

# System pro M compact® Circuit breaker SU 200 PR for ring-tongue applications acc. to UL 489



2CDC0210037S0012



2CDC021015S0012

The SU 200 PR is a high-performance circuit breaker with ring cable lug connections conforming to UL, CSA, and IEC standards. The integrated captive connecting screws simplify the connection of electric lines, provides extra protection and saves time. This circuit breaker is a valuable addition to the well known system System pro M compact® range which allow most of the UL 489 and CSA 22.2 No. 5 approved components to be combined effortlessly with the new model line.

## Standards and approvals

### Standards

UL 489

CSA 22.2. No. 5

IEC/EN 60947-2

### Approvals

UL 489

US

CSA 22.2. No. 5

CA

VDE

DE

# Circuit breaker SU 200 PR

## Technical data

<b>General Data</b>	
Standards	UL 489, CSA 22.2 No. 5, 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
<b>IEC/EN 60947-2</b>	
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 ( $\leq 40$ A); 7.5 kA ( $> 40$ A)
Overvoltage Category	III
Pollution Degree	2
Rated impulse withstand voltage $U_{imp}$ (1.2/50 $\mu$ s)	4 kV (test voltage 6.2 kV at sea level; 5 kV at 2000 m)
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.
<b>UL / CSA</b>	
Rated voltage	1P: 277 V AC ( $\leq 35$ A); 240 V AC ( $> 35$ A) 2...4P: 480Y/277 V AC ( $\leq 35$ A); 240 V AC ( $> 35$ A)
Short-circuit current rating (SCCR)	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)
<b>Mechanical data</b>	
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 with load $0.8 I_n$
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
<b>Installation</b>	
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
<b>Dimensions and weight</b>	
Mounting dimensions acc. to DIN 43880	Mounting dimension 1
Pole dimensions (H x D x W)	115 x 69 x 17.5
Pole weight	approx. 125 g
<b>Combination with auxiliary elements</b>	
Integrated auxiliary switch	No
Signal contact/auxiliary switch, shunt trip	Yes
Undervoltage release	No

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## Tripping characteristic, internal resistance and power loss

### Tripping characteristic K

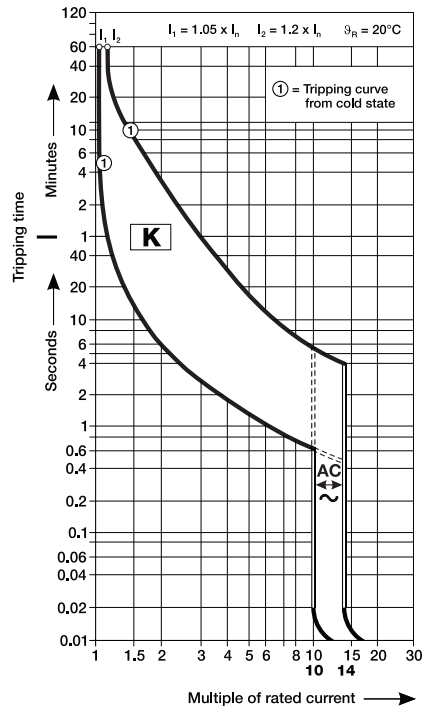
Rated current $I_n$ 0.5 to 63 A	Thermal release <sup>1)</sup>		Tripping time	Electromagnetic release <sup>2)</sup>	
	Conventional non-tripping current $I_1$ $1.05 \cdot I_n$	Conventional tripping current $I_2$ $1.2 \cdot I_n$		Conventional hold current surges $10 \cdot I_n$	trip at least at $14 \cdot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

<sup>1)</sup> The thermal releases are calibrated to a nominal reference ambient temperature; for K the reference value is 20 °C. In the case of higher ambient temperatures, the current values fall by approx. 6 % for each 10 K temperature rise.

<sup>2)</sup> The indicated tripping values of electromagnetic tripping devices apply to a frequency of 50/60 Hz. The thermal release operates independent of frequency.

