

Description

Miniaturised single pole thermal-magnetic circuit breakers with trip-free mechanism and toggle actuation (S-type TM CBE to EN 60934). Two designs provide the option of either printed circuit board or threadneck panel mounting. A separate shunt tap terminal and auxiliary contacts are available. Fast acting, medium or long delay characteristics can be specified for both models.

Suitable for use in distribution rails – see section Power Distribution Systems.

Complies with CBE standard EN 60934 (IEC 60935).

Typical applications

Control equipment, communications systems, instrumentation.
Suitable for mounting on Euro cards.

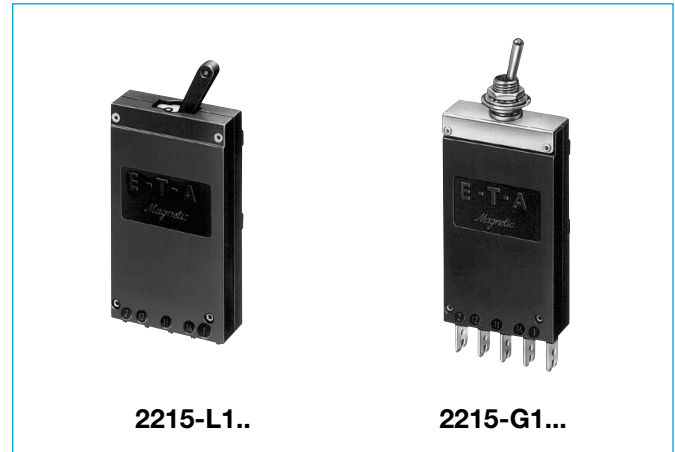
Ordering information 2215-G1

| | |
|--|--|
| Type No. | |
| 2215 | single pole thermal-magnetic circuit breaker |
| Mounting | |
| G1 | threadneck panel mounting |
| Number of poles | |
| 1 | 1-pole protected |
| Mounting hardware | |
| 1 | 2 hex nuts 1/4"-40 UNS-2A, serrated washer, location pin (-G1 only) |
| Terminal design (main contacts) | |
| P1 | blade terminals 6.3-0.8, without shunt terminal |
| Characteristic curve | |
| F1 | fast acting: 1.01-1.4xI _N ; magn. 2-4xI _N DC (DC only) |
| M1 | standard delay: therm. 1.01-1.4xI _N ; magn. 4.5-10.5xI _N DC; magn. 3.5-8xI _N AC |
| T1 | delayed: therm. 1.01-1.4xI _N ; DC magn. 8-17xI _N DC, 6-13xI _N AC |
| Auxiliary contacts | |
| S0 | without auxiliary contact |
| S11 | with auxiliary contact (change over) blade terminals 6.3x0.8 (QC .250) |
| Current ratings | |
| 0.05...10 A | |
| 2215 - G1 1 1 - P1 F1 - S11 - 0.5 A ordering example | |

Ordering information 2215-L1

| | |
|--|--|
| Type No. | |
| 2215 | single pole thermal-magnetic circuit breaker |
| Mounting | |
| L1 | PCB mounting |
| Number of poles | |
| 1 | 1-pole protected |
| Mounting hardware | |
| 0 | without accessories |
| Terminal design (main contacts) | |
| L1 | solder pins, without shunt terminal |
| Characteristic curve | |
| F1 | fast acting: 1.01-1.4xI _N ; magn. 2-4xI _N DC (DC only) |
| M1 | standard delay: therm. 1.01-1.4xI _N ; magn. 4.5-10.5xI _N DC; magn. 3.5-8xI _N AC |
| Auxiliary contacts - terminal design | |
| S0 | without auxiliary contact |
| S12 | with auxiliary contact (change over) solder pins |
| Current ratings | |
| 0.05...10 A | |
| 2215 - L1 1 0 - L1 F1 - S12 - 0.5 A ordering example | |

Please be informed that we have minimum ordering quantities to be observed.



