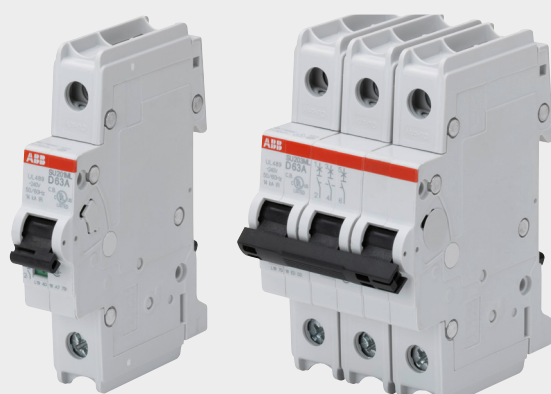


# MINIATURE CIRCUIT BREAKERS

## SU200ML data sheet

Branch circuit protection acc. to CSA C22.2 No.5 / UL 489



The miniature circuit breaker SU 200 ML is ABB's solution for UL 489 branch circuit protection up to 240 Vac and 96 Vdc. This circuit breaker is an all-round device for AC and DC applications for universal use in North American and global markets due to its approvals acc. to the international standards UL, CSA and IEC. Moreover, SU200ML is fully compatible with System pro M compact® UL 489 accessories.

### Features

- High performance MCB with 14 kA interrupting capacity acc. to UL 489 / CSA 22.2 No. 5 and 15 kA breaking capacity acc. to IEC/EN 60947-2
- Certified up to  $I_n = 40\text{ A}$  at 480 Y/277 V AC acc. to UL 489 / CSA 22.2 No. 5
- Certified for AC and DC use acc. to UL and CSA
- 40 °C reference temperature acc. to UL and CSA
- Current limiting acc. to UL 489
- Clear contact position indication in red/green ("real CPI")

