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Find the *ABB S273-K25* at our website: *Click HERE*

Pro M Miniature circuit breakers
General information

General information

Miniature circuit breakers (MCBs) are used throughout the world in all types of electrical installations. ABB MCBs are recognized for use by Underwriters Laboratories Standard UL1077 for supplementary circuit protectors in systems rated 240VAC, 480VAC and 600VAC. Devices are certified per CSA C22.2.

MCBs are approved per IEC-898 and VDE 0641, and certified under IEC-947 and VDE 0660 standards for use in systems rated 415VAC or 690VAC (S500 series).

MCBs can be applied to 16 2/3Hz – 400Hz and DC power systems.

Special direct current version MCBs include a permanent magnet for DC fault current interruption. These "UC" versions are rated 250/500VDC under UL1077/CSA 22.2 No. 235.

Continuous current ratings are as low as 0.2 amperes and up to 125 amperes maximum.

MCBs are of compact size and can be quickly mounted on standard 35mm DIN rail or can be front mounted by use of a front mounting kit.

MCBs include line and load side terminals for conductors from 18 through 4AWG (0.75 – 25mm^2) for 40 amperes; up to 2AWG for 50 and 63 amperes.

MCBs can also be connected via busbar conductors which can be either upper or lower mounted for top feed or bottom feed. Dual function terminals allow busbars to be connected with main incoming line conductors without separate lugs.

Accessories

Auxiliary devices can be added to S260, S270 and S280 series MCBs:

- Shunt trips
- Auxiliary contacts
- Trip contacts
- Aux/trip contacts
- Undervoltage release

Accessory device modules can be field mounted to all above listed ABB MCBs. Auxiliary contacts are also available for the S500 series MCB.

Applications

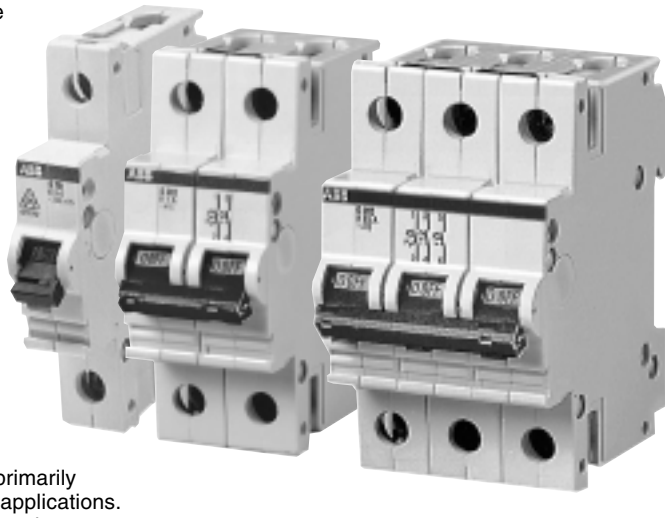
MCBs can be used for equipment protection, in commercial appliances, protection of control circuits against overcurrent faults, computer equipment and other computer peripheral devices.

UL 1077

MCBs are recognized as supplementary protectors and are intended for use as overcurrent protection within an appliance or other electrical equipment where branch circuit overcurrent protection is already provided or not required. MCBs and accessories are recognized under UL File E76126.

CSA C22.2

MCBs and accessories are certified under CSA C22.2 No. 235 per File LR98793.



Tripping characteristics

Time-current curves

ABB miniature circuit breakers are available with different trip characteristics, allowing for maximum system protection.

B Characteristic

Available with the S260 series has rated currents of 6 through 63 amperes in 10 steps. The "B" time-current curve is designed primarily for use in cable protection applications. Instantaneous tripping occurs between approximately 3 to 5 times rated current in 50/60Hz systems. This quick trip curve maximizes protection of control circuits under low short circuit fault levels that could damage control wiring.

C Characteristic

Available in the S260 series with rated currents up though 63 amperes and the S290 series with rated currents of 80, 100 and 125 amperes. The "C" time-current curve is designed for medium magnetic start-up currents. Instantaneous tripping occurs between 5 and 10 times rated current in 50/60 Hz systems. The "C" characteristic is also available in other S2 Series MCBs.

D Characteristic

The new magnetic trip action has an instantaneous trip point of approximately 15 times the breaker rating. Thus, the S260-D can be a good protective solution for applications involving high in-rush transformers, motors and other high inductive systems. The 260-D is also suitable for any application where a high instantaneous trip point is desired.

K Characteristic

The "K" time-current characteristic considers high magnetic start-up currents from motors, transformers and other equipment. Instantaneous tripping occurs between 8 and 12 times rated current in 50/60Hz systems. The "K" characteristic is available up through 63 amperes.

The "K" curve offers the best protection for the broadest range of electrical systems. The higher magnetic trip settings maximizes protection while allowing for higher in-rush currents during system start-up.

Z Characteristic

Also available up through 63 amperes, the "Z" characteristic offers instantaneous tripping between 2 and 3 times rated current in 50/60Hz systems. This trip characteristic is available in the S280 series with both the 480VAC and 250/500VDC ratings.

Many applications require a very low short circuit trip settings in order to protect semiconductor or other sensitive devices and the "Z" trip characteristic may provide maximum protection and service in these applications.

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General information
Interruption ratings
Trip characteristics overview

Interruption ratings

Voltage	Rated interrupting capacity	Rated current	MCB type	Comment
120 VAC	10kA	0.5 - 63A	S260-B,C,D	Single pole
		0.5 - 63A	S270-K	Single pole
		0.2 - 40A	S280-K, Z	Single pole
	18kA	32 - 63A	S500-B,C,D	
		26 - 45A	S500-K	
	30kA	6 - 25A	S500-B,C,D	
		0.15 - 25A	S500-K	
240 VAC	6kA	0.5 - 63A	S260-B,C,D	Single pole
		0.5 - 63A	S270-K	Single pole
		50 - 63A	S280-K, Z	Single pole
	10kA	0.5 - 63A	S260-B,C,D	Multi pole
		0.5 - 63A	S270-K	Multi pole
		0.2 - 40A	S280-K,Z	Single pole
	18kA	32 - 63A	S500-B,C,D	
		26 - 45A	S500-K	
	30kA	6 - 25A	S500-B,C,D	
		0.15 - 25A	S500-K	
277 VAC	6kA	0.5 - 63A	S260-B,C,D	Single pole
		0.5 - 63A	S270-K	Single pole
		50 - 63A	S280-K,Z	Single pole
	10kA	0.2 - 40A	S280-K,Z	Single pole
277/480 VAC	6kA	0.5 - 63A	S260-B,C,D	Multi pole
		0.5 - 63A	S270-K	Multi pole
		40 - 63A	S280-K,Z	Multi pole
	10kA	0.2 - 32A	S280-K,Z	Multi pole
60 VDC	10kA	0.5 - 63A	S260-B,C,D	Single pole
		0.5 - 63A	S270-K	Single pole
125 VDC	10kA	0.5 - 63A	S260-B,C,D	Multi pole
		0.5 - 63A	S270-K	Multi pole
		0.2 - 63A	S280UC-K,Z	Single pole
250 VDC	4.5kA	0.2 - 63A	S280UC-K,Z	Single pole
500 VDC	4.5kA	0.2 - 63A	S280UC-K,Z	Multi pole

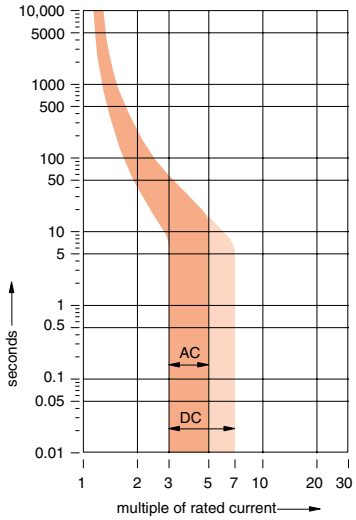
Trip characteristics overview

Curve	Magnetic characteristic ①	Thermal characteristic	Series
B	3 - 5X	1.25X	S260, S500
C	5 - 10X	1.25X	S260, S290, S500
D	10 - 20X	1.25X	S260, S500
K	8 - 12X	1.05X	S270,S280, S500
Z	2 - 3X	1.05X	S280

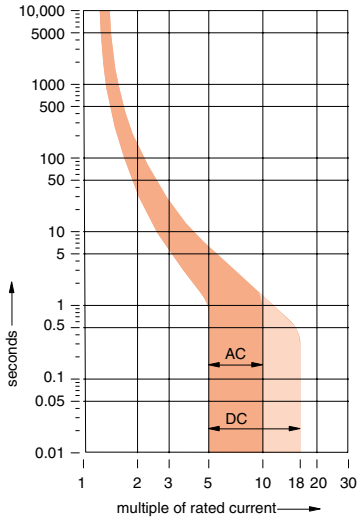
① All values are relative to MCB's ampere rating.

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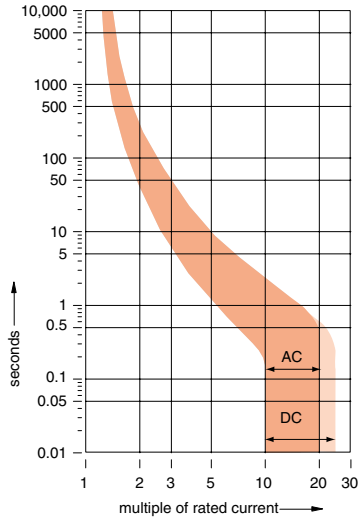
B



