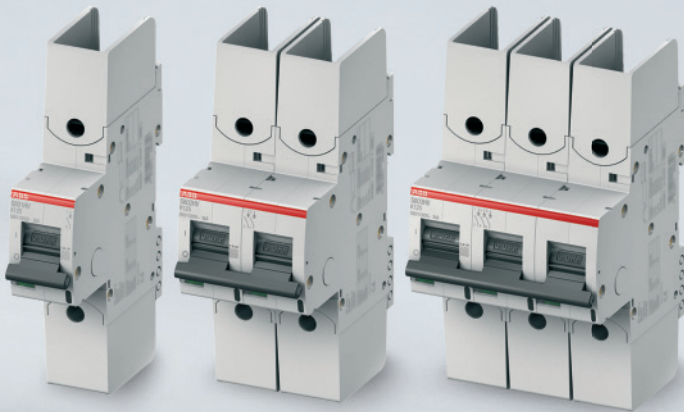


TECHNICAL INFORMATION

High Performance Circuit Breaker S800HV

for 1000 V AC applications



The High Performance Circuit Breaker S800HV is designed for voltages of 580/1000 V AC. The S800HV is available as 1-, 2- and 3-pole version.

The small pole width of only 27 mm allows a space-saving installation. The current range covers the rated operational current range from 6–125 A with a max. rated short-circuit breaking capacity (I_{cu}) of 4 kA. Due to the high rated operational voltage of 580/1000 V AC the field of application is wide – from underground mining to distributions on high altitudes.

Features

- Rated operational voltage of 580/1000 V AC (IEC) and 600 V AC (UL), Supplementary Protector
- Rated short-circuit breaking capacity (I_{cu}) of 4 kA at 580/1000 V AC and 15 kA @ 600Y V AC (UL) (only valid with XT2L 125 TMF 35-400)
- Fast modification on ring lug terminal is possible
- Compact
- Space saving

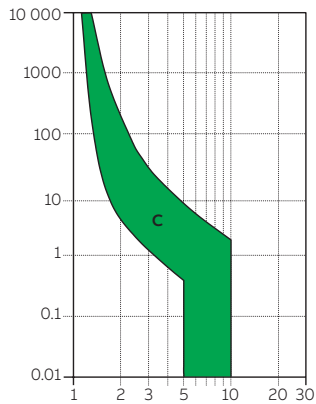
Application

- Transformer protection
- Motor protection
- Mining industry, opencast and underground
- Power distribution systems e. g. tunnels
- Lighting systems protection
- Protection of ventilation equipment
- Used for application supplied by long wires

Technical data

S800HV

| General data | | |
|--|-----------------|--|
| Tripping characteristic | | C, K |
| Standard | | IEC 60947-2, UL 1077 |
| Poles | | 1 ... 3 |
| Rated frequency f | Hz | 50/60 |
| Overtoltage category | | III |
| Pollution degree | | 2 |
| Suitability for isolation | | yes |
| Data acc. to IEC 60947-2 | | |
| Rated operational voltage U_e | V | AC 580/1000 |
| Rated operational current I_e | A | K: 6...125A C: 10A, 32A |
| Rated ultimate short-circuit capacity I_{cu} | kA | 4 (6 ... 63 A) 3 (80 ... 125 A) |
| Rated service short-circuit capacity I_{cs} | kA | 2.5 (6 ... 63 A) 2 (80 ... 125 A) |
| Rated insulation voltage U_i | V | AC 1000 |
| Rated impulse withstand voltage U_{imp} | kV | 8 |
| Reference temperature for tripping characteristic | °C | K: 40 C: 30 |
| Electrical and mechanical endurance | ops. | 10 ... 32 A: 10000 electrical/10000 mechanical 40 ... 100 A: 1500 electrical/8500 mechanical 125 A: 4000 electrical/10000 mechanical |
| Data acc. to UL1077, Supplementary Protector | | |
| Poles | | 3 |
| Rated voltage U_n | V | AC 600 Y |
| Rated current I_n | A | 10 ... 32 |
| Characteristic | | C, K |
| Short - circuit breaking capacity I_{cc} | kA | AC 600 Y = 15 kA with XT2L 125A TMF35-400 |
| Mechanical data | | |
| Housing | | Material group I, RAL 7035 |
| Toggle | | black, lockable |
| Protection degree acc. to IEC / EN 60529 | | IP20; IP40 (actuating side only) |
| Classification acc. to NF F16-101, NF F 16-102 | | I3, F2 |
| Classification acc. to IEC 61373 (shock and vibration) | | Cat. 1, Class B |
| Shock resistance acc. to IEC / EN 60068-2-27 | | Test Ea: 5 g/30 ms Test Fc: 2 – 13.2 Hz/1 mm |
| Vibration resistance acc. to IEC / EN 60068-2-6 | | 13.2 – 100 Hz/0.7 g with load 100 % x I_e 12+12 cycle with 55 °C/90–96 % RH and 25 °C/95–100 % RH |
| Environmental conditions (damp heat) acc. to IEC / EN 60068-2-30 | | 16 hours 55°C/2 hours 70°C/55% RH |
| Environmental conditions (dry heat) acc. to IEC / EN 60068-2-2 | | 16 hours 55°C/2 hours 70°C/55% RH |
| Ambient temperature | °C | –25 ... +60 |
| Storage temperature | °C | –40 ... +70 |
| Installation | | |
| Terminal | | Failsafe cage terminal |
| Connection (top/bottom) – Cu only | mm ² | 1 ... 50 stranded 1 ... 70 flexible |
| Tightening torque | Nm | 3.5 |
| Screwdriver | | POZI 2 |
| Mounting | | EN 60715 |
| Mounting position | | any |
| Supply side | | any |
| Dimension and weight | | |
| Pole dimension (H x L x W) | mm | 142 x 82,5 x 26,5 |
| Pole weight | kg | 0,27 |

