CANADIAN BROCHURE

Miniature Circuit Breaker

Quick Selection Guide

- UL489 / CSA C22.2 No.5 devices
- UL1077 / CSA C22.2 No. 235 devices
- Fast selection of devices
- Easy codification of devices

We didn’t just change the market, we created it

ABB miniature circuit breakers, 90 years of trust

Then

In 1923, Hugo Stotz combined a thermal and magnetic trip unit in a single device that could be screwed into regular fuse sockets. Stotz’s invention opened a new world in electrical installation.

Now

The next-generation ABB mini circuit breakers (MCBs) provide the highest safety solutions for nearly every electrical application and installation type—and meet all relevant standards worldwide.

System pro M compact™ MCBs

Miniature circuit breakers protect installations against overload and short circuit to ensure reliability and safety for operations. They are selectively switchable, even under load, in the event of a fault or for maintenance purposes. Downtime is minimized, thanks to the devices’ reclosing capability.

- Residential, commercial and industrial multi-functional platform, completely compatible for maximum value and flexibility
- Comprehensive, fully integrated range of easy-to-install MCBs and accessories

Quality and sustainability

Our MCBs are built to last. We achieve this through an uncompromising commitment to quality. We use only the finest components and materials. All materials comply with EU (RoHS, REACH) standards for sustainability and are halogen-free. Every unit is inspected three times before it leaves our facilities.

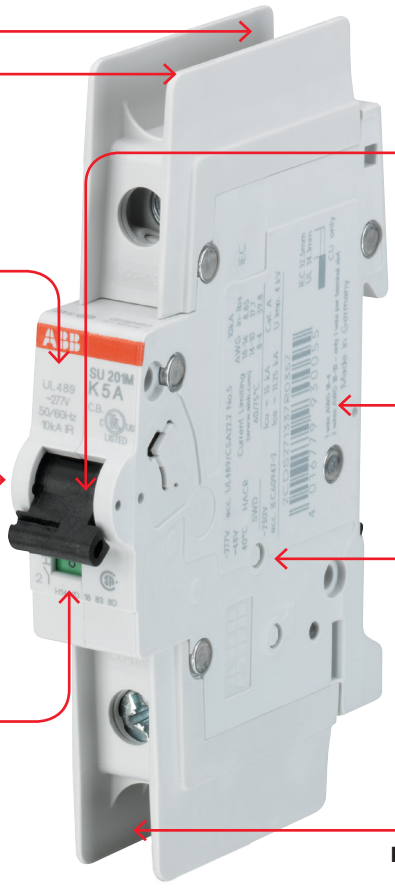
Our reputation for innovation, quality and performance is built into every ABB circuit breaker with these patented features:

Terminal
Extended size with insulation for IP20 protection and new pressure plate for improved conductor connection — easier to handle, safer to use

Contact design
With snap-action mechanism for improved arc movement and optimized switching

Switching mechanism
New design and assembly increases reliability of triggering — even under tough conditions

Tripping device
Optimized arc extinguishing system improves safety



Patented twin terminals with captive screws add comfort and safety

Product code identifies basic technical specs

Patented tripping device ensures uncompromised safety

Contact-position indicator with direct contact connection clearly indicates position for extra safety

Simple switch mechanism provides immediate system availability after a fault

Laser printing resists scratches and solvents

Unit performs at its high rated voltage

Patented housing design offers environmental friendliness and optimized performance