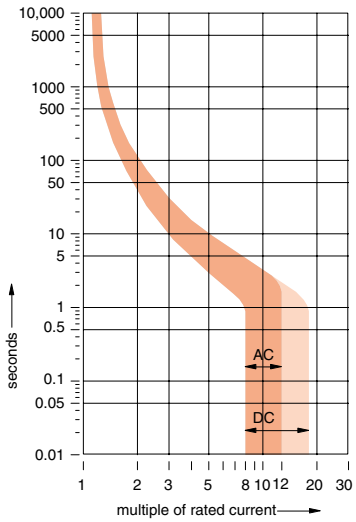
C



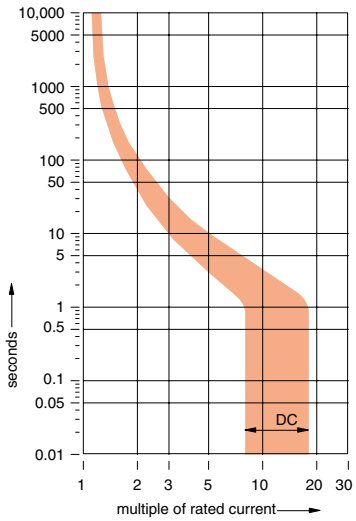
D



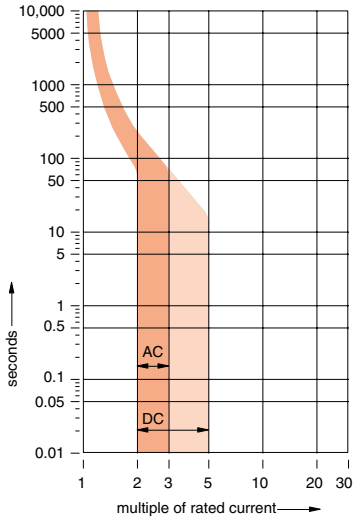
K



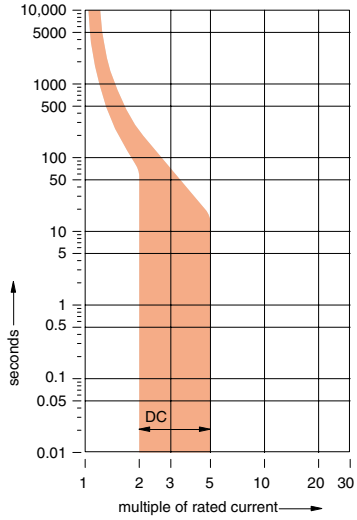
UC-K



Z



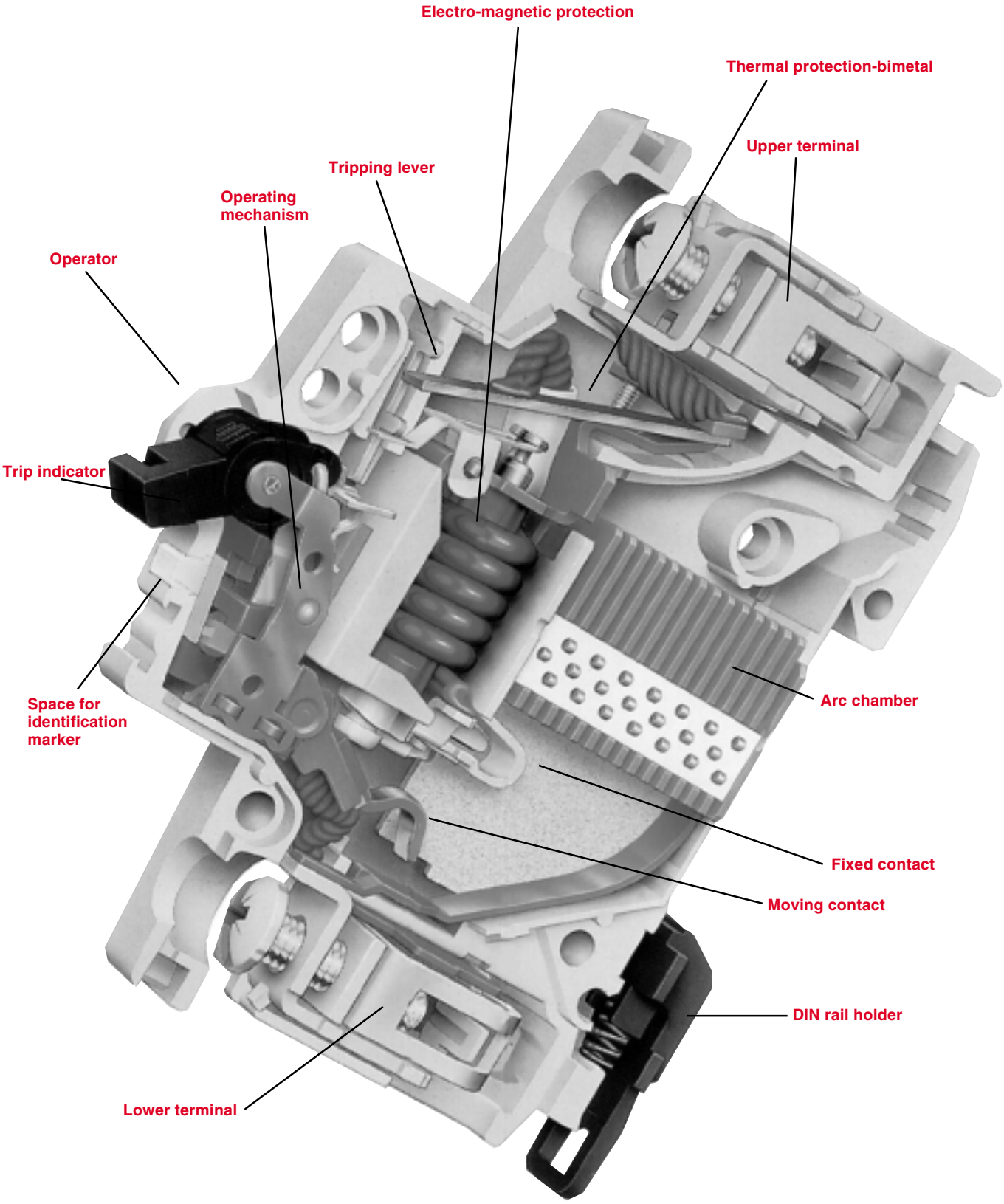
UC-Z



Pro M

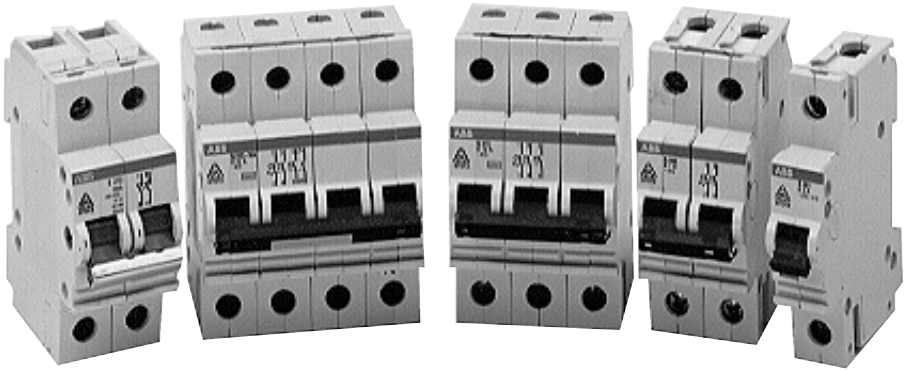
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General information
Construction details (S280 shown)



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Pro M Miniature Circuit Breakers
S260, S270, S280, S290



Pro M

Description

The S2 Series of miniature circuit breakers offer a compact solution to protection requirements. The breakers are recognized under standard UL 1077 as supplemental protective devices. The S2 devices are current limiting, DIN rail mounted and can offer a good equivalent to fused systems.

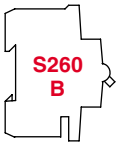
The S2 is available with application-specific trip characteristics to provide maximum circuit protection. The breakers offer thermal-magnetic trip protection according to B, C, D, K and Z characteristics.

For the worldwide market, the breakers carry UL, CSA, IEC, CE and many other agency approvals and certifications.

Features

- Current limiting
- Fast breaking time (2.5 – 3.5 msec)
- Unique bus connection system
- Wide range of accessories
- Available with variable depth handle mechanism
- Optional Z curve for SCR protection
- CE certified and marked
- DIN rail or front plated mounting
- Finger safe terminals
- Multi-function terminals
- Suitable for reverse feed
- UL 1077 and CSA 22.2
- 277/480VAC and 500VDC versions

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S260
277/480 VAC

B

UL 1077 CSA C22.2 No. 235
VDE 0641 IEC-898
Cable protection



S261-B6



S262-B6
S261-B6NA

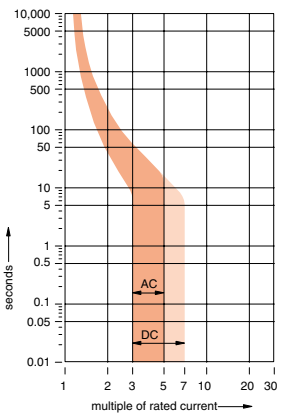


S263-B6



S264-B6
S263-B6NA

B



Rated current	Catalog number	Wgt. oz. (1 pc.)
6	S261-B6	4.5
10	S261-B10	
13	S261-B13	
16	S261-B16	
20	S261-B20	
25	S261-B25	
32	S261-B32	
40	S261-B40	
50	S261-B50	
63	S261-B63	
6	S261-B6NA	9.0
10	S261-B10NA	
13	S261-B13NA	
16	S261-B16NA	
20	S261-B20NA	
25	S261-B25NA	
32	S261-B32NA	
40	S261-B40NA	
50	S261-B50NA	
63	S261-B63NA	
6	S262-B6	9.0
10	S262-B10	
13	S262-B13	
16	S262-B16	
20	S262-B20	
25	S262-B25	
32	S262-B32	
40	S262-B40	
50	S262-B50	
63	S262-B63	

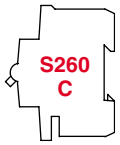
Rated current	Catalog number	Wgt. oz. (1 pc.)
6	S263-B6	13.5
10	S263-B10	
13	S263-B13	
16	S263-B16	
20	S263-B20	
25	S263-B25	
32	S263-B32	
40	S263-B40	
50	S263-B50	
63	S263-B63	
6	S263-B6NA	18.0
10	S263-B10NA	
13	S263-B13NA	
16	S263-B16NA	
20	S263-B20NA	
25	S263-B25NA	
32	S263-B32NA	
40	S263-B40NA	
50	S263-B50NA	
63	S263-B63NA	
6	S264-B6	18.0
10	S264-B10	
13	S264-B13	
16	S264-B16	
20	S264-B20	
25	S264-B25	
32	S264-B32	
40	S264-B40	
50	S264-B50	
63	S264-B63	

Switched neutral

To create a miniature circuit breaker from stock items with a switched neutral, order standard MCB (usually a single or three pole version) and a neutral disconnect module, S2-NT, which can be field added to the MCB.

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S260
277/480 VAC



C UL 1077 CSA C22.2 - NO. 235
VDE 0641 IEC-898
Cable & equipment protection

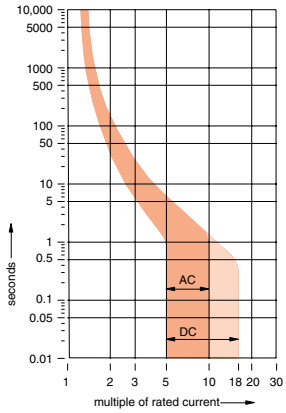

S261-C1


S262-C1


S263-C1


S264-C1

C



Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S261-C0.5	4.5
1	S261-C1	
1.6	S261-C1.6	
2	S261-C2	
3	S261-C3	
4	S261-C4	
6	S261-C6	
8	S261-C8	
10	S261-C10	
13	S261-C13	
16	S261-C16	
20	S261-C20	
25	S261-C25	
32	S261-C32	
40	S261-C40	
50	S261-C50	
63	S261-C63	
0.5	S261-C0.5NA	9.0
1	S261-C1NA	
1.6	S261-C1.6NA	
2	S261-C2NA	
3	S261-C3NA	
4	S261-C4NA	
6	S261-C6NA	
8	S261-C8NA	
10	S261-C10NA	
13	S261-C13NA	
16	S261-C16NA	
20	S261-C20NA	
25	S261-C25NA	
32	S261-C32NA	
40	S261-C40NA	
50	S261-C50NA	
63	S261-C63NA	
0.5	S262-C0.5	9.0
1	S262-C1	
1.6	S262-C1.6	
2	S262-C2	
3	S262-C3	
4	S262-C4	
6	S262-C6	
8	S262-C8	
10	S262-C10	
13	S262-C13	
16	S262-C16	
20	S262-C20	
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40	S262-C40	
50	S262-C50	
63	S262-C63	

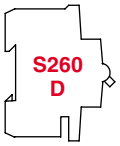
Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S263-C0.5	13.5
1	S263-C1	
1.6	S263-C1.6	
2	S263-C2	
3	S263-C3	
4	S263-C4	
6	S263-C6	
8	S263-C8	
10	S263-C10	
13	S263-C13	
16	S263-C16	
20	S263-C20	
25	S263-C25	
32	S263-C32	
40	S263-C40	
50	S263-C50	
60	S263-CS60	
63	S263-C63	
0.5	S263-C0.5NA	18.0
1	S263-C1NA	
1.6	S263-C1.6NA	
2	S263-C2NA	
3	S263-C3NA	
4	S263-C4NA	
6	S263-C6NA	
8	S263-C8NA	
10	S263-C10NA	
13	S263-C13NA	
16	S263-C16NA	
20	S263-C20NA	
25	S263-C25NA	
32	S263-C32NA	
40	S263-C40NA	
50	S263-C50NA	
63	S263-C63NA	
0.5	S264-C0.5	18.0
1	S264-C1	
1.6	S264-C1.6	
2	S264-C2	
3	S264-C3	
4	S264-C4	
6	S264-C6	
8	S264-C8	
10	S264-C10	
13	S264-C13	
16	S264-C16	
20	S264-C20	
25	S264-C25	
32	S264-C32	
40	S264-C40	
50	S264-C50	
63	S264-C63	

Switched neutral

To create a miniature circuit breaker from stock items with a switched neutral, order standard MCB (usually a single or three pole version) and a neutral disconnect module, S2-NT, which can be field added to the MCB.

Pro M

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S260
277/480 VAC

D

UL 1077 CSA C22.2
VDE 0641 IEC-898
Cable & equipment protection


S261-D0.5


S262-D1


S263-D63

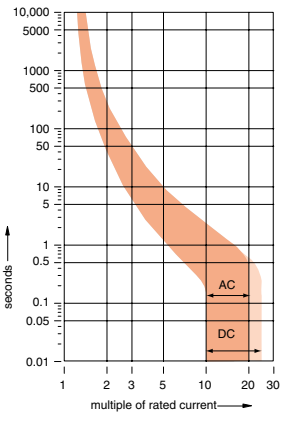
Rated current	Catalog number	Wgt. oz. (1 pc.)
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1	S261-D1	
1.6	S261-D1.6	
2	S261-D2	
3	S261-D3	
4	S261-D4	
6	S261-D6	
8	S261-D8	
10	S261-D10	
13	S261-D13	
16	S261-D16	
20	S261-D20	
25	S261-D25	
32	S261-D32	
40	S261-D40	
50	S261-D50	
63	S261-D63	
0.5	S262-D0.5	9.0
1	S262-D1	
1.6	S262-D1.6	
2	S262-D2	
3	S262-D3	
4	S262-D4	
6	S262-D6	
8	S262-D8	
10	S262-D10	
13	S262-D13	
16	S262-D16	
20	S262-D20	
25	S262-D25	
32	S262-D32	
40	S262-D40	
50	S262-D50	
63	S262-D63	

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S263-D0.5	13.5
1	S263-D1	
1.6	S263-D1.6	
2	S263-D2	
3	S263-D3	
4	S263-D4	
6	S263-D6	
8	S263-D8	
10	S263-D10	
13	S263-D13	
16	S263-D16	
20	S263-D20	
25	S263-D25	
32	S263-D32	
40	S263-D40	
50	S263-D50	
63	S263-D63	

Switched neutral

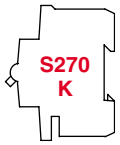
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D



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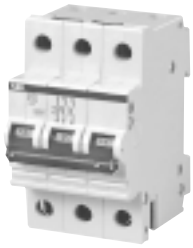
S270
277/480 VAC