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

### K characteristic



2CDC 022 005 F0211

### Internal resistance and power loss

Rated current A	Internal resistance per pole <sup>4)</sup> mΩ	Power loss per pole <sup>4)</sup> 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

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

# Circuit breaker SU 200 PR

## Derating

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

### Ambient temperature

The rated value of the current of a circuit breaker 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 °C											
	–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

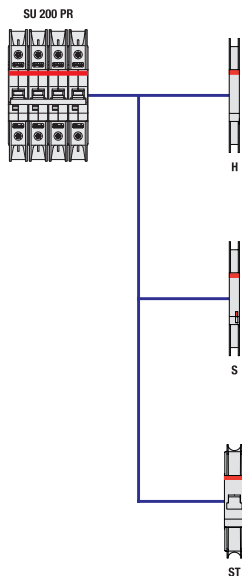
If several miniature circuit breakers are installed directly side by side with high load on all poles, a correction factor has to be applied to the rated current (see table). If distance pieces (spacers) are used, the factor is not to be considered.

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

# Circuit breaker SU 200 PR

## Accessories, dimensional drawings and instructions for use

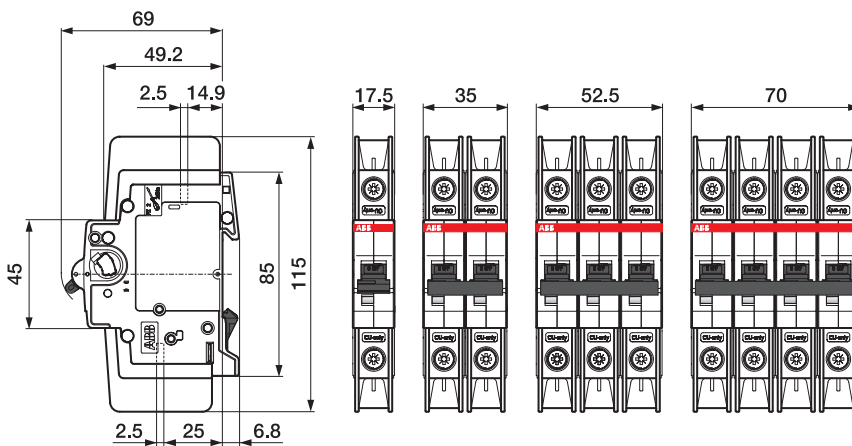
### Accessory overview



- H Auxiliary contact S2C-H6RU
- S Signal contact S2C-S6RU
- ST Shunt trip S2C-A...U

2CDC 092 001 F0111

### Dimensional drawing



2CDC 022 002 F0111

### Instructions for use

**Ring Tongue Details**

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

CU only  
 60/75°C  
 (140/167°F)

max. 2.0 mm  
 (0.08")

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

2CDC 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.

$< 2.8 \text{ Nm}$   
 $2.8 \text{ Nm}$

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

$F = \text{max, } 30 \text{ N}$   
 $F = \text{Maximum to operate}$

Please follow the Ring Tongue Details on the rear of this sheet.

