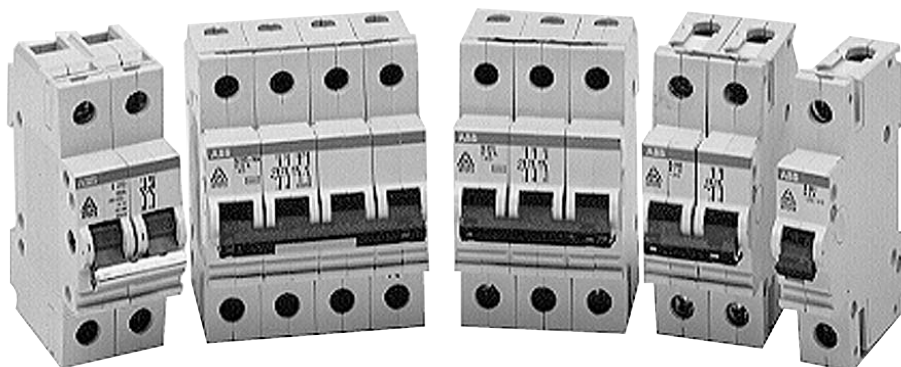


S260 – S290

Miniature circuit breakers



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



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 panel mounting
- Finger safe terminals
- Multi-function terminals
- Suitable for reverse feed
- UL 1077 and CSA 22.2
- 277/480VAC and 500VDC versions



General information

S260, S270, S280, S290

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 – 25mm²) 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 through 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 between 10 and 20 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.

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	18kA	32 - 63A	S500-B,C,D	
		26 - 45A	S500-K	
		6 - 25A	S500-B,C,D	
30kA	30kA	0.15 - 25A	S500-K	
		0.5 - 63A	S260-B,C,D	Single pole
		0.5 - 63A	S270-K	Single pole
240 VAC	6kA	50 - 63A	S280-K, Z	Single pole
		0.5 - 63A	S260-B,C,D	Multi pole
		0.5 - 63A	S270-K	Multi pole
10kA	10kA	0.2 - 40A	S280-K,Z	Single pole
		0.2 - 63A	S280-K,Z	Multi pole
		32 - 63A	S500-B,C,D	
18kA	18kA	26 - 45A	S500-K	
		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	10kA	0.2 - 40A	S280-K,Z	Single pole
		0.5 - 63A	S260-B,C,D	Multi pole
		0.5 - 63A	S270-K	Multi pole
277/480 VAC	6kA	40 - 63A	S280-K,Z	Multi pole
		0.2 - 32A	S280-K,Z	Multi pole
		0.5 - 63A	S260-B,C,D	Multi pole
60 VDC	10kA	0.5 - 63A	S270-K	Single pole
		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

