

Description

Miniaturised single pole thermal circuit breaker with push-to-reset, tease-free, trip-free, snap action mechanism (R-type TO CBE to EN 60934). Available in versions for PCB or panel mounting, snap-in or threadneck, or as an integral type. Approved to CBE standard EN 60934 (IEC 60934). For higher current ratings see type 1140.

Typical applications

Motors, transformers, solenoids, printed circuit boards, hand-held machines and appliances, marine applications, caravans.

Ordering information

Type No.

| | |
|---------------|--|
| 104 | PCB mounting type (-PR), or integral type (-P30/P10) |
| 105 | snap-in panel mounting |
| 106 | threadneck panel mounting with metal hex and plastic knurled nut (hardware bulk shipped with 5 pcs plus) |
| 106-M2 | threadneck panel mounting 3/8-27UNF with collar, metal hex nut and plastic knurled nut (hardware bulk shipped with 5 pcs plus) |

Terminal design

| | |
|------------|---|
| P10 | blade terminals A6.3-0.8 (QC .250) |
| P30 | blade terminals A2.8-0.8 (QC .110) |
| PR | solder terminal pins for PCB mounting (type 104 only) |
| PR3 | PCB mounting (vertical), type 104 only |

Current ratings

0.05...10 A

106 - P30 - 5 A ordering example

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

Preferred types

| Preferred types | Standard current ratings (A) | | | | | | | | | | | |
|-----------------|------------------------------|-----|---|-----|-----|---|---|---|---|---|---|----|
| | 0.5 | 0.8 | 1 | 1.2 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 | 10 |
| 106-P10- | x | x | x | x | x | x | x | x | x | x | x | x |
| 106-P30- | x | x | x | x | x | x | x | x | x | x | x | x |

Standard current ratings and typical internal resistance values

| Current rating (A) | Internal resistance (Ω) | Current rating (A) | Internal resistance (Ω) |
|--------------------|-------------------------|--------------------|-------------------------|
| 0.05 | 285 | 1.8 | 0.28 |
| 0.08 | 134 | 2 | 0.25 |
| 0.1 | 81 | 2.5 | 0.18 |
| 0.2 | 22 | 3 | 0.11 |
| 0.3 | 8.7 | 3.5 | 0.076 |
| 0.4 | 5.5 | 4 | 0.067 |
| 0.5 | 3.3 | 4.5 | 0.051 |
| 0.6 | 2.45 | 5 | ≤ 0.05 |
| 0.7 | 1.6 | 6 | ≤ 0.05 |
| 0.8 | 1.45 | 7 | ≤ 0.05 |
| 1 | 0.9 | 8 | ≤ 0.05 |
| 1.2 | 0.6 | 10 | ≤ 0.05 |
| 1.5 | 0.4 | | |



Technical data

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

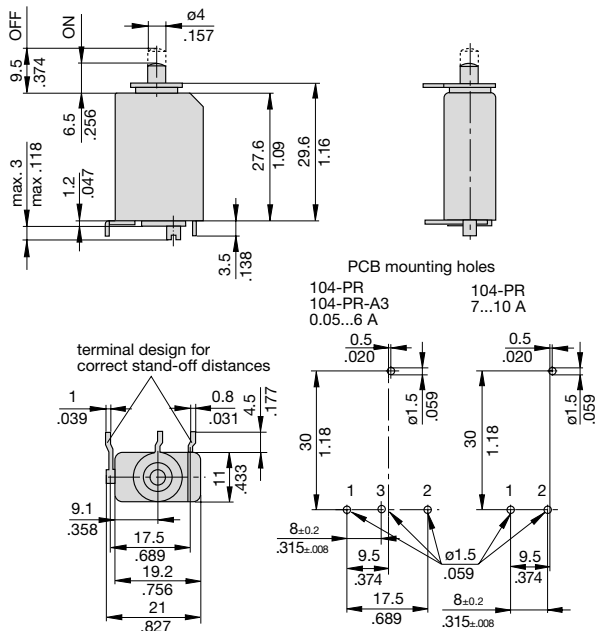
| | | | |
|---|--|--|---------|
| Voltage rating | AC 240 V; DC 48 V (UL: AC 250 V; DC 48 V) | | |
| Current ratings | 0.05...10 A | | |
| Typical life | 0.05...5 A | 1,000 operations at 2 x I _N , inductive | |
| | DC 28 V: | 3,000 operations at 2 x I _N , inductive | |
| | 6...8 A | 500 operations at 2 x I _N , inductive | |
| | 10 A | 50 operations at 2 x I _N , inductive | |
| Ambient temperature | -20...+60 °C (-4...+140 °F) T 60 | | |
| Insulation co-ordination (IEC 60664 and 60664 A) | rated impulse withstand voltage | pollution degree | |
| | 2.5 kV | 2 | |
| | reinforced insulation in operating area | | |
| Dielectric strength (IEC 60664 and 60664A) operating area | test voltage AC 3,000 V | | |
| Insulation resistance | > 100 MΩ (DC 500 V) | | |
| Interrupting capacity I _{cn} | 0.05...8 A | 6 x I _N AC | |
| | 0.05...10 A | 6 x I _N DC | |
| Interrupting capacity (UL 1077) | I _N | U _N | |
| | 0.05...10 A | AC 250 V | 2,000 A |
| | 0.05...10 A | DC 48 V | 200 A |
| Degree of protection (IEC 60529/DIN 40050) | operating area IP40 terminal area IP00 | | |
| Vibration | 10 g (57-500 Hz) ± 0.76 mm (10-57 Hz), to IEC 60068-2-6, test Fc, 10 frequency cycles/axis | | |
| Shock | 25 g (11 ms) 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. 10 g | | |