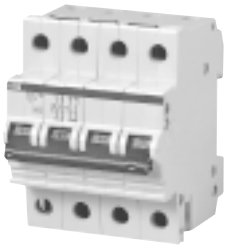


K UL 1077 CSA C22.2 - NO. 235
VDE 0641 IEC-898
Cable & equipment protection

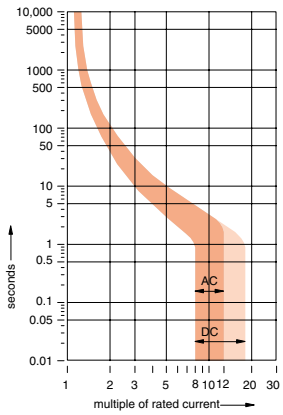

S271-K10


S271-K2
S272-K2NA


S273-K10


S273-K20
S274-K20NA

K



Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S271-K0.5	
1	S271-K1	
1.6	S271-K1.6	
2	S271-K2	
3	S271-K3	
4	S271-K4	
5	S271-KS5	
6	S271-K6	
8	S271-K8	
10	S271-K10	
13	S271-K13	4.5
15	S271-KS15	
16	S271-K16	
20	S271-K20	
25	S271-K25	
30	S271-KS30	
32	S271-K32	
40	S271-K40	
50	S271-K50	
60	S271-KS60	
63	S271-K63	
0.5	S271-K0.5NA	
1	S271-K1NA	
1.6	S271-K1.6NA	
2	S271-K2NA	
3	S271-K3NA	
4	S271-K4NA	
6	S271-K6NA	
8	S271-K8NA	
10	S271-K10NA	9.0
13	S271-K13NA	
16	S271-K16NA	
20	S271-K20NA	
25	S271-K25NA	
32	S271-K32NA	
40	S271-K40NA	
50	S271-K50NA	
63	S271-K63NA	
0.5	S272-K0.5	
1	S272-K1	
1.6	S272-K1.6	
2	S272-K2	
3	S272-K3	
4	S272-K4	
5	S272-KS5	
6	S272-K6	
8	S272-K8	
10	S272-K10	9.0
13	S272-K13	
15	S272-KS15	
16	S272-K16	
20	S272-K20	
25	S272-K25	
30	S272-KS30	
32	S272-K32	
40	S272-K40	
50	S272-K50	
60	S272-KS60	
63	S272-K63	

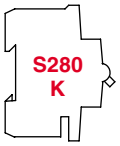
Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S273-K0.5	
1	S273-K1	
1.6	S273-K1.6	
2	S273-K2	
3	S273-K3	
4	S273-K4	
5	S273-KS5	
6	S273-K6	
8	S273-K8	
10	S273-K10	
13	S273-K13	13.5
15	S273-KS15	
16	S273-K16	
20	S273-K20	
25	S273-K25	
30	S273-KS30	
32	S273-K32	
40	S273-K40	
50	S273-K50	
60	S273-KS60	
63	S273-K63	
0.5	S273-K0.5NA	
1	S273-K1NA	
1.6	S273-K1.6NA	
2	S273-K2NA	
3	S273-K3NA	
4	S273-K4NA	
6	S273-K6NA	
8	S273-K8NA	
10	S273-K10NA	18.0
13	S273-K13NA	
16	S273-K16NA	
20	S273-K20NA	
25	S273-K25NA	
32	S273-K32NA	
40	S273-K40NA	
50	S273-K50NA	
63	S273-K63NA	
0.5	S274-K0.5	
1	S274-K1	
1.6	S274-K1.6	
2	S274-K2	
3	S274-K3	
4	S274-K4	
6	S274-K6	
8	S274-K8	18.0
10	S274-K10	
13	S274-K13	
16	S274-K16	
20	S274-K20	
25	S274-K25	
32	S274-K32	
40	S274-K40	
50	S274-K50	
63	S274-K63	

Switched neutral

To create a miniature circuit breaker from stock items with a switched neutral, order standard MCB (usually a single or three pole version) and a neutral disconnect module, S2-NT, which can be field added to the MCB.

Pro M

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S280
277/480 VAC

K UL 1077 CSA C22.2 - NO. 235
VDE 0660
Cable & equipment protection


S281-K16


S282-K1


S283-K63

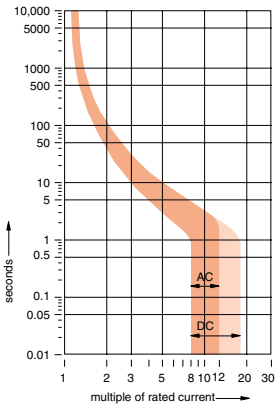
Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S281-K0.2	
0.3	S281-K0.3	
0.5	S281-K0.5	
0.75	S281-K0.75	
1	S281-K1	
1.6	S281-K1.6	
2	S281-K2	
3	S281-K3	
4	S281-K4	
6	S281-K6	
8	S281-K8	4.6
10	S281-K10	
13	S281-K13	
16	S281-K16	
20	S281-K20	
25	S281-K25	
32	S281-K32	
40	S281-K40	
50	S281-K50	
63	S281-K63	
0.2	S282-K0.2	
0.3	S282-K0.3	
0.5	S282-K0.5	
0.75	S282-K0.75	
1	S282-K1	
1.6	S282-K1.6	
2	S282-K2	
3	S282-K3	
4	S282-K4	
6	S282-K6	9.2
8	S282-K8	
10	S282-K10	
13	S282-K13	
16	S282-K16	
20	S282-K20	
25	S282-K25	
32	S282-K32	
40	S282-K40	
50	S282-K50	
63	S282-K63	

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S283-K0.2	
0.3	S283-K0.3	
0.5	S283-K0.5	
0.75	S283-K0.75	
1	S283-K1	
1.6	S283-K1.6	
2	S283-K2	
3	S283-K3	
4	S283-K4	
6	S283-K6	13.9
8	S283-K8	
10	S283-K10	
13	S283-K13	
16	S283-K16	
20	S283-K20	
25	S283-K25	
32	S283-K32	
40	S283-K40	
50	S283-K50	
63	S283-K63	

Switched neutral

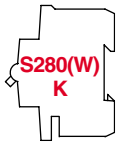
To create a miniature circuit breaker from stock items with a switched neutral, order standard MCB (usually a single or three pole version) and a neutral disconnect module, S2-NT, which can be field added to the MCB.

K



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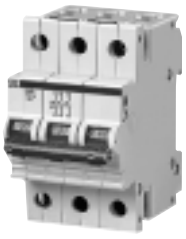
S280 (W)
for use with ring tongue terminal connectors
277/480 VAC



K UL 1077 CSA C22.2 - NO. 235
VDE 0660
Cable & equipment protection


S281-K16W


S282-K1W


S283-K63W

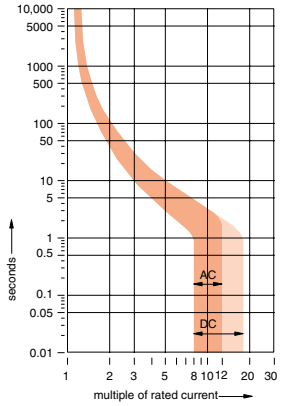
Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S281-K0.2W	
0.3	S281-K0.3W	
0.5	S281-K0.5W	
0.75	S281-K0.75W	
1	S281-K1W	
1.6	S281-K1.6W	
2	S281-K2W	
3	S281-K3W	
4	S281-K4W	
6	S281-K6W	
8	S281-K8W	4.6
10	S281-K10W	
13	S281-K13W	
16	S281-K16W	
20	S281-K20W	
25	S281-K25W	
32	S281-K32W	
40	S281-K40W	
50	S281-K50W	
63	S281-K63W	
0.2	S282-K0.2W	
0.3	S282-K0.3W	
0.5	S282-K0.5W	
0.75	S282-K0.75W	
1	S282-K1W	
1.6	S282-K1.6W	
2	S282-K2W	
3	S282-K3W	
4	S282-K4W	
6	S282-K6W	9.2
8	S282-K8W	
10	S282-K10W	
13	S282-K13W	
16	S282-K16W	
20	S282-K20W	
25	S282-K25W	
32	S282-K32W	
40	S282-K40W	
50	S282-K50W	
63	S282-K63W	

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S283-K0.2W	
0.3	S283-K0.3W	
0.5	S283-K0.5W	
0.75	S283-K0.75W	
1	S283-K1W	
1.6	S283-K1.6W	
2	S283-K2W	
3	S283-K3W	
4	S283-K4W	
6	S283-K6W	13.9
8	S283-K8W	
10	S283-K10W	
13	S283-K13W	
16	S283-K16W	
20	S283-K20W	
25	S283-K25W	
32	S283-K32W	
40	S283-K40W	
50	S283-K50W	
63	S283-K63W	

Screws (must be ordered separately!)

Item	Catalog number
PKG of 20 screws	S2-SCR

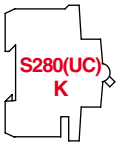
K



① For use with ring tongue or cable terminals only. Cannot be used with busbar system.

Pro M

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S280UC
500 VDC

K UL 1077 VDE 0660
CSA 22.2 No. 235
Cable and Equipment Protection


S281UC-K25


S282UC-K8

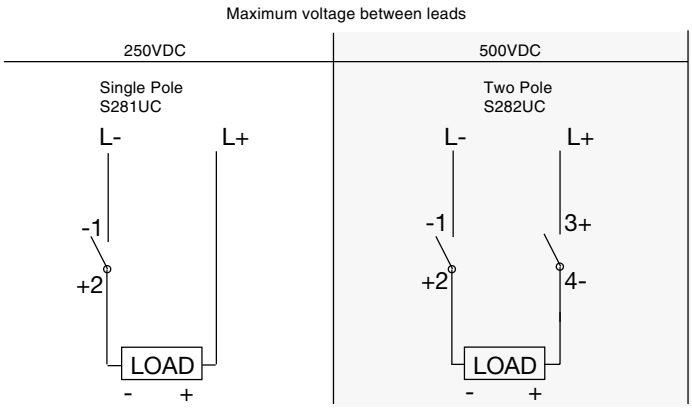

S283UC-K16

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S281UC-K0.2	
0.3	S281UC-K0.3	
0.5	S281UC-K0.5	
0.75	S281UC-K0.75	
1	S281UC-K1	
1.6	S281UC-K1.6	
2	S281UC-K2	
3	S281UC-K3	
4	S281UC-K4	
6	S281UC-K6	4.6
8	S281UC-K8	
10	S281UC-K10	
16	S281UC-K16	
20	S281UC-K20	
25	S281UC-K25	
32	S281UC-K32	
40	S281UC-K40	
50	S281UC-K50	
63	S281UC-K63	
0.2	S282UC-K0.2	
0.3	S282UC-K0.3	
0.5	S282UC-K0.5	
0.75	S282UC-K0.75	
1	S282UC-K1	
1.6	S282UC-K1.6	
2	S282UC-K2	
3	S282UC-K3	
4	S282UC-K4	9.2
6	S282UC-K6	
8	S282UC-K8	
10	S282UC-K10	
16	S282UC-K16	
20	S282UC-K20	
25	S282UC-K25	
32	S282UC-K32	
40	S282UC-K40	
50	S282UC-K50	
63	S282UC-K63	

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.2	S283UC-K0.2	
0.3	S283UC-K0.3	
0.5	S283UC-K0.5	
0.75	S283UC-K0.75	
1	S283UC-K1	
1.6	S283UC-K1.6	
2	S283UC-K2	
3	S283UC-K3	
4	S283UC-K4	
6	S283UC-K6	13.9
8	S283UC-K8	
10	S283UC-K10	
16	S283UC-K16	
20	S283UC-K20	
25	S283UC-K25	
32	S283UC-K32	
40	S283UC-K40	
50	S283UC-K50	
63	S283UC-K63	

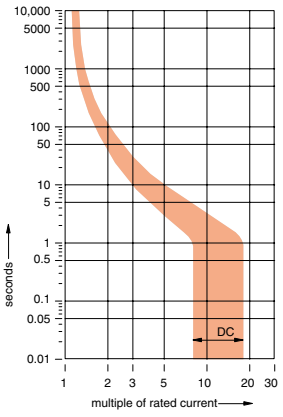
Direct current applications

The S280UC differs from standard miniature circuit breakers in that the UC versions include a permanent magnet which aids in the extinguishing of the arc during medium and high level faults. It is necessary to observe the correct polarity and current direction when connecting the UC breakers. Two examples of correct connection are shown below.



Termination points are marked on all UC type MCBs, points one (1) and four (4) are negative and points two (2) and three (3) are positive. Four pole breakers are also available for voltage reversal applications.

