

ABL



SWITCHING DEVICES

AUGUST 2017



THE ORIGINAL. SINCE 1933.

SWITCHING DEVICES

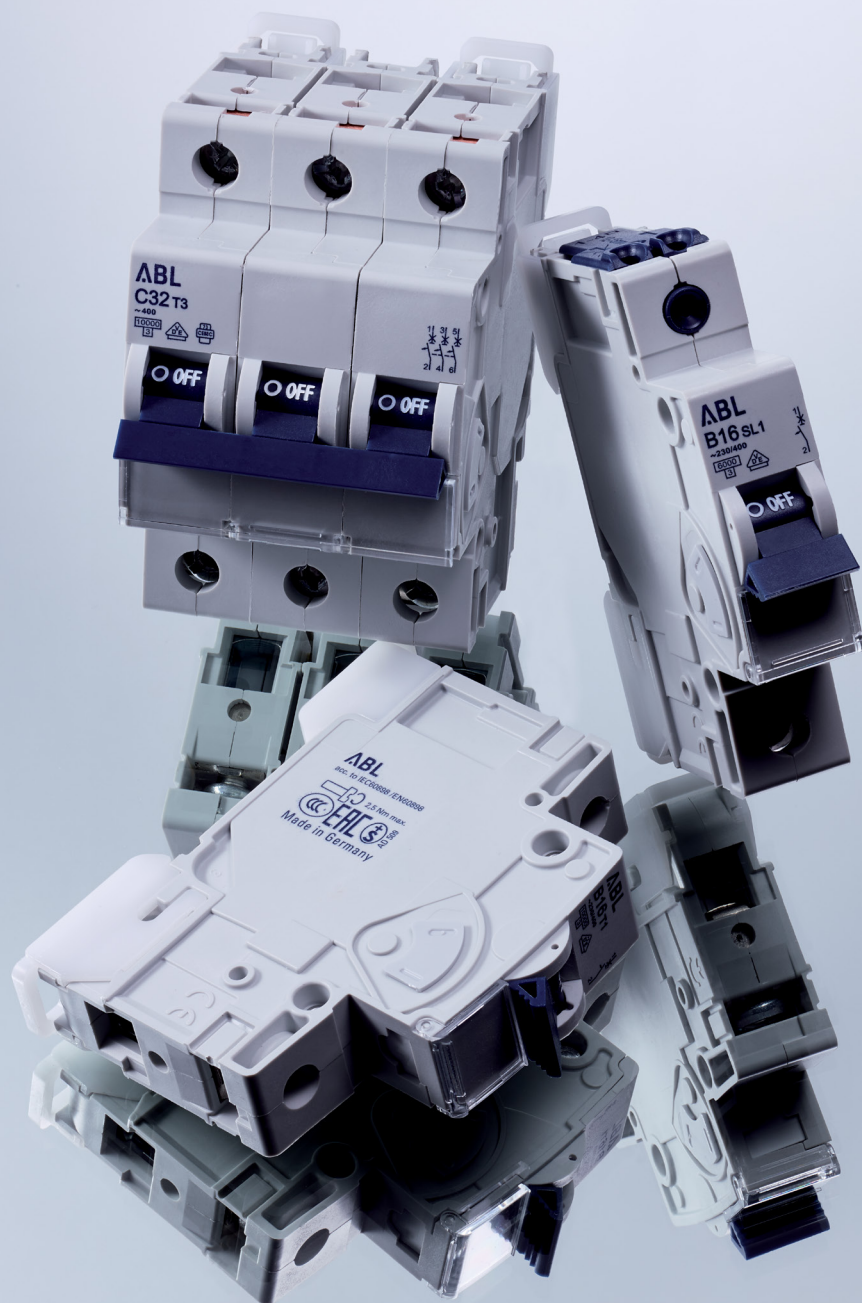
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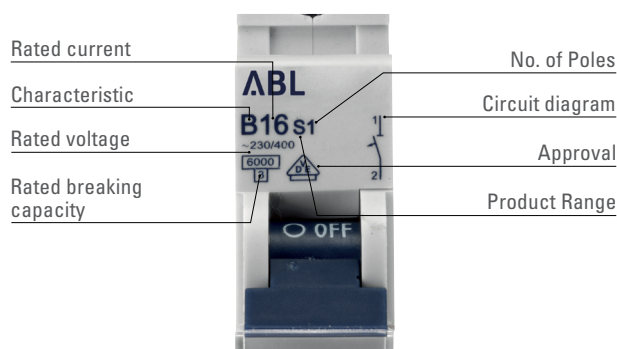
MINIATURE CIRCUIT BREAKERS

MCBs	6
S Product Range	8
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1+N Busbars	18

THE WINNING FEATURES OF ABL SURSUM SWITCHING DEVICES

1 FUNCTIONAL FORM

- User-friendly ergonomics
- Intuitive product coding
- Clearly marked ON/OFF positions



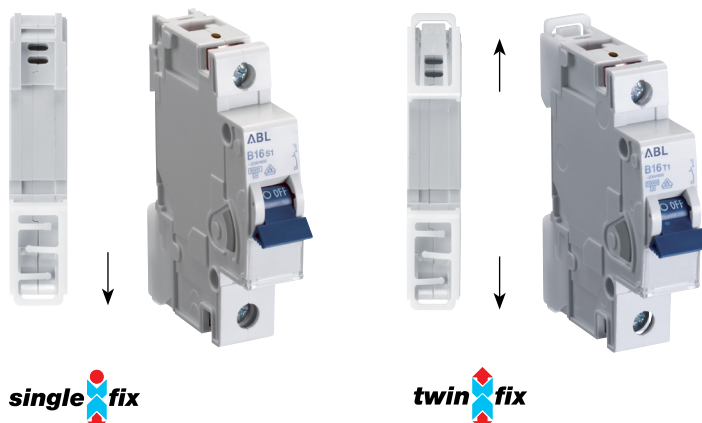
2 COMPACT DESIGN OFFERING MAXIMUM WIRING SPACE

At 82,5 mm height one of the smallest IEC
Miniature circuit breakers available



3 EASIER BUSBAR REMOVAL

Innovative fixing slides for easy removal from
the busbar, even when feeding from the top.



4 SWITCHING DEVICES

in a consistent and contemporary design



5 EXTENSIVE APPLICATION POSSIBILITIES

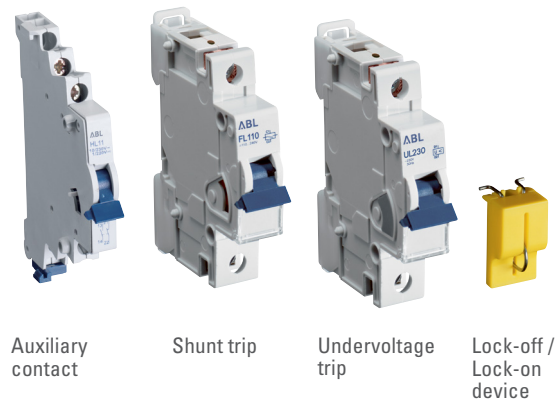
Four separate product ranges for different applications in Industry and house installations in AC and DC versions. With a wide range of trip characteristics and 22 nominal ratings between 0,3 A and 63 A it offers the best possible protection.

Wide range of international Certificates of approvals (VDE, Germanischer Lloyd, CCC, EAC, CEBC, SEV)

- S-Range
6kA in compliance with IEC60898
6A-32A, in B, C, Characteristic in 1-pole and 3-pole
- SL-Range
6kA in compliance with IEC60898
16A, in B Characteristic in 1-pole
- T-Range
10kA in compliance with IEC60898 and IEC 60947
0,3A-63A, in B, C, D, K, Z Characteristic in 1-pole, 1+N, 2-pole, 3-pole, 3+N, 4-pole
- DC-Range
6kA in compliance with IEC60898
0,5A-63A, in B, C, Characteristic in 1-pole, 125V and 2-pole 250V DC when serial connected

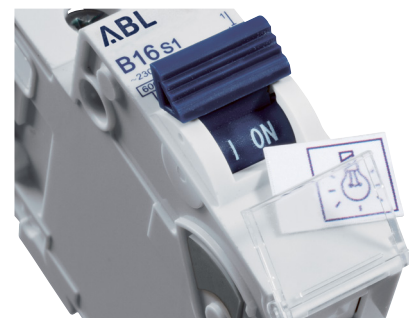
6 COMPLETE PRODUCT SYSTEM

- Full range of accessories for Circuit Breakers
- Auxilliary contacts can be mounted on the left and/or on the right side
- Common accessories for all product ranges



7 PROFESSIONAL LABELING SYSTEM

- with marking window
- Blank perforated labels available for one pole, two pole and three pole windows for convenient circuit indication



MINIATURE CIRCUIT BREAKERS S PRODUCT RANGE

6 kA B and C characteristic acc. to IEC 60898-1



6000
3

single  fix

RATED CURRENT I _n A	CHARACTERISTIC		WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.		

1-pole				
6	B6S1	C6S1	120	12
10	B10S1	C10S1	120	12
13	B13S1	C13S1	120	12
16	B16S1	C16S1	120	12
20	B20S1	C20S1	120	12
25	B25S1	C25S1	120	12
32	B32S1	C32S1	120	12



6000
3

single  fix

3-pole				
6	B6S3	C6S3	360	4
10	B10S3	C10S3	360	4
13	B13S3	C13S3	360	4
16	B16S3	C16S3	360	4
20	B20S3	C20S3	360	4
25	B25S3	C25S3	360	4
32	B32S3	C32S3	360	4

MINIATURE CIRCUIT BREAKERS SL PRODUCT RANGE

with screwless top terminal
B characteristic 6 kA acc. to IEC 60898-1



RATED CURRENT I_n A	CHARACTER- ISTIC	WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.		

einpilig			
16	B16SL1	120	12



plug  **power**

single  **fix**

MINIATURE CIRCUIT BREAKERS T PRODUCT RANGE

10 kA B, C and D characteristic acc. to IEC 60898-1

10 kA K and Z characteristic acc. to IEC 60947-2



RATED CURRENT I_n A	CHARACTERISTIC					WEIGHT g/EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.	D ITEM NO.	K ITEM NO.	Z ITEM NO.		