Approvals

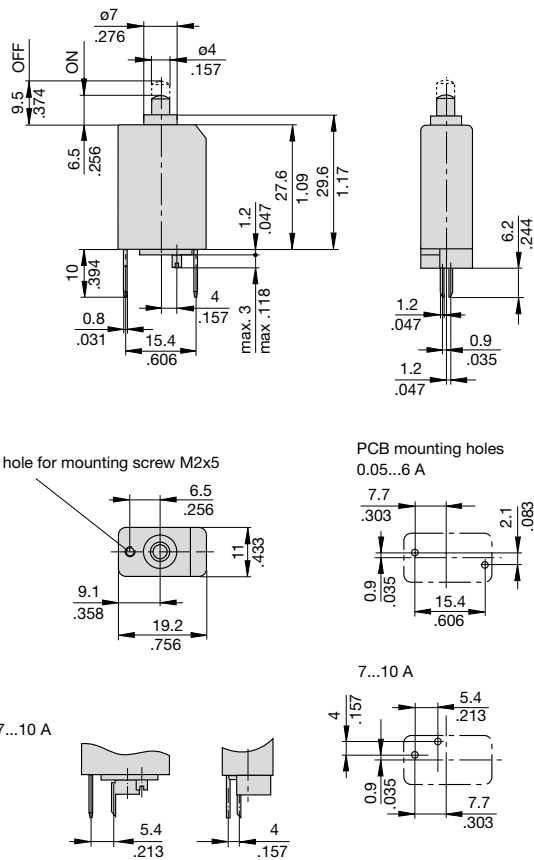
| Authority | Standard | Rated voltage | Current ratings |
|-----------|--------------|---------------------|----------------------------------|
| VDE | EN 60934 | AC 240 V DC 48 V | 0.02 A... 8 A 0.02 A... 10 A |
| UL | UL1077 | AC 250 V DC 48 V | 0.05 A... 10 A 0.05 A... 10 A |
| CSA | C22.2 No 235 | AC 250 V DC 48 V | 0.05 A... 10 A 0.05 A... 10 A |
| CQC | GB 17701 | AC 240 V DC 48 V | 0.05 A... 8 A 0.05 A... 10 A |