### 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 |
| CCC            | CN |

# Miniature Circuit Breaker SU200ML

## Technical data

1) Also fulfilling the requirement acc. to the protection degree IPXXB

| General Data                                                   |                                                                                               |                                                                                                                                                                                                               |                                     |
|----------------------------------------------------------------|-----------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------|
| Standards                                                      | IEC/EN 60947-2 (Approvals: CB report, VDE, CCC)<br>UL489, CSA 22.2 No. 5 (Approvals: UL, CSA) |                                                                                                                                                                                                               |                                     |
| Poles                                                          | 1P, 2P, 3P, 4P                                                                                |                                                                                                                                                                                                               |                                     |
| Tripping characteristics                                       | C, K, Z                                                                                       |                                                                                                                                                                                                               |                                     |
| Rated current I <sub>n</sub>                                   | A                                                                                             | 0.2...63 A                                                                                                                                                                                                    |                                     |
| Rated frequency f                                              | Hz                                                                                            | 50 / 60 Hz                                                                                                                                                                                                    |                                     |
| Rated insulation voltage U <sub>i</sub> acc. to IEC/EN 60664-1 | V                                                                                             | 440 V AC                                                                                                                                                                                                      |                                     |
| Overvoltage category                                           | III                                                                                           |                                                                                                                                                                                                               |                                     |
| Pollution degree                                               | 3                                                                                             |                                                                                                                                                                                                               |                                     |
| Data acc. to IEC/EN 60947-2                                    |                                                                                               |                                                                                                                                                                                                               |                                     |
| Rated operational voltage U <sub>e</sub>                       | V                                                                                             | 1P:<br>2P, 3P, 4P:                                                                                                                                                                                            | 230 V AC<br>400 V AC                |
| Max. power frequency recovery voltage (U <sub>max</sub> )      | V                                                                                             | 1P:<br>2P, 3P, 4P:<br>1P: 48 V DC; 2P:                                                                                                                                                                        | 253/440 V AC<br>440 V AC<br>96 V DC |
| Min. operating voltage                                         | V                                                                                             | 12 V AC, 12 V DC                                                                                                                                                                                              |                                     |
| Rated ultimate short-circuit breaking capacity I <sub>cu</sub> | kA                                                                                            | 15 kA                                                                                                                                                                                                         |                                     |
| Rated service short-circuit breaking capacity I <sub>cs</sub>  | kA                                                                                            | ≤ 40 A:<br>> 40 A:                                                                                                                                                                                            | 11.25 kA<br>7.5 kA                  |
| Rated impulse withstand voltage U <sub>imp</sub> . (1.2/50 μs) | kV                                                                                            | 4 kV (test voltage 6.2 kV at sea level, 5 kV at 2,000 m)                                                                                                                                                      |                                     |
| Dielectric test voltage                                        | kV                                                                                            | 2 kV (50/60 Hz, 1 min.)                                                                                                                                                                                       |                                     |
| Reference temperature for tripping characteristics             | °C                                                                                            | 30 °C                                                                                                                                                                                                         |                                     |
| Electrical endurance                                           | ops.                                                                                          | I <sub>n</sub> < 30 A: 20,000 ops (AC), I <sub>n</sub> ≥ 30 A: 10,000 ops. (AC); 1,000 ops. (DC);<br>1 cycle (2s - ON, 13s - OFF, I <sub>n</sub> ≤ 32 A), 1 cycle (2s - ON, 28s - OFF, I <sub>n</sub> > 32 A) |                                     |
| Data acc. to UL / CSA                                          |                                                                                               |                                                                                                                                                                                                               |                                     |
| Rated voltage                                                  | V                                                                                             | 1P, 2P, 3P, 4P: 240 V AC<br>1P: 48 VDC; 2P: 96 V DC (2p in series)                                                                                                                                            |                                     |
| Rated interrupting capacity acc. to UL 1077                    | kA                                                                                            | –                                                                                                                                                                                                             |                                     |
| Short-circuit current rating acc. to UL 489                    | kA                                                                                            | 14 kA                                                                                                                                                                                                         |                                     |
| Reference temperature for tripping characteristics             | °C                                                                                            | 40 °C                                                                                                                                                                                                         |                                     |
| Electrical endurance                                           | ops.                                                                                          | 6,000 ops (AC), 6,000 ops. (DC); 1 cycle (1s - ON, 9s - OFF)                                                                                                                                                  |                                     |
| Mechanical Data                                                |                                                                                               |                                                                                                                                                                                                               |                                     |
| Housing                                                        | Insulation group II, RAL 7035                                                                 |                                                                                                                                                                                                               |                                     |
| Toggle                                                         | Insulation group II, black, sealable                                                          |                                                                                                                                                                                                               |                                     |
| Contact position indication                                    | CPI (red ON / green OFF)                                                                      |                                                                                                                                                                                                               |                                     |
| Protection degree acc. to EN 60529                             | IP20 <sup>1)</sup> , IP40 in enclosure with cover                                             |                                                                                                                                                                                                               |                                     |
| Mechanical endurance                                           | ops.                                                                                          | 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 <sub>n</sub>                                 |                                                                                                                                                                                                               |                                     |
| Environmental conditions (damp heat) acc. to IEC/EN 60068-2-30 | °C/RH                                                                                         | 28 cycles with 55°C/90-96% and 25°C/95-100%                                                                                                                                                                   |                                     |
| Ambient temperature                                            | °C                                                                                            | -25 ... +55 °C                                                                                                                                                                                                |                                     |
| Storage temperature                                            | °C                                                                                            | -40 ... +70 °C                                                                                                                                                                                                |                                     |
| Installation                                                   |                                                                                               |                                                                                                                                                                                                               |                                     |
| Terminal                                                       | Failsafe bi-directional cylinder-lift terminal                                                |                                                                                                                                                                                                               |                                     |
| Cross-section of conductors (top / bottom)                     | mm²                                                                                           | 35 mm² / 35 mm²                                                                                                                                                                                               |                                     |
| Flexible (if different)                                        | mm²<br>AWG                                                                                    | 25 mm² / 25 mm²<br>18 - 4 AWG                                                                                                                                                                                 |                                     |
| Cross-section of busbars (top / bottom)                        | mm²<br>AWG                                                                                    | 10 mm² / 10 mm²<br>18 - 8 AWG                                                                                                                                                                                 |                                     |
| Tightening Torque                                              | Nm<br>in.lbs.                                                                                 | 2.8 Nm<br>AWG 18-16: 8.85 in.-lbs.<br>AWG 14-10: 17.7 in.-lbs.<br>AWG 8-4: 39.8 in.-lbs.                                                                                                                      |                                     |
| Screwdriver                                                    | No. 2 Pozidrive                                                                               |                                                                                                                                                                                                               |                                     |
| Mounting                                                       | On DIN rail 35 mm acc. to EN 60715 by fast clip                                               |                                                                                                                                                                                                               |                                     |
| Mounting position                                              | any                                                                                           |                                                                                                                                                                                                               |                                     |
| Supply                                                         | optional                                                                                      |                                                                                                                                                                                                               |                                     |
| Dimensions and weight                                          |                                                                                               |                                                                                                                                                                                                               |                                     |
| Mounting dimensions acc. to DIN 43880                          | Mounting dimension 3                                                                          |                                                                                                                                                                                                               |                                     |
| Pole dimensions (H x D x W)                                    | mm                                                                                            | 95 x 69 x 17.5 mm                                                                                                                                                                                             |                                     |
| Pole weight                                                    | g                                                                                             | approx. 120 g                                                                                                                                                                                                 |                                     |
| Combination with aux. elements                                 |                                                                                               |                                                                                                                                                                                                               |                                     |
| Auxiliary contact                                              | Yes                                                                                           |                                                                                                                                                                                                               |                                     |
| Signal contact                                                 | Yes                                                                                           |                                                                                                                                                                                                               |                                     |
| Shunt trip                                                     | Yes                                                                                           |                                                                                                                                                                                                               |                                     |

# Miniature Circuit Breaker SU200ML

## Tripping characteristics

1) The thermal releases are calibrated to a nominal reference ambient temperature e.g. for UL 489 of 40 °C. In the case of higher ambient temperatures, the current values decrease by approx. 4 % for each 10 K temperature rise.

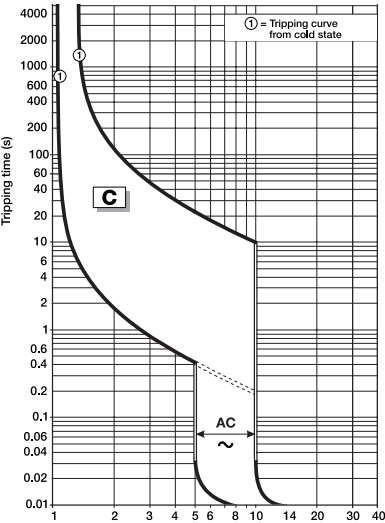
2) The indicated tripping values of electromagnetic tripping devices apply to a frequency of 50/60 Hz. The thermal release operates independent of frequency.