Technical data

For further details please see: www.e-t-a.de/ti_e

| | | | |
|--|--|-------------------------|---|
| Voltage rating | AC 250 V (50/60 Hz); DC 50 V (UL: AC 250 V; DC 75 V) | | |
| Current rating range | 0.05...10 A (higher current ratings to special order) | | |
| Auxiliary circuit | 1 A, AC 250 V / DC 28 V | | |
| Typical life | 10,000 operations at 1 x I _N | | |
| Ambient temperature | -30...+60 °C (-22...+140 °F) | | |
| Insulation co-ordination (IEC 60664 and 60664 A) | rated impulse withstand voltage 2.5 kV | pollution degree 2 | reinforced insulation in operating area |
| Dielectric strength IEC 60664 and 60664A) | test voltage operating area AC 3,000 V main/aux. circuit AC 1,500 V | | |
| Insulation resistance | > 100 MΩ (DC 500 V) | | |
| Interrupting capacity I _{cn} | 300 A | | |
| Interrupting capacity (UL 1077) | I _N 0.05 A | U _N AC 250 V | 200 A |
| | 0.1...6 A | AC 250 V | 1,000 A |
| | 8...10 A | AC 250 V | 2,000 A |
| | 0.05...10 A | DC 50 V | 1,000 A |
| Degree of protection (IEC 60529/DIN 40050) | operating area IP30 terminal area IP00 | | |
| Vibration | curve F1: 6 g (57-500 Hz), ± 0.46 mm (10-57 Hz) curves M1, T1: 8 g (57-500 Hz), ± 0.61 mm (10-57 Hz) to IEC 60068-2-6, test Fc 10 frequency cycles/axis | | |
| Shock | curves F1, M1, T1: 30 g (11 ms), directions 1, 2, 3, 4, 5, curve F1: 10 g (11 ms), direction 6 curves M1, T1: 15 g (11 ms), direction 6 to IEC 60068-2-27, test Ea | | |
| Corrosion | 96 hours at 5 % salt mist to IEC 60068-2-11, test Ka | | |
| Humidity | 240 hours at 95 % RH to IEC 60068-2-78, test Cab | | |
| Mass | approx. 25 g | | |

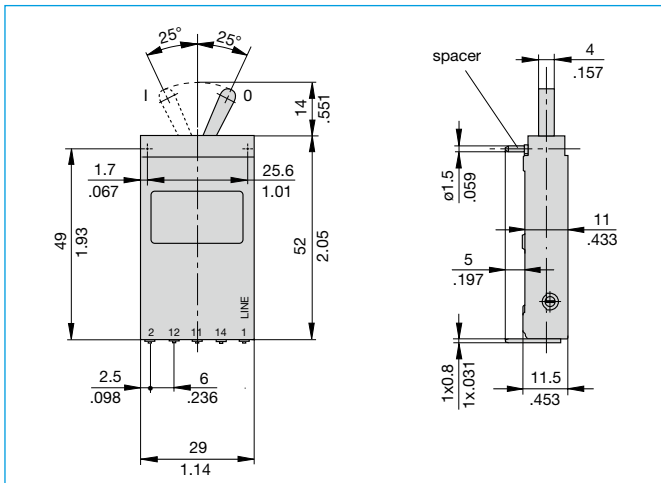
Approvals

| Authority | Standard | Rated voltage | Current ratings |
|-----------|---------------|---------------------|---------------------------------------|
| UL | UL 1077 | AC 250 V DC 75 V | 0.05 A...10 A 0.05 A...10 A (20 A) |
| CSA | C22.2 No. 235 | AC 250 V DC 75 V | 0.05 A...10 A 0.05 A...10 A (20 A) |

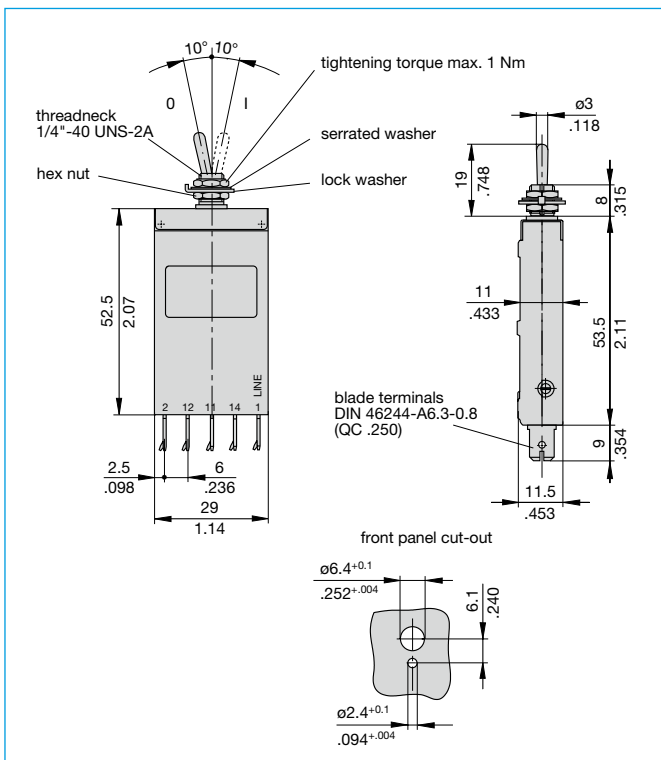
Standard current ratings and typical internal resistance values

