## Overview

Miniature circuit breakers are used to protect systems and installations in buildings and for industrial applications.

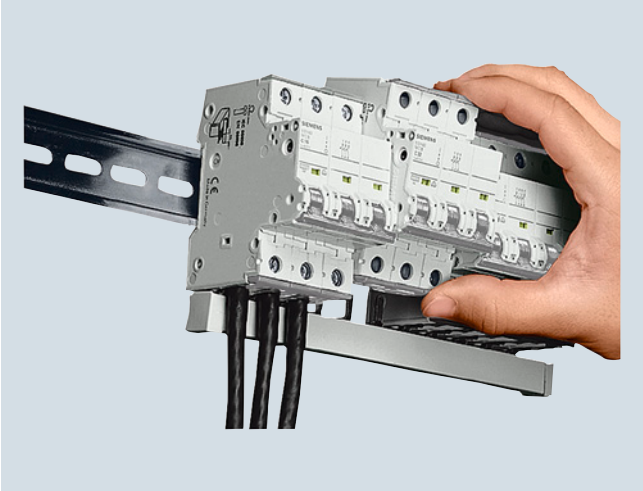
Used in industrial applications and plant engineering, miniature circuit breakers can be supplemented with additional components, such as auxiliary switches, fault signal contacts, shunt trips, undervoltage releases, remote controlled mechanism, RC units, and arc fault detection devices.

The devices are approved for worldwide use according to IEC standards for power supply systems up to 250/440 V AC. 72 V DC per pole is permitted in DC systems.

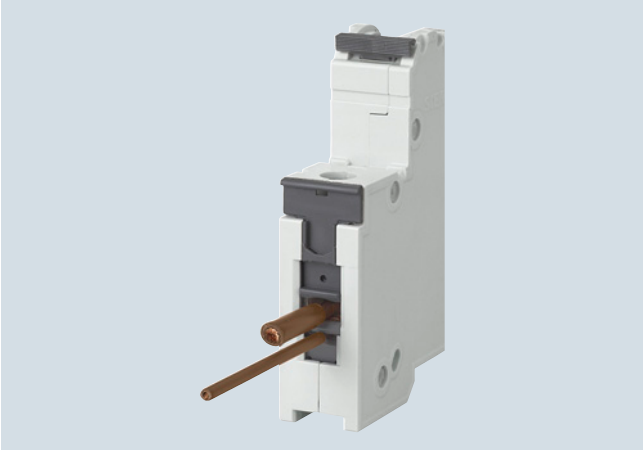
For North America, there is an additional approval according to UL 1077 for use as "supplementary protectors" in systems up to 480/277 V AC. For use in ship building, the devices also have numerous certifications according to shipping classifications; BV, DNV, GL and LRS. References to this can be found in chapter "Appendix", "Standards and approvals".

## Benefits

- Optional top or bottom infeed as the terminals are identical
- Clear and visible conductor connection in front of the rear busbar facilitates controls
- The conductor is easily inserted into the terminal thanks to the large and easily accessible wiring space



- Quick and easy manual removal of miniature circuit breakers from the busbar assembly, for example if connections need to be changed
- Time-saving replacement of parts as busbars no longer need to be freed from adjacent devices



- Double terminal chambers permit accommodation of 2 wires of different cross-sections


- The 5SY miniature circuit breakers are ideal for the quick and easy mounting of auxiliary switches and fault signal contacts. Captive metal brackets on the additional components ensure the quick and easy mounting of devices on the miniature circuit breakers without the need for tools