UC-K



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S280 & S280UC
277/480VAC & 500VDC



Z UL 1077 VDE 0660
CSA 22.2 No. 235
Fast trip characteristic


S281-Z16


S282-Z32


S283-Z32

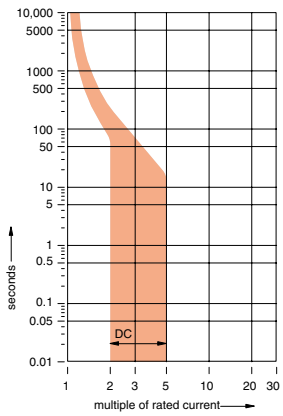
480 VAC Class

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S281-Z0.5	
1	S281-Z1	
1.6	S281-Z1.6	
2	S281-Z2	
3	S281-Z3	
4	S281-Z4	
6	S281-Z6	
8	S281-Z8	4.5
10	S281-Z10	
16	S281-Z16	
20	S281-Z20	
25	S281-Z25	
32	S281-Z32	
40	S281-Z40	
50	S281-Z50	
63	S281-Z63	
0.5	S282-Z0.5	
1	S282-Z1	
1.6	S282-Z1.6	
2	S282-Z2	
3	S282-Z3	
4	S282-Z4	
6	S282-Z6	
8	S282-Z8	9.2
10	S282-Z10	
16	S282-Z16	
20	S282-Z20	
25	S282-Z25	
32	S282-Z32	
40	S282-Z40	
50	S282-Z50	
63	S282-Z63	
0.5	S283-Z0.5	
1	S283-Z1	
1.6	S283-Z1.6	
2	S283-Z2	
3	S283-Z3	
4	S283-Z4	
6	S283-Z6	
8	S283-Z8	13.9
10	S283-Z10	
16	S283-Z16	
20	S283-Z20	
25	S283-Z25	
32	S283-Z32	
40	S283-Z40	
50	S283-Z50	
63	S283-Z63	

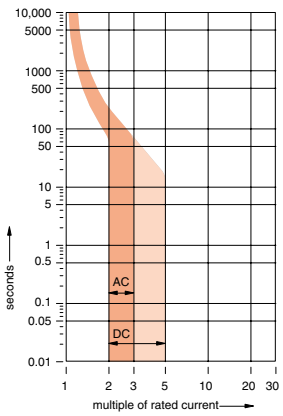
500 VDC Class

Rated current	Catalog number	Wgt. oz. (1 pc.)
0.5	S281UC-Z0.5	
1	S281UC-Z1	
1.6	S281UC-Z1.6	
2	S281UC-Z2	
3	S281UC-Z3	
4	S281UC-Z4	
6	S281UC-Z6	
8	S281UC-Z8	
10	S281UC-Z10	4.6
16	S281UC-Z16	
20	S281UC-Z20	
25	S281UC-Z25	
32	S281UC-Z32	
40	S281UC-Z40	
50	S281UC-Z50	
63	S281UC-Z63	
0.5	S282UC-Z0.5	
1	S282UC-Z1	
1.6	S282UC-Z1.6	
2	S282UC-Z2	
3	S282UC-Z3	
4	S282UC-Z4	
6	S282UC-Z6	
8	S282UC-Z8	
10	S282UC-Z10	9.2
16	S282UC-Z16	
20	S282UC-Z20	
25	S282UC-Z25	
32	S282UC-Z32	
40	S282UC-Z40	
50	S282UC-Z50	
63	S282UC-Z63	
0.5	S283UC-Z0.5	
1	S283UC-Z1	
1.6	S283UC-Z1.6	
2	S283UC-Z2	
3	S283UC-Z3	
4	S283UC-Z4	
6	S283UC-Z6	
8	S283UC-Z8	13.9
10	S283UC-Z10	
16	S283UC-Z16	
20	S283UC-Z20	
25	S283UC-Z25	
32	S283UC-Z32	
40	S283UC-Z40	
50	S283UC-Z50	
63	S283UC-Z63	

UC-Z



Z



Switched neutral

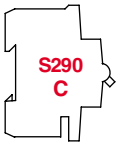
To create a miniature circuit breaker from stock items with a switched neutral, order standard MCB (usually a single or three pole version) and a neutral disconnect module, S2-NT, which can be field added to the MCB. See accessories page 1.18.

Direct current applications

Please refer to the chart on page 1.12..

Pro M

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S290
277/480 VAC

C VDE 0660
Cable and equipment protection


S291-C80


S290-H11

480 VAC Class

Rated current	Catalog number	Wgt. oz. (1 pc.)
80 100 125	S291-C80 S291-C100 S291-C125	9.2
80 100 125	S292-C80 S292-C100 S292-C125	18.4
80 100 125	S293-C80 S293-C100 S293-C125	27.6
80 100 125	S294-C80 S294-C100 S294-C125	36.8

Auxiliary contact

	S290-H11	1.75

Bell alarm

	S290-S	1.75

Shunt trip

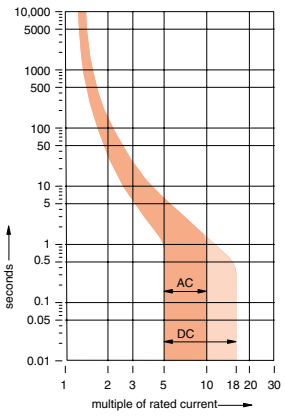
	S290-A1	6.2

For field mounting, left side, 110V – 415VAC

	S290-A2	6.2

For field mounting, left side, 24 – 48VDC

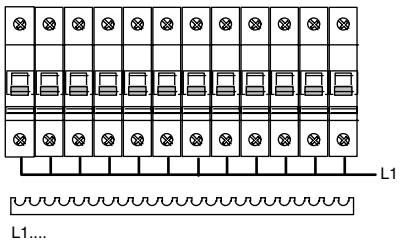
C



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Accessories
Busbars
S260, S270, S280

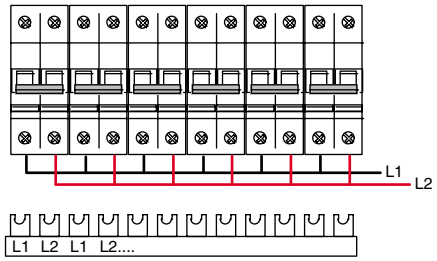
1 Phase



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
55	12	207	–	SZ-KS1/12	0.6
55	56	988	–	SZ-KS1/56	2.6
85	56	988	–	SZ-KS2/56	5.2
110	56	988	–	SZ-VB45.32	10.0

Uninsulated copper bar mounts flush with bottom edge of circuit breakers.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

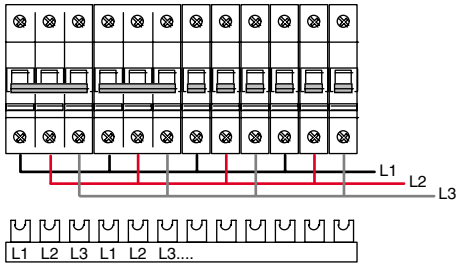
2 Phase



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	58	1035	PSB-END3	SZ-PSB54N	14.4
65	58	1035	PSB-END3	SZ-PSB56N	19.1
50	12	213	–	PSB-53UL	4.0

Insulated busbar assembly contains 2 separate circuits for use with 1, 1+N or 2 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

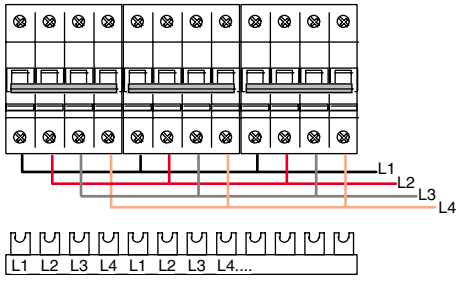
3 Phase



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	12	213	–	PSB-3UL	4.3
65	60	1065	PSB-END5	SZ-PSB4N	21.4
50	60	1065	PSB-END6	SZ-PSB12N	34.2

Insulated busbar assembly contains 3 separate circuits for use with 1 or 3 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

4 Phase



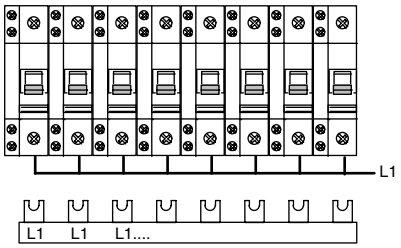
Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	60	1035	PSB-END4	SZ-PSB62N	23.2
65	60	988	PSB-END4	SZ-PSB64N	31.6

Insulated busbar assembly contains 4 separate circuits for use with 3+N1 or 4 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

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Accessories
Busbars
S260, S270, S280

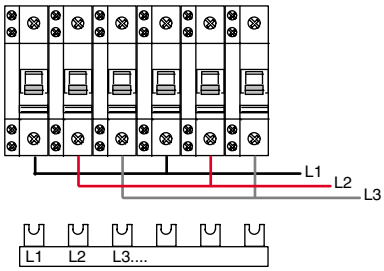
1 Phase with 1 auxiliary



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	39	1044	PSB-END3	SZ-KS3/39N	7.4
65	39	1044	PSB-END3	SZ-KS4/39N	10.1

Uninsulated copper bar mounts flush with bottom edge of circuit breakers.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

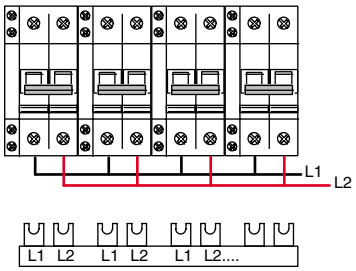
3 Phase for 1 pole MCB's with 1 auxillary



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	58	1044	PSB-END3	SZ-PSB46N	16.1
65	58	1044	PSB-END3	SZ-PSB48N	22.1

Insulated busbar assembly contains 2 separate circuits for use with 1, 1+N or 2 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

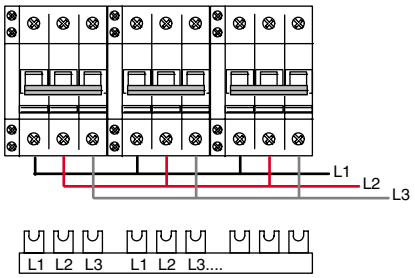
2 Phase with 1 auxillary



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
65	48	1065	—	SZ-PSB92N	23.2

Insulated busbar assembly contains 3 separate circuits for use with 1 or 3 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

3 Phase with 1 auxillary

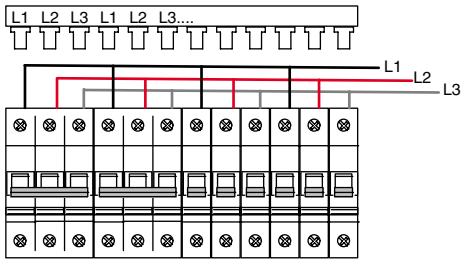


Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	48	980	PSB-END3	SZ-PSB50N	15.8
65	48	980	PSB-END3	SZ-PSB52N	22.6

Insulated busbar assembly contains 4 separate circuits for use with 3+N1 or 4 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

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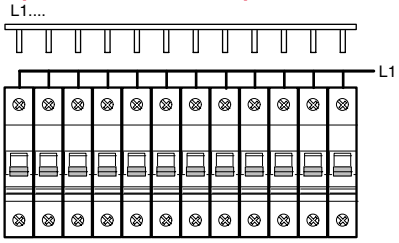
3 Phase



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	12	213	—	SZ-PSB21	4.5
50	60	1065	—	SZ-PSB22	21.4
65	12	213	—	SZ-PSB23	6.0
65	60	1065	—	SZ-PSB24	34.2

Insulated busbar assembly contains 3 separate circuits for use with 1, 2+N or 3 pole MCBs.
For use on line side (top) of S260 and S270 MCBs.

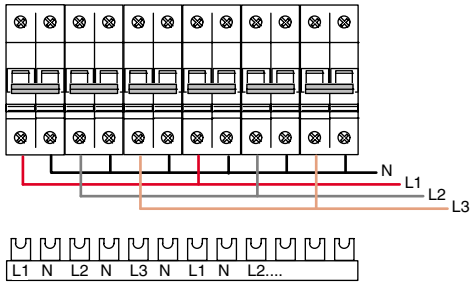
3 ph + N, for use with 2 pole MCB's on 3 ph / 4W system



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	12	202	—	SZ-KS16/12N	1.5
50	56	1007	—	SZ-KS16/56N	9.0

Insulated busbar assembly contains 1 circuit for use with 1 pole MCBs.
For use on line side (top) of S260 and S270 MCBs.

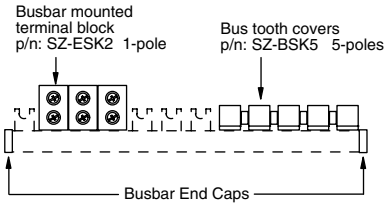
3 Phase + N, for use with 2 pole MCB's on 3 phase / 4W system



Amp rating	Number of poles	Busbar length	End cap catalog number	Catalog number	Weight ounce (2 pc.)
50	58	1048	PSB-END4	SZ-PSB58N	22.3
65	58	1048	PSB-END4	SZ-PSB60N	30.8

Insulated busbar assembly contains 4 separate circuits for use with 1+N or 2 pole MCBs.
For use on load side (bottom) of S260, S270, S280 and line side (top) of S280 MCBs.

MCB Busbar accessories



Description	Catalog number	Weight ounce (2 pc.)
Busbar end caps	PSB-END3 PSB-END4 PSB-END5 PSB-END6	—
Busbar tooth covers (shrouds unused portion of busbar)	SZ-BSK5	—
IEC busbar mounted terminal block 1 pole, for use on all busbars	SZ-ESK2	1.0

Pro M

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Accessories
S260, S270 & S280


S2-H11


S2-A1


S2-BM1


S2-S


S2-S/H


S2-NT

Electrical accessories	Catalog number	Wgt. oz. (1 pc.)
Auxiliary contacts		
For field mounting: left side		
1 N.O./ 1 N.C.	S2-H11	1.4
2 N.O.	S2-H20	
2 N.C.	S2-H02	
1 N.O./ 2 N.C.	S2-H12	
2 N.O./ 1 N.C.	S2-H21	
2 N.O./ 1 N.C. (low voltage)	S2-H21KL	

The S2-H11 auxiliary switch can be field mounted to any S260, S270 or S280 series breaker. The auxiliary contacts will signal whether the breaker is in the ON or OFF position. The contacts are rated 6A/240 VAC and 1.5A/110 VDC. Minimum operating voltage is 12 VAC/VDC.

Bell alarm		
For field mounting, left side	S2-S	1.4

The S2-S bell alarm includes a set of contacts that will only signal when the breaker has tripped. Typically the contacts would be connected to an alarm or bell to signal the operator that an overcurrent trip has occured. The bell alarm also includes a test button for testing the alarm contacts without opening the breaker. The contact is rated 6A/240 VAC and 1.5A/110 VDC. Minimum operating voltage is 12 VAC/VDC.

Bell alarm with auxiliary contact		
For field mounting, left side	S2-S/H	1.4

The S2-S/H bell alarm with auxiliary contact device combines one set of bell alarm contacts with one set of auxiliary contacts (N.O.).