| Current ratings (A) | Internal resistance (Ω) | Current ratings (A) | Internal resistance (Ω) |
|---------------------|-------------------------|---------------------|-------------------------|
| 0.05 | 440 | 1.5 | 0.55 |
| 0.1 | 108 | 2 | 0.34 |
| 0.2 | 29.9 | 2.5 | 0.21 |
| 0.3 | 14.2 | 3 | 0.15 |
| 0.4 | 7.9 | 4 | 0.084 |
| 0.5 | 5.0 | 5 | 0.057 |
| 0.6 | 3.5 | 6 | 0.043 |
| 0.8 | 1.8 | 8 | ≤ 0.02 |
| 1 | 1.2 | 10 | ≤ 0.02 |

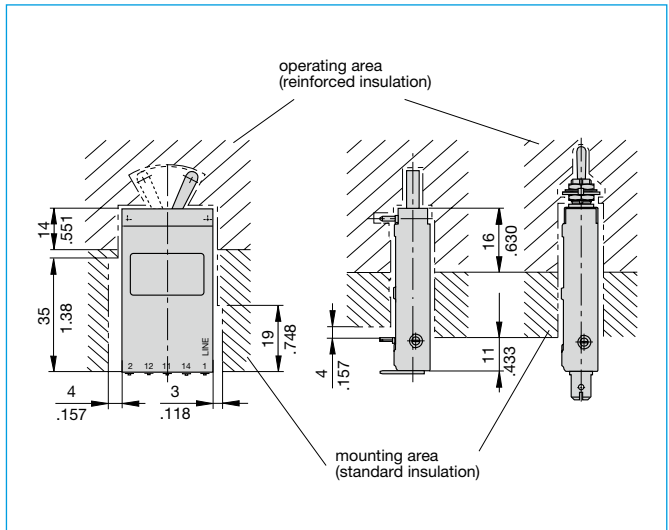
Dimensions 2215-L1..



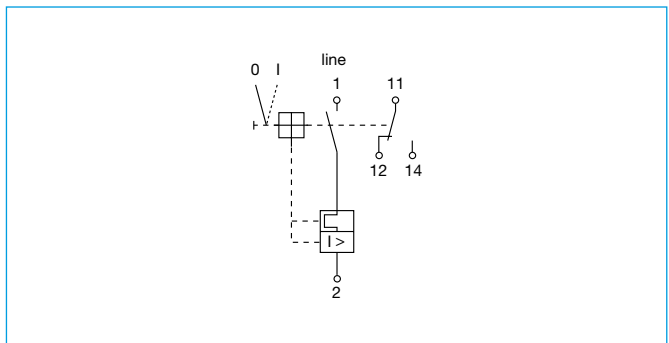
Dimensions 2215-G1..



