

Supplementary protector S 200 MR for ring-tongue applications acc. to UL 1077



S 200 MR is a high-performance supplementary protector with ring cable lug connections conforming to UL, CSA, and IEC standards. The integrated captive connecting screws simplify the connection of electric lines, providing extra protection and time saving. As part of the proven product range System pro M compact S 200 MR can be easily combined with most of the UL1077, CSA 22.2 No. 235 and IEC-approved components.

01 S 201 MR and S 203 MR

Standards and approvals

Standards
UL 1077
CSA 22.2. No. 235
IEC/EN 60947-2

Approvals	
UL 1077	US
CSA 22.2. No. 235	CA
VDE	DE

Instructions for use

Ring Tongue Details					
Only or ring cable lugs	Insulated only Rated voltage 480V/277 V AC	A	B	C	Suitable for M5 (0.20")
	Insulated only Rated voltage 240/240 V AC	max. 11.0 mm (0.43")	max. 12.2 mm (0.48")	max. 14.0 mm (0.55")	

CU only
 60/75°C
 (140/167°F)

PZ 2 Torque: 2.8 Nm (25lb-in)

max. 2.0 mm (0.08")

20DC 022 003 F0211

Ring Tongue Terminal, Special purpose - Not for general use

Installation Instructions

Please insert or withdraw the cable lug only when the screw is completely open.

Please make sure that the terminal screw penetrates the ring lug hole properly and completely during tightening.

Please ensure that the screw is securely tightened before applying any mechanical force on the cable / cable lug.

Do not apply abnormal downward pressure on the screw during tightening or loosening of the screw.

F = max. 30 N F = Maximum to operate

Supplementary protector S 200 MR

Technical data

General data	
Standards	UL 1077, CSA 22.2 No. 235, IEC/EN 60947-2
Poles	1P, 2P, 3P, 4P
Rated current I_n	0.2 - 63 A
Rated frequency f	50/60 Hz
Tripping characteristics	K
IEC/EN 60947-2	
Rated operational voltage U_n	1P: 230 V AC, 2 ... 4P: 400 V AC
Power frequency recovery voltage U_{max}	1P: 253 V AC, 2 ... 4P: 440 V AC
Min. operating voltage	12 V AC
Rated insulation voltage U_i	250 V AC (phase to ground), 500 V AC (phase to phase)
Rated ultimate short-circuit breaking capacity I_{cu}	15 kA
Rated service short-circuit breaking capacity I_{cs}	11.2 kA (≤ 40 A); 7.5 kA (> 40 A)
Overvoltage category	III
Pollution degree	2
Rated impulse withstand voltage U_{imp} (1.2/50 μ s)	4 kV (test voltage 6.2 kV at sea level; 5 kV at 2000m)
Dielectric test voltage	2.0 kV (50/60 Hz, 1 min)
Reference temperature for tripping characteristics	20 °C
Electrical endurance	$I_n \leq 25$ A: 20,000 ops., $I_n > 25$ A: 10,000 ops.
UL / CSA	
Rated voltage	1P: 277 V AC, 2 ... 4P: 480Y/277 V AC
Rated uninterrupting capacity	10 kA
Application	Ring tongue terminal, not for general use
Reference temperature for tripping characteristics	25 °C
Electrical endurance	6,000 ops. (AC), 1 cycle (1s.-ON, 9s.-OFF)
Mechanical data	
Housing	Insulation group I, RAL 7035
Toggle	Insulation group II, black, sealable
Contact position indication	Real CPI (green OFF / red ON)
Protection degree acc. to EN 60529	IP20, IP40 in enclosure with cover
Mechanical endurance	20,000 ops.
Shock resistance acc. to IEC/EN 60068-2-27	25 g - 2 shocks - 13 ms
Vibration resistance acc. to IEC/EN 60068-2-6	5g - 20 cycles at 5...150...5 Hz at 0.8 I_n
Environmental conditions acc. to DIN EN 60068-2-30	28 cycles with 55 °C/90-96 % and 25 °C/95-100%
Ambient temperature	-25 ... +55 °C
Storage temperature	-40 ... +70 °C
Installation	
Terminal	Ring tongue terminal
Cross section of conductors (top/bottom)	18 - 4 AWG
Torque	2.8 Nm 25 in.-lbs.
Screw driver	No. 2 Pozidrive
Mounting	On DIN rail 35 mm, acc. to EN 60715 by fast clip
Mounting position	any
Supply side	top or bottom
Dimensions and weight	
Mounting dimensions acc. to DIN 43880	Mounting dimension 1
Pole dimensions (H x D x W)	100 x 69 x 17.5
Pole weight	approx. 125 g
Combinations with auxiliary elements	
Integrated auxiliary switch	No
Signal contact/auxiliary switch, shunt trip	Yes

