transportation of the complete switchboard.

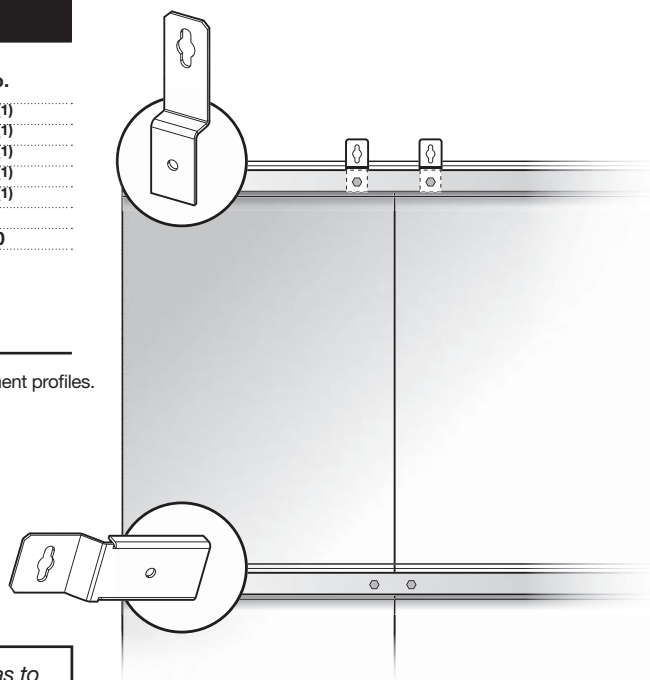
- In each kit are included: Two horizontal profiles for the adequate combinations of enclosures, and the wall mounting brackets (top).
- The profiles are assembled horizontally through the enclosures, as it is shown in the picture.



Reinforcement profiles - order codes

	Ref. No.
For coupled 12 & 24 modules enclosures	885235 ⁽¹⁾
For coupled 12 & 36 modules enclosures	885236 ⁽¹⁾
For coupled 24 & 12 & 24 modules enclosures	885237 ⁽¹⁾
For coupled 36 & 12 & 36 modules enclosures	885238 ⁽¹⁾
For coupled 36 & 12 & 24 modules enclosures	885239 ⁽¹⁾
Hooks to mount on sides (set of 4 hooks)	885240

(1) Vertical wall mounting supports 885256 included in reinforcement profiles.



✓ For side mounting brackets a special set **885240** has to be ordered additionally. Only for horizontal wall mounting.

Cable entry plates

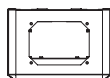
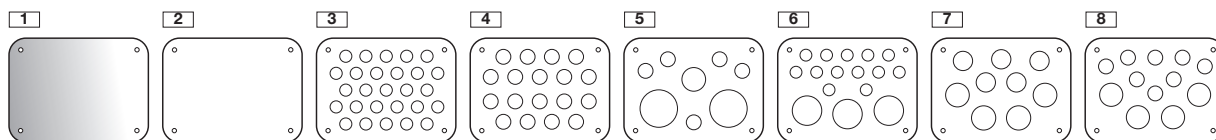
The enclosures are delivered without cable entry plates. The number and type of cable entry plates should be ordered following the table below.

Made in glass fibre reinforced polyester.

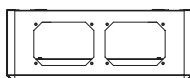


Cable entry plates - order codes

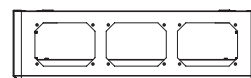
Type	Floor standing			Wall mounting			Ref. No.
	12 modules	24 modules	36 modules	12 modules	24 modules	36 modules	
Plain metal IP40 (RAL 9006) 1	1	2	3	2	4	6	885287
In polyester IP43 (RAL 7035)							
Plain 2	1	2	3	2	4	6	885228
27xM20 3	1	2	3	2	4	6	885229
18xM25 4	1	2	3	2	4	6	885230
2xM63 + 1xM40 + 5xM25 5	1	2	3	2	4	6	885231
3xM50 + 13xM20 6	1	2	3	2	4	6	885232
4xM40 + 5xM32 7	1	2	3	2	4	6	885233
4xM40 + 8xM25 8	1	2	3	2	4	6	885234



12 modules: 1 entry plate

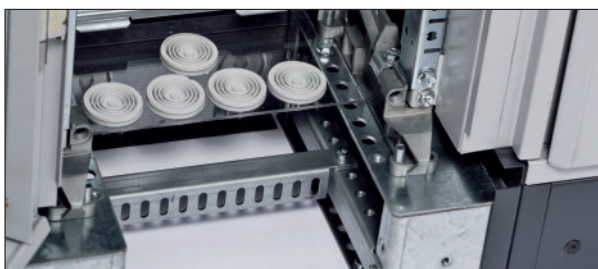


24 modules: 2 entry plates



36 modules: 3 entry plates

Floor bases



Cable fixation



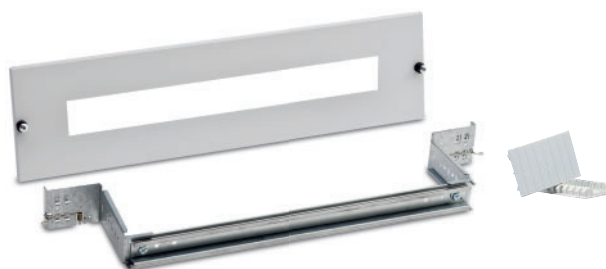
Separation for floor base

	Ref. No.	Ref. No.	Ref. No.
	12 modules	24 modules	36 modules
Floor base height - 100 mm	885084	885085	885086
Horizontal cutted separation (set including cable glands)	885087	885088	885089
Horizontal plain separation (set)	885090	885091	885092
Set of cable fixation	885093	885094	885095

Functional units for modular devices

Content

- DIN rail
- Supports to fix the rear panel profiles
- Coverplate with cut-out
- Blanking plate
- Fixation elements



Functional units for modular devices

	Height (mm)	Ref. No.	Ref. No.	Ref. No.
		12 modules	24 modules	36 modules
DIN rail for devices	150	885098	885100	885103
	200	885099	885101	885104
DIN rail for Fixwell™ devices	150	-	885102	885105
DIN rails for MCBs Hti/Dilos 40/160A + busbars	150	-	885096 ⁽¹⁾	885097 ⁽²⁾

(1) DIN rail for 12 modules + busbar 160A
 (2) DIN rail for 18 modules + busbar 160A

Functional units for terminals

Content

- DIN rail adjustable in height
- Supports to fix the rear panel profiles
- Plain coverplate
- Fixation elements



Functional units for terminals

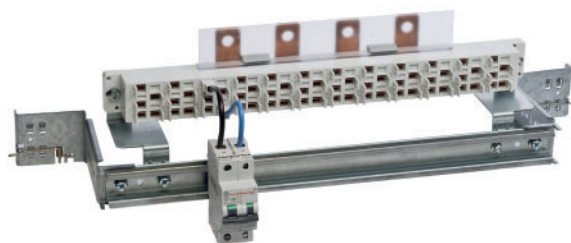
	Height (mm)	Ref. No.	Ref. No.	Ref. No.
		12 modules	24 modules	36 modules
1 horizontal DIN rail for terminals without coverplate	-	885241	885242	885243
1 horizontal DIN rail for terminals	150	885149	885150	885151
1 vertical DIN rail for terminals*	900	885152	-	-
3/4 vertical DIN rails for terminals**	300	-	885153	885154
Earth bar	-	885264*	885138**	885138**

Moduclic plug-in distribution system

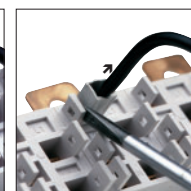
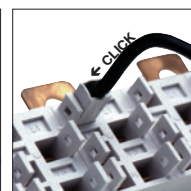
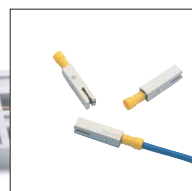
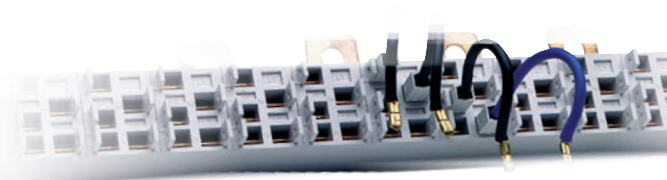
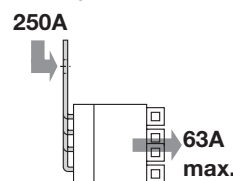
Moduclic is a secondary plug-in distribution system of 250A, 660V~ 60kA peak. Moduclic is a busbar for modular devices and this as well for MCBs as for comfort functions. Moduclic is mounted directly on the DIN-rail and is **independent** the type of **system enclosure**: Quixtra or VP-System.

