Technical specifications
S200, S200P, S200MR, S200MUC—UL 1077, CSA 22.2 No. 235

Technical specifications

	S200	S200P	S200MR	S200MUC
Number of poles	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4	1, 2, 3, 4
Trip curves	B, C, D, K, Z	B, C, D, K, Z	K	C, K, Z
Rated current	0.5-63 A	0.2-63 A	0.2-63 A	0.2-63 A
Rated voltage	277/Y480 VAC 60/110 VDC (1/2-pole)	277/Y480 VAC	277/Y480 VAC	277/Y480 VAC 250/500 VDC (1/2-pole)
Short circuit interrupt rating	6 kA	10 kA (up to 25 A) 6 kA (32-63 A)	10 kA	10 kA (DC) 6 kA (AC)
Calibration temperature	25 °C	25 °C	25 °C	25 °C
Protection degree	IP 20	IP 20	IP 20	IP 20
Mounting position	Any	Any	Any	Any
Mounting/installation	35 mm DIN rail	35 mm DIN rail	35 mm DIN rail	35 mm DIN rail
Terminal/cable size	AWG 18-4	AWG 18-4	AWG 18-4	AWG 18-4
Service life, mechanical	20,000 operations	20,000 operations	20,000 operations	20,000 operations
Ambient temperature	-25 °C to +55 °C	-25 °C to +55 °C	-25 °C to +55 °C	-25 °C to +55 °C
Shock resistance (IEC 60068-2-27)	25 g - 2 shocks - 13 ms	25 g - 2 shocks - 13 ms	25 g - 2 shocks - 13 ms	25 g - 2 shocks - 13 ms

Auxiliary contact S2C-H6R and signal contact S2C-S6R

Rated current	10
Rated voltage AC/DC	24
Contact	1 pole, single throw
Connection capacity mm²	18-14 AWG (0.75...2.5)
Tightening torque	11 in. lbs (1.2 Nm)
Shock resistance acc. to DIN IEC 68-2-6	5 g, 20 frequency cycles 5...150...5 Hz at 24 VAC/DC, 5 mA auto-reclosing < 10 ms
Mechanical service life	10,000 operations

Shunt trip

		S2C-A1	S2C-A2
Rated voltage	AC DC	12...60 V 12...60 V	110...415 V 110...250 V
Maximum release duration		<10 ms	<10 ms
Minimum release voltage	AC DC	7 V 10 V	55 V 80 V
Consumption on release	AC DC	40...200 VA 40...200 VA	55...210 VA 55...110 VA
Coil resistance		3.7 Ω	225 Ω
Terminals		18...6/0.75-16 AWG/mm²	18...6/0.75-16 AWG/mm²
Tightening torque		18/2 in. lbs/Nm	18/2 in. lbs/Nm

Undervoltage release

		S2C-UA 12 DC	S2C-UA 24 AC	S2C-UA 24 DC	S2C-UA 48 AC	S2C-UA 48 DC	S2C-UA 110 AC	S2C-UA 110 DC	S2C-UA 230 AC	S2C-UA 230 DC	S2C-UA 400 AC
Standards		IEC/EN 60947-1	10...415 V								
Rated voltage	AC		24 V		48 V		110 V		230 AC		400 V
	DC	12 V		24 V		48 V		110 V		230 V	
Frequency		50 ... 60 HZ									
Release trip		0.35 UnOVO 0.7 Un V									
Terminals		2 x 16/2 x 1.5 AWG/mm²									
Consumption		0.2 VA	3.6 VA	2 VA	3.6 VA	2.1 VA	3.5 VA	2.2 VA	3.7 VA	2.3 VA	2.4 VA
Resistance to corrosion		constant atmosphere: 23/83 – 40/93 – 55/20; variable atmosphere: 25/95 – 40/93 °C/RH									
Protection degree		IPXXB / IP2X									
Tightening torque		3.5/0.4 in. lbs/Nm									

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Internal resistance and power loss per pole

Internal resistance per pole in mΩ, power loss per pole in W.