# Circuit breaker SU 200 PR

## Ordering data



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Number of poles	Rated current $I_n$ A	Type	Order code	bbn/EAN 401677	Weight per PCE kg	Packing unit PCE
1	0.2	SU201PR-K0.2	2CDS271327R0087	9847865	0.140	10
	0.3	SU201PR-K0.3	2CDS271327R0117	9847872	0.140	10
	0.5	SU201PR-K0.5	2CDS271327R0157	9847889	0.140	10
	0.75	SU201PR-K0.75	2CDS271327R0187	9847896	0.140	10
	1	SU201PR-K1	2CDS271327R0217	9847902	0.140	10
	1.6	SU201PR-K1.6	2CDS271327R0257	9847919	0.140	10
	2	SU201PR-K2	2CDS271327R0277	9847926	0.140	10
	3	SU201PR-K3	2CDS271327R0317	9847933	0.140	10
	4	SU201PR-K4	2CDS271327R0337	9847940	0.140	10
	5	SU201PR-K5	2CDS271327R0357	9847957	0.140	10
	6	SU201PR-K6	2CDS271327R0377	9847964	0.140	10
	8	SU201PR-K8	2CDS271327R0407	9847971	0.140	10
	10	SU201PR-K10	2CDS271327R0427	9847988	0.140	10
	13	SU201PR-K13	2CDS271327R0447	9847995	0.140	10
	15	SU201PR-K15	2CDS271327R0457	9848008	0.140	10
	16	SU201PR-K16	2CDS271327R0467	9848015	0.140	10
	20	SU201PR-K20	2CDS271327R0487	9848022	0.140	10
	25	SU201PR-K25	2CDS271327R0517	9848039	0.140	10
	30	SU201PR-K30	2CDS271327R0527	9848046	0.140	10
	32	SU201PR-K32	2CDS271327R0537	9848053	0.140	10
	35	SU201PR-K35	2CDS271327R0547	9848060	0.140	10
40	SU201PR-K40	2CDS271327R0557	9848077	0.140	10	
50	SU201PR-K50	2CDS271327R0577	9848084	0.140	10	
60	SU201PR-K60	2CDS271327R0587	9848091	0.140	10	
63	SU201PR-K63	2CDS271327R0607	9848107	0.140	10	
2	0.2	SU202PR-K0.2	2CDS272327R0087	9848114	0.280	5
	0.3	SU202PR-K0.3	2CDS272327R0117	9848121	0.280	5
	0.5	SU202PR-K0.5	2CDS272327R0157	9848138	0.280	5
	0.75	SU202PR-K0.75	2CDS272327R0187	9848145	0.280	5
	1	SU202PR-K1	2CDS272327R0217	9848152	0.280	5
	1.6	SU202PR-K1.6	2CDS272327R0257	9848169	0.280	5
	2	SU202PR-K2	2CDS272327R0277	9848176	0.280	5
	3	SU202PR-K3	2CDS272327R0317	9848183	0.280	5
	4	SU202PR-K4	2CDS272327R0337	9848190	0.280	5
	5	SU202PR-K5	2CDS272327R0357	9848206	0.280	5
	6	SU202PR-K6	2CDS272327R0377	9848213	0.280	5
	8	SU202PR-K8	2CDS272327R0407	9848220	0.280	5
	10	SU202PR-K10	2CDS272327R0427	9848237	0.280	5
	13	SU202PR-K13	2CDS272327R0447	9848244	0.280	5
	15	SU202PR-K15	2CDS272327R0457	9848251	0.280	5
	16	SU202PR-K16	2CDS272327R0467	9848268	0.280	5
	20	SU202PR-K20	2CDS272327R0487	9848275	0.280	5
	25	SU202PR-K25	2CDS272327R0517	9848282	0.280	5
	30	SU202PR-K30	2CDS272327R0527	9848299	0.280	5
	32	SU202PR-K32	2CDS272327R0537	9848305	0.280	5
	35	SU202PR-K35	2CDS272327R0547	9848312	0.280	5
40	SU202PR-K40	2CDS272327R0557	9848329	0.280	5	
50	SU202PR-K50	2CDS272327R0577	9848336	0.280	5	
60	SU202PR-K60	2CDS272327R0587	9848343	0.280	5	
63	SU202PR-K63	2CDS272327R0607	9848350	0.280	5	