CSA C22.2 No.235 / UL1077

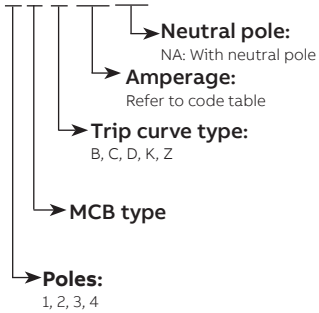
Supplementary Protection

Standards	Type of load / application	Suggested trip curve	Network type	Available voltage level	Available current levels	Interrupting capacity	Series suggested
UL1077 CSA C22.2 No.235	Cable protection	B	AC	480Y/277 Vac	0,5...63 A	10 kA / 5 kA (1)	ST200M
				480Y/277 Vac	10...100 A	10 kA	S800C (2)
				600Y/347 Vac	10...63 A	6 kA	S800S (2)
			DC	60 Vdc / 125 Vdc	6...63 A	10 kA	ST200M
				125 Vdc / 500 Vdc	10...100 A	10 kA	S800C (2)
	Medium magnetic start-up current protection	C	AC	480Y/277 Vac	0,5...63 A	10 kA / 5 kA (1)	ST200M
				480Y/277 Vac	10...100 A	10 kA	S800C (2)
				600Y/347 Vac	10...100 A	6 kA	S800S (2)
				600Y/347Vac	10...32 A	15 kA	S800HV (3p only) (2)
			DC	60 Vdc / 125 Vdc	0,5...63 A	10 kA	ST200M
				125 Vdc / 500 Vdc	10...100 A	10kA	S800C (2)
				250 Vdc / 500 Vdc	0.5...63 A	10 kA	S200MUC (2)
	High inductive systems, High in-rush demand applications	D	AC	480Y/277 Vac	0,5...63 A	10 kA / 5 kA (1)	ST200M
				480Y/277 Vac	10...100 A	10 kA	S800C (2)
				600Y/347 Vac	10...63 A	6 kA	S800S (2)
			DC	60 Vdc / 125 Vdc	0,5...63 A	10 kA	ST200M
				125 Vdc / 500 Vdc	10...100 A	10 kA	S800C (2)
	High magnetic start-up protection (motors, transformers)	K	AC	480Y/277 Vac	0,5...63 A	10 kA / 5 kA (1)	ST200M, S200MR(3)
				480Y/277 Vac	10...100 A	10 kA	S800C (2)
				600Y/347 Vac	10...63 A	6 kA	S800S (2)
				600Y/347 Vac	10...32 A	15 kA	S800HV (3p only) (2)
			DC	60 Vdc / 125 Vdc	0,5...63 A	10 kA	ST200M
				125 Vdc / 500 Vdc	10...100 A	10 kA	S800C (2)
				250 Vdc / 500 Vdc	0,2...63 A	10 kA	S200MUC (2)
	Semiconductors and sensitive equipment protection	Z	AC	480Y/277 Vac	0,5...63 A	10 kA / 5 kA (1)	ST200M
			DC	60 Vdc / 125 Vdc	0,5...63 A	10 kA	ST200M
				250 Vdc / 500 Vdc	0,5...63 A	10 kA	S200MUC (2)

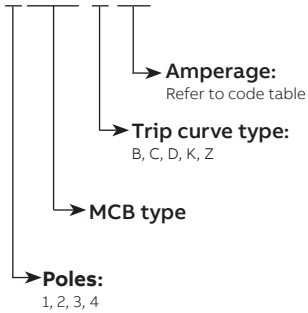
(1) ST200M series certifies 10 kA up to 35A max at 480Y/277Vac and up to 63A at 240Vac (2) Non-stock items (3) Ring terminal version