3) As from operating temperature (after  $I_1 > 1\text{ h}$ )

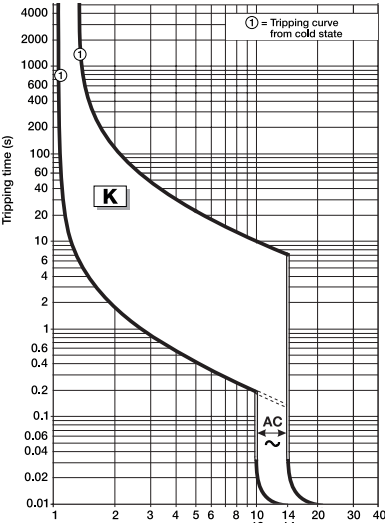
### Tripping characteristics

| Acc. to        | Tripping characteristics | Rated current | Thermal release <sup>1)</sup>           |                                     | Tripping time  | Electromagnetic release <sup>2)</sup> |                  |
|----------------|--------------------------|---------------|-----------------------------------------|-------------------------------------|----------------|---------------------------------------|------------------|
|                |                          |               | Currents:                               |                                     |                | Range of instantaneous tripping       | Tripping time    |
|                |                          | $I_n$         | conventional non-tripping current $I_1$ | conventional tripping current $I_2$ |                |                                       |                  |
| IEC/EN 60947-2 | C                        | 0.5 to 63 A   | $1.05 \cdot I_n$                        | $> 1\text{ h}$                      | $> 1\text{ h}$ | $5 \cdot I_n$                         | $> 0.2\text{ s}$ |
|                |                          |               |                                         | $< 1\text{ h}^{3)}$                 |                | $10 \cdot I_n$                        | $< 0.2\text{ s}$ |
|                | K                        | 0.2 to 63 A   | $1.05 \cdot I_n$                        | $> 1\text{ h}$                      | $> 1\text{ h}$ | $10 \cdot I_n$                        | $> 0.2\text{ s}$ |
|                |                          |               |                                         | $< 1\text{ h}^{3)}$                 |                | $14 \cdot I_n$                        | $< 0.2\text{ s}$ |
|                | Z                        | 0.5 to 63 A   | $1.05 \cdot I_n$                        | $> 1\text{ h}$                      | $> 1\text{ h}$ | $2 \cdot I_n$                         | $> 0.2\text{ s}$ |
|                |                          |               |                                         | $< 1\text{ h}^{3)}$                 |                | $3 \cdot I_n$                         | $< 0.2\text{ s}$ |

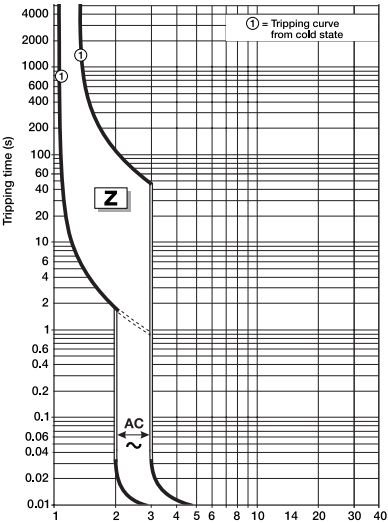
C characteristic



K characteristic



Z characteristic



# Miniature Circuit Breaker SU200ML Derating

## Deviating ambient temperature

—  
1) Current ratings  
0.2, 0.3 and 0.75 A  
available with  
K characteristic only

The rated value of the current of a miniature circuit breaker of SU 200 ML series refers to a reference ambient temperature of 30 °C acc. to IEC/EN 60947-2 and 40 °C acc. to UL/CSA. The follow-

ing tables show derating factors for ambient temperature from -40 °C to 70 °C for the characteristics C, K, Z.

### IEC derating / Reference temp: 30 °C

| IEC/EN 60947-2     | ambient temperature (°C) |       |       |       |       |       |       |      |       |       |       |       |
|--------------------|--------------------------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|-------|
| I <sub>n</sub> (A) | -40                      | -30   | -20   | -10   | 0     | 10    | 20    | 30   | 40    | 50    | 60    | 70    |
| 0.2 <sup>1)</sup>  | 0.26                     | 0.25  | 0.24  | 0.23  | 0.22  | 0.22  | 0.21  | 0.20 | 0.19  | 0.19  | 0.18  | 0.17  |
| 0.3 <sup>1)</sup>  | 0.39                     | 0.37  | 0.36  | 0.35  | 0.33  | 0.32  | 0.31  | 0.30 | 0.29  | 0.28  | 0.27  | 0.26  |
| 0.5                | 0.64                     | 0.62  | 0.60  | 0.58  | 0.56  | 0.54  | 0.52  | 0.5  | 0.48  | 0.46  | 0.45  | 0.43  |
| 0.75 <sup>1)</sup> | 0.97                     | 0.93  | 0.90  | 0.87  | 0.84  | 0.81  | 0.78  | 0.75 | 0.72  | 0.70  | 0.67  | 0.65  |
| 1                  | 1.29                     | 1.24  | 1.20  | 1.16  | 1.12  | 1.08  | 1.04  | 1    | 0.96  | 0.93  | 0.89  | 0.86  |
| 1.6                | 2.11                     | 2.02  | 1.95  | 1.87  | 1.80  | 1.73  | 1.66  | 1.6  | 1.54  | 1.47  | 1.42  | 1.36  |
| 2                  | 2.58                     | 2.49  | 2.40  | 2.31  | 2.23  | 2.15  | 2.07  | 2    | 1.93  | 1.85  | 1.79  | 1.72  |
| 3                  | 3.87                     | 3.73  | 3.60  | 3.47  | 3.35  | 3.23  | 3.11  | 3    | 2.89  | 2.78  | 2.68  | 2.58  |
| 4                  | 5.16                     | 4.97  | 4.80  | 4.63  | 4.46  | 4.30  | 4.15  | 4    | 3.85  | 3.71  | 3.57  | 3.44  |
| 5                  | 6.45                     | 6.22  | 6.00  | 5.78  | 5.58  | 5.38  | 5.19  | 5    | 4.82  | 4.64  | 4.47  | 4.30  |
| 6                  | 7.74                     | 7.46  | 7.20  | 6.94  | 6.69  | 6.45  | 6.22  | 6    | 5.78  | 5.56  | 5.36  | 5.16  |
| 8                  | 10.32                    | 9.95  | 9.59  | 9.25  | 8.92  | 8.60  | 8.30  | 8    | 7.70  | 7.42  | 7.14  | 6.88  |
| 10                 | 12.90                    | 12.44 | 11.99 | 11.56 | 11.15 | 10.75 | 10.37 | 10   | 9.63  | 9.27  | 8.93  | 8.60  |
| 13                 | 16.76                    | 16.17 | 15.59 | 15.03 | 14.50 | 13.98 | 13.48 | 13   | 12.52 | 12.06 | 11.61 | 11.18 |
| 15                 | 19.34                    | 18.65 | 17.99 | 17.35 | 16.73 | 16.13 | 15.56 | 15   | 14.45 | 13.91 | 13.40 | 12.90 |
| 16                 | 20.63                    | 19.90 | 19.19 | 18.50 | 17.84 | 17.21 | 16.59 | 16   | 15.41 | 14.84 | 14.29 | 13.76 |
| 20                 | 25.79                    | 24.87 | 23.98 | 23.13 | 22.30 | 21.51 | 20.74 | 20   | 19.26 | 18.55 | 17.86 | 17.20 |
| 25                 | 32.24                    | 31.09 | 29.98 | 28.91 | 27.88 | 26.88 | 25.93 | 25   | 24.08 | 23.18 | 22.33 | 21.50 |
| 30                 | 38.69                    | 37.31 | 35.98 | 34.69 | 33.45 | 32.26 | 31.11 | 30   | 28.89 | 27.82 | 26.79 | 25.80 |
| 32                 | 41.27                    | 39.79 | 38.37 | 37.01 | 35.69 | 34.41 | 33.18 | 32   | 30.82 | 29.68 | 28.58 | 27.52 |
| 35                 | 45.14                    | 43.53 | 41.97 | 40.47 | 39.03 | 37.64 | 36.30 | 35   | 33.71 | 32.46 | 31.26 | 30.10 |
| 40                 | 51.58                    | 49.74 | 47.97 | 46.26 | 44.61 | 43.01 | 41.48 | 40   | 38.52 | 37.09 | 35.72 | 34.40 |
| 50                 | 64.48                    | 62.18 | 59.96 | 57.82 | 55.76 | 53.77 | 51.85 | 50   | 48.15 | 46.37 | 44.65 | 43.00 |
| 60                 | 77.38                    | 74.61 | 71.95 | 69.39 | 66.91 | 64.52 | 62.22 | 60   | 57.78 | 55.64 | 53.58 | 51.60 |
| 63                 | 81.24                    | 78.35 | 75.55 | 72.85 | 70.25 | 67.75 | 65.33 | 63   | 61    | 58    | 56    | 54    |