The main advantage of Moduclic is the **safety** aspect (IP20): adding or **removing** electrical circuits in a panel board **without disconnecting** the power. All outgoing circuits stay in the operational function, due to the fact that all operations are done using the **insulated click connection**, without touching the live parts, even not when using an insulated tool.

Standard connections of 6 mm² (up to 40A) are shipped with Moduclic. The Moduclic distribution system is suitable for integration in **all system enclosures** conform to **IEC 60439-1**



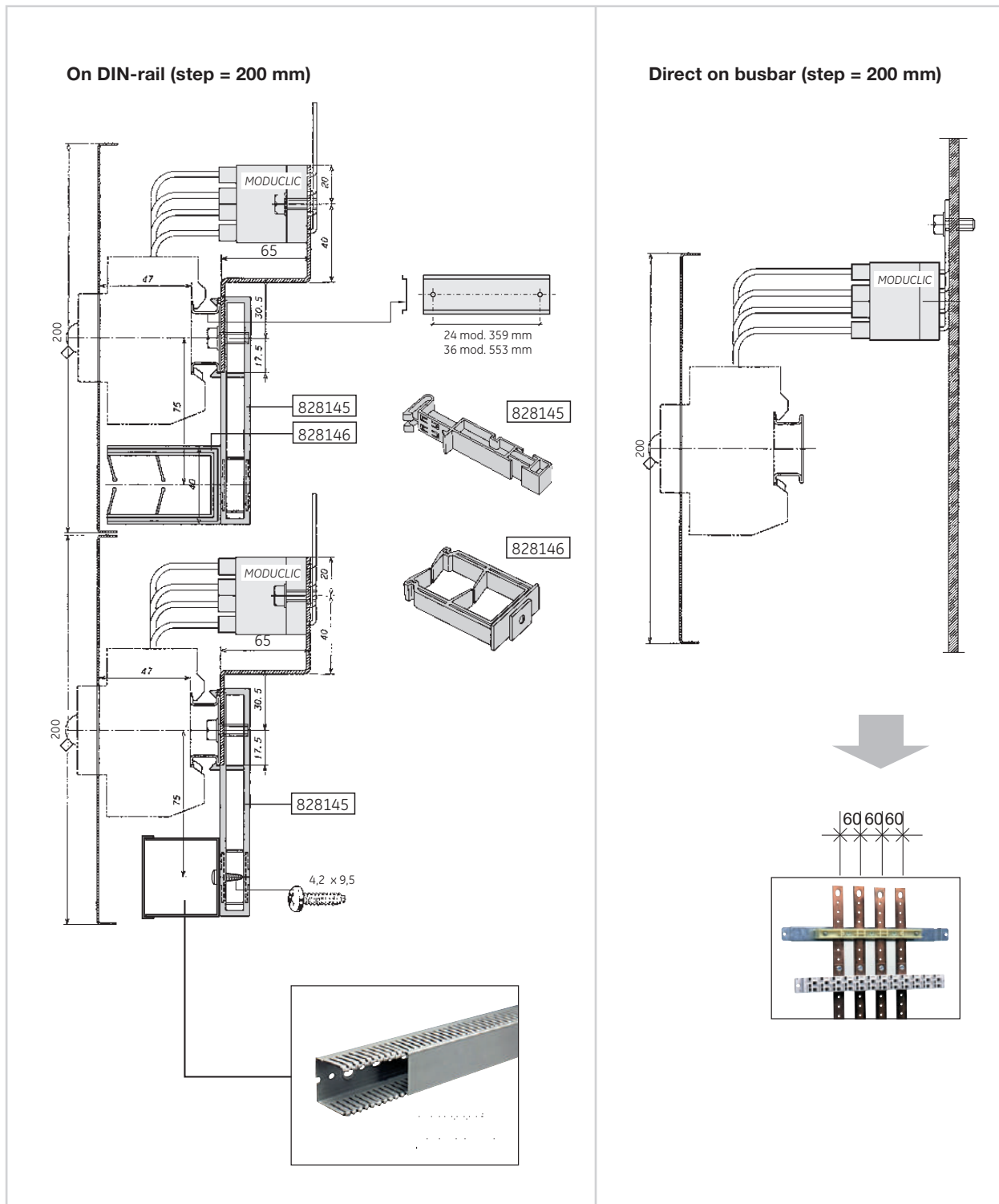
24 and 36 modules - 3P+2N - IP20



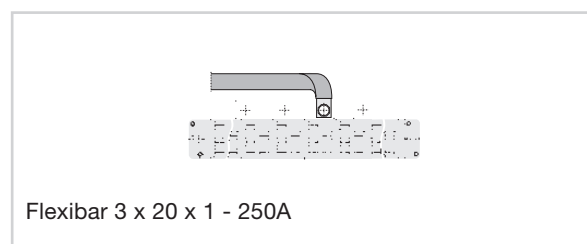
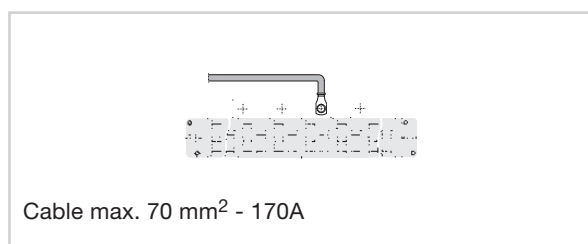
Moduclic distribution system

Description	Cables	Cable section (mm ²)	Cable length (mm)	Ref. No.	Pack
Moduclic 24 modules 3P+2N + cables 3P+N	18 black cables 6 blue cables	6 6	120 120	880884	1
Moduclic 24 modules 3P+2N + cables mono	12 black cables 12 blue cables	6 6	120 120	880885	1
Moduclic 24 modules 3P+2N without cables	-	-	-	880886	1
Moduclic 36 modules 3P+2N + cable 3P+N	27 black cables 9 blue cables	6 6	120 120	885265	1
Moduclic 36 modules 3P+2N + cables mono	18 black cables 18 blue cables	6 6	120 120	885266	1
Moduclic 36 modules 3P+2N without cables	-	-	-	885267	1
Cables with end connector	6 black cables 6 blue cables 6 black cables 6 blue cables	6 6 10 10	120 120 120 120	880887 880888 880889 880890	1 1 1 1
Stripped cables	6 black cables 6 blue cables 6 black cables 6 blue cables	6 6 10 10	320 320 320 320	880891 880892 880893 880894	1 1 1 1
Cables for 2 x 4P MCBs - 6 black & 2 blue	8 cables 8 cables 8 cables 8 cables	6 10 6 10	120 120 320 320	880926 880928 880930 880932	1 1 1 1
Cables for 4 x 2P MCBs - 4 black & 4 blue	8 cables 8 cables 8 cables 8 cables	6 10 6 10	120 120 320 320	880927 880929 880931 880933	1 1 1 1
Plugs	1.5-2.5 mm ² blue, 10 plugs 4-6 mm ² yellow, 10 plugs			880895 880896	1 1

Mounting of Moduclic



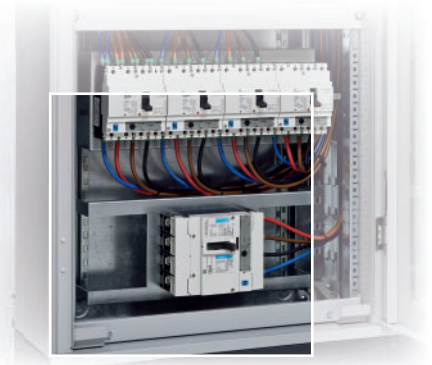
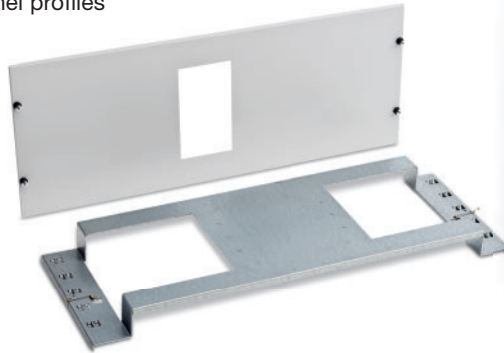
Incoming connections