1-pole							
0.3		C0.3T1	D0.3T1	K0.3T1	Z0.3T1	120	12
0.5		C0.5T1	D0.5T1	K0.5T1	Z0.5T1	120	12
0.8		C0.8T1	D0.8T1	K0.8T1	Z0.8T1	120	12
1	B1T1	C1T1	D1T1	K1T1	Z1T1	120	12
1.6		C1.6T1	D1.6T1	K1.6T1	Z1.6T1	120	12
2	B2T1	C2T1	D2T1	K2T1	Z2T1	120	12
2.5		C2.5T1	D2.5T1	K2.5T1	Z2.5T1	120	12
3	B3T1	C3T1	D3T1	K3T1	Z3T1	120	12
3.5		C3.5T1	D3.5T1	K3.5T1	Z3.5T1	120	12
4	B4T1	C4T1	D4T1	K4T1	Z4T1	120	12
5	B5T1	C5T1	D5T1	K5T1	Z5T1	120	12
6	B6T1	C6T1	D6T1	K6T1	Z6T1	120	12
8		C8T1	D8T1	K8T1	Z8T1	120	12
10	B10T1	C10T1	D10T1	K10T1	Z10T1	120	12
13	B13T1	C13T1	D13T1	K13T1	Z13T1	120	12
16	B16T1	C16T1	D16T1	K16T1	Z16T1	120	12
20	B20T1	C20T1	D20T1	K20T1	Z20T1	120	12
25	B25T1	C25T1	D25T1	K25T1	Z25T1	120	12
32	B32T1	C32T1	D32T1	K32T1	Z32T1	120	12
40	B40T1	C40T1	D40T1	K40T1		125	12
50	B50T1	C50T1	D50T1 *	K50T1		135	12
63	B63T1	C63T1	D63T1 *	K63T1		135	12



1-pole with switched neutral							
0.3		C0.3T8	D0.3T8	K0.3T8		240	6
0.5		C0.5T8	D0.5T8	K0.5T8		240	6
0.8		C0.8T8	D0.8T8	K0.8T8		240	6
1	B1T8	C1T8	D1T8	K1T8		240	6
1.6		C1.6T8	D1.6T8	K1.6T8		240	6
2	B2T8	C2T8	D2T8	K2T8		240	6
2.5		C2.5T8	D2.5T8	K2.5T8		240	6
3	B3T8	C3T8	D3T8	K3T8		240	6
3.5		C3.5T8	D3.5T8	K3.5T8		240	6
4	B4T8	C4T8	D4T8	K4T8		240	6
5	B5T8	C5T8	D5T8	K5T8		240	6
6	B6T8	C6T8	D6T8	K6T8		240	6
8		C8T8	D8T8	K8T8		240	6
10	B10T8	C10T8	D10T8	K10T8		240	6
13	B13T8	C13T8	D13T8	K13T8		240	6
16	B16T8	C16T8	D16T8	K16T8		240	6
20	B20T8	C20T8	D20T8	K20T8		240	6
25	B25T8	C25T8	D25T8	K25T8		240	6
32	B32T8	C32T8	D32T8	K32T8		240	6
40	B40T8	C40T8	D40T8	K40T8		250	6
50	B50T8	C50T8	D50T8 *	K50T8		270	6
63	B63T8	C63T8	D63T8 *	K63T8		270	6

* only in 6 kA available

MINIATURE CIRCUIT BREAKERS T PRODUCT RANGE

10 kA B, C and D characteristic acc. to IEC 60898-1

10 kA K and Z characteristic acc. to IEC 60947-2



RATED CURRENT I_n A	CHARACTERISTIC					WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.	D ITEM NO.	K ITEM NO.	Z ITEM NO.		

2-pole							
0.3		C0.3T2	D0.3T2	K0.3T2	Z0.3T2	240	6
0.5		C0.5T2	D0.5T2	K0.5T2	Z0.5T2	240	6
0.8		C0.8T2	D0.8T2	K0.8T2	Z0.8T2	240	6
1	B1T2	C1T2	D1T2	K1T2	Z1T2	240	6
1.6		C1.6T2	D1.6T2	K1.6T2	Z1.6T2	240	6
2	B2T2	C2T2	D2T2	K2T2	Z2T2	240	6
2.5		C2.5T2	D2.5T2	K2.5T2	Z2.5T2	240	6
3	B3T2	C3T2	D3T2	K3T2	Z3T2	240	6
3.5		C3.5T2	D3.5T2	K3.5T2	Z3.5T2	240	6
4	B4T2	C4T2	D4T2	K4T2	Z4T2	240	6
5	B5T2	C5T2	D5T2	K5T2	Z5T2	240	6
6	B6T2	C6T2	D6T2	K6T2	Z6T2	240	6
8		C8T2	D8T2	K8T2	Z8T2	240	6
10	B10T2	C10T2	D10T2	K10T2	Z10T2	240	6
13	B13T2	C13T2	D13T2	K13T2	Z13T2	240	6
16	B16T2	C16T2	D16T2	K16T2	Z16T2	240	6
20	B20T2	C20T2	D20T2	K20T2	Z20T2	240	6
25	B25T2	C25T2	D25T2	K25T2	Z25T2	240	6
32	B32T2	C32T2	D32T2	K32T2	Z32T2	240	6
40	B40T2	C40T2	D40T2	K40T2		250	6
50	B50T2	C50T2	D50T2 *	K50T2		270	6
63	B63T2	C63T2	D63T2 *	K63T2		270	6



3-pole							
0.3		C0.3T3	D0.3T3	K0.3T3	Z0.3T3	360	4
0.5		C0.5T3	D0.5T3	K0.5T3	Z0.5T3	360	4
0.8		C0.8T3	D0.8T3	K0.8T3	Z0.8T3	360	4
1	B1T3	C1T3	D1T3	K1T3	Z1T3	360	4
1.6		C1.6T3	D1.6T3	K1.6T3	Z1.6T3	360	4
2	B2T3	C2T3	D2T3	K2T3	Z2T3	360	4
2.5		C2.5T3	D2.5T3	K2.5T3	Z2.5T3	360	4
3	B3T3	C3T3	D3T3	K3T3	Z3T3	360	4
3.5		C3.5T3	D3.5T3	K3.5T3	Z3.5T3	360	4
4	B4T3	C4T3	D4T3	K4T3	Z4T3	360	4
5	B5T3	C5T3	D5T3	K5T3	Z5T3	360	4
6	B6T3	C6T3	D6T3	K6T3	Z6T3	360	4
8		C8T3	D8T3	K8T3	Z8T3	360	4
10	B10T3	C10T3	D10T3	K10T3	Z10T3	360	4
13	B13T3	C13T3	D13T3	K13T3	Z13T3	360	4
16	B16T3	C16T3	D16T3	K16T3	Z16T3	360	4
20	B20T3	C20T3	D20T3	K20T3	Z20T3	360	4
25	B25T3	C25T3	D25T3	K25T3	Z25T3	360	4
32	B32T3	C32T3	D32T3	K32T3	Z32T3	360	4
40	B40T3	C40T3	D40T3	K40T3		375	4
50	B50T3	C50T3	D50T3 *	K50T3		405	4
63	B63T3	C63T3	D63T3 *	K63T3		405	4

* only in 6 kA available

MINIATURE CIRCUIT BREAKERS T PRODUCT RANGE

10 kA B, C and D characteristic acc. to IEC 60898-1

10 kA K and Z characteristic acc. to IEC 60947-2



RATED CURRENT I_n A	CHARACTERISTIC					WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.	D ITEM NO.	K ITEM NO.	Z ITEM NO.		

3-pole with switched neutral							
0.3		C0.3T9	D0.3T9	K0.3T9		480	3
0.5		C0.5T9	D0.5T9	K0.5T9		480	3
0.8		C0.8T9	D0.8T9	K0.8T9		480	3
1	B1T9	C1T9	D1T9	K1T9		480	3
1.6		C1.6T9	D1.6T9	K1.6T9		480	3
2	B2T9	C2T9	D2T9	K2T9		480	3
2.5		C2.5T9	D2.5T9	K2.5T9		480	3
3	B3T9	C3T9	D3T9	K3T9		480	3
3.5		C3.5T9	D3.5T9	K3.5T9		480	3
4	B4T9	C4T9	D4T9	K4T9		480	3
5	B5T9	C5T9	D5T9	K5T9		480	3
6	B6T9	C6T9	D6T9	K6T9		480	3
8		C8T9	D8T9	K8T9		480	3
10	B10T9	C10T9	D10T9	K10T9		480	3
13	B13T9	C13T9	D13T9	K13T9		480	3
16	B16T9	C16T9	D16T9	K16T9		480	3
20	B20T9	C20T9	D20T9	K20T9		480	3
25	B25T9	C25T9	D25T9	K25T9		480	3
32	B32T9	C32T9	D32T9	K32T9		480	3
40	B40T9	C40T9	D40T9	K40T9		500	3
50	B50T9	C50T9	D50T9 *	K50T9		540	3
63	B63T9	C63T9	D63T9 *	K63T9		540	3



4-pole							
0.3		C0.3T4	D0.3T4	K0.3T4		480	3
0.5		C0.5T4	D0.5T4	K0.5T4		480	3
0.8		C0.8T4	D0.8T4	K0.8T4		480	3
1	B1T4	C1T4	D1T4	K1T4		480	3
1.6		C1.6T4	D1.6T4	K1.6T4		480	3
2	B2T4	C2T4	D2T4	K2T4		480	3
2.5		C2.5T4	D2.5T4	K2.5T4		480	3
3	B3T4	C3T4	D3T4	K3T4		480	3
3.5		C3.5T4	D3.5T4	K3.5T4		480	3
4	B4T4	C4T4	D4T4	K4T4		480	3
5	B5T4	C5T4	D5T4	K5T4		480	3
6	B6T4	C6T4	D6T4	K6T4		480	3
8		C8T4	D8T4	K8T4		480	3
10	B10T4	C10T4	D10T4	K10T4		480	3
13	B13T4	C13T4	D13T4	K13T4		480	3
16	B16T4	C16T4	D16T4	K16T4		480	3
20	B20T4	C20T4	D20T4	K20T4		480	3
25	B25T4	C25T4	D25T4	K25T4		480	3
32	B32T4	C32T4	D32T4	K32T4		480	3
40	B40T4	C40T4	D40T4	K40T4		500	3
50	B50T4	C50T4	D50T4 *	K50T4		540	3
63	B63T4	C63T4	D63T4 *	K63T4		540	3

* only in 6 kA available

MINIATURE CIRCUIT BREAKERS DC PRODUCT RANGE

6 kA B and C characteristic acc. to IEC 60898-2



6000 T15 **twinfix**

RATED CURRENT I_n A	CHARACTERISTIC		WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.		