Supplementary protector S 200 MR

Tripping characteristic, internal resistance and power loss

Tripping characteristic K

Rated current I_n	Thermal release ¹⁾		Tripping time	Electromagnetic release ²⁾		Tripping time
	Currents: conventional non-tripping current I_1	conventional tripping current I_2		Currents: hold current surges	trip at least at	
0.5 to 63 A	$1.05 \cdot I_n$	$1.2 \cdot I_n$	> 1 h < 1 h	not applicable		
	$1.05 \cdot I_n$	$1.2 \cdot I_n$	> 2 h < 1 h ³⁾	$10 \cdot I_n$	$14 \cdot I_n$	> 0.2 s < 0.2 s

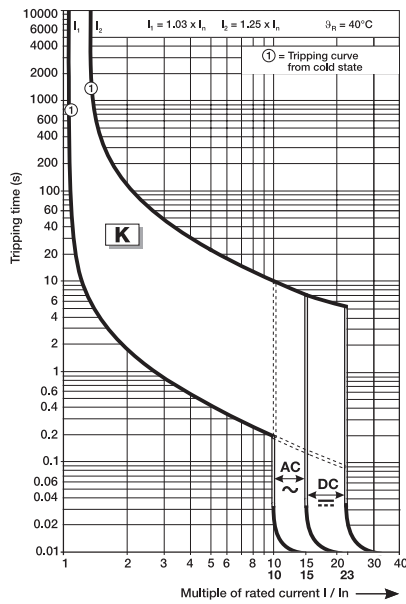
¹⁾ The thermal releases are calibrated to a nominal reference ambient temperature; for K the reference example value is 20 °C.

In case of higher ambient temperatures, the current values decline by approx. 6 % for each 10 K temperature rise.

²⁾ The indicated tripping values of electromagnetic tripping devices apply to a frequency of 0/60 Hz. The thermal release operates independently from the frequency.

³⁾ As from operating temperature (after $I_1 > 1$ h or, as applicable, 2 h)

K characteristic



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Internal resistance and power loss

Rated current A	Internal resistance per pole ⁴⁾ m Ω	Power loss per pole ⁴⁾ 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

⁴⁾ Internal resistances and power loss are subject to application-specific and environment-specific conditions and are therefore to be considered as typical values.

Supplementary protector S 200 MR

Derating

For installation of supplementary protectors at temperatures that are different from the reference temperature and installations of several supplementary protectors directly side by side, derating factors apply to be considered.

Ambient temperature

The rated value of the current of a supplementary protectors with K characteristic refers to a reference ambient temperature of 20 °C.

The following table shows derating factors for ambient temperature from –40 to 70 °C for the characteristic K.

Rated current I _n A	Maximum operating current at ambient temperature T A											
	-40°C	-30°C	-20°C	-10°C	0°C	10°C	20°C	30°C	40°C	50°C	60°C	70°C
0.5	0.66	0.64	0.61	0.59	0.56	0.53	0.50	0.47	0.43	0.40	0.35	0.31
1.0	1.32	1.27	1.22	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71	0.61
1.6	2.12	2.04	1.96	1.88	1.79	1.70	1.60	1.50	1.39	1.26	1.13	0.98
2.0	2.65	2.55	2.45	2.35	2.24	2.12	2.00	1.87	1.73	1.58	1.41	1.22
3.0	4.0	3.8	3.7	3.5	3.4	3.2	3.0	2.8	2.6	2.4	2.1	1.8
4.0	5.3	5.1	4.9	4.7	4.5	4.2	4.0	3.7	3.5	3.2	2.8	2.4
6.0	7.9	7.6	7.3	7.0	6.7	6.4	6.0	5.6	5.2	4.7	4.2	3.7
8.0	10.8	10.2	9.8	9.4	8.9	8.5	8.0	7.5	6.9	6.3	5.7	4.9
10.0	13.2	12.7	12.2	11.7	11.2	10.6	10.0	9.4	8.7	7.9	7.1	6.1
13.0	17.2	16.6	15.9	15.2	14.5	13.8	13.0	12.2	11.3	10.3	9.2	8.0
16.0	21.2	20.4	19.6	18.8	17.9	17.0	16.0	15.0	13.9	12.6	11.3	9.8
20.0	26.5	25.5	24.5	23.5	22.4	21.2	20.0	18.7	17.3	15.8	14.1	12.2
25.0	33.1	31.9	30.6	29.3	28.0	26.5	25.0	23.4	21.7	19.8	17.7	15.3
32.0	42.3	40.8	39.2	37.5	35.8	33.9	32.0	29.9	27.7	25.3	22.6	19.6
40.0	52.9	51.0	49.0	46.9	44.7	42.4	40.0	37.4	34.6	31.6	28.3	24.5
50.0	66.1	63.7	61.2	58.6	55.9	53.0	50.0	46.8	43.3	39.5	35.4	30.6
63.0	83.3	80.3	77.2	73.9	70.4	66.8	63.0	58.9	54.6	49.8	44.5	38.6