Functional units for MCCBs - Record Plus

Content

- Mounting plate
- Supports to fix to the rear panel profiles
- Coverplate with cut-out
- Fixation elements



Horizontal assembly

Record Plus frame size	In (A)	Poles	RCD position	Height (mm)	12 modules		24 modules		36 modules	
					# MCCBs	Ref. No.	# MCCBs	Ref. No.	# MCCBs	Ref. No.
FD	160	3/4 poles	-	150	-	-	1	885117	-	-
FD+RCD	160	3 poles	Bottom	150	-	-	1	885114	-	-
FD+RCD	160	4 poles	Bottom	150	-	-	1	885115	-	-
FE	250	3/4 poles	-	200	-	-	1	885121	1	885131
FE+RCD	250	3/4 poles	Bottom	200	-	-	1	885119	1	885130
FG	630	3 poles	-	300	-	-	-	-	1	885134
FG	630	4 poles	-	300	-	-	-	-	1	885135
FG +RCD	630	3 poles	Bottom	300	-	-	-	-	1	885132
FG +RCD	630	4 poles	Bottom	300	-	-	-	-	1	885133

Vertical assembly

Record Plus frame size	In (A)	Poles	RCD position	Height (mm)	12 modules		24 modules		36 modules	
					# MCCBs	Ref. No.	# MCCBs	Ref. No.	# MCCBs	Ref. No.
FD	160	3/4 poles	-	300/250 ⁽¹⁾	1	885107	4	885116	6	885127
FD+RCD	160	3/4 poles	Lateral	300/250	1	885106	2	885116	3	885127
FE	250	3/4 poles	-	450	1	885109	3	885120	4	885129
FE+RCD	250	3/4 poles	Bottom	600	1	885108	3	885118	4	885128
FG	630	3 poles	-	600	1	885112	1	885124	-	-
FG	630	4 poles	-	600	1	885113	1	885125	-	-
FG +RCD	630	3 poles	Bottom	600	1	885110	1	885122	-	-
FG +RCD	630	4 poles	Bottom	600	1	885111	1	885123	-	-

(1) Height 300 mm in 12 modules
Height 250 mm in 24 and 36 modules.

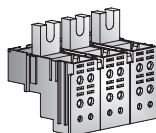
Distribution terminals for Record Plus

Especially designed to allow the use of the moulded case circuit breaker Record Plus FE frame as a mains device with cables distributing the load over multiple outgoing circuits (or lines of multiple outgoing circuits).

The terminals are available as a three or four pole set allowing the line or load side of the breaker to be equipped. The sets consist of a number of fully insulated single pole units that can be assembled into a multipole distribution block before they are mounted on the breaker.

External connectors

Connector 6 copper cable cores 2.5 mm² up to 35 mm²
Set for equipping the line or load side of a breaker



Frame size	Conductors	Size of conductors	Strippable length	Max. torque on lug bolt
FE160/250	max. 6	4 x 2.5 - 35 mm ²	12 mm	6 Nm
	-	2 x 2.5 - 16 mm ²	12 mm	3 Nm

External connectors

	Ref. No.	Pack
Set 3 pole	880954	1
Set 4 pole	880955	1

Functional units for loadbreak disconnectors - Dilos

Content

- Mounting plate
- Supports to fix to the rear panel profiles
- Coverplate with cut-out
- Fixation elements



Horizontal assembly

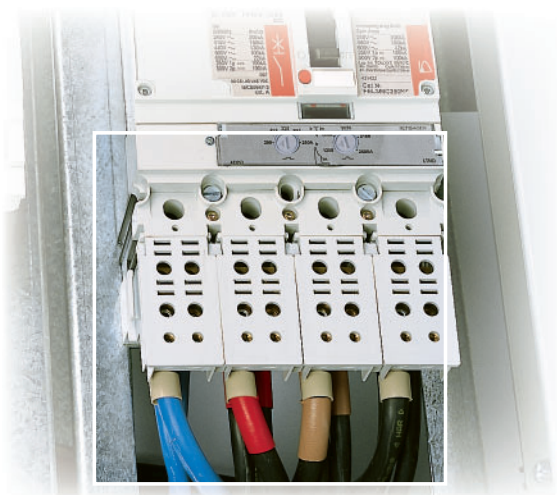
Dilos size	In (A)	Poles	Height (mm)	Ref. No.	Ref. No.	Ref. No.
				12 modules	24 modules	36 modules
Dilos 1H ⁽¹⁾	-	3/4 poles	300	-	885140	-
Dilos 3 ⁽¹⁾	250-315	3/4 poles	300	-	885142	885146
Dilos 4 ⁽²⁾	400-630	3/4 poles	450	-	885144	885147

Vertical assembly

Dilos size	In (A)	Poles	Height (mm)	Ref. No.	Ref. No.	Ref. No.
				12 modules	24 modules	36 modules
Dilos 1/2	-	3/4 poles	300	885148	-	-
Dilos 1H ⁽¹⁾	-	3/4 poles	300	885136	885139	-
Dilos 3 ⁽¹⁾	250-315	3/4 poles	300	885137	885141	885145
Dilos 4 ⁽²⁾	400-630	3/4 poles	600	-	885143	-

(1) Use handle 730649 or 730650

(2) Use handle 730653



Busbars


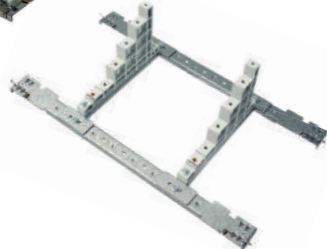
Staircase busbars

The staircase busbar can be assembled in vertical position in the 12 modules enclosure and in horizontal position in the 24 and 36 modules enclosures.

- No electrical device can be mounted at the same level as the staircase busbar. Only a blind coverplate should be mounted over it.
- The kits for the vertical busbars include the metal supports to fix the holder in horizontal position in the enclosure.
- The kits for horizontal busbars includes the support to fix the holders in vertical position in the enclosure and all fixation elements.



Staircase busbars holders

	Ref. No.	Ref. No.	Ref. No.
	12 modules	24 modules	36 modules
 Vertical copper bars (support + isolator)	885197	-	-
 Horizontal copper bars (support + isolators)	-	885198	885199



Rear mounted busbars

The rear mounted busbar can be assembled in vertical or in horizontal position in all type of enclosures.

Electrical devices can be mounted over the rear busbars: modular devices, terminals and MCBs Record Plus FD/ FE frames⁽¹⁾.

- The kits for the vertical busbars includes the metal supports to fix the holder in horizontal position in the enclosure.
- The kits for horizontal busbars includes the support to fix the holders in vertical position in the enclosure and all fixation elements.

Rear mounted busbars holders

	Ref. No.	Ref. No.	Ref. No.
	12 modules	24 modules	36 modules
 Vertical copper bars	885191	885192	885193
 Horizontal copper bars	885194	885195	885196

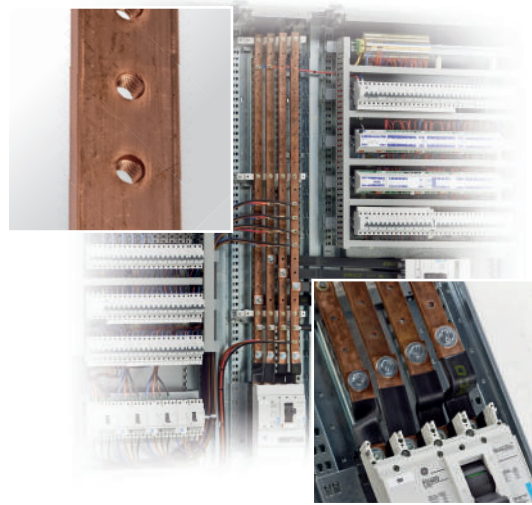
(1) In the 12 modules enclosures no devices can be mounted over the rear busbars.

Copper bars

The copper bars are common for the staircase busbars and for the rear mounted busbars.