1-pole				
0.5		C0.5DC1	120	12
1	B1DC1	C1DC1	120	12
2	B2DC1	C2DC1	120	12
3	B3DC1	C3DC1	120	12
4	B4DC1	C4DC1	120	12
6	B6DC1	C6DC1	120	12
10	B10DC1	C10DC1	120	12
13	B13DC1	C13DC1	120	12
16	B16DC1	C16DC1	120	12
20	B20DC1	C20DC1	120	12
25	B25DC1	C25DC1	120	12
32	B32DC1	C32DC1	120	12
40	B40DC1	C40DC1	120	12
50	B50DC1	C50DC1	120	12
63	B63DC1	C63DC1	120	12



6000 T15 **twinfix**

2-pole				
0.5		C0.5DC2	240	6
1	B1DC2	C1DC2	240	6
2	B2DC2	C2DC2	240	6
3	B3DC2	C3DC2	240	6
4	B4DC2	C4DC2	240	6
6	B6DC2	C6DC2	240	6
10	B10DC2	C10DC2	240	6
13	B13DC2	C13DC2	240	6
16	B16DC2	C16DC2	240	6
20	B20DC2	C20DC2	240	6
25	B25DC2	C25DC2	240	6
32	B32DC2	C32DC2	240	6
40	B40DC2	C40DC2	240	6
50	B50DC2	C50DC2	240	6
63	B63DC2	C63DC2	240	6

ACCESSORIES MINIATURE CIRCUIT BREAKERS

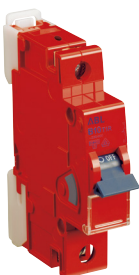
S, SL,T and DC product ranges



Shunt trip

MODULE	RATED OPERATING VOLTAGE	MAX. OPERATING CURRENT AT U_n (T < 10 ms)	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1	12 V UC	1,3 A	FL12	105	5
1	24 V UC	0,6 A	FL24	105	5
1	48 - 72 V UC	0,2 A	FL48	105	5
1	110-230 V UC, 400 V AC	0,25 A bei 110 V	FL110	105	5
		0,5 A bei 230 V			
		0,8 A bei 400 V			

Pull-in voltage $0.7 \times U_e$ Switch in duration at U_e 100%



**Single Pole Miniature Circuit Breaker, 10 A,
B Characteristic for the special designation of circuits e.g. fire warning and
telephone systems etc.**

RATED CURRENT I_n [A]	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
10	B10T1R	150	12



Distance device 9 mm

MODULE	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
$1/2$	ISD	13	10



Lock-off/Lock-on device

ITEM NO.	WEIGHT g / EACH	PACKING UNIT
EASS	2	10

ACCESSORIES MINIATURE CIRCUIT BREAKERS

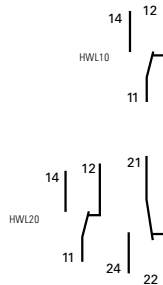
S, SL, T and DC product ranges



Auxiliary contact

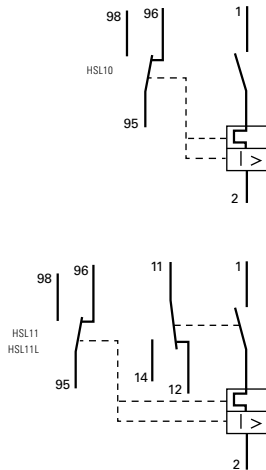
MODULE	TYPE OF CONTACT	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1/2	1 auxiliary contact	1NO	HL10	35	20
1/2	2 auxiliary contacts	1NO + 1NC	HL11	40	20
1/2	2 auxiliary contacts	1NO + 1NC	HL11L*	40	20
1/2	3 auxiliary contacts	1NO + 2NC	HL12	45	20
1/2	3 auxiliary contacts	2NO + 1NC	HL21	45	20

* Mounting on the left



Auxiliary contact

MODULE	TYPE OF CONTACT	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1/2	1 auxiliary contact	1 CO contact	HWL10	40	20
1/2	2 auxiliary contacts	2 CO contact	HWL20	50	20



Auxiliary contact with signal contact

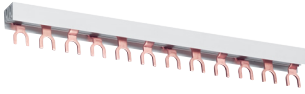
MODULE	TYPE OF CONTACT	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1/2	1 signal contact / 1 auxiliary contact	2 CO contact	HSL11	50	20
1/2	1 signal contact / 1 auxiliary contact	2 CO contact	HSL11L*	50	20
1/2	1 signal contact	1 CO contact	HSL10	40	20

* Mounting on the left

The signal contact and the auxiliary contact are each fitted with a floating CO contact. Both contacts have trip-free mechanisms, i.e. manipulating the contact positions from outside is not possible. The signal contact indicates overload or short circuit of the main device while the auxiliary contact shows the switch condition (on/off).

BUSBARS

for S, SL, T and DC miniature circuit breakers



Busbars fork type

CROSS SECTION (mm ²)	BUSBAR CURRENT START OF BUSBAR/ MIDDLE INFEEED	MODULES/ PHASES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT	SUITABLE END CAP ITEM NO.
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1-phase

12	65/110	56	SB16010	250	50	
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1-phase 1-pole circuit breaker + auxiliary contact

24	90/150	37/1	SDO.124	200	50	
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2-phase and 1-phase + N

10	63/100	28/2	SB26010	390	20	SB.A5
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3-phase + N, L1/N, L2/N, L3/N, for MCB 1+N, 2 modules

16	80/130	27/2 3+N	SB41627	725	15	SB.A3
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2-phase 2-pole circuit breaker + auxiliary contact

16	80/130	22/2	SB26216	310	20	SB.A2
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3-phase

10	63/100	4/3	SB31210	84	25	SB.A1
10	63/100	19/3	SB36010	420	20	SB.A1
16	80/130	19/3	SB36016	675	20	SB.A2

3-phase 3-pole circuit breaker + auxiliary contact

16	80/130	16/3	SB36316	630	20	SB.A2
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3-phase 1-pole circuit breaker + auxiliary contact

16	80/130	36/1	SDO.316	500	20	SB.A2
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4-phase and 3-phase + N

16	80/130	14/4	SB46016	835	15	SB.A3
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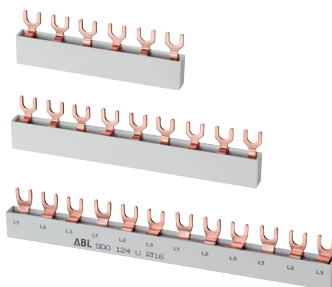
End caps for busbars

FOR BUSBARS ITEM NO.	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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SB31210, SB36010	SB.A1	0,8	10
SB36016, SB36316, SDO.316, SB41627, SB26216	SB.A2	1	10
SB46016	SB.A3	1,1	10
SB26010	SB.A5	0,8	10

BUSBARS

for S, SL and T miniature circuit breakers



Busbars fork type

CROSS SECTION (mm ²)	BUSBAR CURRENT START OF BUSBAR/ MIDDLE INFEED	NUMBER OF POLES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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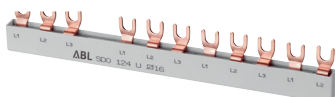
3-phase

10	63	6	G31006	37	25
10	63/100	9	G31009	60	25
10	63/100	12	G31012	84	25

16	80	6	G31606	52	20
16	80/130	9	G31609	87	20
16	80/130	12	G31612	119	20



Busbars cannot be cut to length!



Busbars fork type

3-phase for left-hand RCCB installation in the distribution board (N omitted)

10	63	11	G31011S	82	25
16	80	11	G31611S	117	20

3-phase for right-hand RCCB installation in the distribution unit

16	80	11	G31611	108	20
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Busbars cannot be cut to length!