Part number configuration

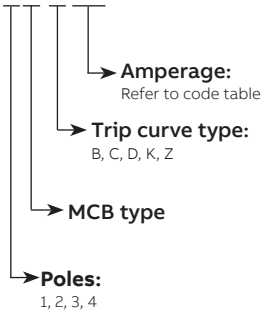
ST201M-K ** NA



S201MUC-K **



S801C-K **



CSA C22.2 No.5 / UL489

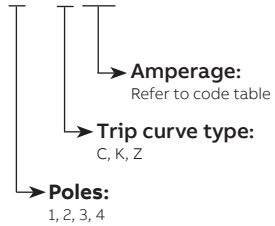
Branch Circuit Protection

Standards	Type of load / application	Suggested trip curve	Network type	Available voltage level	Available current levels	Interrupting capacity	Series suggested
UL489 CSA C22.2 No.5	Medium magnetic start-up current protection	C	AC	240 Vac	0.5...63 A	10 kA	SU200M
				480Y/277 Vac	0.5...40 A	10 kA	SU200M
			DC	48 Vdc / 96 Vdc	0.5...63 A	10 kA	SU200M
	High magnetic start-up protection (motors, transformers)	K	AC	240 Vac	0.2...63 A	10 kA	SU200M, SU200MR (1, 2)
				240 Vac	10...100 A	30 kA / 50 kA	S800U
				480Y/277 Vac	0.2...35 A	10 kA	SU200M, SU200MR (1, 2)
			DC	60 Vdc / 125 Vdc	1...63 A	14 kA	S200UDC
				48 Vdc / 96 Vdc	0.2...63 A	10 kA	SU200M
	Semiconductors and sensitive equipment protection	Z	AC	240 Vac	0.5...63 A	10 kA	SU200M
				240 Vac	10...100 A	30 kA / 50 kA	S800U (2)
				480Y/277 Vac	0.5...40 A	10 kA	SU200M
			DC	60 Vdc / 125 Vdc	1...63 A	14 kA	S200UDC
				48 Vdc / 96 Vdc	0.5...63 A	10 kA	SU200M
UL489B	Semiconductors and sensitive equipment protection in PV applications	Z	DC	600 Vdc	10...80A	10 kA	S800U-UCZ (2)
	GFDI in PV applications	PV-S	DC	1000 Vdc	5 A	3 kA	S800U-PVS (2)

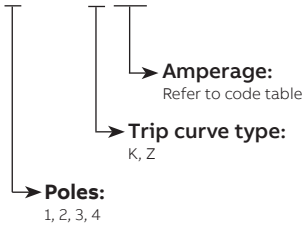
(1) Ring terminal version (2) Non-stock items

Part number configuration

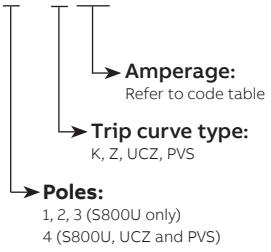
SU201M-K **



S201UDC-K **



S801U-K **



Amperage code table

Available Current

		UL489 / CSA C22.2 No.5 / UL489B										UL1077 / CSA 22.2 No.235														
Amperage code	Amperage value	SU200M			SU200 MR	S200 UDC		S800 U		S800U-UCZ	S800U-PVS	ST200M					S200MR	S200MUC			S800S S800C				S800 HV	
		C	K	Z	K	K	Z	K	Z	Z	PVS	B	C	D	K	Z	K	C	K	Z	B	C	D	K	C	K
0.2	0.2 A		•		•												•		•							
0.3	0.3 A		•		•												•		•							
0.5	0.5 A	•	•	•	•							•	•	•	•	•	•	•	•	•						
0.75	0.75 A		•		•												•		•							
1	1 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
1.6	1.6 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
2	2 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
3	3 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
4	4 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
5	5 A	•	•	•	•	•	•				•	•	•	•	•	•	•		•	•						
6	6 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
7	7 A											•	•	•	•	•										
8	8 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•						
10	10 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
13	13 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
15	15 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•		•	•						
16	16 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
20	20 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
25	25 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
30	30 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•		•	•						
32	32 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•	•	•
35	35 A	•	•	•	•							•	•	•	•	•	•		•	•						
40	40 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•		
50	50 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•	•	•	•	•	•	•	•		
60	60 A	•	•	•	•	•	•	•	•	•		•	•	•	•	•	•		•	•						
63	63 A	•	•	•	•	•	•					•	•	•	•	•	•	•	•	•	•	•	•	•		
70	70 A							•	•	•																
80	80 A							•	•	•											•	•	•	•		
90	90 A							•	•																	
100	100 A							•	•												•	•	•	•		

Trip curve information

Trip curves are an essential part of the System pro M compact miniature circuit breaker offering. Manufacturing tolerance of the short circuit tripping function allows a miniature circuit breaker to be selected according to the application. When selecting a trip curve for the application, load type and inrush current are driving factors in the selection process. System pro M compact circuit breakers offer up to five trip curves to meet varying applications.