The cross-section selection should be done based on the table below:

- Rated nominal current (In)
- Rated short-circuit current (Icw)



Busbar system

Cross section in mm		Type	Connection ⁽¹⁾	Spacing between ⁽²⁾ supports (mm)	Spacing between busbars (mm)	Max. Current rating Amp	Short-circuit withstand strength	
Phase bar	Neutral bar						I _{cw} (kA) - sec ⁽²⁾	I _{pk} (kA)
20x5	20x5	Standard	Plain	300	60	250	17.5 - 0.7	35
30x5	30x5	Standard	Plain	300	60	400	25 - 0.8	50
20x10	20x10	Standard	Plain	300	60	400	20 - 1	40
30x10	30x10	Standard	Plain	300	60	630	30 - 1	63
20x5	20x5	Standard	M6/25	300	60	250	17.5 - 0.35	35
30x5	30x5	Standard	M6/25	300	60	400	25 - 0.35	52.5
20x10	20x10	Standard	M6/25	300	60	400	20 - 0.75	40
30x10	30x10	Standard	M8/25	300	60	630	30 - 0.75	63
20x5	20x5	Staircase	M6/25	300	35	250	20 - 0.35	40
30x5	30x5	Staircase	M6/25	300	35	400	25 - 0.35	52.5
20x10	20x10	Staircase	M6/25	300	35	400	25 - 0.45	52.5
30x10	30x10	Staircase	M8/25	300	35	630	25 - 1	52.5

Copper bars



	Threaded holes ⁽¹⁾	Length (mm)	Ref. No.
Plain copper bar - 20x5mm	no	3000	885036
Plain copper bar - 30x5mm	no	3000	885204
Plain copper bar - 20x10mm	no	3000	885205
Plain copper bar - 30x10mm	no	3000	885206
Threaded copper bar - 20x5mm	M6	2000	885207
Threaded copper bar - 20x10mm	M6	2000	885208
Threaded copper bar - 30x5mm	M6	2000	885209
Threaded copper bar - 30x10mm	M8	2000	885210
4 threaded copper bars length 1m - 20x5 mm	M6	1000	880847
4 threaded copper bars length 1m - 32x5 mm	M6	1000	880850 ⁽³⁾
4 threaded copper bars length 1m - 30x10 mm	M8	1000	880851
Fastener bolts			
Bolts M6x16 mm (40 pcs)			880617
Bolts M8x20 mm (40 pcs)			880852

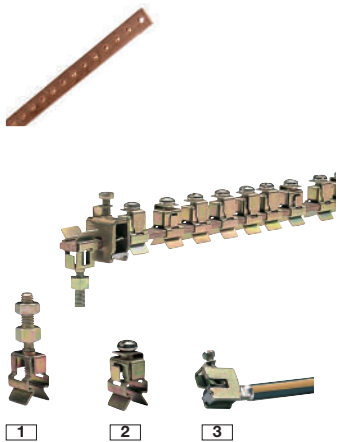
(1) Distance between holes: 25 mm
 (2) Other values on demand
 (3) Only for staircase busbar

Flexible copper



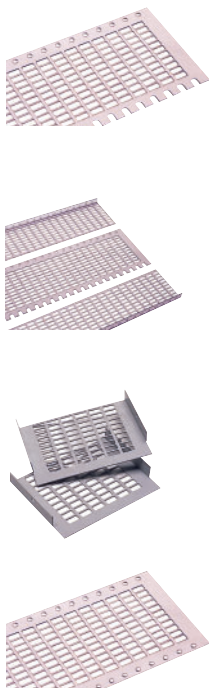
	Rated current (A)	Length (mm)	Ref. No.
Flexible copper 6x13x0.5	125	2000	886530
Flexible copper 2x20x1	160	2000	886532
Flexible copper 3x20x1	250	2000	828162
Flexible copper 4x32x1	400	2000	828163
Flexible copper connection between Record Plus FG and:			
staircase busbar 400A/630A in cable compartment			885211
staircase busbar 400A in cable compartment on right side from 36 mod. enclosure			885289
staircase busbar 400A in cable compartment on left side from 36 mod. enclosure			885290
staircase busbar 630A in cable compartment on right side from 36 mod. enclosure			885291
staircase busbar 630A in cable compartment on left side from 36 mod. enclosure			885292

Earth bars



	Ref. No.
Main earth bar for enclosure Cu 30x10	
12 modules	885261
24 modules	885262
36 modules	885263
Horizontal earth bar for enclosure Cu 12x4 + connectors	
12 modules	885225
24 modules	885226
36 modules	885227
1 Fixation clips M6 (set of 20 pcs)	880637
2 Connectors 16mm ² (set of 20 pcs)	880639
3 Connectors 35mm ² (set of 20 pcs)	880638


Protection shrouds



	Ref. No.
Frontal shroud for staircase busbar - length 1000mm	885200
Frontal and lateral (2) shrouds for staircase busbar - length 1000mm	885201
Top and bottom shroud for staircase busbar	885202
Frontal shroud for rear mounted busbar - length 1000mm	
for enclosure 12 modules	885126
for enclosure 24 and 36 modules	885203

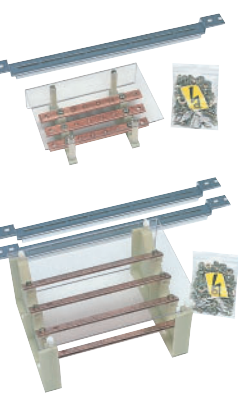
Separation screen Form 2

QuiXtra 630 can be upgraded to internal segregation Form 2 by adding separation screens for the busbars. The vertical separation screen has to be installed between two coupled enclosures, in modules of 150mm. Form 2 can not be achieved with the rear mounted busbar, if any electrical device is assembled over it.

Form 2 screens						
	Ref. No.		Ref. No.			
	12 modules		24 modules		36 modules	
	Vertical separation screen Form 2 - Height 150mm	885212	885212	885212	885212	
Horizontal separation screen Form 2	885213	885214	885214	885215		
Content <ul style="list-style-type: none"> • Isolated screen • Fixation elements 						

4-poles terminals

For DIN rail mounting		
Terminals	Ref. No.	
4P terminals for DIN rail mounting 63A	610022	
4P terminals for DIN rail mounting 80A	880614	
4P terminals for DIN rail mounting 125A	880742	
4P terminals for DIN rail mounting 160A	610020	
Shrouding for 4P terminal 160A	610021	

For mounting on horizontal supports						
	Ref. No.		Ref. No.			
	12 modules		24 modules		36 modules	
	4P terminal 250A (coverplate 200mm min.)	885217	885220	885220	885223	
4P terminal 400A (coverplate 300mm min.)	-	885221	885221	885224		
Content <ul style="list-style-type: none"> • 4P terminals • Fixing supports • Protective plate • Fixation elements 						

Cover plates

Blind cover plates

- Blind cover plate
- Fixation elements



Recessed cover plates

- Recessed 30 mm blind cover plate
- Fixation elements



Meter cover plates

- Cover plate with 1 cut-out and 2 or 4 pre-punched cut-outs
- Hinges
- Fixation elements



Push-buttons cover plates

- Cover plate with pre-punched cut-outs for Series P9 push-buttons: 10 in 24 modules and 12 in 36 modules
- Hinges
- Fixation elements



Cover plates



Height (mm)	Description	Ref. No.	Ref. No.	Ref. No.
		12 modules	24 modules	36 modules
50	Blind	885166	885167	885168
100	Blind	887127	887132	887137
150	Series P9 push-buttons, 10 or 12 cut-outs	-	885189	885190
150	Blind	885169	885170	885171
150	Meters 4 or 6 cut-outs 72x72	-	885185	885186
150	Meters 3 or 5 cut-outs 96x96	-	885187	885188
150	Cut-out for modular devices	885178	885179	885180
150	Recessed & cut-out for cable glands	-	885181	885182
200	Blind	885172	885173	885174
250	Blind	887128	887133	887138
300	Blind	885175	885176	885177
300	Recessed and cut-out for cable glands	-	885183	885184
400	Blind	887129	887134	887139
600	Blind	885161	887135	887140
750	Blind	885162	-	-
900	Blind	885163	-	-
1050	Blind	885164	-	-
1200	Blind	885165	-	-