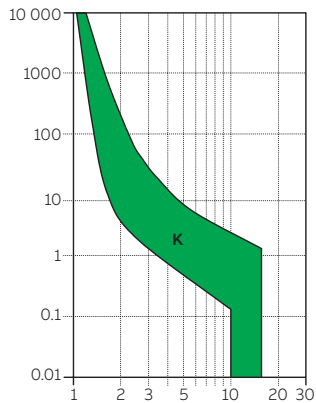


Tripping characteristic

| Characteristics | Currents | Thermal tripping Small test current | Thermal tripping Large test current | Electromagnetic tripping |
|-----------------|------------|--|--|-----------------------------|
| C | 10 A, 32 A | $1.05 \times I_n$ | $1.30 \times I_n$ | $8 \times I_n \pm 20\%$ |
| K | 6...125 A | $1.05 \times I_n$ | $1.20 \times I_n$ | $13 \times I_n \pm 20\%$ |

Internal resistance at 25 °C ambient temperature and nominal power losses (per pole)

| Rated current I_n [A] | Internal resistance R_i [mΩ] | Power loss P_v [W] |
|----------------------------|-----------------------------------|-------------------------|
| 6 | 51.7 | 1.8 |
| 8 | 27.2 | 1.7 |
| 10 | 15.2 | 1.5 |
| 13 | 12.1 | 2 |
| 16 | 12.1 | 3.1 |
| 20 | 8.7 | 3.5 |
| 25 | 6.8 | 4.3 |
| 32 | 3.1 | 3.2 |
| 40 | 2.3 | 3.7 |
| 50 | 1.7 | 4.3 |
| 63 | 1.6 | 6.4 |
| 80 | 1 | 6.4 |
| 100 | 0.8 | 8 |
| 125 | 0.6 | 9.4 |



Influence of ambient temperature

The table refers to the conditions according to the product standard IEC 60947-2.

Max. operating current depending on the ambient temperature of S800 with characteristic C and K

| C | Ambient temperature [°C] | | | | | | | | | | | | | | | | | | | | |
|-----------|--------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| I_n [A] | 12.0 | 11.8 | 11.7 | 11.5 | 11.3 | 11.1 | 10.9 | 10.7 | 10.6 | 10.4 | 10.2 | 10.0 | 9.8 | 9.6 | 9.4 | 9.3 | 9.1 | 8.9 | 8.7 | 8.5 | 8.3 |
| | 38.5 | 37.9 | 37.3 | 36.7 | 36.1 | 35.5 | 34.9 | 34.3 | 33.8 | 33.2 | 32.6 | 32.0 | 31.4 | 30.8 | 30.2 | 29.7 | 29.1 | 28.5 | 27.9 | 27.3 | 26.7 |