Shunt trip		
For field mounting, left side		
12-60 VAC (12-60VDC)	S2-A1	5.2
110-415 VAC (110-250 VDC)	S2-A2	

For remote tripping of breaker, a shunt trip device can be added to the MCB. The solenoid device opens the breaker after control voltage is applied. Shunt trips are available depending on control system voltage (12-415 VAC/VDC).

Undervoltage release		
For field mounting, left or right side		
12V	S2-BM1	5.2
24V	S2-BM2	
48V	S2-BM3	
110V	S2-BM4	
220V	S2-BM5	
380V	S2-BM6	

When control voltage drops below approximately 50% of rated voltage, the S2-BM opens the breaker. The breaker can not be operated unless proper control voltage is first applied to the UVR coil. Similar in size and mounting to the shunt trip accessory; can be left or right side mounted.

Hand operated neutral disconnect		
For field mounting, right side, 40A max.	S2-NT	1.4

When switching of neutral with breaker contacts is desired, the neutral module S2-NT can be added to any S260, S270 or S280 MCB. The neutral connection makes before the MCB contacts connect line to load. Makes contact before MCB contacts close. Must be opened manually.

Factory mounting

Auxiliary contacts and shunt trips may be mounted in combination.

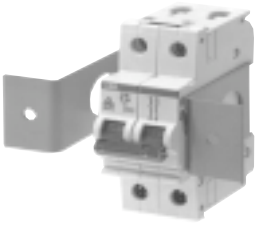
NOTE: Above accesssories are for use with types S260, S270 and S280 breakers only.

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Accessories
S260, S270, S280


S500-ME2


MB-CL


MB-3PD


SZ-AST35

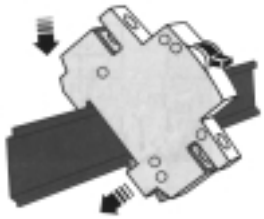

SA2


SA1

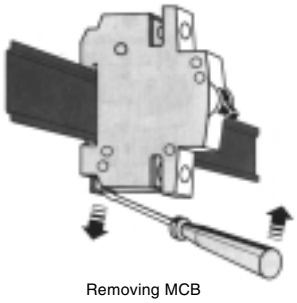
Electrical accessories	Catalog number	Wgt. oz. (1 pc.)
Front mounting kit		
For 2 poles	S500-ME1	2.1
For 2 – 5 poles	S500-ME2	2.9
For 2 – 10 poles	S500-ME3	3.6
Optional rear terminals (2 per kit)	MB-2RT	1.5
Includes flange, mounting rail, terminals for rear connection and hardware.		
Front mounting clip		
For 1 – 4 poles	MB-CL	2
Simple mounting clip for up to four module mounting.		
Front mounting bracket		
For 1 – 3 poles	MB-3PD	2.5
For flush mounting of three pole MCBs: includes hardware.		
Pin-type connector		
2AWG (35mm^2)	SZ-AST35	0.5
Needed for connecting large cable 2AWG (35mm^2) and busbar on same breaker.		
Locking device		
Adaptor only	SA1	0.7
Padlock only w/ 2 keys	SA2	0.1
Allows breaker to be locked in ON or OFF position.		
Labeling accessory		
1 sheet = 100 blank labels		
1 sheet = 100 numbered labels	STL-ST	—
Snaps into rail indent on front of MCB Label holder & labels includes 100 label carriers.		
Enclosure, IP55		
For 4 modules	12644	8.1
For 6 modules	12646	10.8
For 10 modules	12650	20.4
For 20 modules	12652	41.0
Molded plastic complete with mounting rail and knock-outs for cable entries.		
Blanking plates		
Single pole (set of 10)	BP-1P	—
Twelve pole (snap-off, set of 1)	BP-12P	—
Terminal covers		
For 2 modules	PCD2	2.0
For 4 modules	PCD4	2.8
For 6 modules	PCD6	3.4
For 8 modules	PCD8	4.1
For additional protection against accidental contact. Includes integrated mounting rail.		
Handle mechanism		
	RHS2-M	9.2
For use with 2, 3 and 4 pole S2 MCBs and disconnect switch selector handles with 5mm shaft.		
Mounting rail		
Universal mounting	SMR-39	8
35mm DIN rails are available in 39-inch strips (1 meter).		

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Technical data
Mounting and operating instructions



Mounting MCB



Removing MCB

Mounting
Universal mounting position using snap-on mounting to standard 35x7.5mm DIN rail.

Miniature circuit breakers (MCBs) can also be mounted to front of door using a panel cut-out with breaker handle protruding through panel opening for external operation. Special front mounting kit type ME is available (see page 2.12).

Connection
Terminals are suitable for solid or flexible conductors from 18 to 4 AWG (0.75 to 25mm^2) with no busbar connected. When maximum busbar size of 36 mm^2 is used, maximum cable is 6 AWG (16 mm^2).

Maximum tightening torque of 17.5 in-lb (2 Nm) for line/load terminals and 4.5 in-lb (0.5Nm) for accessory device terminals.

Operation
MCBs are switched on by moving the handle to the upper position. Stamped onto the handle switch, a “I” is visible confirming that the breaker is closed.

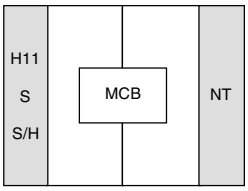
The MCBs are “trip-free,” if the handle is being forced to the “ON” position, the breaker will still trip under fault conditions.

The “O” marking indicates that the breaker is in the “OFF” position. The MCB is now open and the load is disconnected from line power.

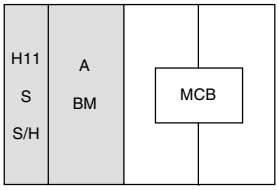
When a breaker has tripped, the MCB handle should first be set to the full “OFF” position to make certain the trip mechanism has been reset. Once the fault has been determined and cleared the MCB can again be switched “ON”.

Maintenance
ABB miniature circuit breakers require no special maintenance; only normal electrical system maintenance procedures are required.

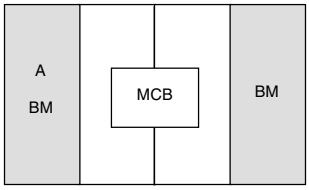
Possible mounting arrangements of MCB accessories



Auxiliary switch/bell alarm neutral disconnect



Shunt trip or undervoltage release mounted with auxiliary switch



Shunt trip and/or undervoltage release

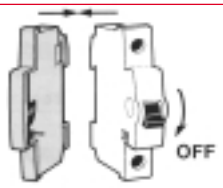
Auxiliary switch



Set breaker to “ON” position



Break out opening on side of MCB

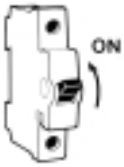


Set MCB to “OFF” position and mount auxiliary switch to side of breaker



Attach with spring clamps

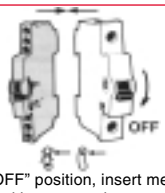
Bell alarm with auxiliary contact



Set breaker to “ON” position



Break out opening on side of MCB and remove seal



Set MCB to “OFF” position, insert metal pin as noted above with arrow and mount device to side of MCB

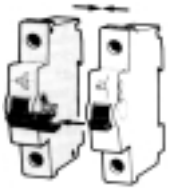


Attach with spring clamps

Shunt trip and undervoltage release



Remove seal

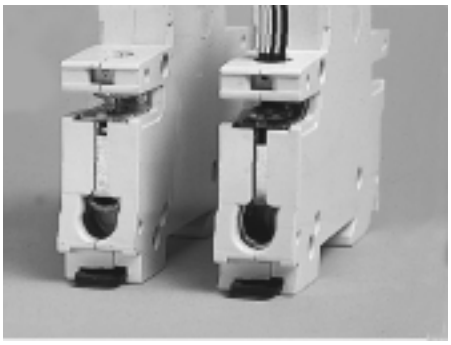


Add shunt trip to MCB

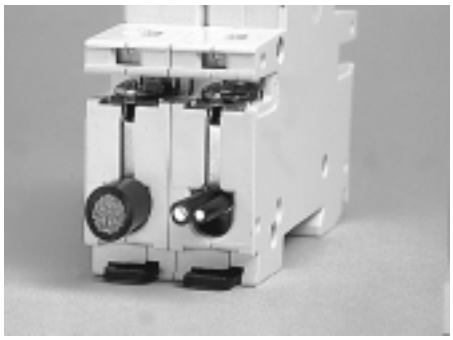


Attach with spring clamps

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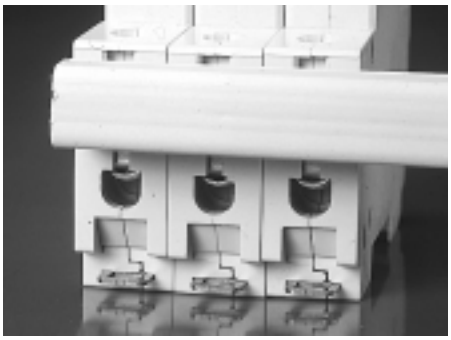
Dual function terminals provided in open position for connection to busbars. Pressing on screw head opens box terminal for cable insertion. Only the lower terminal is dual function.



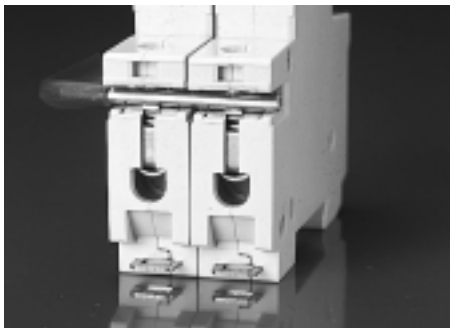
Terminals allow for connection of cable 18-4 AWG. Conductors of different sizes may also be used in same terminal.



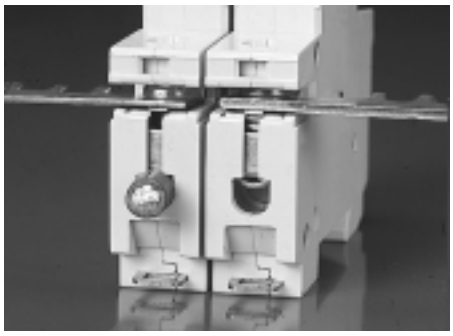
Up to five conductors, 16 AWG each, can be safely connected per terminal.



Lower terminals can be bussed together with single phase or multi-phase busbars as shown. Upper terminals can also be busbar connected.



Lower terminal can also be bussed with solid round conductor.



Cables can be connected to box terminals in addition to busbar connections on lower, dual function terminals.

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Technical data
S260, S270, & S280

Item	S260-B		S260-C, -D		S270-K		S280-K	
Approvals:								
UL	1077		1077		1077		1077	
CSA	C22.2 — No.235		C22.2 — No. 235		C22.2 — No. 235		C22.2 — No. 235	
VDE	0641, 0660		0660		0660		0660	
IEC	898, 947		898, 947		898, 947		898, 947	
No. of poles:	1,2,3,4 1+N,3+N		1,2,3		1,2,3,4, 1+N,3+N		1,2,3,4,1+N,3+N	
Tripping characteristic:	B		C,D		K		K	
Rated currents:	6 to 63A		0.5 to 63A		0.5 to 63A		0.2 to 63A	
Minimum operating voltage:	12V		12V		12V		12V	
UL/CSA rated voltage & interrupting capacity	Single pole	Multi pole	Single pole	Multi pole	Single pole	Multi pole	Single pole	Multi pole
120VAC	10kA	—	10kA	—	10kA	—	10kA for 0.2-40A 6kA for 50-63A	—
240VAC	6kA	10kA	6kA	10kA	6kA	10kA	10kA for 0.2-40A 6kA for 50-63A	10kA for 0.2-32A 6kA for 40-63A
277VAC	6kA	—	6kA	—	6kA	—	10kA for 0.2-40A	—
277/480 VAC	—	6kA	—	6kA	—	6kA	—	10kA for 0.2-32A 6kA for 40-63A
60VDC	10kA	10kA	10kA	10kA	10kA	10kA	—	—
125VDC	—	10kA	—	10kA	—	10kA	—	—
Frequency:	50/60Hz (See below)		50/60Hz (see below)		50/60Hz (see below)		50/60Hz (see below)	
Rated voltage								
IEC single pole	240/415VAC 60VDC 415VAC 110VDC		240/415VAC 60VDC 415VAC 110VDC		240/415VAC 60VDC 415VAC 110VDC		240/415VAC 60VDC 415VAC 110VDC	
IEC multi-pole								
Protection category:	IP20		IP20		IP20		IP20	
Depth of unit per DIN 43880:	68mm		68mm		68mm		68mm	
Mounting position:	optional		optional		optional		optional	
Standard mounting:	35mm DIN rail		35mm DIN rail		35mm DIN rail		35mm DIN rail	
Terminals:	Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 18-4AWG (0.75 – 25sq mm)	
	50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		50A and above Conductors from 18-2AWG (0.75 – 35sq mm)	
Service life at rated load:	20,000 operations		20,000 operations		20,000 operations		20,000 operations	
Ambient temperatures:	-25°C to +55°C		-25°C to +55°C		-25°C to +55°C		-25°C to +55°C	
Shock resistance:	10g minimum of 20 impacts, shock duration of 13ms		10g minimum of 20 impacts, shock duration of 13ms		10g minimum of 20 impacts, shock duration of 13ms		10g minimum of 20 impacts, shock duration of 13ms	
Vibration resistance:	5g, minimum of 30 minutes		5g, minimum of 30 minutes		5g, minimum of 30 minutes		5g, minimum of 30 minutes	
Disconnecting neutral rating:	6kA switching		6kA switching		6kA switching		—	

Influence of frequency on electro-magnetic trips

Magnetic trip values shown on trip curves are valid for 50/60Hz applications. For frequencies other than 50/60Hz, the magnetic (instantaneous) trip values are increased by the factor given below:

	16 2/3 - 60Hz	100Hz	200Hz	400Hz	DC
Approx. factor	1	1.1	1.2	1.5	1.5

Thermal tripping is independent of frequency.