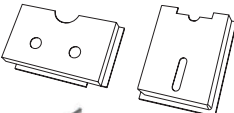

Mounting plates


Height (mm)	Cover plate height (mm)	Ref. No.	Ref. No.	Ref. No.
		12 modules	24 modules	36 modules
130	150	885155	885156	885157
280	300	885158	885159	885160

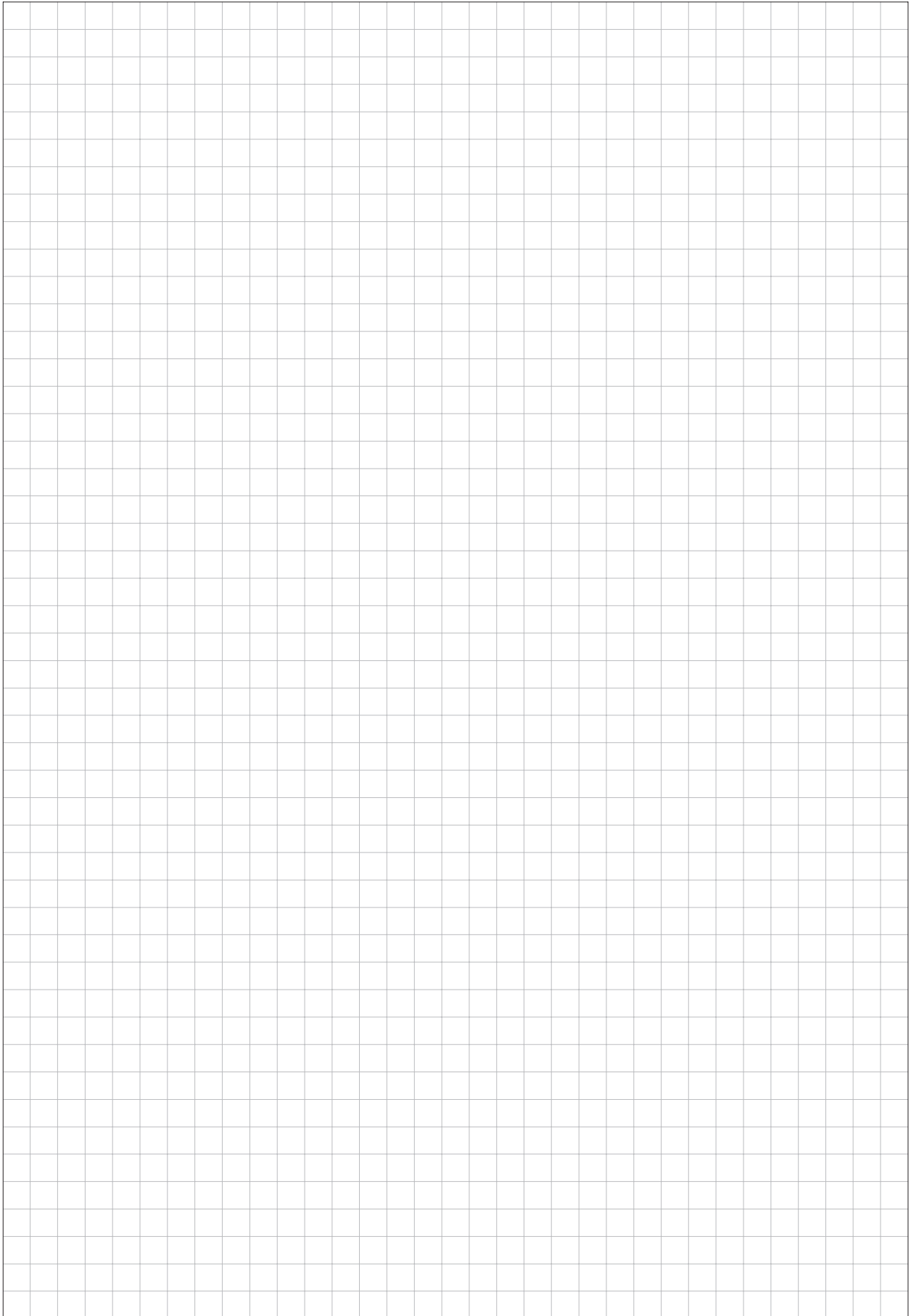


Accessories/spare parts

	Description	Ref. No.	Ref. No.	Ref. No.
		12 modules	24 modules	36 modules
	IP43 profile	885312	885313	885314
	IP43 kit in the back	885286	885286	885286
	Cable support	885244	885245	885246
	Lighting unit	-	885247	885248
	Adhesive label holder	885249	885250	885251
	Spreader box for enclosure	885282	885283	885284

	Description	Ref. No.
	Paint touch-up kit RAL9006	885252
	Paint touch-up kit RAL7024	885253
	Support for cable duct (set of 4 pcs)	885254
	Blanking strips for 45 mm cut-out - length 1000mm - RAL 7035	828056
	Blanking strips for 45 mm cut-out - length 72mm - RAL 7035 (set of 4 pcs)	610142
	Vertical wall mounting brackets (set of 4 brackets)	885256
	Screw M6x20 (bag of 50)	885257
	Screw M8x25 (bag of 50)	885258
	Captive washer for M6x20 (bag of 100)	885259
	Captive washer for M8x25 (bag of 100)	885260
	Cage nut M6 (bag of 100)	885288
	Set cable tray support (20 supports)	828145
	Set cable tray (10 trays)	828146
	Document pocket DIN A5	832000
	Document pocket DIN A4	811516
	Hinges for cover plate (set of 2 pcs)	885285
	Earthing cable for door	885295
	Lifting brackets	885240

	Description	Ref. No.	Ref. No.	Ref. No.
		3 - 4 - 5 rows	6 - 7 - 8 rows	9 - 10 - 12 rows
	Round lock V2432E with key	885300	885304	885308
	Round lock 405E with key	885302	885306	885310
	Round lock 455E with key	885303	885307	885311



<i>Miniature circuit breakers</i>	<i>A</i>
<i>Residential current circuit breakers</i>	<i>B</i>
<i>Busbar systems</i>	<i>C</i>
<i>Comfort functions/Energy control</i>	<i>D</i>
<i>Residential enclosures</i>	<i>E</i>
<i>Contactors/Soft starters/Speed drives</i>	<i>F</i>
<i>Overload relays</i>	<i>G</i>
<i>Control and signalling units</i>	<i>H</i>
<i>Manual motor starters</i>	<i>I</i>
<i>Moulded case circuit breakers</i>	<i>J</i>
<i>Air circuit breakers</i>	<i>K</i>
<i>Fuse systems/Loadbreak disconnectors</i>	<i>L</i>
<i>General purpose enclosures</i>	<i>M</i>
<i>System enclosures</i>	<i>N</i>
<i>Numerical index</i>	<i>X</i>