MINIATURE CIRCUIT BREAKERS 1+N PRODUCT RANGE

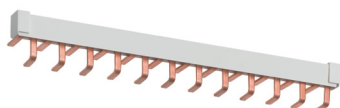
6 kA B and C characteristic acc. to IEC 60898-1



RATED CURRENT I _n A	CHARACTERISTIC		WEIGHT g / EACH	PACKING UNIT
	B ITEM NO.	C ITEM NO.		
1-pole with switched neutral, 1 module				
10	B10N8R	C10N8R	101	12
13	B13N8R	C13N8R	101	12
16	B16N8R	C16N8R	101	12
20	B20N8R	C20N8R	101	12
25	B25N8R	C25N8R	101	12
32	B32N8R	C32N8R	101	12

BUSBARS FOR MINIATURE CIRCUIT BREAKERS

1+N Product Range



Pin-type busbars for 1 + N miniature circuit breakers in 1M							
CROSS SECTION (mm ²)	BUSBAR CURRENT	MODULES	PHASES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT	SUITABLE END CAP ITEM NO.
1-phase + N							
10	63	12/2	1+N	SN11012	75	25	SB.A2
10	63	54/2	1+N	SN11054	350	20	SB.A2
3-phase + N, L1/N, L2/N, L3/N							
16	80	12/2	3+N	SN31612	160	25	SB.A3
16	80	54/2	3+N	SN31654	720	15	SB.A3



Power feed terminals L grey							
16	80			SBL1N	14	1	
Power feed terminals N blue							
16	80			SBN1N	14	1	





RCCBs AND RCBOs

RCCBs

RW Product Range

Sensitive to alternating currents,

Type AC

Undelayed tripping 22

RP Product Range

Sensitive to pulsating currents,

Type A

Undelayed tripping 23

Short-time delayed tripping 24

Selective tripping 24

RA Product Range

Sensitive to universal current,

Type B

Short-time delayed tripping 25

Selective tripping 25

Auxiliary contact 26

Technical features and
application notes 27

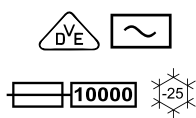
RCBOs

EC and EB product range 28

Busbars 29

RCCB – SENSITIVE TO ALTERNATING CURRENT TYPE AC

Undelayed tripping acc. to IEC 61008

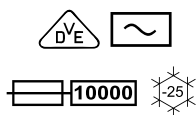


RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK- UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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2-pole, undelayed tripping							
30	16	250	63	2	RW2103	250	1
100	16	250	63	2	RW2110	250	1
300	16	250	63	2	RW2130	250	1
30	25	250	63	2	RW2203	250	1
100	25	250	63	2	RW2210	250	1
300	25	250	63	2	RW2230	250	1
30	40	250	63	2	RW2303	260	1
100	40	250	63	2	RW2310	260	1
300	40	250	63	2	RW2330	260	1
30	63	250	100	2	RW2403	270	1
100	63	250	100	2	RW2410	270	1
300	63	250	100	2	RW2430	270	1

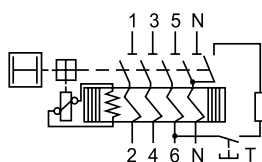
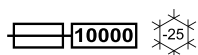
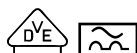
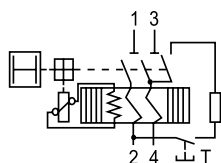
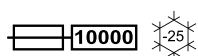
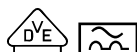
RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK- UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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4-pole, undelayed tripping							
30	16	250	63	4	RW4103	450	1
100	16	250	63	4	RW4110	450	1
300	16	250	63	4	RW4130	450	1
30	25	250	63	4	RW4203	450	1
100	25	250	63	4	RW4210	450	1
300	25	250	63	4	RW4230	450	1
30	40	250	63	4	RW4303	450	1
100	40	250	63	4	RW4310	450	1
300	40	250	63	4	RW4330	450	1
30	63	250	100	4	RW4403	450	1
100	63	250	100	4	RW4410	450	1
300	63	250	100	4	RW4430	450	1
30	80	250	125	4	RW4503	470	1
300	80	250	125	4	RW4530	470	1
500	80	250	125	4	RW4550	470	1
30	100	250	125	4	RW4603	470	1
100	100	250	125	4	RW4610	470	1
300	100	250	125	4	RW4630	470	1
30	125	250	125	4	RW4703	470	1
100	125	250	125	4	RW4710	470	1
300	125	250	125	4	RW4730	470	1
500	125	250	125	4	RW4750	470	1

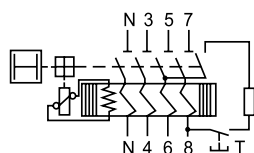


RCCB – SENSITIVE TO PULSATING CURRENTS, TYPE A

Undelayed tripping acc. to IEC 61008



25-125 A, N-pole right



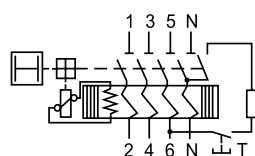
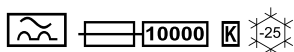
25-63 A, N-pole left

RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO. N-POL RIGHT	ITEM NO. N-POL LEFT	WEIGHT g / EACH	PACK- ING UNIT
2-pole, undelayed tripping								
10	16	250	50	2	RP2101		270	1
30	25	250	100	2	RP2203		270	1
300	25	250	100	2	RP2230		270	1
30	40	250	100	2	RP2303		270	1
300	40	250	100	2	RP2330		270	1
30	63	250	100	2	RP2403		270	1
300	63	250	100	2	RP2430		270	1
500	63	250	100	2	RP2450		270	1

RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO. N-POL RIGHT	ITEM NO. N-POL LEFT	WEIGHT g / EACH	PACK- ING UNIT
4-pole, undelayed tripping								
30	25	250	100	4	RP4203	RP4203L	450	1
300	25	250	100	4	RP4230	RP4230L	420	1
500	25	250	100	4	RP4250	RP4250L	420	1
30	40	250	100	4	RP4303	RP4303L	450	1
300	40	250	100	4	RP4330	RP4330L	420	1
500	40	250	100	4	RP4350	RP4350L	420	1
30	63	250	100	4	RP4403	RP4403L	450	1
300	63	250	100	4	RP4430	RP4430L	420	1
500	63	250	100	4	RP4450	RP4450L	420	1
30	80	250	125	4	RP4503		460	1
300	80	250	125	4	RP4530		430	1
500	80	250	125	4	RP4550		430	1
30	100	250	125	4	RP4603		460	1
300	100	250	125	4	RP4630		430	1
500	100	250	125	4	RP4650		430	1
30	125	250	125	4	RP4703		460	1
300	125	250	125	4	RP4730		430	1
500	125	250	125	4	RP4750		430	1

RCCB – SENSITIVE TO PULSATING CURRENTS, TYPE A

Short-time delayed tripping acc. to IEC 61008



RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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4-pole, short-time delayed tripping

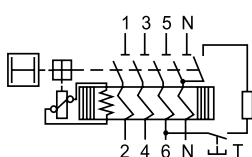
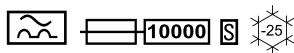
30	40	3.000	100	4	RP4303K	430	1
30	63	3.000	100	4	RP4403K	430	1

Areas of application

- Power supplies of residential and single-purpose buildings as well as industrial facilities with TN-S and TN-C-S networks, where normal RCCBs unwantedly trip as a result of transient drainage currents, such as
- Systems with long cable lengths behind the RCCB
- Lighting systems with many fluorescent lamps (> 20 pieces)
- Computer systems
- Solaria
- X-ray systems
- The use in TN-C networks and in systems in which electronic equipment might cause smooth DC residual currents or residual currents with frequencies of $\neq 50$ Hz is excluded.

RCCB – SENSITIVE TO PULSATING CURRENTS, TYPE A

Selective tripping acc. to IEC 61008



RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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4-pole, selective tripping

300	40	5.000	100	4	RP4330S	430	1
300	63	5.000	100	4	RP4430S	450	1
300	100	5.000	125	4	RP4630S	460	1
300	125	5.000	125	4	RP4730S	460	1

Areas of application

Main distributors in extended electricity supply systems with TN-S and TN-C-S systems, e.g. for

- Camping sites
- Marinas
- Allotment colonies
- Fairgrounds
- etc.

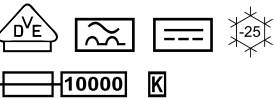
Here, selective RCCBs mostly protect the cables from the main distribution to the sub-distributions. The use in TN-C networks and in systems in which electronic equipment might cause smooth DC residual currents or residual currents with frequencies of $\neq 50$ Hz is excluded.

Notes

To ensure the selectivity of the RCCB, the rated residual current of the RP4xxxS must be selected at least one level higher than that of the undelayed switch connected downstream.

RCCB – SENSITIVE TO UNIVERSAL CURRENT, TYPE B

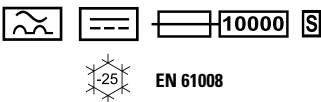
Short-time delayed tripping acc. to IEC 61008



RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
4-pole, short-time delayed tripping							
30	25	5.000	100	4	RA4203	450	1
300	25	5.000	100	4	RA4230	450	1
500	25	5.000	100	4	RA4250	450	1
30	40	5.000	100	4	RA4303	500	1
300	40	5.000	100	4	RA4330	500	1
500	40	5.000	100	4	RA4350	500	1
30	63	5.000	100	4	RA4403	500	1
300	63	5.000	100	4	RA4430	500	1
500	63	5.000	100	4	RA4450	500	1
30	80	5.000	125	4	RA4503	500	1
300	80	5.000	125	4	RA4530	500	1
500	80	5.000	125	4	RA4550	500	1
30	100	5.000	125	4	RA4603	500	1
300	100	5.000	125	4	RA4630	500	1
500	100	5.000	125	4	RA4650	500	1
30	125	5.000	125	4	RA4703	500	1
300	125	5.000	125	4	RA4730	500	1
500	125	5.000	125	4	RA4750	500	1

RCCB – SENSITIVE TO UNIVERSAL CURRENT, TYPE B

Selective tripping acc. to IEC 61008



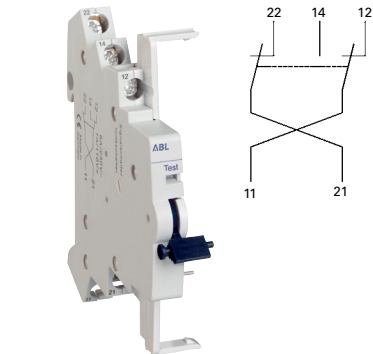
40-80 A N-pole right
100-125 A N-pole left

RATED RESID. CURRENT $I_{\Delta n}$ mA	RATED CURRENT I_n A	SURGE CURRENT STRENGTH > A	MAX. BACK-UP FUSE A	MODULES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
300	40	5.000	100	4	RA4330S	450	1
300	63	5.000	100	4	RA4430S	500	1
300	80	5.000	125	4	RA4530S	500	1
300	100	5.000	125	4	RA4630S	500	1
300	125	5.000	125	4	RA4730S	500	1

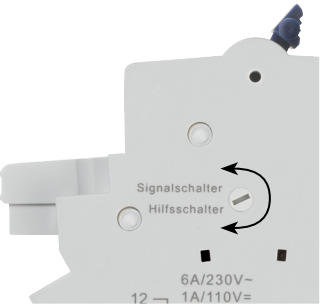
AUXILIARY CONTACT

for all RCCBs

AUXILIARY CONTACT FOR ALL RCCBS



Auxiliary contact					
MO	TYPE OF CONTACT	CONTACTS	ITEM NO.	WEIGHT g/EACH	PAKING UNIT
1/2	2 Auxiliary contacts (1 signal contact)	1 CO + 1 NC	RH11	45	1



1 switch – 2 functions
 With the help of a CO contact, it is possible to switch between the signal contact and auxiliary contact functions.