## Technical specifications

| | | | 5SY6 | 5SY4 | 5SY5 | 5SY7 | 5SY8 | 5SP4 |
|---|---|---|---|---|---|---|---|---|
| **Standards** | | | EN 60898-1 | EN 60898-1 | EN 60898-2 | EN 60898-1 | EN 60947-2 | EN 60898-1 |
| **Approvals** | | | See chapter "Appendix" | | | | | |
| **Rated voltage $U_n$** | | V AC<br>V DC | 230/400<br>-- | 230/400<br>-- | 230/400<br>220/440/<br>880[5] | 230/400<br>-- | 230/400<br>-- | 230/400<br>-- |
| **Operational voltage** | | | | | | | | |
| | Min. | V AC/DC/pole | 24 | 24 | 24 | 24 | 24 | 24 |
| Acc. to EN 60898-1/-2 and EN 60947-2 | Max.<br>Max. | V DC/pole<br>V AC | 72[4]<br>250/440 | 72[4]<br>250/440 | 250<br>250/440 | 72[4]<br>250/440 | 72[4]<br>250/440 | 72<br>250/440 |
| Acc. to UL 1077 and CSA C22.2 No.235 | Max. | V AC | 480/277 | 480/277 | -- | 480/277 | 480/277 | 480/277 |
| | Max. | V DC | 60 | 60[6] | -- | 60[6] | 60[6] | 60 |
| **Breaking capacity**[1] | | | | | | | | |
| • $I_{cn}$ acc. to IEC/EN 60898-1 | | kA AC | 6 | 10 | 10 | 15 | -- | 10 |
| • $I_{cn}$ acc. to IEC/EN 60898-2 | | kA DC | 10 | 10 | 10 | 15 | -- | 10 |
| • $I_{cu}$ acc. to IEC/EN 60947-2 | | kA AC<br>kA DC | 30 ... 10[1]<br>15 | 35 ... 10[1]<br>15 | 35 ... 10[1]<br>15 | 50 ... 15[1]<br>15 | 70 ... 20[1]<br>15 | 10<br>15 |
| • Acc. to UL1077 and CSA C22.2 No.235 | | kA AC | 5 | 5 | -- | 5 | 5 | 5 |
| **Insulation coordination** | | | | | | | | |
| • Rated insulation voltage | | V AC<br>V DC/pole | 250/440<br>-- | -- | 250 | -- | -- | -- |
| **Rated frequency** | | Hz | 50/60 | | | | | |
| **Pollution degree for overvoltage category** | | | 3/III[3] | | | | | |
| **Touch protection** | Acc. to EN 50274 | | Yes | | | | | |
| **Handle end position, sealable** | | | Yes | | | | | |
| **Degree of protection** | Acc. to EN 60529 | | IP20 with connected conductors,<br>IP40 in the area of the handle with distribution cover | | | | | |
| **CFC and silicone-free** | | | Yes | | | | | |
| **Mounting** | | | | | | | | |
| • Snap-on fixing system | | | Yes | | | | | -- |
| • Standard mounting rail and screw fixing | | | -- | | | | | Yes |
| **Terminals** | ± Screw (Pozidriv) | | 2 | | | | | |
| • Tunnel terminals at both ends | | | -- | | | | | Yes |
| • Combined terminals at both ends | | | Yes | | | | | -- |
| • Terminal tightening torque | | Nm<br>lbs/in. | 2.5 ... 3<br>22 ... 26 | | | | | 2.5 ... 3.5<br>22 ... 31 |
| **Conductor cross-sections** | | | | | | | | |
| • Solid and stranded | | $mm^2$ | 0.75 ... 35 | | | | | 4 ... 50 |
| • Finely stranded, with end sleeve | | $mm^2$ | 0.75 ... 25 | | | | | 1.5 ... 35 |
| • AWG conductors<br>(Cu 60/75 °C $I_n \leq 40$ A; 60 °C $I_n > 40$ A) | | AWG | 14 ... 4 | | | | | 14 ... 2 |
| **Mains connection** | | | | | | | | |
| • AC | | | Any | | | | | |
| • DC | | | Any | | [2] | Any | | |
| **Mounting position** | | | Any | | | | | |
| **Endurance**<br>On average, with rated load | | Actuations<br>Actuations | 20000<br>10000 for 5SY5 at 40 A, 50 A and 63 A | | | | | |
| **Ambient temperature** | | °C | -25 ... +55, max. 95 % humidity | | | | | |
| **Storage temperature** | | °C | -40 ... +75 | | | | | |
| **Resistance to climate** | Acc. to IEC 60068-2-30 | | 6 cycles | | | | | |
| **Shock** | Acc. to IEC 60068-2-27 | $m/s^2$ | 150 at 11 ms half-sine | | | | | |
| **Resistance to vibrations** | Acc. to IEC 60068-2-6 | $m/s^2$ | 50 at 25 ... 150 Hz and 60 at 35 Hz (4 s) | | | | | |

1) For further information see Configuration Manual "Miniature circuit breakers" at: www.siemens.com/lowvoltage/manuals.

2) Ensure compliance with the specified polarity when connecting DC.

3) 5SY54.. 4-pole, degree of pollution 2 at overvoltage category II.

4) Exempt: C/D 0.3 A ... 0.5 A

5) 5SY54.. 4-pole 880 V is not a standardized voltage acc. to EN 60898-1, suitable for max. 1000 V DC, if the four poles are connected in series.

6) Valid for 1-pole switching devices only.