Influence of adjacent devices

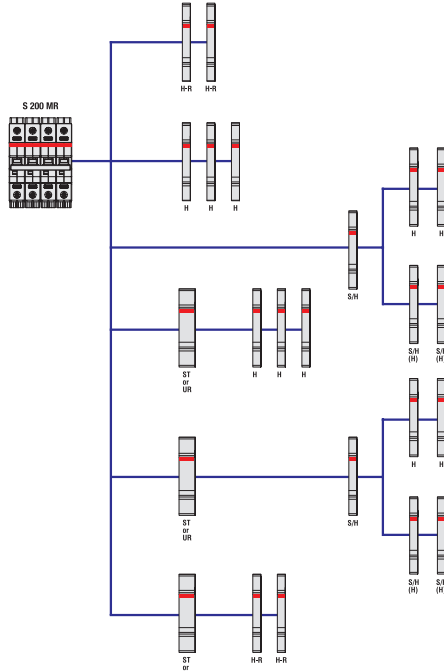
If several miniature circuit breakers are installed directly side by side with high load on all poles, a correction factor has to be applied to the rated current (see table). If distance pieces (spacers) are used, the factor is not to be considered.

No. of adjacent devices	Factor F
1	1
2	0.95
3	0.9
4	0.86
5	0.82
6	0.795
7	0.78
8	0.77
9	0.76
>9	0.76

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Accessories, dimensional drawings and instructions for use

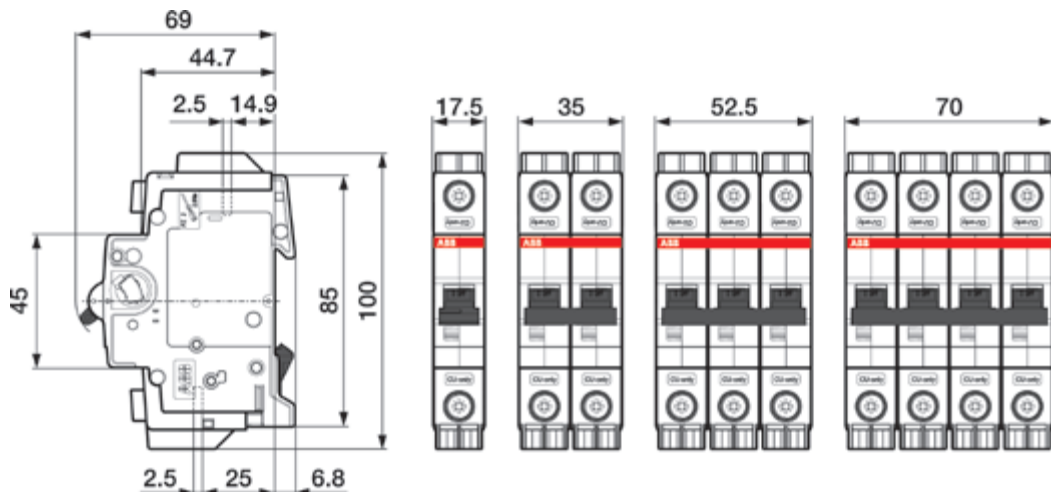
Accessory overview



- H Auxiliary contact S2C-H6R
- H-R Auxiliary contact S2C-H6-...R
- S/H Signal/Auxiliary contact S2C-S/H6R
- S/H(H) Signal/Auxiliary contact S2C-S/H6R used as auxiliary contact
- ST Shunt trip S2C-A...
- UR Undervoltage release S2C-UA