X.3 Numerical index by reference number

Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

Numerical index by Reference number

Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page
103000		107452	I.6	120894	F.29	129223	F.32	133581	F.18	135724	F.9
103751	F.16	107453	I.6	120895	F.29	129224	F.32	133582	F.18	135728	F.9
103758	F.16	107454	I.6	120896	F.29	129225	F.32	133583	F.18	135757	F.13
103765	F.16	107455	I.6	120897	F.29	129226	F.32	133584	F.18	135769	F.13
103772	F.16	107456	I.6	120898	F.29	129227	F.32	133586	F.17	135771	F.13
103779	F.16	107457	I.6	120899	F.29	129228	F.32	133588	F.18	135775	F.13
103805	F.16	107458	I.8	120900	F.29	129229	F.32	133589	F.18	135777	F.13
103806	F.16	107459	I.8	120901	F.29	129230	F.32	133590	F.18	135780	F.13
103807	F.16	107460	I.8	120902	F.29	129231	F.32	133591	F.11	135781	F.14
107000		107461	I.8	120903	F.29	129232	F.32	133592	F.11	135782	F.14
107035	I.11	107462	I.8	120904	F.29	129233	F.32	133593	F.11	135783	F.14
107036	I.11	107463	I.8	120905	F.29	129234	F.32	133594	F.11	135784	F.14
107037	I.11	107464	I.8	120906	F.29	129257	F.32	133595	F.11	135785	F.14
107038	I.11	107465	I.8	120907	F.29	129258	F.32	133596	F.11	135786	F.14
107039	I.11	107466	I.8	120908	F.29	129259	F.32	133597	F.11	135787	F.19
107040	I.11	107467	I.6	120909	F.29	129260	F.32	133598	F.11	135791	F.11
107041	I.11	107468	I.6	120910	F.29	129261	F.32	133599	F.11	135796	F.14
107042	I.11	107469	I.6	120954	F.32	129262	F.32	133600	F.11	135803	F.14
107043	I.11	107470	I.6	120957	F.32	129263	F.32	133601	F.25	135806	F.17
107044	I.11	107471	I.6	120958	F.32	129264	F.32	133602	F.25	135807	F.17
107045	I.11	107472	I.6	120959	F.32	129265	F.32	133603	F.25	135819	F.13
107046	I.11	107473	I.6	120960	F.32	129266	F.32	133604	F.25	135822	F.13
107047	I.11	107474	I.6	120961	F.32	129267	F.32	133605	F.25	135826	F.13
107048	I.11	107475	I.6	120962	F.32	129268	F.32	133606	F.11	135839	F.13
107049	I.11	107476	I.6	120963	F.32	129269	F.32	133607	F.11	135842	F.13
107050	I.11	107477	I.6	120964	F.32	129270	F.32	133608	F.11	135846	F.13
107051	I.11	107478	I.6	120965	F.32	129271	F.32	133609	F.11	135937	F.19
107052	I.11	107479	I.6	120966	F.32	129272	F.32	133610	F.11	136000	
107054	I.11	107480	I.6	120967	F.32	129273	F.32	133631	F.27	136005	F.13
107055	I.11	107481	I.6	120968	F.32	129274	F.32	133700	F.14	136024	F.19
107108	I.12	107482	I.8	120969	F.32	129275	F.32	133704	F.14	136038	F.19
107183	I.10	107483	I.8	120970	F.32	129511	F.32	133725	F.14	136048	F.14
107188	I.11	107484	I.8	120971	F.32	129512	F.32	133766	F.17	136049	F.14
107189	I.11	107485	I.8	120972	F.32	129513	F.32	133767	F.17	136053	F.14
107395	I.5	107486	I.8	120973	F.32	129539	F.32	133768	F.17	136054	F.14
107396	I.5	107487	I.8	120974	F.32	129540	F.32	133769	F.17	136055	F.18
107397	I.5	107488	I.8	120975	F.32	129541	F.32	133773	F.18	136056	F.18
107398	I.5	107489	I.8	120976	F.32	129542	F.32	133774	F.18	136057	F.18
107399	I.5	107490	I.8	120977	F.32	129543	F.32	133876	F.19	136058	F.18
107400	I.5	108000		124000		129544	F.32	133889	F.9	136060	F.18
107401	I.5	108223	F.36	124901	H.3	129545	F.32	135000		136062	F.18
107402	I.5	108227	F.36	124908	H.3	129546	F.32	135002	F.17	136157	I.9
107403	I.5	114000		124911	H.3	129547	F.32	135003	F.17	136158	I.9
107404	I.5	114066	G.4	124915	H.3	129548	F.32	135004	F.17	136160	I.9
107405	I.5	114067	G.4	124916	H.3	129549	F.32	135005	F.18	136161	I.9
107406	I.5	114068	G.4	124917	H.3	129550	F.32	135006	F.18	136162	I.9
107407	I.5	114069	G.4	124929	H.3	129551	F.32	135007	F.18	136163	I.9
107408	I.5	114070	G.4	124930	H.3	129552	F.32	135008	F.18	136164	I.9
107409	I.5	114071	G.4	125000		129553	F.32	135010	F.13	136165	I.9
107410	I.7	114072	G.4	125565	F.10	129554	F.32	135012	F.13	136166	I.9
107411	I.7	114073	G.4	125583	F.13	129877	F.45	135014	F.17	136167	I.9
107412	I.7	114074	G.4	125587	F.13	129878	F.45	135015	F.17	136168	I.9
107413	I.7	114075	G.4	125594	F.11	129879	F.45	135016	F.17	136169	I.9
107414	I.7	114076	G.4	125610	G.2	133000		135017	F.17	136170	I.9
107415	I.7	114077	G.4	125718	F.13	133101	F.17	135018	F.17	136171	I.9
107416	I.7	114078	G.4	125848	F.9	133102	F.11	135019	F.17	136172	I.9
107417	I.7	114079	G.4	125868	F.24	133153	F.9	135020	F.17	136173	I.10
107418	I.7	114080	G.4	125877	F.24	133164	F.10	135021	F.17	136174	I.10
107419	I.5	114081	G.4	125905	G.2	133258	F.11	135022	F.17	136175	I.10
107420	I.5	114082	G.4	129000		133259	F.11	135023	F.17	136176	I.10
107421	I.5	114083	G.4	129052	F.32	133261	F.11	135024	F.13	136177	I.10
107422	I.5	114084	G.4	129053	F.32	133262	F.11	135028	F.17	136178	I.10
107423	I.5	114085	G.4	129148	F.48	133263	F.11	135029	F.17	136179	I.10
107424	I.5	114086	G.4	129149	F.48	133393	F.14	135030	F.17	136180	I.10
107425	I.5	116000		129150	F.48	133397	F.14	135031	F.17	136181	I.10
107426	I.5	116300	F.36	129151	F.48	133400	F.14	135032	F.14	136182	I.10
107427	I.5	116301	F.36	129152	F.48	133404	F.14	135034	F.14	136183	I.10
107428	I.5	116302	F.36	129153	F.48	133407	F.13	135036	F.14	136184	I.10
107429	I.5	116573	F.18	129155	F.48	133411	F.13	135037	F.14	136185	I.10
107430	I.5	116575	F.18	129156	F.48	133435	F.13	135042	F.13	136186	I.10
107431	I.5	116576	F.18	129157	F.48	133439	F.13	135046	F.13	136187	I.10
107432	I.5	116577	F.18	129158	F.48	133442	F.14	135049	F.14	136188	I.10
107433	I.5	116578	F.18	129159	F.48	133446	F.14	135051	F.14	136189	I.10
107434	I.7	116579	F.18	129165	F.45	133456	F.13	135052	F.13	136190	I.10
107435	I.7	116580	F.18	129166	F.45	133460	F.13	135054	F.14	136191	I.10
107436	I.7	116581	F.18	129167	F.45	133463	F.14	135055	F.13	136192	I.10
107437	I.7	116582	F.18	129168	F.45	133467	F.14	135061	F.13	136193	I.10
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107440	I.7	116612	F.19	129175	F.45	133488	F.14	135073	F.17	136196	I.10
107441	I.7	116662	F.22	129177	F.45	133498	F.13	135077	F.17	136197	I.10
107442	I.7	116780	F.14	129213	F.32	133502	F.13	135089	F.14	136198	I.10
107443	I.6	120000		129214	F.32	133505	F.14	135090	F.14	136199	I.10
107444	I.6	120881	F.29	129215	F.32	133509	F.14	135103	F.14	136200	I.10
107445	I.6	120882	F.29	129216	F.32	133523	F.13	135104	F.13	136201	I.10
107446	I.6	120883	F.29	129217	F.32	133526	F.14	135112	F.14	136202	I.10
107447	I.6	120884	F.29	129218	F.32	133535	F.19	135122	F.10	136203	I.10
107448	I.6	120885	F.29	129219	F.32	133556	F.19	135126	F.13	136204	I.10
107449	I.6	120886	F.29	129220	F.32	133563	F.19	135127	F.13	136205	I.10
107450	I.6	120892	F.29	129221	F.32	133574	F.19	135710	F.9	136206	I.10
107451	I.6	120893	F.29	129222	F.32	133577	F.19	135718	F.9	136207	I.10