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Technical data
S280, S280UC, S280UC, S290



Item	S280UC-K		S280-Z		S280UC-Z		S290-C
Approvals:							
UL	1077		1077		1077		—
CSA	C22.2 — No. 235		C22.2 — No. 235		C22.2 — No. 235		—
VDE	0660		0660		0660		0660
IEC	898,947		898, 947		898, 947		898
No. of poles:	1,2,3		1,2,3,4		1,2,3		1,2,3,4
Tripping characteristic:	K		Z		Z		C
Rated currents:	0.2 to 63A		0.5 to 63A		0.5 to 63A		80 to 125A
Minimum operating voltage:	12V		12V		12V		12V
UL/CSA rated voltage & interrupting capacity	Single pole	Multi pole	Single pole	Multi pole	Single pole	Multi pole	
120VAC	6kA for 0.2-40A 5kA for 50-63A	—	10kA for 0.2-40A 6kA for 50-63A	—	6kA for 0.2-40A 5kA for 50-63A	—	—
240VAC	6kA for 0.2-40A 5kA for 50-63A	6kA for 0.2-40A 5kA for 50-63A	10kA for 0.2-40A 6kA for 50-63A	10kA for 0.2-32A 6kA for 40-63A	6kA for 0.2-40A 5kA for 50-63A	6kA for 0.2-40A 5kA for 50-63A	—
277VAC	4.5kA for 0.2-40A 5kA for 50-63A	—	10kA for 0.2-40A 6kA for 50-63A	—	4.5kA for 0.2-40A 5kA for 50-63A	—	—
277/480 VAC	—	4.5kA for 0.2-40A 5kA for 50-63A	—	10kA for 0.2-32A 6kA for 40-63A	—	4.5kA for 0.2-40A 5kA for 50-63A	—
60VDC	10kA	10kA	—	—	10kA	10kA	—
125VDC	10kA	10kA	—	—	10kA	10kA	—
250VDC	4.5kA	4.5kA	—	—	4.5kA	4.5kA	—
500VDC	—	4.5kA	—	—	—	4.5kA	—
Frequency:	50/60Hz (see below)		50/60 Hz (see below)		50/60Hz (see below)		50/60Hz (see below)
Rated voltage							
IEC single pole	240/415VAC 220VDC		240/415VAC 60VDC		240/415VAC 220VDC		230/440VAC 60VDC
IEC multi-pole	415VAC 440VDC		415VAC 110VDC		415VAC 440VDC		440VAC 110VDC
Protection category:	IP20		IP20		IP20		IP20
Depth of unit per DIN 43880:	68mm		68mm		68mm		70mm
Mounting position:	optional		optional		optional		optional
Standard mounting:	35mm DIN rail		35mm DIN rail		35mm DIN-rail		35mm DIN-rail
Terminals:	Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 18-4AWG (0.75 – 25sq mm)		Conductors from 14-1/0AWG (1.5 – 50sq mm)
	50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		50A and above Conductors from 18-2AWG (0.75 – 35sq mm)		— — —
Service life at rated load:	20,000 operations		20,000 operations		20,000 operations		10,000 operations
Ambient temperatures:	-25°C to +55°C		-25°C to +55°C		-25°C to +55°C		-5°C to +45°C
Shock resistance:	10g minimum of 20 impacts, shock duration of 13ms		10g minimum of 20 impacts, shock duration of 13ms		10g minimum of 20 impacts, shock duration of 13ms		30g minimum of 20 impacts, shock duration of 13ms
Vibration resistance:	5g, minimum of 30 minutes		5g, minimum of 30 minutes		5g, minimum of 30 minutes		60m/s², at 10 – 150 Hz

Influence of frequency on electro-magnetic trips

Magnetic trip values shown on trip curves are valid for 50/60Hz applications. For frequencies other than 50/60Hz, the magnetic (instantaneous) trip values are increased by the factor given below:

	16 2/3 - 60Hz	100Hz	200Hz	400Hz	DC
Approx. factor	1	1.1	1.2	1.5	1.5

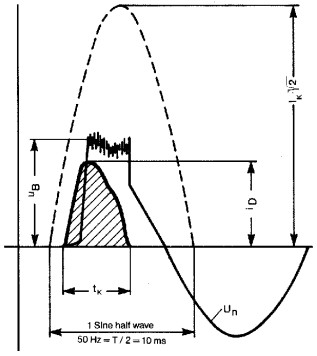
Thermal tripping is independent of frequency.

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Technical data
Let-through values

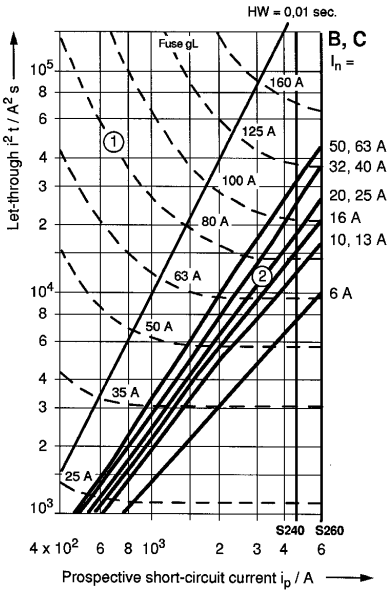
Description
All ABB miniature circuit breakers substantially reduce the maximum let-through current from the peak available short circuit current.

I_K - RMS current of fault
I_D - Max let-through of MCB
V_n - System voltage
V_B - Arc voltage of MCB
t_k - Breaking time of MCB

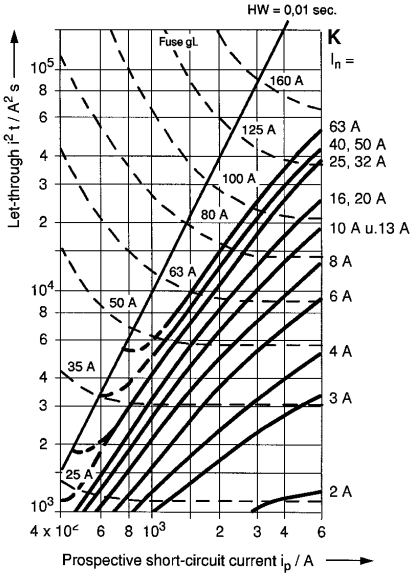


Let-through values I^2t

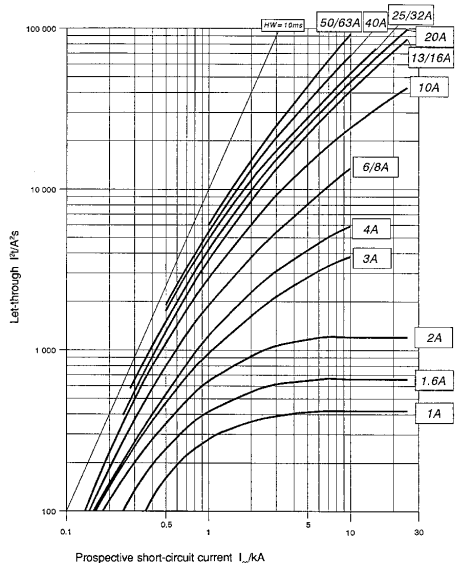
S260-B



S270-K



S280-K

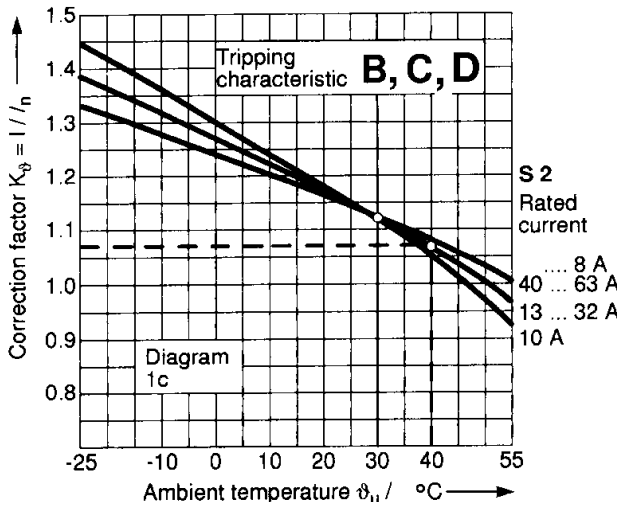
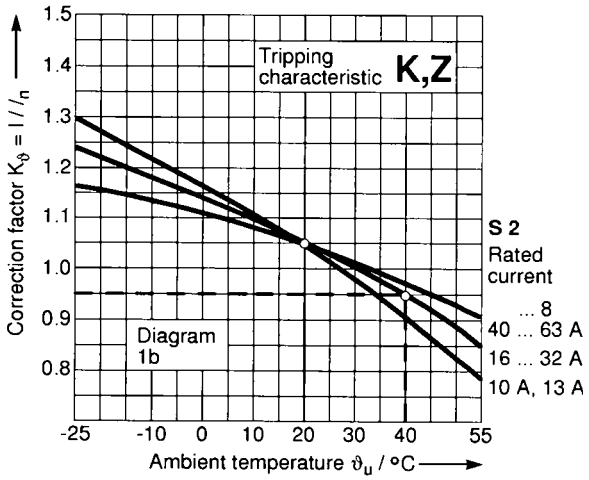


For other curves, please contact ABB Control.

Version	I^2t	I Peak
S260B	TD9980	—
S260C	TD9981	—
S260D	TD9982	—
S270K	TD9972	TD9950
S280K	TD9978	—
S280Z	TD9979	—
S290C	TD9985	—

Version	Amps	Time-current trip
S260B	6 - 63	TD9725
S270K	0.5 - 8	TD9705
	10 - 40	TD9706
	50 - 63	TD9707
S280K	0.2 - 8	TD9708
	10 - 40	TD9709
	50 - 63	TD9710
S280Z	0.5 - 63	TD9711

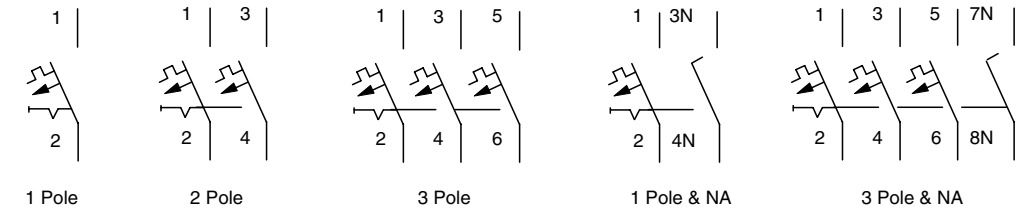
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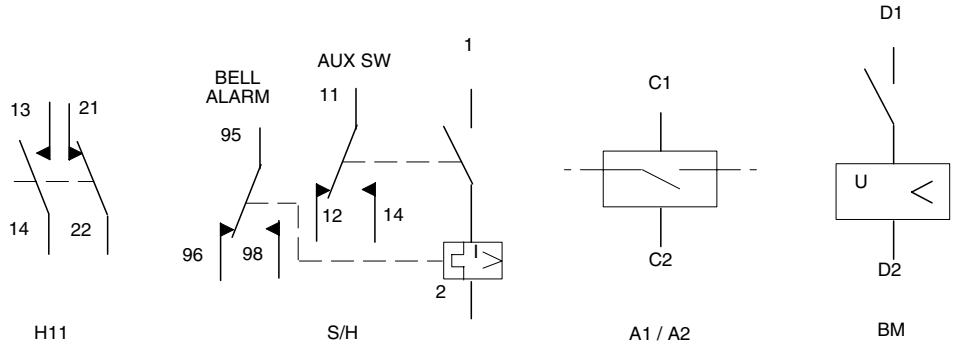
Type B, C, D	Type K, Z
	

Current carrying capacity of type “B”, “C”, “D”, “K” and “Z” thermal trip characteristics as a function of ambient temperature.

Terminal markings

Input optional from top or bottom.