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Dimensional drawings



2CDC022001F0011

Supplementary protector S 200 MR

Ordering data



2CDC021005S0015



2CDC021006S0015

Number of poles	Rated current I_n	EAN	Type code	Order code	Weight (1 pc)	Packing unit
					kg	PCE
1	A					
	0.2	4016779954181	S201MR-K0.2	2CDS271437R0087	0.140	10
	0.3	4016779956697	S201MR-K0.3	2CDS271437R0117	0.140	10
	0.5	4016779956710	S201MR-K0.5	2CDS271437R0157	0.140	10
	0.75	4016779956734	S201MR-K0.75	2CDS271437R0187	0.140	10
	1	4016779956758	S201MR-K1	2CDS271437R0217	0.140	10
	1.6	4016779956772	S201MR-K1.6	2CDS271437R0257	0.140	10
	2	4016779956796	S201MR-K2	2CDS271437R0277	0.140	10
	3	4016779956819	S201MR-K3	2CDS271437R0317	0.140	10
	4	4016779956833	S201MR-K4	2CDS271437R0337	0.140	10
	5	4016779956857	S201MR-K5	2CDS271437R0357	0.140	10
	6	4016779956871	S201MR-K6	2CDS271437R0377	0.140	10
	8	4016779956895	S201MR-K8	2CDS271437R0407	0.140	10
	10	4016779956918	S201MR-K10	2CDS271437R0427	0.140	10
	13	4016779956932	S201MR-K13	2CDS271437R0447	0.140	10
	15	4016779956956	S201MR-K15	2CDS271437R0457	0.140	10
	16	4016779956970	S201MR-K16	2CDS271437R0467	0.140	10
	20	4016779956994	S201MR-K20	2CDS271437R0487	0.140	10
	25	4016779957014	S201MR-K25	2CDS271437R0517	0.140	10
	30	4016779957038	S201MR-K30	2CDS271437R0527	0.140	10
	32	4016779957052	S201MR-K32	2CDS271437R0537	0.140	10
	35	4016779957076	S201MR-K35	2CDS271437R0547	0.140	10
	40	4016779957090	S201MR-K40	2CDS271437R0557	0.140	10
	50	4016779957113	S201MR-K50	2CDS271437R0577	0.140	10
	60	4016779957137	S201MR-K60	2CDS271437R0587	0.140	10
	63	4016779957151	S201MR-K63	2CDS271437R0607	0.140	10
2	0.2	4016779957670	S202MR-K0.2	2CDS272437R0087	0.280	5
	0.3	4016779957694	S202MR-K0.3	2CDS272437R0117	0.280	5
	0.5	4016779957717	S202MR-K0.5	2CDS272437R0157	0.280	5
	0.75	4016779957731	S202MR-K0.75	2CDS272437R0187	0.280	5
	1	4016779957755	S202MR-K1	2CDS272437R0217	0.280	5
	1.6	4016779957779	S202MR-K1.6	2CDS272437R0257	0.280	5
	2	4016779957793	S202MR-K2	2CDS272437R0277	0.280	5
	3	4016779957816	S202MR-K3	2CDS272437R0317	0.280	5
	4	4016779957830	S202MR-K4	2CDS272437R0337	0.280	5
	5	4016779957854	S202MR-K5	2CDS272437R0357	0.280	5
	6	4016779957878	S202MR-K6	2CDS272437R0377	0.280	5
	8	4016779957892	S202MR-K8	2CDS272437R0407	0.280	5
	10	4016779957915	S202MR-K10	2CDS272437R0427	0.280	5
	13	4016779957939	S202MR-K13	2CDS272437R0447	0.280	5
	15	4016779957953	S202MR-K15	2CDS272437R0457	0.280	5
	16	4016779957977	S202MR-K16	2CDS272437R0467	0.280	5
	20	4016779957991	S202MR-K20	2CDS272437R0487	0.280	5
	25	4016779958011	S202MR-K25	2CDS272437R0517	0.280	5
	30	4016779958035	S202MR-K30	2CDS272437R0527	0.280	5
	32	4016779958059	S202MR-K32	2CDS272437R0537	0.280	5
	35	4016779958073	S202MR-K35	2CDS272437R0547	0.280	5
	40	4016779958097	S202MR-K40	2CDS272437R0557	0.280	5
	50	4016779958110	S202MR-K50	2CDS272437R0577	0.280	5
	60	4016779958134	S202MR-K60	2CDS272437R0587	0.280	5
	63	4016779958158	S202MR-K63	2CDS272437R0607	0.280	5