Reference number

Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page	Ref. No.	Page
136208	I.10	137381	F.9	143039	F.13	147205	H.13	147326	H.8	147480	H.5
136209	I.10	137408	F.9	143095	F.13	147206	H.5	147327	H.8	147481	H.5
136210	I.10	137430	F.9	143123	F.13	147207	H.5	147328	H.8	147482	H.5
136211	I.10	137525	F.24	143179	F.14	147208	H.5	147329	H.8	147483	H.5
136212	I.10	137539	F.24	143207	F.14	147209	H.5	147330	H.8	147484	H.5
136213	I.10	137554	F.24	143235	F.13	147210	H.5	147331	H.8	147485	H.5
136214	I.10	137558	F.22	143263	F.13	147211	H.5	147332	H.8	147486	H.5
136215	I.10	137592	G.2	143319	F.14	147218	H.5	147333	H.8	147487	H.5
136216	I.10	137594	G.2	143347	F.14	147219	H.5	147334	H.8	147488	H.5
136217	I.10	137604	F.12	143375	F.24	147220	H.5	147335	H.8	147489	H.8
136218	I.11	137612	F.9	143403	F.24	147224	H.8	147336	H.7	147490	H.8
136219	I.11	137613	F.9	143431	F.24	147225	H.8	147337	H.7	147491	H.8
136220	I.11	137614	F.9	143459	F.24	147226	H.8	147338	H.7	147492	H.8
136221	I.11	137615	F.9	143487	F.24	147227	H.8	147339	H.7	147493	H.8
136222	I.12	137619	F.9	143515	F.13	147228	H.8	147341	H.7	147494	H.8
136223	I.12	137620	F.9	143589	F.13	147229	H.8	147342	H.7	147495	H.8
136224	I.12	139000		143631	F.13	147230	H.8	147343	H.7	147496	H.8
136225	I.12	139600	G.3	143645	F.13	147231	H.8	147344	H.7	147497	H.8
136226	I.12	139601	G.3	143659	F.13	147232	H.8	147346	H.9	147498	H.8
136227	I.12	139602	G.3	143673	F.13	147234	H.8	147347	H.9	147499	H.8
136228	I.12	139603	G.3	143687	F.14	147235	H.8	147348	H.9	147500	H.8
136229	I.12	139604	G.3	143701	F.14	147236	H.4	147349	H.9	147501	H.4
136230	I.12	139605	G.3	143715	F.13	147237	H.4	147350	H.9	147502	H.4
136231	I.12	139606	G.3	143729	F.13	147238	H.4	147351	H.9	147503	H.4
136232	I.12	139607	G.3	143743	F.14	147241	H.4	147352	H.9	147504	H.4
136233	I.12	139608	G.3	143757	F.14	147242	H.6	147353	H.9	147505	H.4
136234	I.12	139609	G.3	143771	F.24	147254	H.13	147354	H.9	147506	H.4
136235	I.12	139610	G.3	143785	F.24	147255	H.13	147355	H.9	147507	H.6
136236	I.12	139611	G.3	143799	F.24	147256	H.13	147356	H.9	147508	H.6
136237	I.12	139612	G.3	143813	F.24	147257	H.13	147357	H.9	147509	H.6
136238	I.12	139613	G.3	143827	F.24	147258	H.13	147379	H.9	147510	H.6
136239	I.12	139614	G.3	143851	F.19	147259	H.13	147380	H.9	147511	H.6
136240	I.12	139615	G.3	143869	F.19	147260	H.5	147385	H.10	147512	H.6
136241	I.12	139616	G.3	147000		147261	H.5	147386	H.10	147513	H.6
136242	I.12	139617	G.3	147001	H.5	147262	H.5	147387	H.10	147514	H.6
136243	I.12	139618	G.3	147002	H.5	147263	H.5	147388	H.10	147515	H.6
136244	I.12	139619	G.3	147003	H.5	147264	H.5	147389	H.10	147516	H.6
136245	I.12	139620	G.3	147004	H.5	147265	H.5	147390	H.10	147517	H.6
136246	I.12	139621	G.3	147005	H.5	147266	H.5	147391	H.10	147518	H.6
136375	F.13	139622	G.3	147006	H.5	147267	H.5	147393	H.10	147519	H.13
136376	F.13	139623	G.3	147007	H.5	147268	H.5	147395	H.10	147520	H.13
136377	F.13	139624	G.3	147008	H.5	147269	H.5	147397	H.10	147521	H.13
136401	F.19	139625	G.3	147009	H.5	147270	H.5	147398	H.10	147522	H.13
136407	F.19	139626	G.3	147010	H.5	147271	H.5	147427	H.11	147523	H.13
136452	G.6	139627	G.3	147011	H.5	147273	H.5	147428	H.11	147524	H.13
136455	G.6	139628	G.3	147014	H.5	147274	H.5	147429	H.11	147525	H.5
136456	G.6	139629	G.3	147015	H.4	147275	H.5	147430	H.11	147526	H.5
136484	F.16	139630	G.3	147016	H.4	147276	H.5	147431	H.11	147527	H.5
136485	F.16	139631	G.3	147017	H.4	147277	H.5	147433	H.11	147528	H.5
136486	F.16	139632	G.3	147018	H.4	147278	H.5	147434	H.11	147529	H.5
136487	F.16	139633	G.3	147019	H.4	147280	H.5	147437	H.11	147530	H.5
136488	F.16	139634	G.3	147020	H.4	147281	H.4	147439	H.11	147531	H.5
136489	F.16	139635	G.5	147027	H.6	147282	H.4	147441	H.11	147532	H.5
136490	F.16	139636	G.5	147028	H.6	147283	H.4	147442	H.11	147533	H.5
136491	F.16	139637	G.5	147029	H.6	147284	H.4	147443	H.11	147534	H.5
136492	F.16	139638	G.5	147030	H.6	147285	H.4	147444	H.11	147535	H.5
136493	F.16	139639	G.5	147031	H.6	147286	H.4	147445	H.11	147538	H.5
136494	F.16	139640	G.5	147032	H.7	147287	H.4	147446	H.11	147543	H.6
136495	F.16	139641	G.5	147033	H.7	147288	H.4	147447	H.11	147544	H.6
136496	F.16	139642	G.5	147034	H.7	147289	H.4	147448	H.11	147545	H.6
136568	F.16	139643	G.5	147037	H.7	147290	H.4	147449	H.11	147548	H.7
136569	F.16	139644	G.5	147041	H.7	147291	H.4	147450	H.11	147553	H.8
136570	F.16	139645	G.5	147046	H.8	147292	H.4	147451	H.11	147558	H.7
136571	F.16	139646	G.5	147047	H.7	147293	H.6	147452	H.11	147563	H.8
136572	F.16	139647	G.5	147051	H.7	147294	H.6	147453	H.11	147568	H.8
136573	F.16	139648	G.5	147056	H.8	147295	H.6	147454	H.11	147573	H.7
136574	F.16	139649	G.5	147061	H.8	147296	H.6	147455	H.11	147588	H.9
136575	F.16	139650	G.3	147066	H.8	147297	H.7	147456	H.12	147615	H.9
136670	F.17	139651	G.3	147071	H.7	147298	H.7	147457	H.12	147625	H.10
136671	F.17	139652	G.3	147076	H.7	147299	H.7	147458	H.12	147627	H.10
136672	F.17	139653	G.3	147087	H.9	147300	H.7	147459	H.12	147675	H.11
136673	F.17	139654	G.3	147088	H.9	147301	H.7	147460	H.12	147692	H.12
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136731	F.22	139656	G.5	147114	H.9	147303	H.7	147462	H.12	147698	H.5
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136737	F.22	139659	G.5	147122	H.10	147306	H.7	147465	H.12	147701	H.5
136739	F.22	139660	G.3	147124	H.10	147311	H.8	147466	H.12	147702	H.5