Function
 The RH11 can be retrofitted as an auxiliary contact or as a fault signal switch on an RCCB for all circuit breaker ranges, allowing for the display of an RCCB’s operating state with the help of further output devices (buzzer, signal lamps etc.). The function setting is carried out with an actuator on the RH11.

Auxiliary contact
 Switches when the RCCB is switched on and off
 Correct function can be tested with a test button
 Fault signal switch
 Switches only when the RCCB trips (middle position)

- Characteristics**
- Can switch between auxiliary contact or fault signal switch function
 - Can be retrofitted
 - Small size (1/2 M)
 - Settable
 - 1 CO contact and 1 NC contact

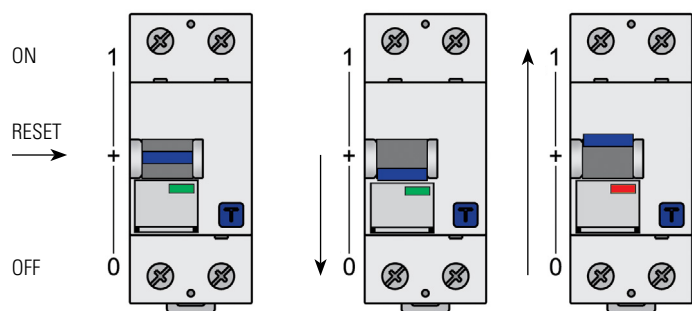
- Type of mounting**
- Left of the RCCB with bracketing
 - Any installation position

Areas of application
 Operating state queries for electricity supplies for residential and single-purpose buildings as well as industrial plants.

Note
 The auxiliary contact does not influence the RCCB.

RESIDUAL CURRENT CIRCUIT BREAKERS · RA AND RP PRODUCT RANGE

Technical features and application notes



Reset function

The switching knob is equipped with a so-called reset function.



Residual current circuit breaker in centre position

It tripped due to a fault in the circuit. It is of utmost importance that any possible causes be checked before switching on again.



Residual current circuit breaker in 0 position

It was switched off manually.

Informed at a glance

On the basis of the switching knob position, it can be seen if the residual current circuit breaker was switched off by a fault (**knob is in the centre position**) or manually (**knob is in the 0 position**).

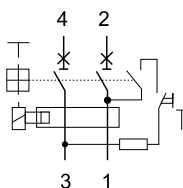
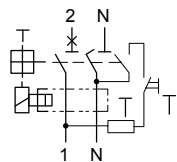
Important note:

For your own safety, the knob must be moved from the centre position to the 0 position to eliminate the fault. Only then can the residual current circuit breaker be switched on again!

RESIDUAL CURRENT OPERATED CIRCUIT BREAKER WITH OVERCURRENT PROTECTION

sensitive to pulsating currents, Type A acc. to IEC 61009

RCBOs offer a compact possibility of implementing wiring protection and protection against personal injury in one device. The RCBO protects itself through its CB part against overload. An undesired overload due to too-high load currents is not possible. One RCBO is assigned to every circuit. So the full residual current is available to every circuit as drainage current. For one residual current in a circuit, only the affected circuit is switched off.



RATED CURRENT I_n A	RATED RESID. CURRENT $I_{\Delta n}$ mA	CHARACTERISTIC		MODULES	WEIGHT g / EACH	PACKING UNIT
		B ITEM NO.	C ITEM NO.			

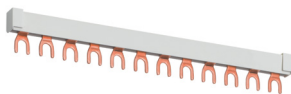
Short circuit withstand rating 10 kA MCB 1-pole + N

6	10	EB0601	EC0601	2	225	1
6	30	EB0603	EC0603	2	225	1
6	100	EB0610	EC0610	2	225	1
6	300	EB0630	EC0630	2	225	1
6	500	EB0650	EC0650	2	225	1
10	10	EB1001	EC1001	2	225	1
10	30	EB1003	EC1003	2	225	1
10	100	EB1010	EC1010	2	225	1
10	300	EB1030	EC1030	2	225	1
10	500	EB1050	EC1050	2	225	1
13	30	EB1303	EC1303	2	225	1
16	10	EB1601	EC1601	2	225	1
16	30	EB1603	EC1603	2	225	1
16	100	EB1610	EC1610	2	225	1
16	300	EB1630	EC1630	2	225	1
16	500	EB1650	EC1650	2	225	1
20	10	EB2001	EC2001	2	225	1
20	30	EB2003	EC2003	2	225	1
20	100	EB2010	EC2010	2	225	1
20	300	EB2030	EC2030	2	225	1
20	500	EB2050	EC2050	2	225	1
25	10	EB2501	EC2501	2	225	1
25	30	EB2503	EC2503	2	225	1
25	100	EB2510	EC2510	2	225	1
25	300	EB2530	EC2530	2	225	1
25	500	EB2550	EC2550	2	225	1
32	30	EB3203	EC3203	2	225	1
32	100	EB3210	EC3210	2	225	1
32	300	EB3230	EC3230	2	225	1
32	500	EB3250	EC3250	2	225	1
40	30	EB4003	EC4003	2	225	1
40	100	EB4010	EC4010	2	225	1
40	300	EB4030	EC4030	2	225	1
40	500	EB4050	EC4050	2	225	1

Short circuit withstand rating 10 kA MCB 2-pole

10	30	EB1003N		2	225	1
13	30	EB1303N		2	225	1
16	30	EB1603N	EC1603N	2	225	1

BUSBARS



CROSS SECTION (mm ²)	BUSBAR CURRENT START OF BUSBAR/ MIDDLE INFEEED	MODULES +H (AUXILIARY CON-TACT)	PHASES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT	SUITABLE END CAP ITEM NO.
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Busbars fork type for RCBOs 2 M							
2-phase and 1-phase + N							
10	63/110	28/2	2/1+N	SB26010	390	20	SB.A5
16	80/130	28/2	2/1+N	SB26016	430	20	SB.A2

2-phase / 1-phase + N and auxiliary contact							
16	80/130	22/2+H	2/1+N	SB26216	470	20	SB.A2

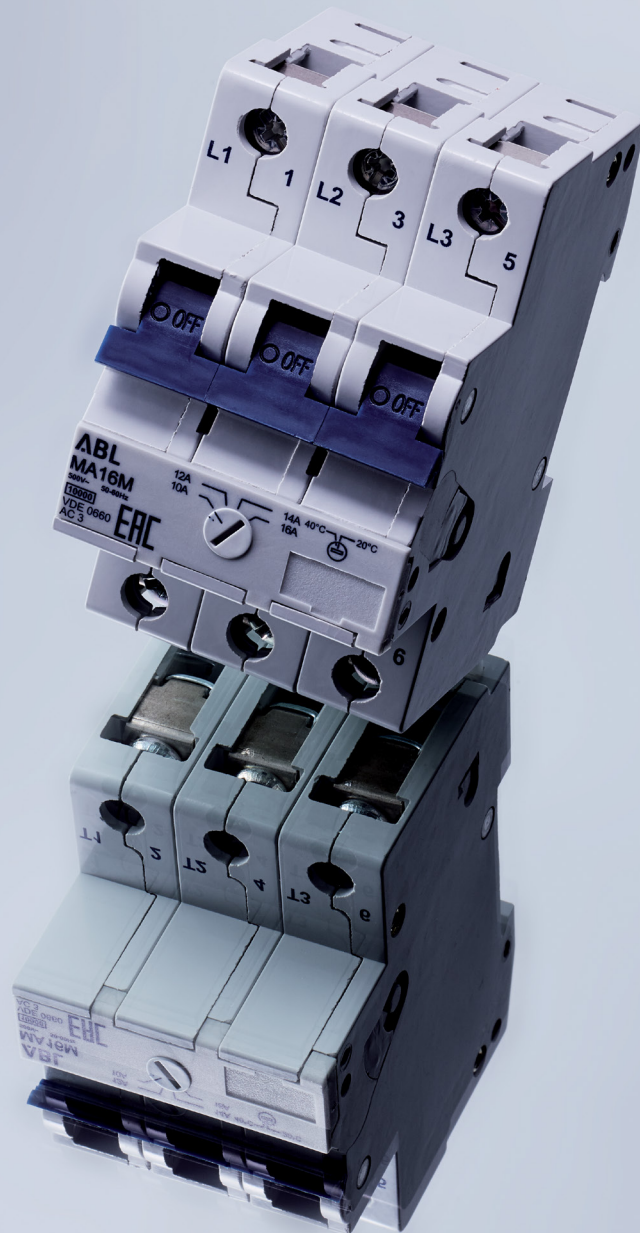
3-phase + N, L1/N, L2/N, L3/N							
16	80/130	27/2	3+N	SB41627	725	15	SB.A3

Busbars fork type for RCBOs 3 M							
3-phase + N, L1/N, L2/N, L3/N							
16	80/130	18/3	3+N	SB41618	650	5	SB.A3

Busbars fork type for RCBOs 2 M							
3-phase + N, L1/N, L2/N, L3/N							
16	80/130	6/2	3+N	G41606	135	20	–



Busbars cannot be cut to length!