### UL derating / Reference temp: 40 °C

| UL 489             | ambient temperature (°C) |       |       |       |       |       |       |       |      |       |       |       |
|--------------------|--------------------------|-------|-------|-------|-------|-------|-------|-------|------|-------|-------|-------|
| I <sub>n</sub> (A) | -40                      | -30   | -20   | -10   | 0     | 10    | 20    | 30    | 40   | 50    | 60    | 70    |
| 0.2 <sup>1)</sup>  | 0.27                     | 0.26  | 0.25  | 0.24  | 0.23  | 0.22  | 0.22  | 0.21  | 0.20 | 0.19  | 0.19  | 0.18  |
| 0.3 <sup>1)</sup>  | 0.40                     | 0.39  | 0.37  | 0.36  | 0.35  | 0.33  | 0.32  | 0.31  | 0.30 | 0.29  | 0.28  | 0.27  |
| 0.5                | 0.67                     | 0.64  | 0.62  | 0.60  | 0.58  | 0.56  | 0.54  | 0.52  | 0.5  | 0.48  | 0.46  | 0.45  |
| 0.75 <sup>1)</sup> | 1.00                     | 0.97  | 0.93  | 0.90  | 0.87  | 0.84  | 0.81  | 0.78  | 0.75 | 0.72  | 0.70  | 0.67  |
| 1                  | 1.34                     | 1.29  | 1.24  | 1.20  | 1.16  | 1.12  | 1.08  | 1.04  | 1    | 0.96  | 0.93  | 0.89  |
| 1.6                | 2.14                     | 2.07  | 1.99  | 1.92  | 1.85  | 1.78  | 1.72  | 1.66  | 1.6  | 1.54  | 1.49  | 1.43  |
| 2                  | 2.67                     | 2.58  | 2.49  | 2.40  | 2.31  | 2.23  | 2.15  | 2.07  | 2    | 1.93  | 1.85  | 1.79  |
| 3                  | 4.01                     | 3.87  | 3.73  | 3.60  | 3.47  | 3.35  | 3.23  | 3.11  | 3    | 2.89  | 2.78  | 2.68  |
| 4                  | 5.35                     | 5.16  | 4.97  | 4.80  | 4.63  | 4.46  | 4.30  | 4.15  | 4    | 3.85  | 3.71  | 3.57  |
| 5                  | 6.69                     | 6.45  | 6.22  | 6.00  | 5.78  | 5.58  | 5.38  | 5.19  | 5    | 4.82  | 4.64  | 4.47  |
| 6                  | 8.02                     | 7.74  | 7.46  | 7.20  | 6.94  | 6.69  | 6.45  | 6.22  | 6    | 5.78  | 5.56  | 5.36  |
| 8                  | 10.70                    | 10.32 | 9.95  | 9.59  | 9.25  | 8.92  | 8.60  | 8.30  | 8    | 7.70  | 7.42  | 7.14  |
| 10                 | 13.37                    | 12.90 | 12.44 | 11.99 | 11.56 | 11.15 | 10.75 | 10.37 | 10   | 9.63  | 9.27  | 8.93  |
| 13                 | 17.38                    | 16.76 | 16.17 | 15.59 | 15.03 | 14.50 | 13.98 | 13.48 | 13   | 12.52 | 12.06 | 11.61 |
| 15                 | 20.06                    | 19.34 | 18.65 | 17.99 | 17.35 | 16.73 | 16.13 | 15.56 | 15   | 14.45 | 13.91 | 13.40 |
| 16                 | 21.40                    | 20.63 | 19.90 | 19.19 | 18.50 | 17.84 | 17.21 | 16.59 | 16   | 15.41 | 14.84 | 14.29 |
| 20                 | 26.75                    | 25.79 | 24.87 | 23.98 | 23.13 | 22.30 | 21.51 | 20.74 | 20   | 19.26 | 18.55 | 17.86 |
| 25                 | 33.43                    | 32.24 | 31.09 | 29.98 | 28.91 | 27.88 | 26.88 | 25.93 | 25   | 24.08 | 23.18 | 22.33 |
| 30                 | 40.12                    | 38.69 | 37.31 | 35.98 | 34.69 | 33.45 | 32.26 | 31.11 | 30   | 28.89 | 27.82 | 26.79 |
| 32                 | 42.79                    | 41.27 | 39.79 | 38.37 | 37.01 | 35.69 | 34.41 | 33.18 | 32   | 30.82 | 29.68 | 28.58 |
| 35                 | 46.81                    | 45.14 | 43.53 | 41.97 | 40.47 | 39.03 | 37.64 | 36.30 | 35   | 33.71 | 32.46 | 31.26 |
| 40                 | 53.49                    | 51.58 | 49.74 | 47.97 | 46.26 | 44.61 | 43.01 | 41.48 | 40   | 38.52 | 37.09 | 35.72 |
| 50                 | 66.87                    | 64.48 | 62.18 | 59.96 | 57.82 | 55.76 | 53.77 | 51.85 | 50   | 48.15 | 46.37 | 44.65 |
| 60                 | 80.24                    | 77.38 | 74.61 | 71.95 | 69.39 | 66.91 | 64.52 | 62.22 | 60   | 57.78 | 55.64 | 53.58 |
| 63                 | 84.25                    | 81.24 | 78.35 | 75.55 | 72.85 | 70.25 | 67.75 | 65.33 | 63   | 60.67 | 58.42 | 56.26 |