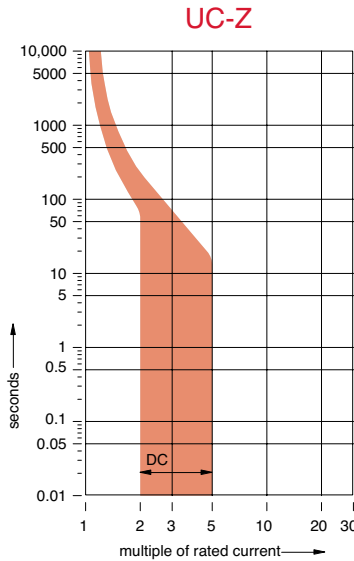
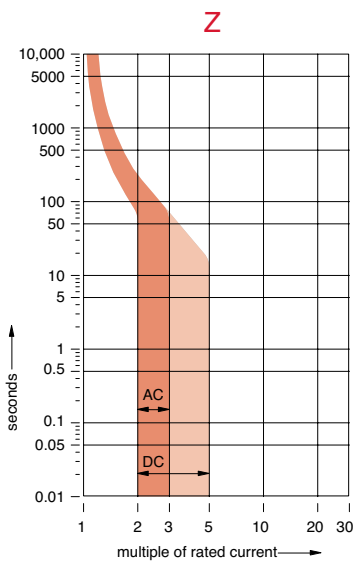
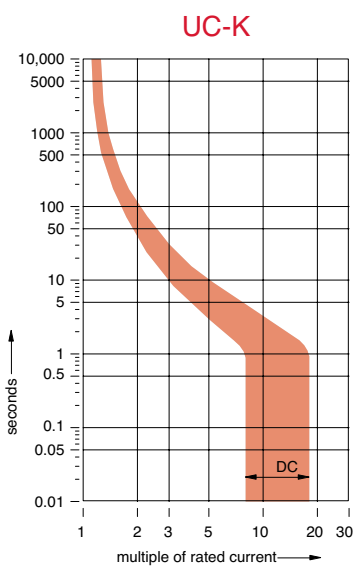
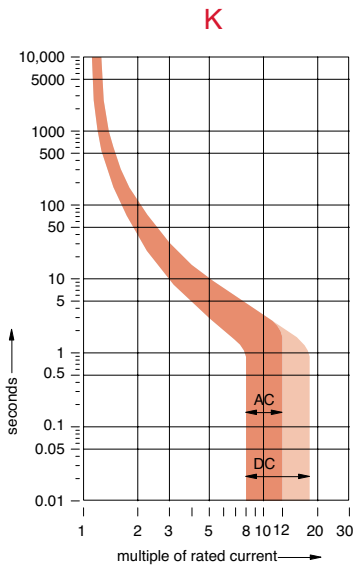
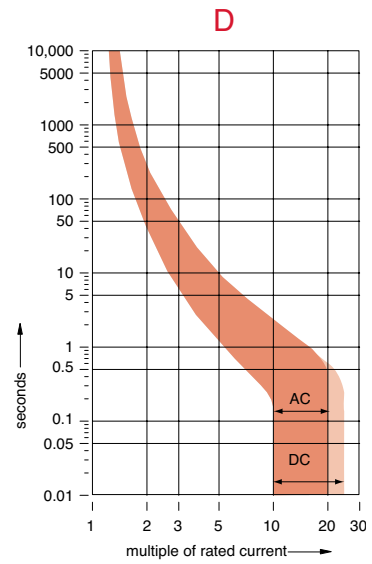
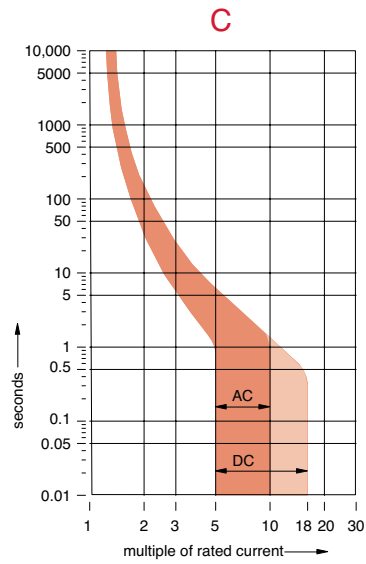
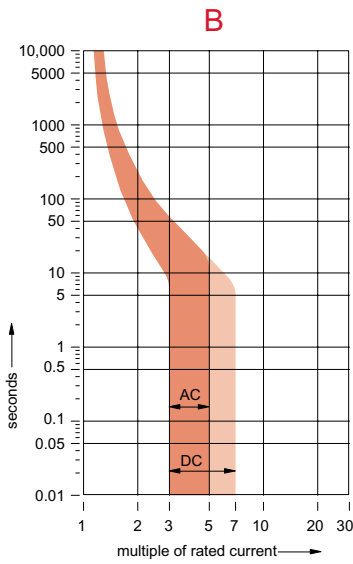
Trip characteristics overview

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.

General information

Tripping curves



General information

Construction details (S280 shown)

System
Pro M