Below is a visual summary of the trip curves (per standard) and typical load types, along with the tripping range as compared to the nominal current. The graph at the bottom right provides a visual summary of the trip curves.

UL 489

Z Curve

- $2 \times I_n < I_{Tripp} < 3 \times I_n$ (AC)
- $3 \times I_n < I_{Tripp} < 4.5 \times I_n$ (DC, SU 200 M)
- $3 \times I_n < I_{Tripp} < 6 \times I_n$ (DC, S 200 UDC)

C Curve

- $5 \times I_n < I_{Tripp} < 10 \times I_n$ (AC)
- $7 \times I_n < I_{Tripp} < 15 \times I_n$ (DC, SU 200 M)

K Curve

- $10 \times I_n < I_{Tripp} < 14 \times I_n$ (AC)
- $14 \times I_n < I_{Tripp} < 21 \times I_n$ (DC, SU 200 M)
- $14 \times I_n < I_{Tripp} < 25 \times I_n$ (DC, S 200 UDC)

UL 1077

Z Curve

- $2 \times I_n < I_{Tripp} < 3 \times I_n$ (AC)
- $2 \times I_n < I_{Tripp} < 4.5 \times I_n$ (DC)

B Curve

- $3 \times I_n < I_{Tripp} < 5 \times I_n$ (AC)
- $4 \times I_n < I_{Tripp} < 7 \times I_n$ (DC)

C Curve

- $5 \times I_n < I_{Tripp} < 10 \times I_n$ (AC)
- $7 \times I_n < I_{Tripp} < 15 \times I_n$ (DC)

D Curve

- $10 \times I_n < I_{Tripp} < 20 \times I_n$ (AC)
- $10 \times I_n < I_{Tripp} < 21 \times I_n$ (DC)

K Curve

- $10 \times I_n < I_{Tripp} < 14 \times I_n$ (AC)
- $10 \times I_n < I_{Tripp} < 22.4 \times I_n$ (DC)

Typical loads by trip curve

Z Curve

- Designed to protect circuits that need a very low short circuit trip setting
- Ex: Semiconductors

B Curve

- Designed for cable protection
- Ex: Control circuits, lighting

C Curve

- Designed for medium magnetic startups
- Ex: Lighting panels, control panels

D and K Curves

- Designed to allow for high inrush loads
- Ex: Motor or transformation circuits

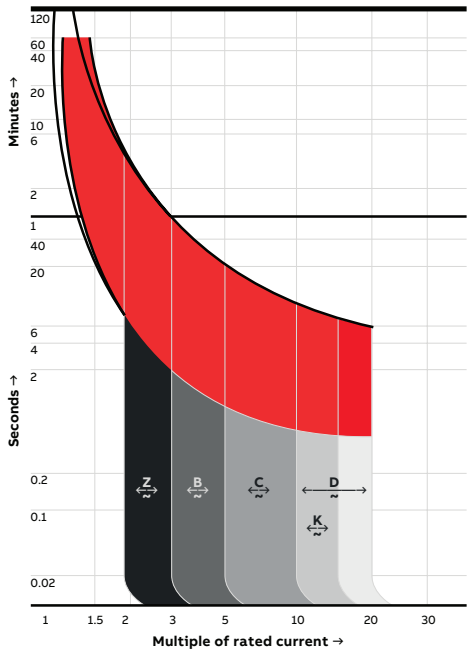


ABB - Campus Montréal.
800 Hymus Boulevard
Saint-Laurent, Quebec, Canada
H4S 0B5
Phone: 438-843-6000
Toll Free: 1-888-856-6266

www.abb.com/lowvoltage

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