## Miniature Circuit Breaker SU200ML Derating

Influence of adjacent devices, internal resistance and power loss

### 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 are used, the factor is not to be considered.

| No. of adjacent devices | Factor F |
|-------------------------|----------|
| 1                       | 1        |
| 2, 3                    | 0.9      |
| 4, 5                    | 0.8      |
| ≥ 6                     | 0.75     |

### Internal resistance and power loss per pole

| Rated current<br>$I_n$ [A] | C, K characteristics                         |                         | Z characteristic                             |                         |
|----------------------------|----------------------------------------------|-------------------------|----------------------------------------------|-------------------------|
|                            | Internal resistance per pole<br>$R_i$ [mOhm] | Power loss<br>$P_v$ [W] | Internal resistance per pole<br>$R_i$ [mOhm] | Power loss<br>$P_v$ [W] |
| 0.2                        | 42500                                        | 1.7                     | –                                            | –                       |
| 0.3                        | 18889                                        | 1.7                     | –                                            | –                       |
| 0.5                        | 5600                                         | 1.4                     | 9000                                         | 2.3                     |
| 0.75                       | 2489                                         | 1.4                     | –                                            | –                       |
| 1                          | 1400                                         | 1.4                     | 2200                                         | 2.2                     |
| 1.6                        | 703                                          | 1.8                     | 1000                                         | 2.6                     |
| 2                          | 450                                          | 1.8                     | 650                                          | 2.6                     |
| 3                          | 178                                          | 1.6                     | 250                                          | 2.3                     |
| 4                          | 113                                          | 1.8                     | 140                                          | 2.2                     |
| 5                          | 50                                           | 1.3                     | 100                                          | 2.5                     |
| 6                          | 56                                           | 2.0                     | 70                                           | 2.5                     |
| 8                          | 23                                           | 1.5                     | 28                                           | 1.8                     |
| 10                         | 21                                           | 2.1                     | 21                                           | 2.1                     |
| 13                         | 14                                           | 2.3                     | 17                                           | 2.9                     |
| 15                         | 11                                           | 2.4                     | 13                                           | 2.9                     |
| 16                         | 9.8                                          | 2.5                     | 10                                           | 2.6                     |
| 20                         | 6.3                                          | 2.5                     | 6.5                                          | 2.6                     |
| 25                         | 5.1                                          | 3.2                     | 5.1                                          | 3.2                     |
| 30                         | 3.9                                          | 3.5                     | 3.9                                          | 3.5                     |
| 32                         | 3.6                                          | 3.7                     | 3.6                                          | 3.7                     |
| 35                         | 3.3                                          | 4.1                     | 3.3                                          | 4.1                     |
| 40                         | 2.8                                          | 4.5                     | 2.8                                          | 4.5                     |
| 50                         | 1.8                                          | 4.5                     | 1.8                                          | 4.5                     |
| 60                         | 1.4                                          | 4.9                     | 1.4                                          | 4.9                     |
| 63                         | 1.4                                          | 5.4                     | 1.4                                          | 5.4                     |