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136994	F.24	139669	G.6	147199	H.12	147321	H.8	147475	H.5	147711	H.5
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148079	H.19	148231	H.14	167443	F.41	169101	F.33	169503	F.32	247291	F.20
148080	H.19	148234	H.18	167444	F.41	169102	F.33	169504	F.32	247292	F.20
148081	H.19	148235	H.18	167445	F.41	169103	F.33	169505	F.32	247293	F.20
148082	H.19	148237	H.16	167453	F.46	169104	F.33	169506	F.32	247294	F.20
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544296	C.6	552407	A.7	552592	A.9	552726	A.11	552857	A.11	552975	A.13
544327	C.6	552409	A.7	552593	A.9	552732	A.11	552858	A.11	552976	A.13
544344	C.6	552410	A.7	552594	A.9	552734	A.11	552859	A.11	552977	A.13
544346	C.8	552411	A.7	552595	A.9	552735	A.11	552860	A.11	552978	A.13
544347	C.8	552412	A.7	552596	A.9	552736	A.11	552861	A.11	552979	A.13
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546126	C.4	552423	A.7	552599	A.9	552739	A.11	552865	A.11	552982	A.13
546127	C.7	552425	A.7	552600	A.9	552740	A.11	552866	A.11	552983	A.13
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546139	C.4	552429	A.7	552604	A.9	552753	A.11	552870	A.11	552996	A.13
546142	C.4	552437	A.7	552605	A.9	552754	A.11	552871	A.11	552997	A.13
546143	C.4	552439	A.7	552606	A.9	552755	A.11	552872	A.11	552998	A.13
546152	C.4	552441	A.7	552607	A.9	552756	A.11	552876	A.11	552999	A.13
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546181	C.8	552443	A.7	552612	A.9	552758	A.11	552878	A.11	553000	A.13
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546197	C.6	552453	A.7	552617	A.9	552761	A.11	552881	A.11	553011	A.13
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546227	C.6	552457	A.7	552619	A.9	552772	A.11	552884	A.11	553014	A.13
546228	C.7	552458	A.7	552620	A.9	552773	A.11	552885	A.11	553015	A.13
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546252	C.6	552482	A.7	552645	A.9	552789	A.11	552902	A.11	553037	A.13
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604698	B.13	604789	B.15	604995	B.17	607889	B.21	608230	B.23	610328	E.13
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604700	B.13	604791	B.15	605120	B.10	607891	B.21	608232	B.23	610330	E.13
604701	B.13	604792	B.15	605121	B.10	607892	B.21	608233	B.23	610331	E.13
604702	B.13	604793	B.15	605122	B.10	607893	B.21	608234	B.23	610332	E.13
604703	B.13	604794	B.15	605123	B.10	607894	B.21	608235	B.23	610344	E.4
604704	B.15	604795	B.15	605124	B.10	607895	B.21	608236	B.23	610345	E.4
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604706	B.15	604797	B.15	605185	B.10	607897	B.21	608238	B.23	610355	E.5
604707	B.15	604798	B.15	605186	B.10	607898	B.21	608239	B.25	610368	E.14
604708	B.15	604799	B.15	605187	B.10	607899	B.21	608240	B.25	610369	E.14
604709	B.15	604800	B.15	605188	B.10	607900	B.21	608241	B.25	610370	E.14
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604712	B.15	604803	B.15	605206	B.10	607903	B.21	608244	B.25	610373	E.14
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604714	B.15	604805	B.15	605208	B.10	607905	B.21	608246	B.25	610375	E.14
604715	B.15	604806	B.15	605209	B.10	607906	B.21	608247	B.25	610380	E.9
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604722	B.15	604813	B.15	606448	B.25	607913	B.23	608254	B.25	610387	E.9
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604746	B.15	604855	B.19	606472	B.25	608000		610142	E.4	618521	E.7
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604768	B.15	604944	B.9	606494	B.25	608209	B.23	610277	E.9	619301	E.15
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604773	B.15	604949	B.9	607131	B.9	608214	B.23	610291	E.9	619319	E.15
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604778	B.15	604984	B.17	607157	B.10	608219	B.23	610303	E.9	619325	E.15
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619337	E.15	644897	C.6	666953	D.3	672501	A.23	676614	A.19	678408	A.55
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678564	A.57	681073	A.13	681211	A.11	691179	A.11	692886	A.37	693023	A.43
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730532	L.16	730988	L.6	731794	L.19	758195	K.9	758587	K.8	758820	K.16
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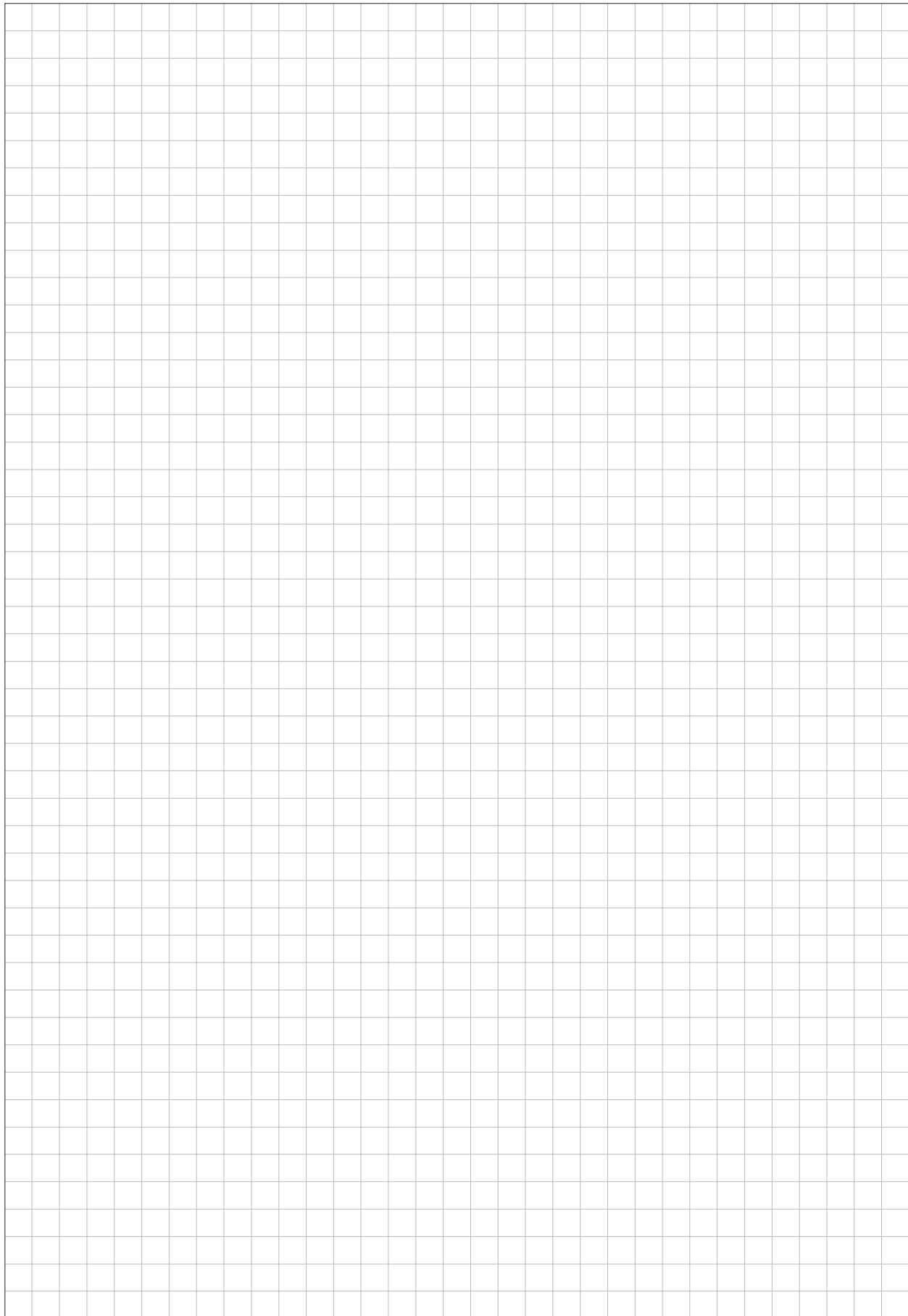
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880895	N.18	885075	N.13	885165	N.26	885260	N.27
880896	N.18	885076	N.13	885166	N.26	885261	N.24
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880927	N.18	885078	N.13	885168	N.26	885263	N.24
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880929	N.18	885080	N.13	885170	N.26	885265	N.18
880930	N.18	885081	N.13	885171	N.26	885266	N.18
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885061	N.13	885151	N.17	885245	N.27		
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885073	N.13	885163	N.26	885258	N.27		

The policy of GE is one of continuous improvement. The right is reserved to alter the design or any structural details of the products at any time without giving notice. October 2013
GE Industrial Solutions

Notes



Notes

A large grid of graph paper for taking notes, consisting of 20 columns and 30 rows of small squares.

GE Industrial Solutions

Berliner Platz 2-6
D-24534 Neumünster
Germany
Tel. +49/4321201-0
Fax +49/4321201-543
www.ge.com/ex/industrialsolutions



GE imagination at work