

### General information

Miniature circuit breakers (MCBs) are used throughout the world in all types of electrical installations. ABB MCBs are approved for use by Underwriters Laboratories in systems rated up to 600VAC/VDC. Devices are also certified per CSA.

MCBs are approved per IEC-898 and VDE 0641, and certified under IEC-947 and VDE 0660 standards for use in systems rated up to 690VAC.

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<sup>2</sup>) for 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 the, S200 series MCBs:

- Shunt trips
- Auxiliary contacts
- Bell alarm contacts
- Aux/bell alarm 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 489

S200U and S200UP MCBs are listed as molded case circuit breakers for use as branch circuit protective devices. Miniature MCCBs and accessories are listed under UL file E212323.

#### UL 1077

S200 and S200P 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 S200 and S500 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 S200 and S500 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.

#### D Characteristic

The new magnetic trip action has an instantaneous trip between 10 and 20 times the breaker rating. Thus, the S200 and S500-D can be a good protective solution for applications involving high in-rush transformers, motors and other high inductive systems. It 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. Available in S200P, S200U, S200UP and S500.

#### 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 S200P, S200U and S200UP series with both the 480Y/277VAC and 250/500VDC ratings.

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