Pro M

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Technical data
Breaker resistance values & wire size comparison

Miniature circuit breaker resistance values

Ampere rating	Milliohms S260-B	S270-K	S280-K	S280-Z
0.2	—	—	33300	—
0.3	—	—	19700	—
0.5	—	6340	5020	10100
0.75	—	—	2400	—
1.0	—	1550	1390	2270
1.6	—	695	612	1100
2	—	460	450	619
3	—	165	147	202
4	—	120	112	149
6	55	52	54.1	104
8	15	38	33.8	53.9
10	13.3	12.6	15.1	17.5
12	13.3	12.6	—	—
16	7.0	7.7	8.1	10.9
20	6.25	6.7	5.27	6.0
25	5.0	4.6	3.97	4.1
32	3.6	3.5	2.65	2.81
40	3.0	2.8	2.44	2.55
50	1.2	1.15	1.15	1.77
63	1.4	0.70	0.70	1.31

Comparison of IEC and AWG wire sizes

mm	AWG (mm)	Amps / UL	Amps / IEC
1.0	—	—	8
—	16 (1.3)	10	—
1.5	—	—	12
—	14 (2.1)	15	—
2.5	—	—	20
—	12 (3.3)	20	—
4	—	—	25
—	10 (5.3)	30	—
6	—	—	32
—	8 (8.4)	50	—
10	—	—	50
—	6 (13.3)	65	—
16	—	—	65
—	4 (21.2)	85	—
25	—	—	85
—	3 (26.7)	100	—
—	2 (33.6)	115	—
35	—	—	115

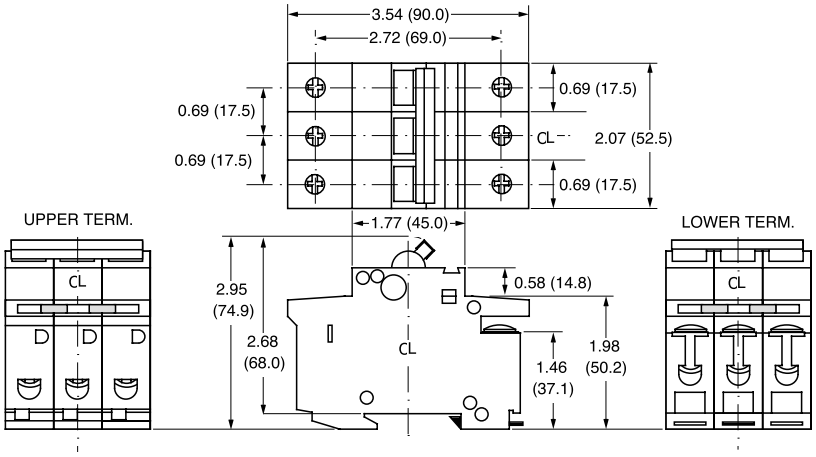
Ampacities for AWG wire are based on copper cable rated 75° C, except for 16AWG which is based on 60° C wire. Taken from UL508 Table 52.2.

Consult applicable standards for futher detail and information.

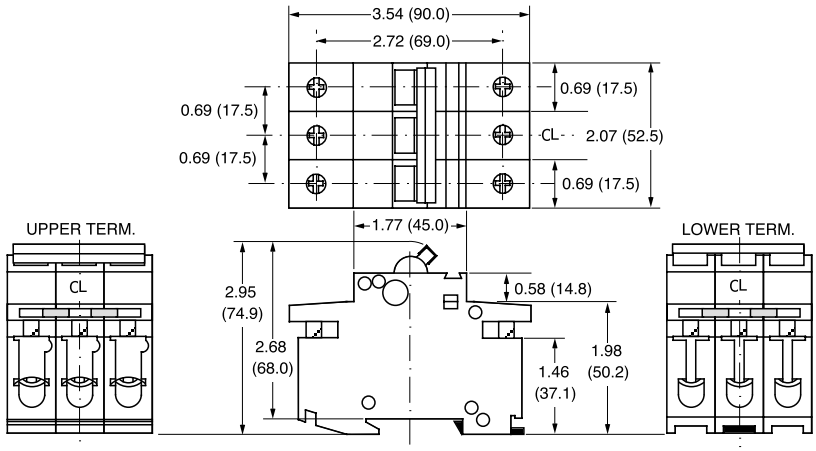
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Approximate dimensions
S260, S270, S280, S290

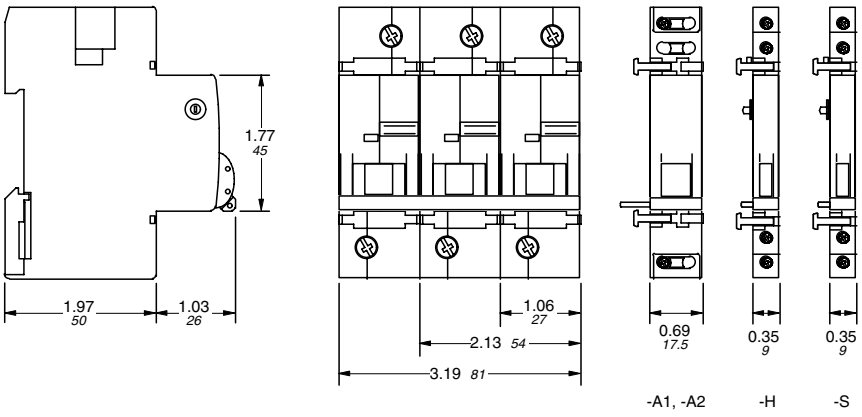
S260 & S270



S280



S290



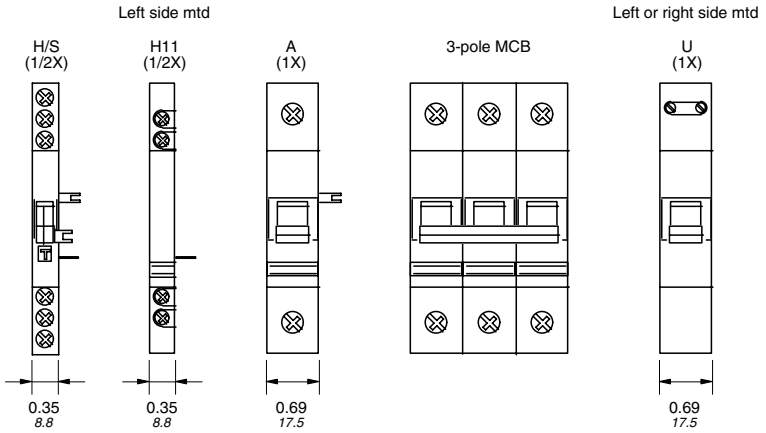
Pro M

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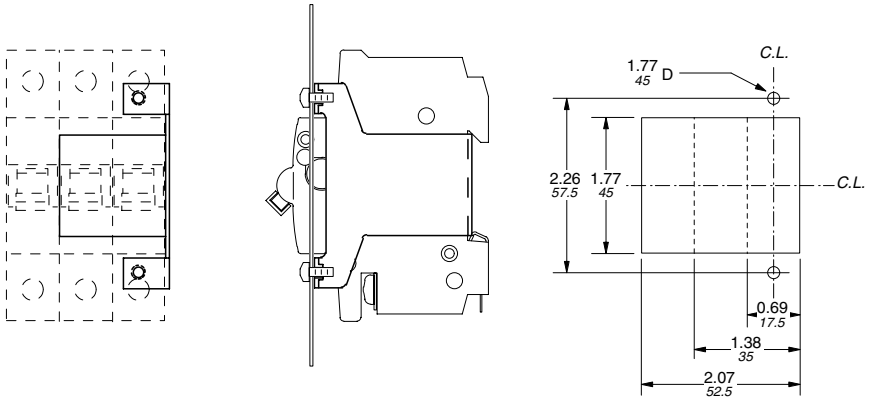
Approximate dimensions
Accessories

00.00 Inches
00.00 Millimeters

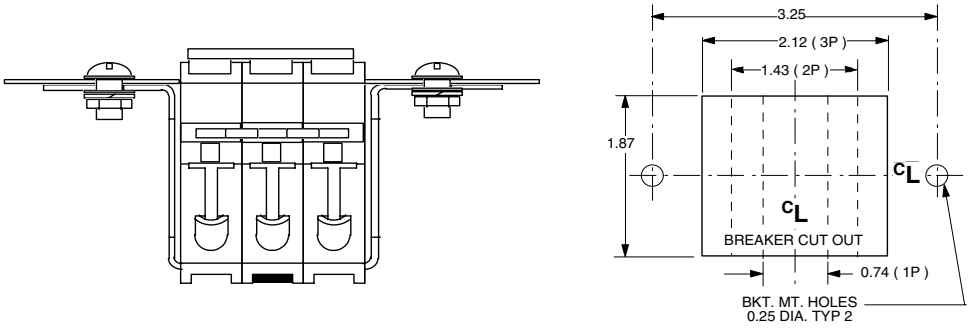
Accessories



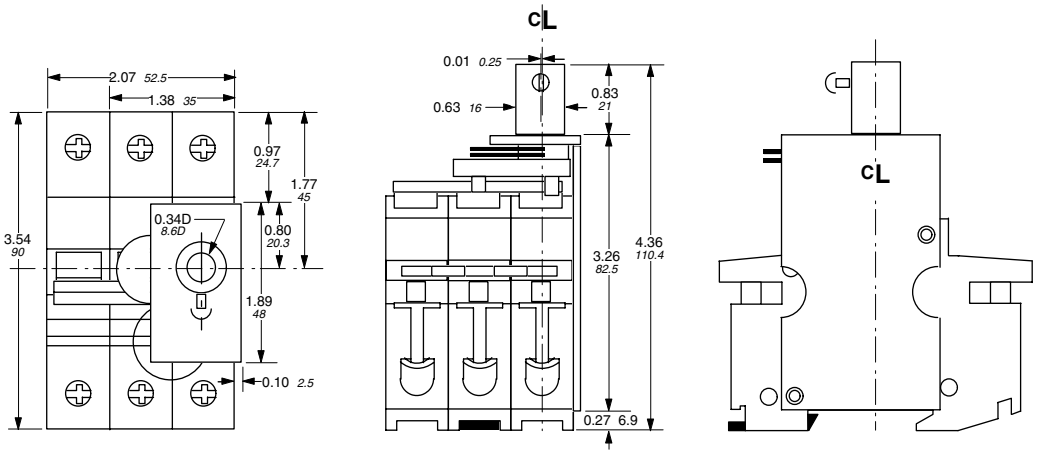
MB-CL



MB-3PD



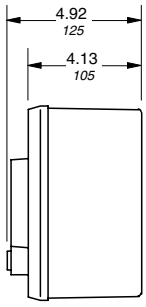
RHS2-M

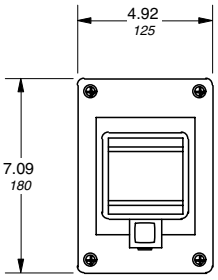


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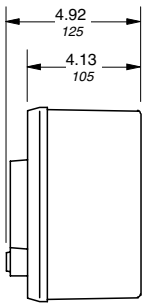
Approximate dimensions
Accessories

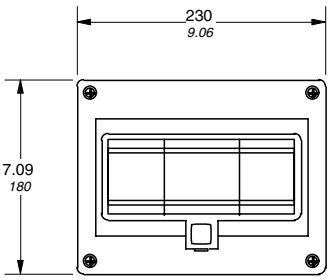
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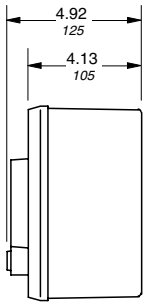


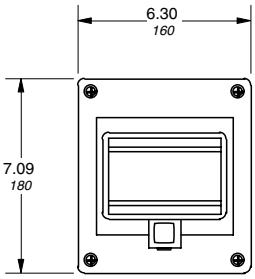
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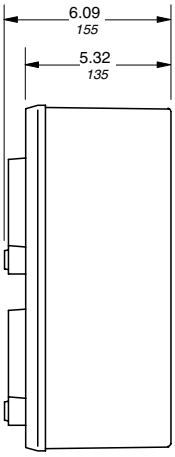


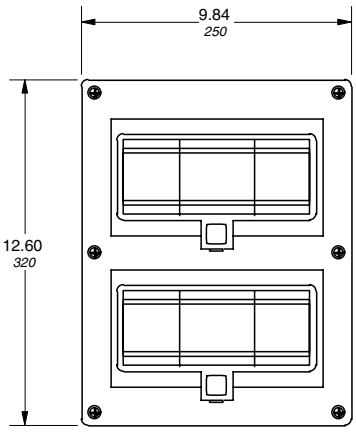
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12656





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Cross-reference

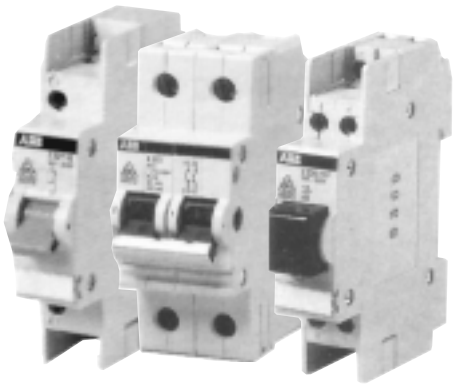
Older version	Suggested replacement series	Physical comparison	Electrical comparison
S160L	S260B	Same pole spacing	Same trip characteristic as “L”
S160K	S270K	Same pole spacing	Same trip characteristic as “K” S270 is 6kA IC
S210L	S260B	Same pole spacing	Same trip characteristic as “L” S260B is 6kA IC
S210K	S280K	Same pole spacing	Same trip characteristic as “K” S280K is 6kA IC
S210Z	S280Z	Same pole spacing	Same trip characteristic as “Z”
S250L	S260B	Same pole spacing	Same trip characteristic as “L”
S210-UCK	S280UC-K	Same pole spacing	Same trip characteristic as “K”
S210-UCZ	S280UC-Z	Same pole spacing	Same trip characteristic as “Z”
S220-K	S500-K	Different pole spacing	Same trip characteristic as “K”
S230-B	S260-B	Same pole spacing	Same trip characteristic as “B”

Many older styles of ABB miniature circuit breakers have been replaced by new and improved versions. Many of these newer styles can be directly interchanged, both electrically and physically, with the older version. There are also many international styles of ABB circuit breakers which are not normal stock items and may be interchanged with stocked ABB versions.