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

Current limiting –  $I_{peak}$  and  $I^2t$  values acc. to UL 489

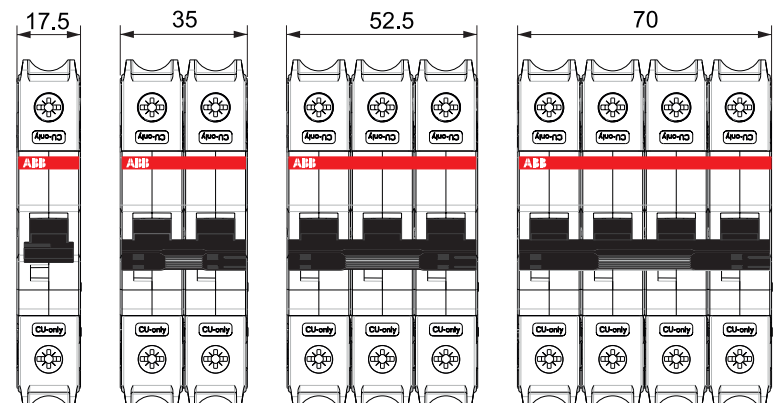
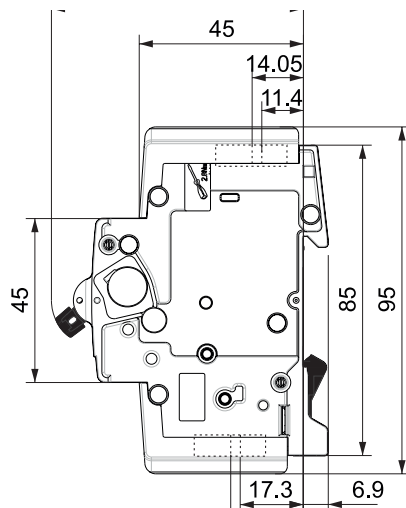
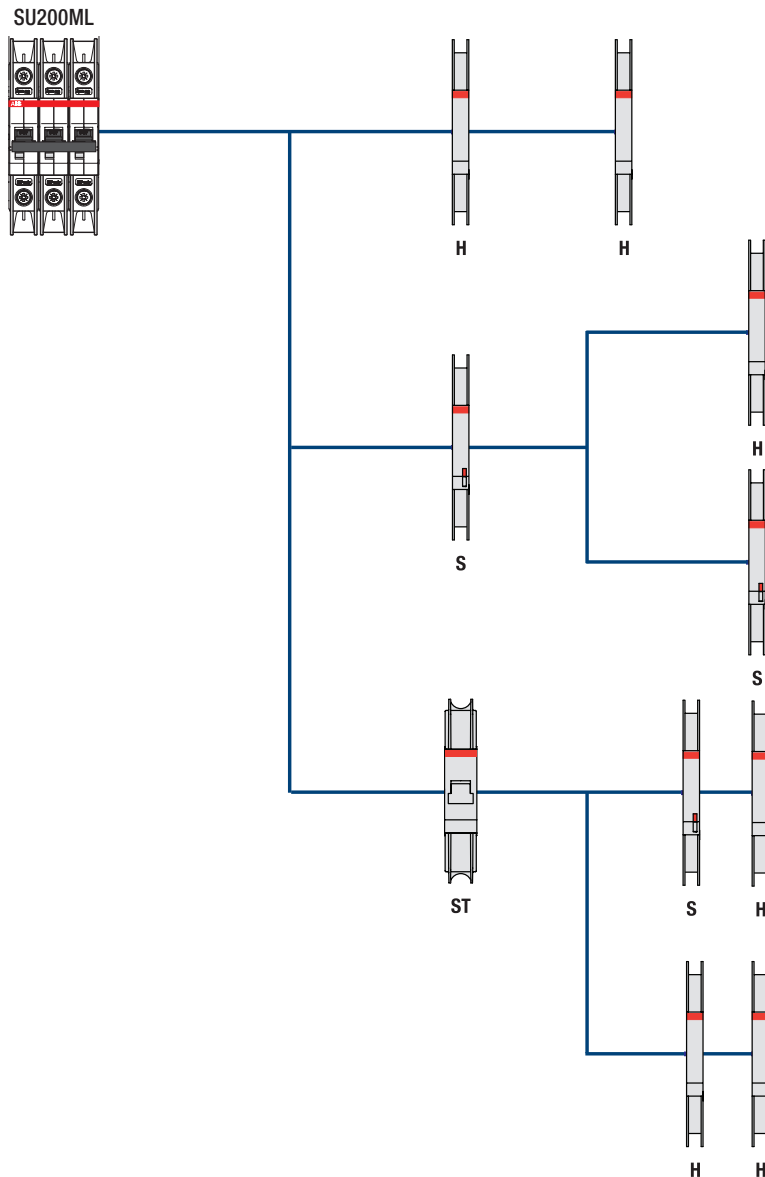
| Characteristic | Nominal current<br>[A] | Voltage<br>[V] | Current<br>[A] | Power Factor | $I_{peak}$<br>[kA] | $I^2t$<br>[kA²S] |
|----------------|------------------------|----------------|----------------|--------------|--------------------|------------------|
| K, C, Z        | ≤ 40                   | 240            | 14000          | 0.25 - 0.3   | 9.0                | 80               |
|                | > 40                   | 240            | 14000          | 0.25 - 0.3   | 10.0               | 140              |
| K, C, Z        | ≤ 40                   | 240            | 10000          | 0.45 - 0.5   | 7.0                | 60               |
|                | > 40                   | 240            | 10000          | 0.45 - 0.5   | 8.0                | 90               |
| K, C, Z        | ≤ 40                   | 240            | 4000           | 0.45 - 0.5   | 4.0                | 25               |
|                | > 40                   | 240            | 4000           | 0.45 - 0.5   | 5.0                | 40               |

# Miniature Circuit Breaker SU200ML

## Accessory overview and dimensional drawing

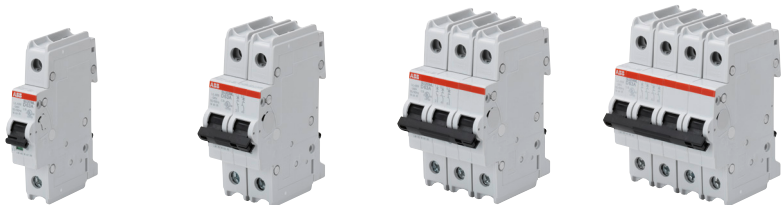
- **H:**  
 Auxiliary contact  
 (S2C-H6RU)  
 (change-over contact)  
**S/H:**  
 Signal contact  
 (S2C-S6RU)  
**ST:**  
 Shunt trip  
 (S2C-A...U)

The certification of the accessories has been done with one accessory only. The number of electrical operations is limited to 4,000 operations for the maximum combinations and the combinations including shunt trips.