Supplementary protector S 200 MR

Ordering data



2CDC021007S0015



2CDC021008S0015

Number of poles	Rated current	EAN	Type code	Order code	Weight (1 pc)	Packing unit
	I_n				kg	PCE
3	A					
	0.2	4016779958677	S203MR-K0.2	2CDS273437R0087	0.420	3
	0.3	4016779958691	S203MR-K0.3	2CDS273437R0117	0.420	3
	0.5	4016779958714	S203MR-K0.5	2CDS273437R0157	0.420	3
	0.75	4016779958738	S203MR-K0.75	2CDS273437R0187	0.420	3
	1	4016779958752	S203MR-K1	2CDS273437R0217	0.420	3
	1.6	4016779958776	S203MR-K1.6	2CDS273437R0257	0.420	3
	2	4016779958790	S203MR-K2	2CDS273437R0277	0.420	3
	3	4016779958813	S203MR-K3	2CDS273437R0317	0.420	3
	4	4016779958837	S203MR-K4	2CDS273437R0337	0.420	3
	5	4016779958851	S203MR-K5	2CDS273437R0357	0.420	3
	6	4016779958875	S203MR-K6	2CDS273437R0377	0.420	3
	8	4016779958899	S203MR-K8	2CDS273437R0407	0.420	3
	10	4016779958912	S203MR-K10	2CDS273437R0427	0.420	3
	13	4016779958936	S203MR-K13	2CDS273437R0447	0.420	3
	15	4016779958950	S203MR-K15	2CDS273437R0457	0.420	3
	16	4016779958974	S203MR-K16	2CDS273437R0467	0.420	3
	20	4016779958998	S203MR-K20	2CDS273437R0487	0.420	3
	25	4016779959018	S203MR-K25	2CDS273437R0517	0.420	3
	30	4016779959032	S203MR-K30	2CDS273437R0527	0.420	3
32	4016779959056	S203MR-K32	2CDS273437R0537	0.420	3	
35	4016779959070	S203MR-K35	2CDS273437R0547	0.420	3	
40	4016779959094	S203MR-K40	2CDS273437R0557	0.420	3	
50	4016779959117	S203MR-K50	2CDS273437R0577	0.420	3	
60	4016779959131	S203MR-K60	2CDS273437R0587	0.420	3	
63	4016779959155	S203MR-K63	2CDS273437R0607	0.420	3	
4	0.2	4016779959674	S204MR-K0.2	2CDS274437R0087	0.560	2
	0.3	4016779959698	S204MR-K0.3	2CDS274437R0117	0.560	2
	0.5	4016779959711	S204MR-K0.5	2CDS274437R0157	0.560	2
	0.75	4016779959735	S204MR-K0.75	2CDS274437R0187	0.560	2
	1	4016779959759	S204MR-K1	2CDS274437R0217	0.560	2
	1.6	4016779959773	S204MR-K1.6	2CDS274437R0257	0.560	2
	2	4016779959797	S204MR-K2	2CDS274437R0277	0.560	2
	3	4016779959810	S204MR-K3	2CDS274437R0317	0.560	2
	4	4016779959834	S204MR-K4	2CDS274437R0337	0.560	2
	5	4016779959858	S204MR-K5	2CDS274437R0357	0.560	2
	6	4016779959872	S204MR-K6	2CDS274437R0377	0.560	2
	8	4016779959896	S204MR-K8	2CDS274437R0407	0.560	2
	10	4016779959919	S204MR-K10	2CDS274437R0427	0.560	2
	13	4016779959933	S204MR-K13	2CDS274437R0447	0.560	2
	15	4016779959957	S204MR-K15	2CDS274437R0457	0.560	2
	16	4016779959971	S204MR-K16	2CDS274437R0467	0.560	2
	20	4016779959995	S204MR-K20	2CDS274437R0487	0.560	2
	25	4016779960014	S204MR-K25	2CDS274437R0517	0.560	2
	30	4016779960038	S204MR-K30	2CDS274437R0527	0.560	2
	32	4016779960052	S204MR-K32	2CDS274437R0537	0.560	2
35	4016779960076	S204MR-K35	2CDS274437R0547	0.560	2	
40	4016779960090	S204MR-K40	2CDS274437R0557	0.560	2	
50	4016779960113	S204MR-K50	2CDS274437R0577	0.560	2	
60	4016779960137	S204MR-K60	2CDS274437R0587	0.560	2	
63	4016779960151	S204MR-K63	2CDS274437R0607	0.560	2	



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