Note: MCB types S260/270 and S280 can be raised to the same height as older style S210 series MCBs through the use of a height adjuster (SZ-ES68/83; $ 30 list per 20). The height adjustor snaps onto the DIN rail and raises the height of components 68mm to match that of the S210 series (83mm).

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Modular installation equipment
System Pro M



Pro M

Description

- Safe connection by box terminals
- Captive screws with Pozidrive slotted head, Pozidrive system, Gr. 1
- Snap-on labels available
- Quick mounting with snap-on clip, easily accessible and detachable at the bottom
- Protection against unintentional direct touch
- System approach for control and circuit protection
- Compact size that dimensionally matches the S2 MCB series
- Control and pilot functions can be along side protective devices
- DIN rail mounted with 45mm front opening
- For use in auxiliary and logic devices
- Provide additional user functions for system control and operation
- Include pushbuttons, indicating lights and selector switches
- ABB System Pro M compatibility
- Most devices are both UL 508 recognized and are IEC compliant
- Labeled with the CE Mark

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Modular installation equipment
Switches, 240VAC
16 & 25A



E221-10

Type	Rated current	Catalog number	List price	Delivery schedule	Suggested order qtys	Weight (Oz.) 1 piece
Switches						
1 N.O. + 1 N.C.	16	E221-11	**$ 90**			
2 N.O. + 2 N.C.	16	E221-22	**177**	B	10	2.46
3 N.O. + 1 N.C.	16	E221-31	**177**			
1 N.O.	16	E221-10	**59**			1.94
2 N.O.	16	E221-20	**110**	B	10	2.12
3 N.O.	16	E221-30	**120**			2.29
4 N.O.	16	E221-40	**159**			2.47
1 N.O. + 1 N.C.	25	E222-11	**140**			2.47
1 N.O.	25	E222-10	**107**			1.94
2 N.O.	25	E222-20	**141**	B	10	2.12
3 N.O.	25	E222-30	**159**			2.29
4 N.O.	25	E222-40	**239**			2.47
Form "C" switches						
1 Change-over contact	16	E221-6	**69**	B	10	2.12
2 Change-over contacts	16	E221-6/2	**125**			2.47
1 Change-over contact	25	E222-6	**128**	B	10	2.12
Form "C" switches (I-O-II, Hand-OFF-Automatic)						
1 Pole	16	E221-4	**99**	B	10	2.12
2 Pole	16	E221-4/2	**147**			2.47
1 Pole	25	E222-4	**150**	B	10	2.12

Note: Above devices are UL 508 recognized and IEC certified.
A300 pilot duty

Delivery Class

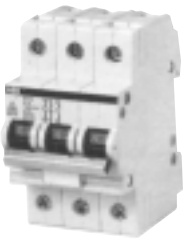
A - Standard item, stock to 2 weeks lead time
B - Stock to 4 weeks lead time
C - 6 to 8 week lead time
D - 10 to 12 week lead time
E - Call for delivery

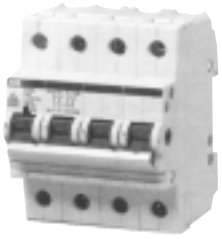
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Modular installation equipment
Disconnect switches
45, 63, 80 & 100A


Single pole


Two pole


Three pole


Four pole

Type	Rated current	Catalog number	List price	Delivery schedule	Suggested order qtys	Weight (Oz.) 1 piece
Single pole, 240V						
	45	E241/45	**$ 54**	B	10	2.82
	63	E271/63	**60**			
	80	E271/80	**72**			
	100	E271/100	**96**			
Two pole, 415V						
	45	E242/45	**114**	B	5	6.17
	63	E272/63	**126**			
	80	E272/80	**150**			
	100	E272/100	**204**			
Three pole, 415V						
	45	E243/45	**174**	B	3	9.52
	63	E273/63	**192**			
	80	E273/80	**228**			
	100	E273/100	**306**			
Four pole, 415V						
	45	E244/45	**234**	B	2	12.87
	63	E274/63	**258**			
	80	E274/80	**306**			
	100	E274/100	**410**			

Above devices are IEC certified.

Isolator switches

The E240/270 series operate as disconnect switches and are typically used as a main disconnect for several branch MCB devices. The isolator switches offer no overcurrent protection. The E240/270 series is the same physical size and shape as the S260, S270 & S280 series. The switches include dual function terminals and can be connected via standard ABB busbar through the upper or lower terminals.

Delivery Class

A - Standard item, stock to 2 weeks lead time
B - Stock to 4 weeks lead time
C - 6 to 8 week lead time
D - 10 to 12 week lead time
E - Call for delivery

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E225-11F



E227-10E

Type	Catalog number	List price	Delivery schedule	Pack units pcs.	Weight (Oz.) 1 piece
Pushbutton, 1 N.O. + 1 N.C. contact					
Grey	E225-11B				
Red	E225-11C				
Green	E225-11D	**$ 75**	A	10	1.94
Yellow	E225-11E				
Black	E225-11F				
Blue	E225-11G				
Illuminated pushbutton, 1 N.O. contact with lamp, 120 VAC					
Clear	E227-10B/110				
Red	E227-10C/110				
Green	E227-10D/110	**100**	A	10	1.94
Yellow	E227-10E/110				
Blue	E227-10G/110				
Pilot light with lamp, 120 VAC					
Clear	E229-B/110				
Red	E229-C/110				
Green	E229-D/110	**93**	A	10	1.59
Yellow	E229-E/110				
Blue	E229-G/110				
Lamps					
24 VAC/DC	E10/24				
120 VAC/DC	E10/110	**24**	A	1	0.14
220 VAC/DC	E10/220				

Note: Above devices are UL 508 recognized and IEC certified.

Special features

- Safe connection via box terminals
- Captive screws with Phillips/Slotted head, Posidriv sysem, Gr. 1
- Snap-on labels available
- Protection against unintentional touch acc. to DIN VDE 0106 Part 100
- Lenses and pushbuttons in six colors

Elapsed time meter

Type	Catalog number	List price	Delivery schedule	Pack units pcs.	Weight (KG) 1 piece
24 VAC, 60 Hz	E233-24/60		B		
120 VAC, 60 Hz	E233-120/60	**$ 130**	A	1	0.045
240 VAC, 60 Hz	E233-240/60		B		

- Non-resettable
- 100,000 hours (99999.99)

Delivery Class

A - Standard item, stock to 2 weeks lead time
B - Stock to 4 weeks lead time
C - 6 to 8 week lead time
D - 10 to 12 week lead time
E - Call for delivery

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Components for quick mounting onto DIN rails (35mm)

Mounting depth:	68mm
Mounting width:	1, 2, 3 and 4 pole switches = 17.5mm (= 1 module)

E220 Switches, 16 & 25A

Switching capacity:	1.25 I_n, 1.1U_n, cos j = 0.6
Short-circuit withstanding capacity:	3 kA, 380V, cos j = 0.9
Toggle sealable:	In ON and OFF positions
Connection cross-sections:	Up to 1 x 6mm^2 or 2 x 2.5mm^2
Rated AC voltage:	240 VAC UL/CSA (E171252) 250/440 VAC IEC

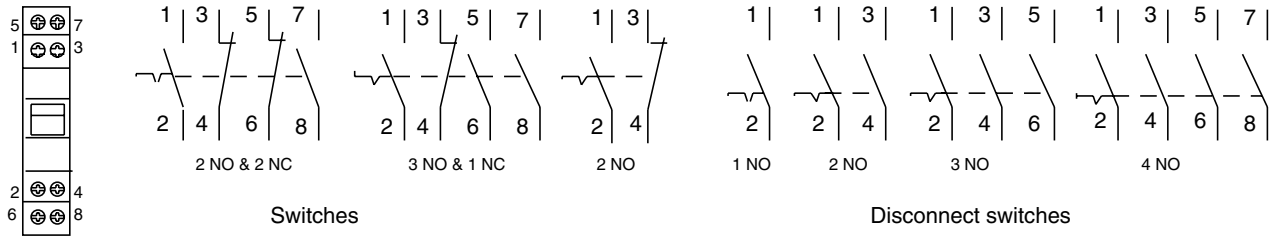
E240/270 Disconnect switches, 45, 63, 80, & 100A

Switching capacity:	1.25 I_n, 1.1U_n, cos j = 0.3
Short-circuit withstanding capacity:	E240 = 10kA, E270 = 25kA RMS
Connection cross-sections:	E240 up to 25mm^2 E270 up to 50mm^2
Rated AC voltage:	240/400/415 VAC

E Series components for quick mounting onto DIN rails (35mm)

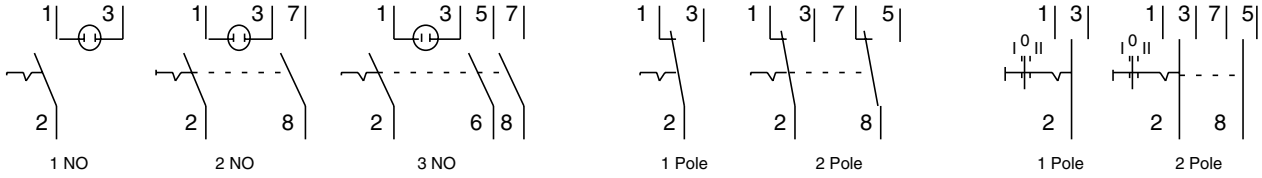
Mounting depth	68mm
Mounting width:	17.5mm (=1 module)
Color:	RAL 7035, grey
Connection cross sections:	Up to 1 X 6mm^2 or 2 X 2.5mm^2
Rated current:	16A
Rated voltage:	250 VAC IEC
Rated voltage:	240 VAC UL/CSA (E171252)

Terminal markings



Switches

Disconnect switches

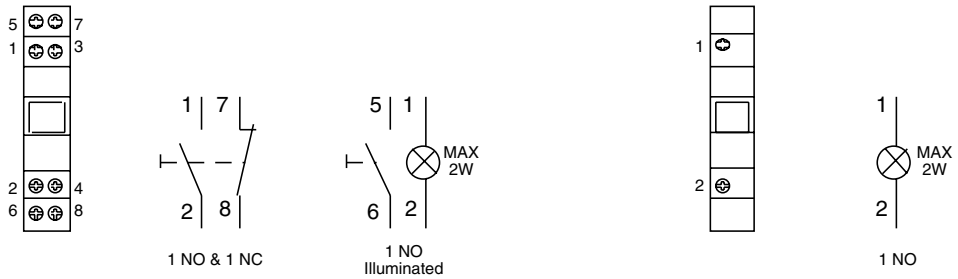


Illuminated pushbutton

Form "C" switches

Form "C" switches
(Hand - OFF- Auto)

Terminal assignments for pushbuttons and indicator lights



Pushbutton

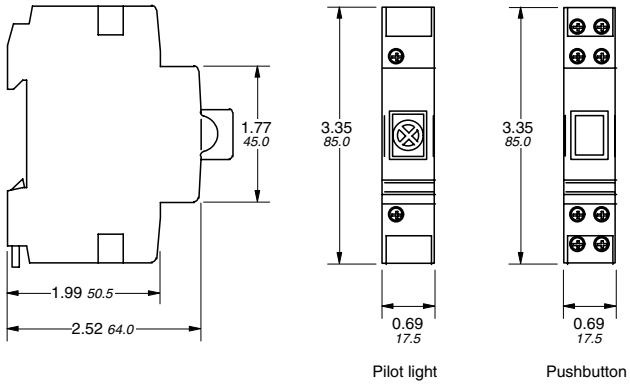
Pilot light

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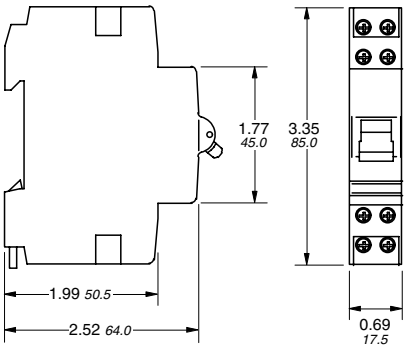
Modular installation equipment
Approximate dimensions

00.00 Inches
00.00 Millimeters

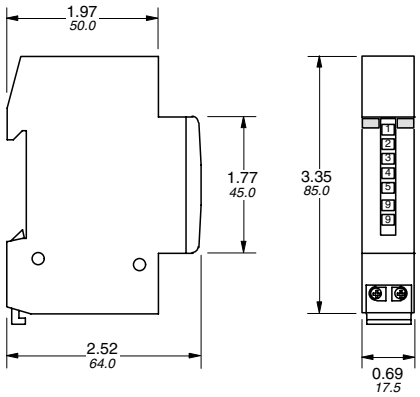
E220



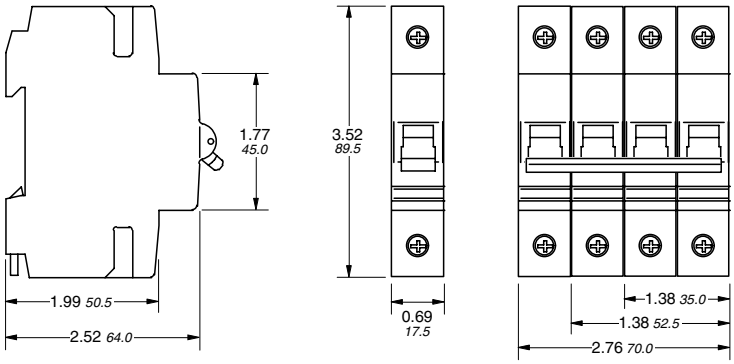
E220, 16 & 25A



E233



E240/270



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