# Miniature Circuit Breaker SU200ML

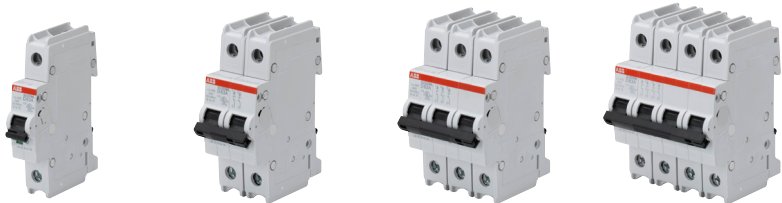
Ordering data characteristic C



| Type      | Rated Current | 1 pole<br>Part number | 2 poles<br>Part number | 3 poles<br>Part number | 4 poles<br>Part number |
|-----------|---------------|-----------------------|------------------------|------------------------|------------------------|
| SU200ML-C | 0.5 A         | SU201ML-C0.5          | SU202ML-C0.5           | SU203ML-C0.5           | SU204ML-C0.5           |
|           | 1.0 A         | SU201ML-C1            | SU202ML-C1             | SU203ML-C1             | SU204ML-C1             |
|           | 1.6 A         | SU201ML-C1.6          | SU202ML-C1.6           | SU203ML-C1.6           | SU204ML-C1.6           |
|           | 2.0 A         | SU201ML-C2            | SU202ML-C2             | SU203ML-C2             | SU204ML-C2             |
|           | 3.0 A         | SU201ML-C3            | SU202ML-C3             | SU203ML-C3             | SU204ML-C3             |
|           | 4.0 A         | SU201ML-C4            | SU202ML-C4             | SU203ML-C4             | SU204ML-C4             |
|           | 5.0 A         | SU201ML-C5            | SU202ML-C5             | SU203ML-C5             | SU204ML-C5             |
|           | 6.0 A         | SU201ML-C6            | SU202ML-C6             | SU203ML-C6             | SU204ML-C6             |
|           | 7.0 A         | SU201ML-C7            | SU202ML-C7             | SU203ML-C7             | SU204ML-C7             |
|           | 8.0 A         | SU201ML-C8            | SU202ML-C8             | SU203ML-C8             | SU204ML-C8             |
|           | 10.0 A        | SU201ML-C10           | SU202ML-C10            | SU203ML-C10            | SU204ML-C10            |
|           | 13.0 A        | SU201ML-C13           | SU202ML-C13            | SU203ML-C13            | SU204ML-C13            |
|           | 15.0 A        | SU201ML-C15           | SU202ML-C15            | SU203ML-C15            | SU204ML-C15            |
|           | 16.0 A        | SU201ML-C16           | SU202ML-C16            | SU203ML-C16            | SU204ML-C16            |
|           | 20.0 A        | SU201ML-C20           | SU202ML-C20            | SU203ML-C20            | SU204ML-C20            |
|           | 25.0 A        | SU201ML-C25           | SU202ML-C25            | SU203ML-C25            | SU204ML-C25            |
|           | 30.0 A        | SU201ML-C30           | SU202ML-C30            | SU203ML-C30            | SU204ML-C30            |
|           | 32.0 A        | SU201ML-C32           | SU202ML-C32            | SU203ML-C32            | SU204ML-C32            |
|           | 35.0 A        | SU201ML-C35           | SU202ML-C35            | SU203ML-C35            | SU204ML-C35            |
|           | 40.0 A        | SU201ML-C40           | SU202ML-C40            | SU203ML-C40            | SU204ML-C40            |
|           | 50.0 A        | SU201ML-C50           | SU202ML-C50            | SU203ML-C50            | SU204ML-C50            |
|           | 60.0 A        | SU201ML-C60           | SU202ML-C60            | SU203ML-C60            | SU204ML-C60            |
|           | 63.0 A        | SU201ML-C63           | SU202ML-C63            | SU203ML-C63            | SU204ML-C63            |