S200 and S200P

Type	Rated current	Device series		Device series		Device series	
	I_n	B, C, D[1]		K		Z	
	A	mΩ	W	mΩ	W	mΩ	W
S200 and S200P	0.5	5500	1.4	6340	1.6	10100	2.5
	1	1440	1.4	1550	1.6	2270	2.3
	1.6	630	1.6	695	1.8	1100	2.8
	2	460	1.8	460	1.9	619	2.5
	3	150	1.3	165	1.5	202	1.8
	4	110	1.8	120	2.0	149	2.4
	6	55	2.0	52	1.9	104	3.7
	8	15	1.0	38	1.5	53.9	3.45
	10	13.3	1.3	12.6	2.0	17.5	1.7
	13	13.3	2.3	12.6	1.26	—	—
	16	7.0	1.8	7.7	2.0	10.9	2.8
	20	6.25	2.5	6.7	2.7	6.0	2.4
	25	5.0	3.2	4.6	2.9	4.1	2.6
	32	3.6	3.7	3.5	3.6	2.8	2.9
	40	3.0	4.8	2.8	4.5	2.5	4.1
	50	1.3	3.25	1.25	2.9	1.8	4.4
	63	1.2	4.8	0.7	5.2	1.3	5.2

[1]Current intensities 0.5-4 apply exclusively to C-type trip characteristics.

S200MR

Rated current	Internal resistance per pole	Power loss per pole
A	mΩ	W
0.2	25300	1.01
0.3	13700	1.23
0.5	4740	1.19
0.75	2067	1.16
1	1270	1.27
1.5	610	1.56
2	442	1.77
3	140	1.26
4	109	1.75
5	50	1.26
6	54	1.94
8	22	1.41
10	18.2	1.82
13	14.8	2.50
15	8.1	1.83
16	11.1	2.83
20	8.5	3.40
25	5.5	3.43
30	3.8	3.39
32	4.6	4.70
35	3.9	4.76
40	2.8	4.40
50	1.7	4.25
60	1.7	6.18
63	1.9	7.56

Temperature derating

Max operating current depending on the ambient temperature of a circuit breaker characteristics type B, C and D

B, C, D, K, and Z	Ambient temperatures T (C°/F°)											
	-40/-40	-30/-22	-20/-4	-10/14	0/32	10/50	20/68	30/86	40/104	50/122	60/140	70/158
Amps	0.67	0.65	0.62	0.60	0.58	0.55	0.53	0.50	0.47	0.44	0.41	0.37
	1.33	1.29	1.25	1.20	1.15	1.11	1.05	1.00	0.94	0.88	0.82	0.75
	2.13	2.07	2.00	1.92	1.85	1.77	1.69	1.60	1.51	1.41	1.31	1.19
	2.67	2.58	2.49	2.40	2.31	2.21	2.11	2.00	1.89	1.76	1.63	1.49
	4.0	3.9	3.7	3.6	3.5	3.3	3.2	3.0	2.8	2.6	2.4	2.2
	5.3	5.2	5.0	4.8	4.6	4.4	4.2	4.0	3.8	3.5	3.3	3.0
	8.0	7.7	7.5	7.2	6.9	6.6	6.3	6.0	5.7	5.3	4.9	4.5
	10.7	10.3	10.0	9.6	9.2	8.8	8.4	8.0	7.5	7.1	6.5	6.0
	13.3	12.9	12.5	12.0	11.5	11.1	10.5	10.0	9.4	8.8	8.2	7.5
	17.3	16.8	16.2	15.6	15.0	14.4	13.7	13.0	12.3	11.5	10.6	9.7
	21.3	20.7	20.0	19.2	18.5	17.7	16.9	16.0	15.1	14.1	13.1	11.9
	26.7	25.8	24.9	24.0	23.1	22.1	21.1	20.0	18.9	17.6	16.3	14.9
	33.3	32.3	31.2	30.0	28.9	27.6	26.4	25.0	23.6	22.0	20.4	18.6
	42.7	41.3	39.9	38.5	37.0	35.4	33.7	32.0	30.2	28.2	26.1	23.9
	53.3	51.6	49.9	48.1	46.2	44.2	42.2	40.0	37.7	35.3	32.7	29.8
	66.7	64.5	62.4	60.1	57.7	55.3	52.7	50.0	47.1	44.1	40.8	37.3
	84.0	81.3	78.6	75.7	72.7	69.6	66.4	63.0	59.4	55.6	51.4	47.0
	112.6	107.2	102.1	97.2	92.6	88.2	84.0	80.0	76.0	72.2	68.6	65.2
	140.7	134.0	127.6	121.6	115.8	110.3	1050	100.0	95.0	90.3	85.7	81.5
	175.9	167.5	159.5	151.9	114.7	137.8	131.3	125.0	118.8	113.8	107.2	101.8

Miniature circuit breaker S200MUC
Use of MCBs in direct current circuits

S200MUC miniature circuit breakers can be used in the 1 pole version at 220 VDC, and in the 2-pole or 4-pole version with series connection of two poles up to 440 VDC.