## 5SY5, universal current, 10000 A



### Selection and ordering data

| 10000 / 3 | VDE $I_n$ | Mounting width | DT | Characteristic B Article No. www.siemens.com/product?Article No. | Price per PU | PG | DT | Characteristic C Article No. www.siemens.com/product?Article No. | Price per PU | PU (UNIT, SET, M) | PS*/ P. unit | PG | Weight per PU approx. |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | A | MW[1] | | | | | | | | | | | kg |
| **Miniature circuit breakers 10000 A, universal current** | | | | | | | | | | | | | |
|  | **1P, 230/400 V AC, 220 V DC** | | | | | | | | | | | | |
| | 0.3 | 1 | | -- | | | | 5SY5114-7 | | 1 | 1 unit | 1AC | 0.174 |
| | 0.5 | | | -- | | | | 5SY5105-7 | | 1 | 1 unit | 1AC | 0.171 |
| | 1 | | | -- | | | | 5SY5101-7 | | 1 | 1/120 units | 1AC | 0.169 |
| | 1.6 | | | -- | | | | 5SY5115-7 | | 1 | 1 unit | 1AC | 0.167 |
| | 2 | | | 5SY5102-6 | | 1AB | | 5SY5102-7 | | 1 | 1/120 units | 1AC | 0.170 |
| | 3 | | | -- | | | | 5SY5103-7 | | 1 | 1/120 units | 1AC | 0.165 |
| | 4 | | | 5SY5104-6 | | 1AB | | 5SY5104-7 | | 1 | 1/120 units | 1AC | 0.164 |
| | 6 | | | 5SY5106-6 | | 1AB | | 5SY5106-7 | | 1 | 1/120 units | 1AC | 0.166 |
| | 8 | | | -- | | | | 5SY5108-7 | | 1 | 1 unit | 1AC | 0.163 |
| | 10 | | | 5SY5110-6 | | 1AB | | 5SY5110-7 | | 1 | 1/120 units | 1AC | 0.164 |
| | 13 | | | 5SY5113-6 | | 1AB | | 5SY5113-7 | | 1 | 1 unit | 1AC | 0.168 |
| | 16 | | | 5SY5116-6 | | 1AB | | 5SY5116-7 | | 1 | 1/120 units | 1AC | 0.164 |
| | 20 | | | 5SY5120-6 | | 1AB | | 5SY5120-7 | | 1 | 1 unit | 1AC | 0.167 |
| | 25 | | | 5SY5125-6 | | 1AB | | 5SY5125-7 | | 1 | 1 unit | 1AC | 0.167 |
| | 32 | | | 5SY5132-6 | | 1AB | | 5SY5132-7 | | 1 | 1 unit | 1AC | 0.168 |
| | 40 | | | 5SY5140-6 | | 1AB | | 5SY5140-7 | | 1 | 1 unit | 1AC | 0.173 |
| | 50 | | | 5SY5150-6 | | 1AB | | 5SY5150-7 | | 1 | 1 unit | 1AC | 0.172 |
| | 63 | | | 5SY5163-6 | | 1AB | | 5SY5163-7 | | 1 | 1 unit | 1AC | 0.176 |
|  | **2P, 400 V AC, 440 V DC** | | | | | | | | | | | | |
| | 0.3 | 2 | | -- | | | | 5SY5214-7 | | 1 | 1 unit | 1AC | 0.330 |
| | 0.5 | | | -- | | | | 5SY5205-7 | | 1 | 1 unit | 1AC | 0.329 |
| | 1 | | | -- | | | | 5SY5201-7 | | 1 | 1 unit | 1AC | 0.325 |
| | 1.6 | | | -- | | | | 5SY5215-7 | | 1 | 1 unit | 1AC | 0.324 |
| | 2 | | | -- | | | | 5SY5202-7 | | 1 | 1/60 units | 1AC | 0.330 |
| | 3 | | | -- | | | | 5SY5203-7 | | 1 | 1/60 units | 1AC | 0.319 |
| | 4 | | | -- | | | | 5SY5204-7 | | 1 | 1/60 units | 1AC | 0.319 |
| | 6 | | | 5SY5206-6 | | 1AB | ► | 5SY5206-7 | | 1 | 1/60 units | 1AC | 0.309 |
| | 8 | | | -- | | | | 5SY5208-7 | | 1 | 1 unit | 1AC | 0.314 |
| | 10 | | | 5SY5210-6 | | 1AB | | 5SY5210-7 | | 1 | 1/60 units | 1AC | 0.315 |
| | 13 | | | 5SY5213-6 | | 1AB | | 5SY5213-7 | | 1 | 1/60 units | 1AC | 0.322 |
| | 16 | | | 5SY5216-6 | | 1AB | | 5SY5216-7 | | 1 | 1/60 units | 1AC | 0.314 |
| | 20 | | | 5SY5220-6 | | 1AB | | 5SY5220-7 | | 1 | 1 unit | 1AC | 0.321 |
| | 25 | | | 5SY5225-6 | | 1AB | | 5SY5225-7 | | 1 | 1/60 units | 1AC | 0.320 |
| | 32 | | | 5SY5232-6 | | 1AB | | 5SY5232-7 | | 1 | 1 unit | 1AC | 0.323 |
| | 40 | | | 5SY5240-6 | | 1AB | | 5SY5240-7 | | 1 | 1 unit | 1AC | 0.322 |
| | 50 | | | 5SY5250-6 | | 1AB | | 5SY5250-7 | | 1 | 1 unit | 1AC | 0.337 |
| | 63 | | | 5SY5263-6 | | 1AB | | 5SY5263-7 | | 1 | 1/60 units | 1AC | 0.343 |

[1] 1 MW (modular width) = 18 mm.

For application examples, see Configuration Manual "Miniature Circuit Breakers" at: www.siemens.com/lowvoltage/manuals.



* You can order this quantity or a multiple thereof.