| K | Ambient temperature [°C] | | | | | | | | | | | | | | | | | | | | |
|-----|--------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | -25 | -20 | -15 | -10 | -5 | 0 | 5 | 10 | 15 | 20 | 25 | 30 | 35 | 40 | 45 | 50 | 55 | 60 | 65 | 70 | 75 |
| 6 | 7.43 | 7.32 | 7.21 | 7.10 | 6.99 | 6.88 | 6.77 | 6.66 | 6.55 | 6.44 | 6.33 | 6.22 | 6.11 | 6.00 | 5.89 | 5.78 | 5.67 | 5.56 | 5.45 | 5.34 | 5.23 |
| 8 | 9.91 | 9.76 | 9.61 | 9.47 | 9.32 | 9.17 | 9.03 | 8.88 | 8.73 | 8.59 | 8.44 | 8.29 | 8.15 | 8.00 | 7.85 | 7.71 | 7.56 | 7.41 | 7.27 | 7.12 | 6.97 |
| 10 | 12.4 | 12.2 | 12.0 | 11.8 | 11.7 | 11.5 | 11.3 | 11.1 | 10.9 | 10.7 | 10.6 | 10.4 | 10.2 | 10.0 | 9.8 | 9.6 | 9.4 | 9.3 | 9.1 | 8.9 | 8.7 |
| 13 | 16.1 | 15.9 | 15.6 | 15.4 | 15.1 | 14.9 | 14.7 | 14.4 | 14.2 | 14.0 | 13.7 | 13.5 | 13.2 | 13.0 | 12.8 | 12.5 | 12.3 | 12.0 | 11.8 | 11.6 | 11.3 |
| 16 | 19.8 | 19.5 | 19.2 | 18.9 | 18.6 | 18.3 | 18.1 | 17.8 | 17.5 | 17.2 | 16.9 | 16.6 | 16.3 | 16.0 | 15.7 | 15.4 | 15.1 | 14.8 | 14.5 | 14.2 | 13.9 |
| 20 | 24.8 | 24.4 | 24.0 | 23.7 | 23.3 | 22.9 | 22.6 | 22.2 | 21.8 | 21.5 | 21.1 | 20.7 | 20.4 | 20.0 | 19.6 | 19.3 | 18.9 | 18.5 | 18.2 | 17.8 | 17.4 |
| 25 | 31.0 | 30.5 | 30.0 | 29.6 | 29.1 | 28.7 | 28.2 | 27.8 | 27.3 | 26.8 | 26.4 | 25.9 | 25.5 | 25.0 | 24.5 | 24.1 | 23.6 | 23.2 | 22.7 | 22.2 | 21.8 |
| 32 | 39.6 | 39.0 | 38.5 | 37.9 | 37.3 | 36.7 | 36.1 | 35.5 | 34.9 | 34.3 | 33.8 | 33.2 | 32.6 | 32.0 | 31.4 | 30.8 | 30.2 | 29.7 | 29.1 | 28.5 | 27.9 |
| 40 | 49.5 | 48.8 | 48.1 | 47.3 | 46.6 | 45.9 | 45.1 | 44.4 | 43.7 | 42.9 | 42.2 | 41.5 | 40.7 | 40.0 | 39.3 | 38.5 | 37.8 | 37.1 | 36.3 | 35.6 | 34.9 |
| 50 | 61.9 | 61.0 | 60.1 | 59.2 | 58.3 | 57.3 | 56.4 | 55.5 | 54.6 | 53.7 | 52.8 | 51.8 | 50.9 | 50.0 | 49.1 | 48.2 | 47.2 | 46.3 | 45.4 | 44.5 | 43.6 |
| 63 | 78.0 | 76.9 | 75.7 | 74.6 | 73.4 | 72.2 | 71.1 | 69.9 | 68.8 | 67.6 | 66.5 | 65.3 | 64.2 | 63.0 | 61.8 | 60.7 | 59.5 | 58.4 | 57.2 | 56.1 | 54.9 |
| 80 | 99.1 | 97.6 | 96.1 | 94.7 | 93.2 | 91.7 | 90.3 | 88.8 | 87.3 | 85.9 | 84.4 | 82.9 | 81.5 | 80.0 | 78.5 | 77.1 | 75.6 | 74.1 | 72.7 | 71.2 | 69.7 |
| 100 | 123.9 | 122.0 | 120.2 | 118.4 | 116.5 | 114.7 | 112.8 | 111.0 | 109.2 | 107.3 | 105.5 | 103.7 | 101.8 | 100.0 | 98.2 | 96.3 | 94.5 | 92.7 | 90.8 | 89.0 | 87.2 |
| 125 | 154.8 | 152.5 | 150.2 | 147.9 | 145.6 | 143.4 | 141.1 | 138.8 | 136.5 | 134.2 | 131.9 | 129.6 | 127.3 | 125.0 | 122.7 | 120.4 | 118.1 | 115.8 | 113.5 | 111.2 | 108.9 |