

## Technical data S280-Z, S280UC-Z, S290-C

Item	S280-Z	S280UC-Z	S290-C
Approvals:			
UL	1077	1077	—
CSA	C22.2 - No.235	C22.2 - No. 235	—
VDE	0660	0660	0660
IEC	898, 947	898, 947	898
No.of poles:	1,2,3,4	1,2,3	1,2,3,4
Tripping characteristic:	Z	Z	C
Rated currents:	0.5 to 63A	0.5 to 63A	80 to 125A
Rated voltage:			
UL/CSA single pole	277VAC	277VAC, 250VDC	①
UL/CSA multi pole	480VAC	480VAC, 500VDC	①
IEC single pole	240/415VAC 60VDC	240/415VAC 220VDC	230/440VAC 60VDC
IEC multi-pole	415VAC 110VDC	415VAC 440VDC	440VAC 110VDC
Minimum operating voltage:	12V	12V	12V
Rated interrupting capacity:	Up to 32A - 10kA IC at 480VAC 40-63A - 6kA IC at 480VAC	Up to 32A - 6kA IC at 480VAC 40-63A - 5kA IC at 480VAC 0.2-63A - 4.5kA IC at 250/500VDC	10kA IC at 440 VAC
Frequency:	50/60 Hz (See pg. 1.22)	50/60Hz (see pg. 1.22)	50/60Hz
Protection category:	IP20	IP20	IP20
Depth of unit per DIN 43880:	68mm	68mm	70mm
Mounting position:	optional	optional	optional
Standard mounting:	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 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)	— — —
Service life at rated load:	20,000 operations	20,000 operations	10,000 operations
Ambient temperatures:	-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	30g minimum of 20 impacts, shock duration of 13ms
Vibration resistance:	5g, minimum of 30 minutes	5g, minimum of 30 minutes	60m/s <sup>2</sup> ,

① For UL and 480VAC ratings, consult Relay Specialties technical sales department.

### Tripping characteristics

#### Time-current curves

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

The "B" trip designation is offered with the S260 series and is specifically designed for control circuit conductor protection. The "K" trip designation, offered with the S270, S280 and S500 covers a much broader range of applications including equipment, motor and cable protection. The "Z" trip designation offered in both AC and DC versions with the S280 is intended for applications where very low instantaneous trip times are required such as for SCR (rectifier) 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 with the S290 series has rated currents of 80, 100 and 125 amperes. The "C" time-current curve is designed for high 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.

#### 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