MOTOR PROTECTIVE CIRCUIT BREAKERS

MOTOR PROTECTIVE CIRCUIT BREAKERS MS	32
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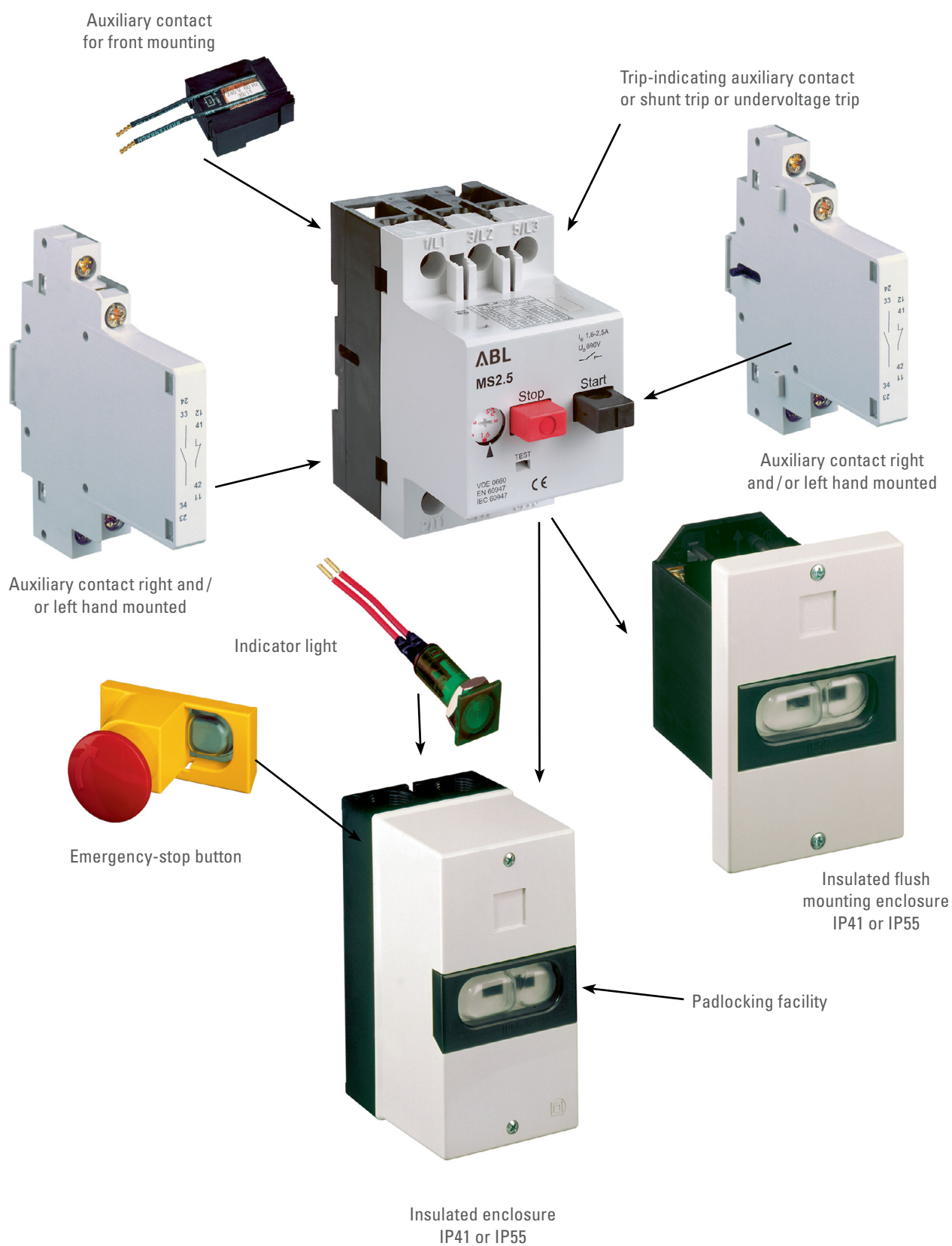
Motor Protective Circuit Breakers MS/BS	33
Transformer Protective Circuit Breakers MST	34
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Accessories	43
Busbars	44

MOTOR PROTECTIVE CIRCUIT BREAKERS MS

Overview



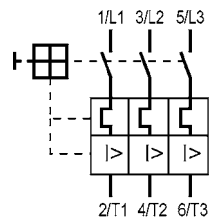
MOTOR PROTECTIVE CIRCUIT BREAKERS MS/BS

acc. to IEC 60947-4-1, UL 508

The MS motor protective circuit breakers offer optimal protection for motors and other loads up to 32 A, due to its high breaking capacity with strongly limited current.

They are equipped with phase failure sensitivity, isolating and main switch functions; 14 ranges are covering nominal rated currents from 0.1 up to 32 A.

The MPCBs are self protected up to 6.3 A at 400 V. Ranges > 6.3 A provide a short circuit withstand rating of 6 kA. The MPCBs are temperature compensated; the actuating current of the short circuit trip is $12 \times I_n$.



FILE E 137938

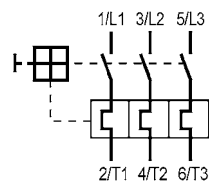


RATED CURRENT A	MAX. RATED OPERATING POWER (kW/AC 3)			OPERATING CURRENT SHORT CIRCUIT TRIP (A)	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
	400/415 V	500 V	690 V				

MS with overload and short circuit tripping Phase failure sensitivity

0.1 – 0.16	–	–	0.06	1.92	MS016	250	1
0.16 – 0.25	0.06	0.06	0.12	3	MS025	250	1
0.25 – 0.4	0.09	0.12	0.18	4.8	MS04	250	1
0.4 – 0.63	0.12	0.18	0.25	7.6	MS063	250	1
0.63 – 1	0.25	0.37	0.55	12	MS1	250	1
1 – 1.6	0.55	0.75	1.1	19.2	MS1.6	250	1
1.6 – 2.5	0.75	1.1	1.5	30	MS2.5	250	1
2.5 – 4	1.5	2.2	3	48	MS4	250	1
4 – 6.3	2.2	3	4	75.6	MS6.3	250	1
6.3 – 10	4	5.5	7.5	120	MS10	250	1
10 – 16	7.5	9	12.5	192	MS16	250	1
16 – 20	9	12.5	15	240	MS20	250	1
20 – 25	12.5	15	22	300	MS25	250	1
25 – 32	15	18.5	–	384	MS32	250	1

*32 A without VDE, without UL-approval



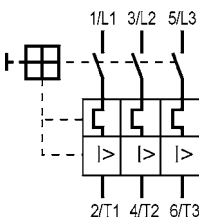
RATED CURRENT A	MAX. RATED OPERATING POWER (kW/AC 3)			OPERATING CURRENT SHORT CIRCUIT TRIP (A)	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
	400/415 V	500 V	690 V				

0.4 – 0.63	0.12	0.18	0.25		BS063	230	1
0.63 – 1	0.25	0.37	0.55		BS1	230	1
1 – 1.6	0.55	0.75	1.1		BS1.6	230	1
1.6 – 2.5	0.75	1.1	1.5		BS2.5	230	1
2.5 – 4	1.5	2.2	3		BS4	230	1
4 – 6.3	2.2	3	4		BS6.3	230	1
6.3 – 10	4	5.5	7.5		BS10	230	1
10 – 16	7.5	9	12.5		BS16	230	1
16 – 20	9	12.5	15		BS20	230	1
20 – 25	12.5	15	22		BS25	230	1
25 – 32	15	18,5	-		BS32	230	1

*32 A without VDE-approval

TRANSFORMER PROTECTIVE CIRCUIT BREAKERS MST

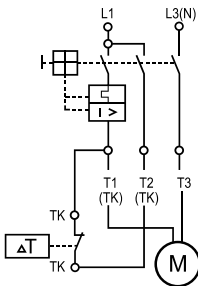
acc. to IEC 60947-4-1



RATED CURRENT A	MAX. RATED OPERATING POWER (kW/AC 3)			OPERATING CURRENT SHORT CIRCUIT TRIP (A)	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
	400/415 V	500 V	690 V				

MST with overload and short circuit tripping for transformers with high inrush currents							
0.1 – 0.16	–	–	–	3.2	MST016	250	1
0.16 – 0.25	–	0.16	–	5	MST025	250	1
0.25 – 0.4	0.16	0.25	0.25	8	MST04	250	1
0.4 – 0.63	0.25	0.4	0.4	12.6	MST063	250	1
0.63 – 1	0.4	0.63	1	20	MST1	250	1
1 – 1.6	0.63	1	–	32	MST1.6	250	1
1.6 – 2.5	1	1.6	2	50	MST2.5	250	1
2.5 – 4	1.6/1	2.5	2.5	80	MST4	250	1
4 – 6.3	2.5	4	6.3	126	MST6.3	250	1
6.3 – 10	4.0/5.0	6.3	–	200	MST10	250	1
10 – 16	6.3/8	10	10	320	MST16	250	1
16 – 20	12.5	16	–	400	MST20	250	1
20 – 25	12.5	16	–	500	MST25	250	1

MOTOR PROTECTIVE DEVICES FOR VARIABLE-SPEED FAN MOTORS



RATED CURRENT A	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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Motor protective devices for variable-speed fan motors

0,4-10	MWC10	190	1
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The MWC 10 is a multi-polar circuit breaker which allows a thermal contact, which is built into the motor (directly into the coil), to be analysed.

For example, if the motor is hindered due to dirt, the coil will heat up more than normal and the thermal contact (NC contact) in the coil will break the circuit.

The bimetal built into the circuit breaker recognizes the opening of the thermal contact in the motor coil and, with the smallest motor rated current, switches off all poles completely within max. 40 s.

However, this type of full motor protection neglects wiring protection. The connection from the full motor protection to the fan is not protected. In order to protect this connection, a back-up fuse is needed which fits the conductor cross section. This back-up fuse is usually installed in front of the full motor protection.