# Circuit breaker SU 200 PR

## Ordering data



Number of poles	Rated current $I_n$ A	Type	Order code	bbn/EAN 401677	Weight per PCE kg	Packing unit PCE
3	0.2	SU203PR-K0.2	2CDS273327R0087	9848367	0.420	3
	0.3	SU203PR-K0.3	2CDS273327R0117	9848374	0.420	3
	0.5	SU203PR-K0.5	2CDS273327R0157	9848381	0.420	3
	0.75	SU203PR-K0.75	2CDS273327R0187	9848398	0.420	3
	1	SU203PR-K1	2CDS273327R0217	9848404	0.420	3
	1.6	SU203PR-K1.6	2CDS273327R0257	9848411	0.420	3
	2	SU203PR-K2	2CDS273327R0277	9848428	0.420	3
	3	SU203PR-K3	2CDS273327R0317	9848435	0.420	3
	4	SU203PR-K4	2CDS273327R0337	9848442	0.420	3
	5	SU203PR-K5	2CDS273327R0357	9848459	0.420	3
	6	SU203PR-K6	2CDS273327R0377	9848466	0.420	3
	8	SU203PR-K8	2CDS273327R0407	9848473	0.420	3
	10	SU203PR-K10	2CDS273327R0427	9848480	0.420	3
	13	SU203PR-K13	2CDS273327R0447	9848497	0.420	3
	15	SU203PR-K15	2CDS273327R0457	9848503	0.420	3
	16	SU203PR-K16	2CDS273327R0467	9848510	0.420	3
	20	SU203PR-K20	2CDS273327R0487	9848527	0.420	3
	25	SU203PR-K25	2CDS273327R0517	9848534	0.420	3
	30	SU203PR-K30	2CDS273327R0527	9848541	0.420	3
	32	SU203PR-K32	2CDS273327R0537	9848558	0.420	3
35	SU203PR-K35	2CDS273327R0547	9848565	0.420	3	
40	SU203PR-K40	2CDS273327R0557	9848572	0.420	3	
50	SU203PR-K50	2CDS273327R0577	9848589	0.420	3	
60	SU203PR-K60	2CDS273327R0587	9848596	0.420	3	
63	SU203PR-K63	2CDS273327R0607	9848602	0.420	3	
4	0.2	SU204PR-K0.2	2CDS274327R0087	9848619	0.560	2
	0.3	SU204PR-K0.3	2CDS274327R0117	9848626	0.560	2
	0.5	SU204PR-K0.5	2CDS274327R0157	9848633	0.560	2
	0.75	SU204PR-K0.75	2CDS274327R0187	9848640	0.560	2
	1	SU204PR-K1	2CDS274327R0217	9848657	0.560	2
	1.6	SU204PR-K1.6	2CDS274327R0257	9848664	0.560	2
	2	SU204PR-K2	2CDS274327R0277	9848671	0.560	2
	3	SU204PR-K3	2CDS274327R0317	9848688	0.560	2
	4	SU204PR-K4	2CDS274327R0337	9848695	0.560	2
	5	SU204PR-K5	2CDS274327R0357	9848701	0.560	2
	6	SU204PR-K6	2CDS274327R0377	9848718	0.560	2
	8	SU204PR-K8	2CDS274327R0407	9848725	0.560	2
	10	SU204PR-K10	2CDS274327R0427	9848732	0.560	2
	13	SU204PR-K13	2CDS274327R0447	9848749	0.560	2
	15	SU204PR-K15	2CDS274327R0457	9848756	0.560	2
	16	SU204PR-K16	2CDS274327R0467	9848763	0.560	2
	20	SU204PR-K20	2CDS274327R0487	9848770	0.560	2
	25	SU204PR-K25	2CDS274327R0517	9848787	0.560	2
	30	SU204PR-K30	2CDS274327R0527	9848794	0.560	2
	32	SU204PR-K32	2CDS274327R0537	9848800	0.560	2
35	SU204PR-K35	2CDS274327R0547	9848817	0.560	2	
40	SU204PR-K40	2CDS274327R0557	9848824	0.560	2	
50	SU204PR-K50	2CDS274327R0577	9848831	0.560	2	
60	SU204PR-K60	2CDS274327R0587	9848848	0.560	2	
63	SU204PR-K63	2CDS274327R0607	9848855	0.560	2	

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