# Miniature Circuit Breaker SU200ML

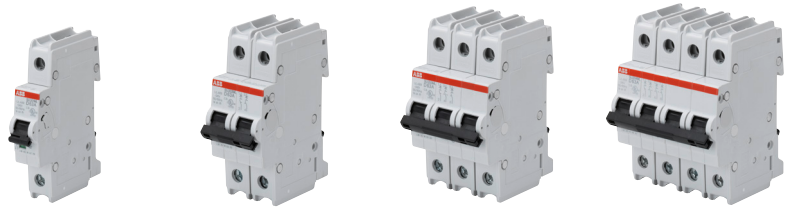
## Ordering data characteristic K



| Type      | Rated Current | 1 pole<br>Part number | 2 poles<br>Part number | 3 poles<br>Part number | 4 poles<br>Part number |
|-----------|---------------|-----------------------|------------------------|------------------------|------------------------|
| SU200ML-K | 0.2 A         | SU201ML-K0.2          | SU202ML-K0.2           | SU203ML-K0.2           | SU204ML-K0.2           |
|           | 0.3 A         | SU201ML-K0.3          | SU202ML-K0.3           | SU203ML-K0.3           | SU204ML-K0.3           |
|           | 0.5 A         | SU201ML-K0.5          | SU202ML-K0.5           | SU203ML-K0.5           | SU204ML-K0.5           |
|           | 0.75 A        | SU201ML-K0.75         | SU202ML-K0.75          | SU203ML-K0.75          | SU204ML-K0.75          |
|           | 1.0 A         | SU201ML-K1            | SU202ML-K1             | SU203ML-K1             | SU204ML-K1             |
|           | 1.6 A         | SU201ML-K1.6          | SU202ML-K1.6           | SU203ML-K1.6           | SU204ML-K1.6           |
|           | 2.0 A         | SU201ML-K2            | SU202ML-K2             | SU203ML-K2             | SU204ML-K2             |
|           | 3.0 A         | SU201ML-K3            | SU202ML-K3             | SU203ML-K3             | SU204ML-K3             |
|           | 4.0 A         | SU201ML-K4            | SU202ML-K4             | SU203ML-K4             | SU204ML-K4             |
|           | 5.0 A         | SU201ML-K5            | SU202ML-K5             | SU203ML-K5             | SU204ML-K5             |
|           | 6.0 A         | SU201ML-K6            | SU202ML-K6             | SU203ML-K6             | SU204ML-K6             |
|           | 7.0 A         | SU201ML-K7            | SU202ML-K7             | SU203ML-K7             | SU204ML-K7             |
|           | 8.0 A         | SU201ML-K8            | SU202ML-K8             | SU203ML-K8             | SU204ML-K8             |
|           | 10.0 A        | SU201ML-K10           | SU202ML-K10            | SU203ML-K10            | SU204ML-K10            |
|           | 13.0 A        | SU201ML-K13           | SU202ML-K13            | SU203ML-K13            | SU204ML-K13            |
|           | 15.0 A        | SU201ML-K15           | SU202ML-K15            | SU203ML-K15            | SU204ML-K15            |
|           | 16.0 A        | SU201ML-K16           | SU202ML-K16            | SU203ML-K16            | SU204ML-K16            |
|           | 20.0 A        | SU201ML-K20           | SU202ML-K20            | SU203ML-K20            | SU204ML-K20            |
|           | 25.0 A        | SU201ML-K25           | SU202ML-K25            | SU203ML-K25            | SU204ML-K25            |
|           | 30.0 A        | SU201ML-K30           | SU202ML-K30            | SU203ML-K30            | SU204ML-K30            |
|           | 32.0 A        | SU201ML-K32           | SU202ML-K32            | SU203ML-K32            | SU204ML-K32            |
|           | 35.0 A        | SU201ML-K35           | SU202ML-K35            | SU203ML-K35            | SU204ML-K35            |
|           | 40.0 A        | SU201ML-K40           | SU202ML-K40            | SU203ML-K40            | SU204ML-K40            |
|           | 50.0 A        | SU201ML-K50           | SU202ML-K50            | SU203ML-K50            | SU204ML-K50            |
|           | 60.0 A        | SU201ML-K60           | SU202ML-K60            | SU203ML-K60            | SU204ML-K60            |
|           | 63.0 A        | SU201ML-K63           | SU202ML-K63            | SU203ML-K63            | SU204ML-K63            |

## Miniature Circuit Breaker SU200ML

Ordering data characteristic Z



| Type      | Rated Current | 1 pole<br>Part number | 2 poles<br>Part number | 3 poles<br>Part number | 4 poles<br>Part number |
|-----------|---------------|-----------------------|------------------------|------------------------|------------------------|
| SU200ML-Z | 0.5 A         | SU201ML-Z0.5          | SU202ML-Z0.5           | SU203ML-Z0.5           | SU204ML-Z0.5           |
|           | 1.0 A         | SU201ML-Z1            | SU202ML-Z1             | SU203ML-Z1             | SU204ML-Z1             |
|           | 1.6 A         | SU201ML-Z1.6          | SU202ML-Z1.6           | SU203ML-Z1.6           | SU204ML-Z1.6           |
|           | 2.0 A         | SU201ML-Z2            | SU202ML-Z2             | SU203ML-Z2             | SU204ML-Z2             |
|           | 3.0 A         | SU201ML-Z3            | SU202ML-Z3             | SU203ML-Z3             | SU204ML-Z3             |
|           | 4.0 A         | SU201ML-Z4            | SU202ML-Z4             | SU203ML-Z4             | SU204ML-Z4             |
|           | 5.0 A         | SU201ML-Z5            | SU202ML-Z5             | SU203ML-Z5             | SU204ML-Z5             |
|           | 6.0 A         | SU201ML-Z6            | SU202ML-Z6             | SU203ML-Z6             | SU204ML-Z6             |
|           | 7.0 A         | SU201ML-Z7            | SU202ML-Z7             | SU203ML-Z7             | SU204ML-Z7             |
|           | 8.0 A         | SU201ML-Z8            | SU202ML-Z8             | SU203ML-Z8             | SU204ML-Z8             |
|           | 10.0 A        | SU201ML-Z10           | SU202ML-Z10            | SU203ML-Z10            | SU204ML-Z10            |
|           | 13.0 A        | SU201ML-Z13           | SU202ML-Z13            | SU203ML-Z13            | SU204ML-Z13            |
|           | 15.0 A        | SU201ML-Z15           | SU202ML-Z15            | SU203ML-Z15            | SU204ML-Z15            |
|           | 16.0 A        | SU201ML-Z16           | SU202ML-Z16            | SU203ML-Z16            | SU204ML-Z16            |
|           | 20.0 A        | SU201ML-Z20           | SU202ML-Z20            | SU203ML-Z20            | SU204ML-Z20            |
|           | 25.0 A        | SU201ML-Z25           | SU202ML-Z25            | SU203ML-Z25            | SU204ML-Z25            |
|           | 30.0 A        | SU201ML-Z30           | SU202ML-Z30            | SU203ML-Z30            | SU204ML-Z30            |
|           | 32.0 A        | SU201ML-Z32           | SU202ML-Z32            | SU203ML-Z32            | SU204ML-Z32            |
|           | 35.0 A        | SU201ML-Z35           | SU202ML-Z35            | SU203ML-Z35            | SU204ML-Z35            |
|           | 40.0 A        | SU201ML-Z40           | SU202ML-Z40            | SU203ML-Z40            | SU204ML-Z40            |
|           | 50.0 A        | SU201ML-Z50           | SU202ML-Z50            | SU203ML-Z50            | SU204ML-Z50            |
|           | 60.0 A        | SU201ML-Z60           | SU202ML-Z60            | SU203ML-Z60            | SU204ML-Z60            |
|           | 63.0 A        | SU201ML-Z63           | SU202ML-Z63            | SU203ML-Z63            | SU204ML-Z63            |

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