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



FILE E 137938

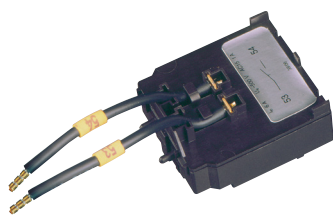


MODULES	WIRING DIAGRAM	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
Auxiliary contact for side mounting					
1/2 M		2 NO	HMS20	40	5
1/2 M		1 NO + 1 NC	HMS11	40	5
1/2 M		1 NO	HMS10	40	5
1/2 M		2 NC	HMS02	40	5
1/2 M		1 NC	HMS01	40	5



Early make auxiliary contact for side mounting					
1/2 M		1 NO + 1 NC	VHMS11	40	5
1/2 TE		2 NO	VHMS20	40	5

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



	WIRING DIAGRAM	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
Trip-indicating auxiliary contact for inside mounting					
		1 NO	SHMS10	25	10
		1 NC	SHMS01	25	10



Auxiliary contact for front mounting					
		1 NO + 1 NC	FHMS11	13	10
		1 NO	FHMS10	11	10
		1 NC	FHMS01	11	10

Can not be used together with EHMS, SHMS, AMS and UMS.

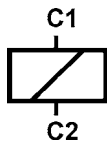
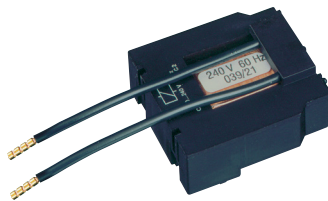
Technical Data	HMS, VHMS	FHMS	SHMS
Rated impulse withstand voltage U_{imp}	4 000 V		
Rated operating voltage U_e	500 V	250 V	500 V
Overvoltage category/Pollution level	III/3	III/3	III/3
Max. current (with free air circulation) I_{th}	6A	5A	6A
Rated operating current I_e	3.5/2 A	1 A/-	2/1 A
Can also be used for low voltage and PLC-inputs	24 V DC, 10 mA		
Cross section: 1 conductor mm ² 2 conductor mm ² only HMS, VHMS	0.75 – 2.5 r; 0.75 – 1.5 f (with ferrule) 0.75 – 2.5 r; 0.75 – 1.5 f (with ferrule)		

It is possible to equip the breakers with different auxiliary contacts. Auxiliary contacts HMS, FHMS and EHMS operate in accordance with the main contacts. They are designed for remote signaling, electrical interlocking and control applications. Early make contacts VHMS operate earlier than the main contacts. Trip-indicating auxiliary contacts SHMS operate in case of a fault.

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS

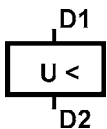
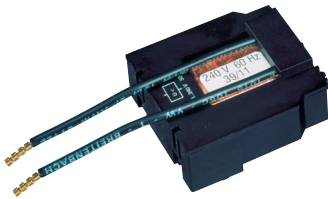


FILE E 137938



	RATED OPERATING VOLTAGE	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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Shunt trip for inside mounting with connecting cable (140 mm long)				
	110 V 50 Hz, 120 V 60 Hz	AMS110	75	10
	220-230V 50 Hz, 240 V 60 Hz	AMS220	75	10
	380-415 V 50 Hz, 440 V 60 Hz	AMS380	75	10
	24 V 50/60 Hz	AMS24	75	10
	500 V 50 Hz	AMS500	75	10
	24 V DC	AMSD24	75	10
Pull-in voltage 0,7 x U _e			Switch in duration for U _e 100% AC	



Undervoltage trip for inside mounting with connecting cable (140 mm long)				
	110 V 50 Hz, 120 V 60 Hz	UMS110	75	10
	220-230 V 50 Hz, 240 V 60 Hz	UMS220	75	10
	380-415 V 50 Hz, 440 V 60 Hz	UMS380	75	10
	24 V 50/60 Hz	UMS24	75	10
	500 V 50 Hz	UMS500	75	10
Pull-in voltage ≥ 0.85 x U _e		Drop out voltage 0,35-0,7 x U _e		Switch in duration for U _e 100%

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



INSULATED ENCLOSURE IP41

with integrated PE(N)
terminal top and bottom each
2 metric knock-outs

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.G41	220	1
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INSULATED FLUSH MOUNTING ENCLOSURE IP41

with integrated PE(N) terminal

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.F41	150	1
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INSULATED ENCLOSURE IP55

WITH INTEGRATED PE(N)
terminal top and bottom each
2 metric knock-outs

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.G55	240	1
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INSULATED FLUSH MOUNTING ENCLOSURE IP55

with integrated PE(N) terminal

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.F55	170	1
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INSULATED ENCLOSURE WITH CEE-PLUG IP54

16 A 400 V
1 opening at the bottom

NO. OF POLES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
-----------------	----------	--------------------	-----------------

5-pole	MS.C51	420	1
4-pole	MS.C41	415	1
3-pole	MS.C31	410	1



INSULATED ENCLOSURE WITH CEE-PLUG IP54 AND PHASE-IN-VERTER

16 A 400 V
1 opening at the bottom

NO. OF POLES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
-----------------	----------	--------------------	-----------------

5-pol.	MS.P51	420	1
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INSULATED ENCLOSURE WITH IP54 SCHUKO EARTHED PLUG

with 2 earthing systems
acc. to CEE7/VII
16 A 250 V, 2-pole + ⊕
1 opening at the bottom

NO. OF POLES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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2-pole+ ⊕	MS.C21	410	1
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Max. assembly of insulated enclosures

ITEM NO.	MS/BS	HMS VHMS	AMS/UMS SHMS/FHMS	MS.PT/MS.PV MS.PS2/MS.VS	MS.BS	MS.N	MS.SL
MS.G41	1	2	1	1	1	2	1
MS.G55	1	2	1	1	-	2	1
MS.F41	1	2	1	1	1	2	1
MS.F55	1	2	1	1	-	2	1
MS.C21	1	-	1	-	-	-	-
MS.C31	1	-	1	-	-	-	-
MS.C41	1	-	1	-	-	-	-
MS.C51	1	-	1	-	-	-	-
MS.P51	1	-	1	-	-	-	-

ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



STOP BUTTON

not latching
red, on grey surface

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.PT	55	5
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PADLOCKING FACILITY

for up to three padlocks

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.VS	100	10
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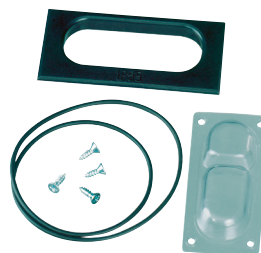


EMERGENCY-STOP BUTTON

latching, turn to release
red, on yellow surface

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.PV	60	5
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KIT IP55

to increase degree of protection
from IP41 to IP55

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.BS	25	10
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EMERGENCY-STOP BUTTON

latching, key release (2 keys)
red, on yellow surface

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.PS2	65	5
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N-TERMINAL

connecting of fifth conductor

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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	MS.N	10	10
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INDICATOR LIGHT

with glow bulb,
nominal rated voltage: 220-240 V

COLOUR	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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green	MS.SLG2	10	5
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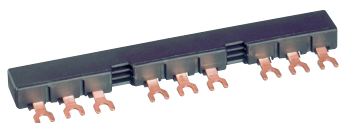
INDICATOR LIGHT

with glow bulb,
nominal rated voltage: 380-440 V

COLOUR	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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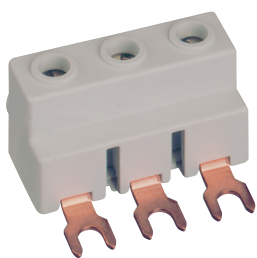
green	MS.SLG3	10	5
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ACCESSORIES FOR MOTOR PROTECTIVE CIRCUIT BREAKERS MS



DESCRIPTION	MAX. BUSBAR CURRENT (A)	LENGTH	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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Busbars					
for 2 MPCBs without auxiliary contacts	63	90 mm	SB.D02	37	10
for 3 MPCBs without auxiliary contacts	63	136 mm	SB.D03	55	10
for 4 MPCBs without auxiliary contacts	63	180 mm	SB.D04	75	10
for 2 MPCBs each with 1 auxiliary contact fitted on the right side	63	99 mm	SB.D12	40	10
for 3 MPCBs each with 1 auxiliary contact fitted on the right side	63	153 mm	SB.D13	65	10
for 4 MPCBs each with 1 auxiliary contact fitted on the right side	63	207 mm	SB.D14	90	10
for 5 MPCBs each with 1 auxiliary contact fitted on the right side	63	261 mm	SB.D15	115	10
for 2 MPCBs each with 2 auxiliary contacts	63	108 mm	SB.D22	45	10
for 4 MPCBs each with 2 auxiliary contacts	63	234 mm	SB.D24	105	10



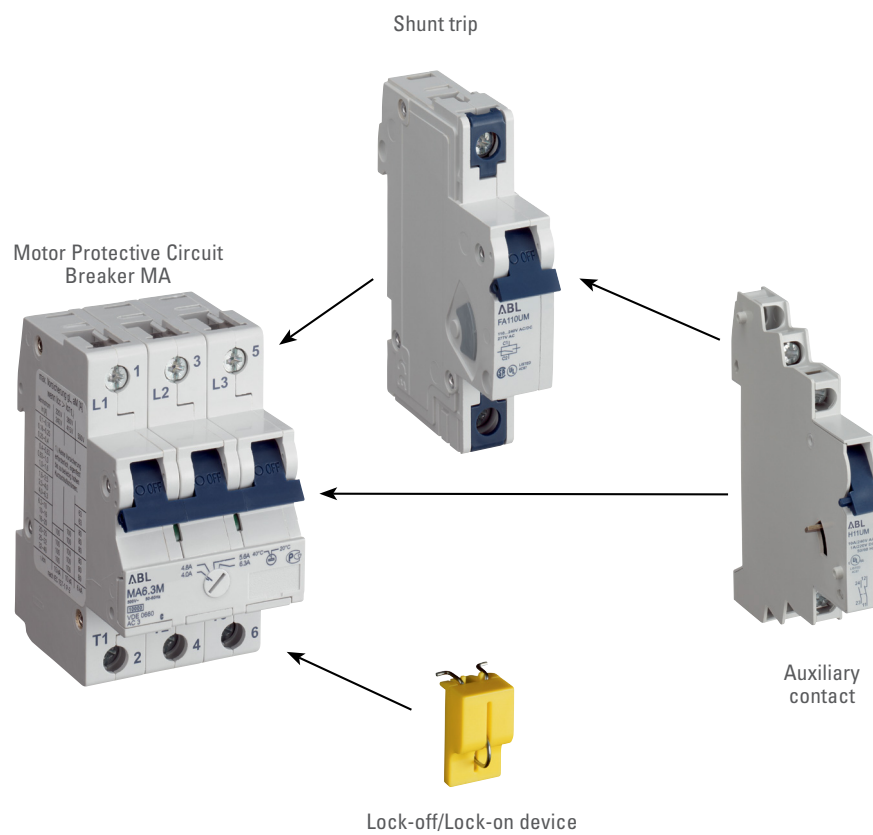
Incoming terminal block					
	63		SB.DE1	30	10