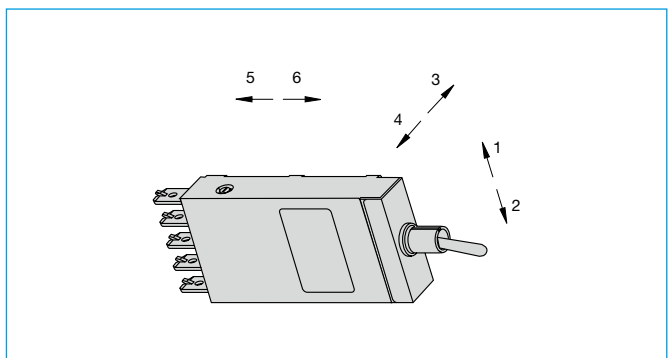
Installation drawing



Internal connection diagram



Shock directions

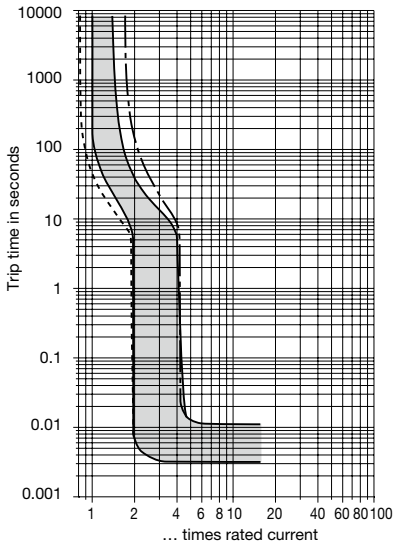


This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

Typical time/current characteristics

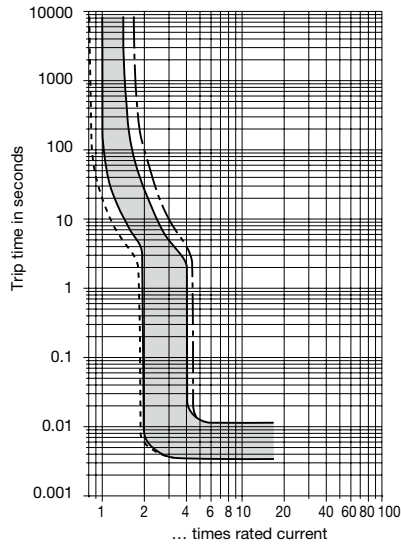
-F1 0.05...6 A

DC only



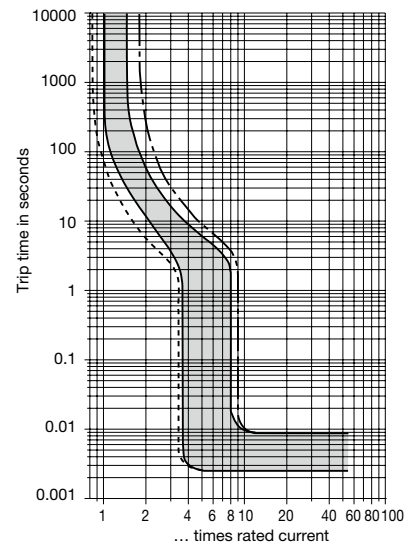
-F1 8...10 A

DC only



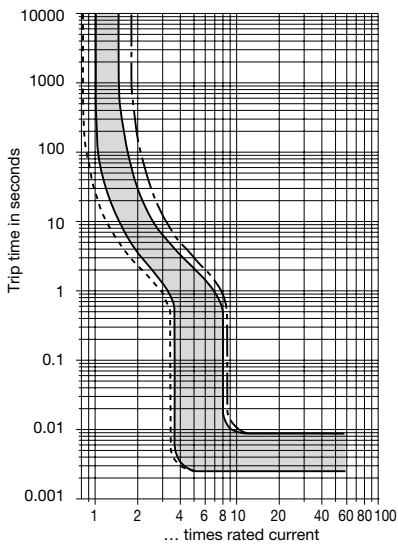
-M1 0.05...6 A

AC/DC ¹⁾



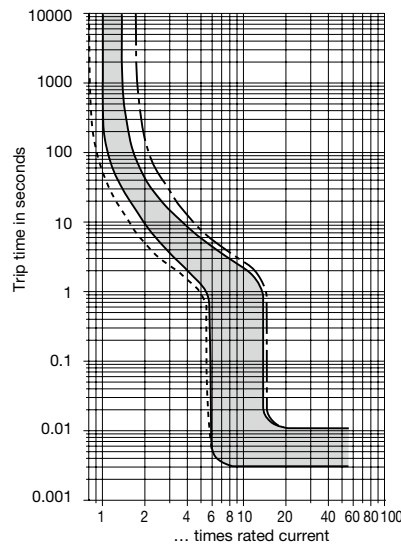
-M1 8...10 A

AC/DC ¹⁾



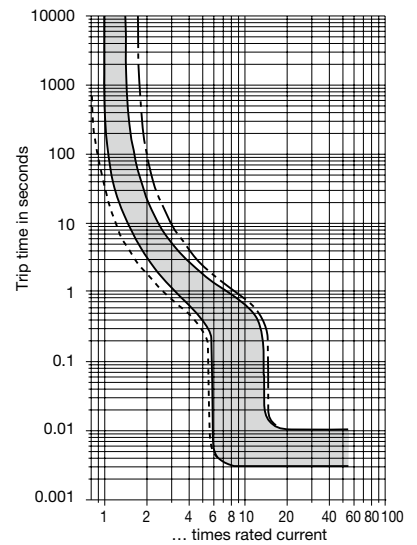
-T1 0.05...6 A

AC/DC ¹⁾



-T1 8...10 A

AC/DC ¹⁾



--- +60 °C / +140 °F ——— +23 °C / +73.4 °F - - - -30 °C / -22 °F

¹⁾Magnetic tripping currents are increased by 30 % on DC supplies (curve M1 and T1).

0.05...10 A:

| | | | | | | | | | |
|------------------|------|------|------|------|-------|------|------|------|------|
| Ambient temp. °F | -22 | -4 | +14 | +32 | +73.4 | +86 | +104 | +122 | +140 |
| temp. °C | -30 | -20 | -10 | 0 | +23 | +30 | +40 | +50 | +60 |
| Derating factor | 0.76 | 0.79 | 0.83 | 0.88 | 1 | 1.04 | 1.11 | 1.19 | 1.29 |

The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.