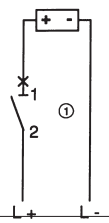
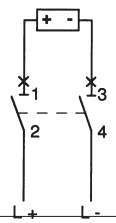
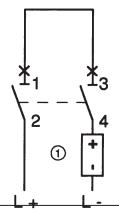
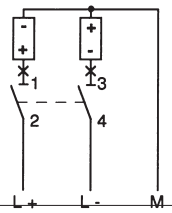
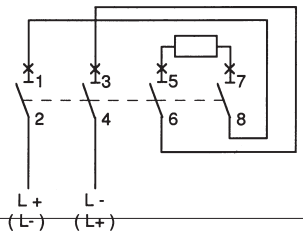
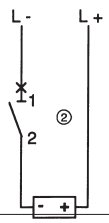
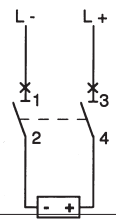
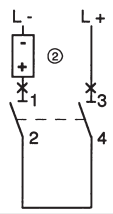
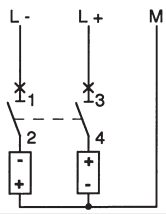
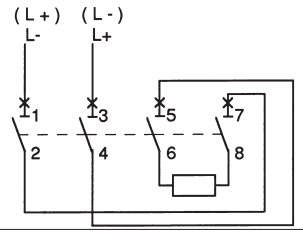
S200MUC differs from the standard S200 type. It is equipped with permanent magnets that assist in the forced extinguishing of the arc.

If voltages to ground exceeding 220 VDC occur, 2-pole S200MUC should be used for one-pole disconnection and four-pole S200MUC for all-pole disconnection.

For DC incoming supply from above

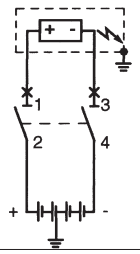
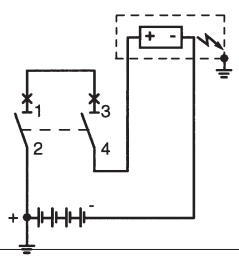
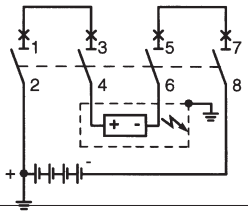
S200MUC MCBs have permanent magnets in the area of arc chutes. Therefore, it is necessary to take into account the polarity during the installation process. In the case of a short circuit, the magnetic field of the permanent magnets corresponds with the electromagnetic field of the short-circuit current, therefore, safely leading the short circuit into the arc chute. Incorrect polarities may cause damage to the MCB. As a result for top-fed devices, terminal 1 must be connected to (-) and terminal 3 to (+).

Examples of permissible voltages between the conductors depending on the number of poles and circuit layout:

Voltage between conductors U_n	250 VDC	500 VDC	500 VDC	500 VDC	500 VDC
Voltage between conductor and ground U_n	250 VDC	250 VDC	500 VDC	250 VDC	250 VDC
MCB	1-pole S201MUC	2-pole S202MUC	2-pole S202MUC	2-pole S202MUC	4-pole S204MUC
Supply from below					
Supply from above					

1 in the circuit diagram, the negative pole is earthed. **2** in the circuit diagram, the positive pole is earthed.

Examples of permissible voltages between the conductors depending on the number of poles and circuit layout:

Voltage between conductors U_n	500 VDC all-pole disconnection	500 VDC 1-pole disconnection	500 VDC all-pole disconnection
Voltage between conductor and ground U_n	250 VDC– circuit symmetrically grounded	250 VDC– unsymmetrically grounded	250 VDC– circuit ungrounded or unsymmetrically grounded
MCB	2-pole S202MUC	2-pole S202MUC	4-pole S204MUC
Supply from below			

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