Shroud					
			SB.DA1	5	10

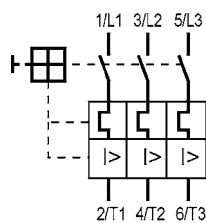
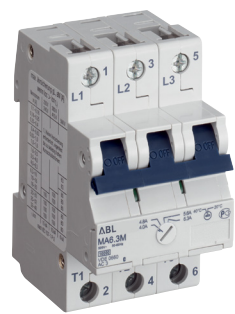
MOTOR PROTECTIVE CIRCUIT BREAKERS MA

Overview



MOTOR PROTECTIVE CIRCUIT BREAKERS MA

IEC 60947



RATED CURRENT [A]	MAX. RATED OPERATING POWER (KW/AC 3)			OPERATING CURRENT SHORT CIRCUIT TRIP [A]	ITEM NO.	WEIGHT G / EACH	PACKING UNIT
	400/415 V	500 V	690 V				

MA with overload and short circuit tripping
 Temperature compensation from +20°C bis +40°C adjustable

0,1 – 0,16	–	–		1,92	MA016M	450	1
0,16 – 0,25	0,06	0,06		3	MA025M	450	1
0,25 – 0,4	0,09	0,12		4,8	MA040M	450	1
0,4 – 0,63	0,12	0,25		7,6	MA063M	450	1
0,63 – 1	0,25	0,37		12	MA1.0M	450	1
1 – 1,6	0,55	0,75		19,2	MA1.6M	450	1
1,6 – 2,5	0,75	1,1		30	MA2.5M	450	1
2,5 – 4	1,5	2,2		48	MA4.0M	450	1
4 – 6,3	2,2	3		75,6	MA6.3M	450	1
6,3 – 10	4	4		120	MA10M	450	1
10 – 16	7,5	9		192	MA16M	450	1
16 – 20	9	12,5		240	MA20M	450	1
20 – 25	12,5	15		300	MA25M	450	1
25 – 32	15	18,5		348	MA32M	450	1
32 – 40	18,5	22		480	MA40M	450	1

ACCESSORIES

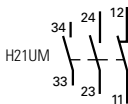
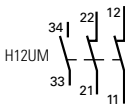
for motor protective circuit breakers MA



Shunt trip					
MODULE	RATED OPERATING VOLTAGE	MAX. OPERATING CURRENT AT U_n ($t < 10$ ms)	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1	12 V $\approx$	1,3 A	FA12UM	105	5
1	24 V $\approx$	0,6 A	FA24UM	105	5
1	48 - 72 V $\approx$	0,2 A	FA48UM	105	5
1	110 - 240 V $\approx$, 415 V~	0,25 A at 110 V	FA110UM	105	5
		0,5 A at 240 V			
		0,8 A at 415 V			
Pull-in voltage $0.7 \times U_e$				Switch in duration for U_e 100%	



Auxiliary contact					
MODULE	TYPE OF CONTACT	CONTACTS	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1/2	1 auxiliary contact	1NO	H10UM	35	10
1/2	2 auxiliary contacts	1NO + 1NC	H11UM	40	10
1/2	3 auxiliary contacts	1NO + 2NC	H12UM	45	10
1/2	3 auxiliary contacts	2NO + 1NC	H21UM	45	10

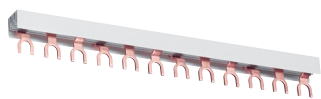


Standards	according to IEC 60947-5-1, DIN EN 60947-5-1, VDE 0660-200, UL 508	
Rated operating currents	10 A / 240 V AC 3 A / 110 V DC 1 A / 220 V DC	
Minimum contact load	1 mA at 24 V DC	
Conductor cross sections		
Type of conductor *)	min.	max.
Single wire	0.5 mm ²	2.5 mm ²
Stranded wire	0.5 mm ²	1.5 mm ²
Stranded wire with ferrule	0.5 mm ²	1.5 mm ²
Torque	max. 0.8 Nm	

*) Stripped length 8 - 9 mm

ACCESSORIES

for motor protective circuit breakers MA

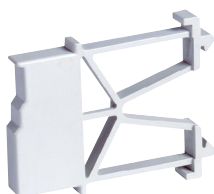


Busbars

CROSS SECTION (mm ²)	BUSBAR CURRENT START OF BUSBAR/ MIDDLE INFEEED	MODULES/ PHASES	ITEM NO.	WEIGHT g / EACH	PACKING UNIT	PASSENDE ENDKAPPE ART.-NR.
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3 phase						
10	63/100	4/3	SB31210	84	25	SB.A1
10	63/100	19/3	SB36010	420	20	SB.A1
16	80/130	19/3	SB36016	675	20	SB.A2

3 phase 3-pole circuit breaker + auxiliary contact						
16	80/130	16/3	SB36316	630	20	SB.A2



DISTANCE DEVICE 9 MM

MODULE	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
--------	----------	--------------------	-----------------

1/2	HDS	7	10
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LOCK-OFF/LOCK-ON DEVICE

For miniature circuit breakers and motor protective circuit breakers

ITEM NO.	WEIGHT g / EACH	PACKING UNIT
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EASS	4	10
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DIN-RAIL PANEL PRODUCTS

Switches	48
Push button	49
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DIN-RAIL PANEL PRODUCTS

Switches



SWITCH 1-POLE

16 A 230 V AC
1M

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1NO	AS161E	56	12



SWITCH 1-POLE WITH CONTROL LIGHT

16 A 230 V AC
1M

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1NO	ASL161E	67	12



GROUP SWITCH 1-POLE

16 A 230 V AC
1M

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1CO	GS161E	68	12



CHANGE-OVER SWITCH 1-POLE

16 A 230 V AC
1M

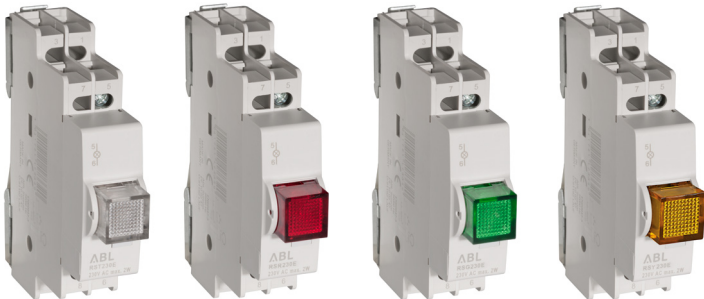
	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1CO	WS161E	59	12

DIN-RAIL PANEL PRODUCTS

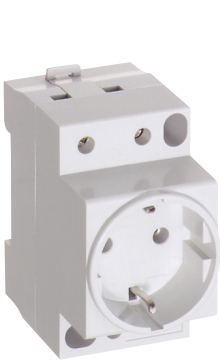
Push button, light signals and SCHUKO socket outlet



PUSH BUTTON 2-POLE			
16 A 230 V AC			
1M			
	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1NO + 1NC	WT161E	80	12



LIGHT SIGNAL			
230 V AC · 1M			
	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
white	RST230E	66	12
red	RSR230E	66	12
green	RSG230E	66	12
yellow	RSY230E	66	12



SCHUKO SOCKET OUTLET		
10/16 A 230 V AC		
2,5M		
ITEM NO.	WEIGHT g / EACH	PACKING UNIT
SD230	110	4



BUILT-IN-SWITCH			
maximum connection cross section 25 mm²			
2,5 TE			
RATED CURRENT	ITEM NO.	WEIGHT g / EACH	PACK- AGING UNIT
63 A	AS63E	231	4



BUILT-IN-SWITCH MODULAR			
maximum connection cross section 25 mm²			
3 TE			
RATED CURRENT	ITEM NO.	WEIGHT g / EACH	PACK- AGING UNIT
100A	AS100E	240	4

DIN-RAIL PANEL PRODUCTS

Installation contactors



INSTALLATION CONTACTOR

20 A / 230 V AC
2-pole, Control voltage 230 V AC
1M

	ITEM NO.	WEIGHT g / EACH	VERP.- EINHEIT
2NO	IS2020	200	12
1NO+1NC	IS2011	200	12



INSTALLATION CONTACTOR

25 A 230 / 400 V AC
4-pole, Control voltage 230 V AC
2M

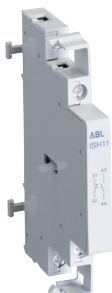
	ITEM NO.	WEIGHT g / EACH	VERP.- EINHEIT
4NO	IS2540	280	6
2NO 2NC	IS2522	280	6
3NO 1NC	IS2531	280	6



INSTALLATION CONTACTOR

40 A and 63 A 230 / 400 V AC
4-pole · Control voltage 230 V AC
3M

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
4NO	IS4040	450	4
4NO	IS6340	450	4



AUXILIARY CONTACT

Continuous thermal current $I_{th} = 6\text{ A}$
Rated operating current I_e
with AC - 15 for U_e 240 V AC 3 A
415 V AC 2 A
440 V AC 1,6 A

1/2M

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1NO 1NC	ISH11	23	3



SEALING CAP

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
2 M	ISP2	2	10
3 M	ISP3	3	10



DISTANCE DEVICE 9MM

	ITEM NO.	WEIGHT g / EACH	PACKING UNIT
1/2 M	ISD	13	10

We recommend the use of distance devices at ambient temperatures higher than 40° C

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