Dimensions

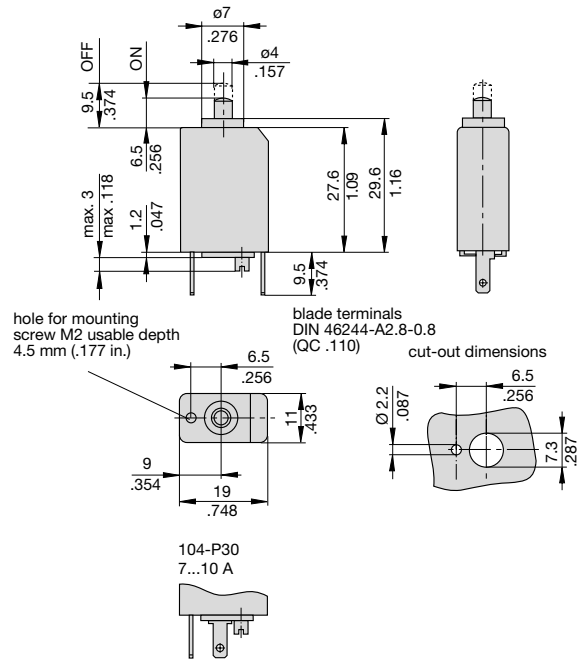
104-PR



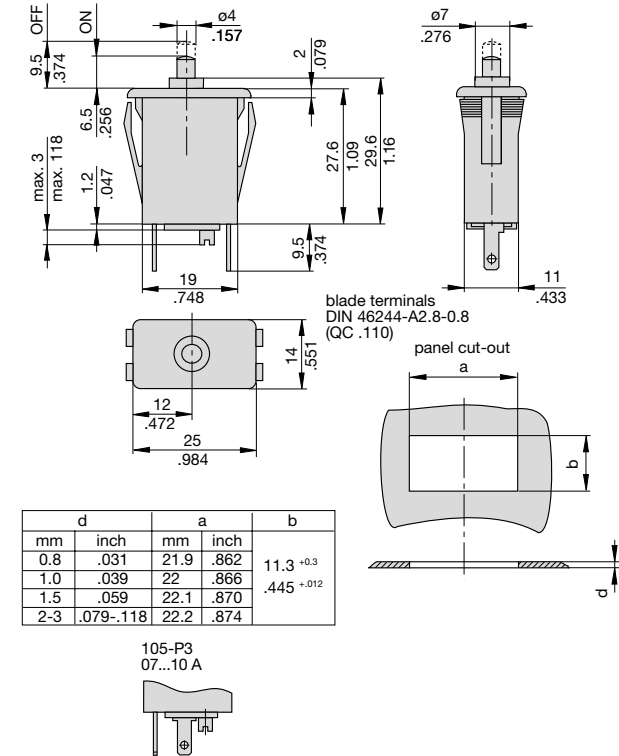
104-PR3 0.05...6 A



104-P30



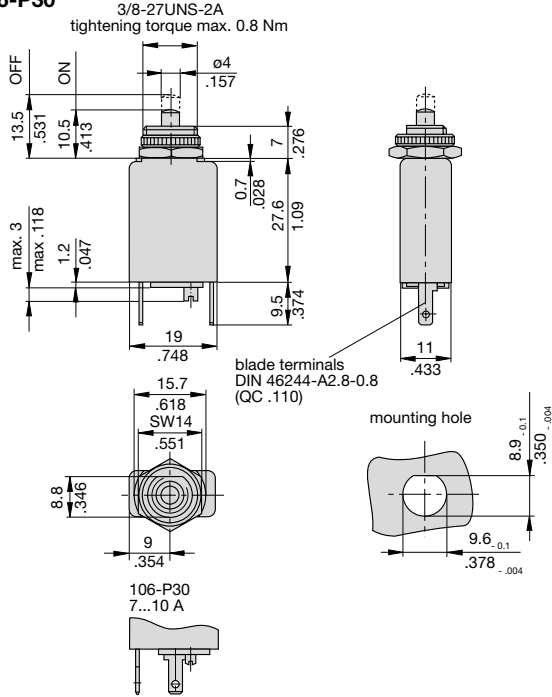
105-P30



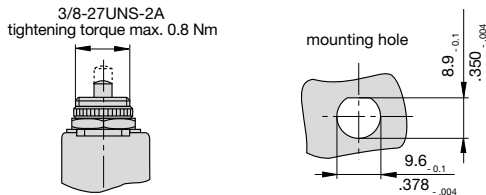
This is a metric design and millimeter dimensions take precedence ($\frac{\text{mm}}{\text{inch}}$)

Dimensions

106-P30

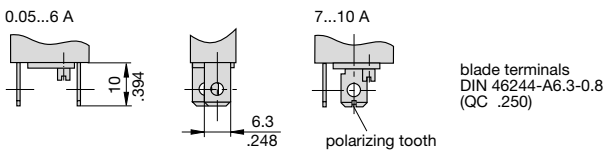


106-M2



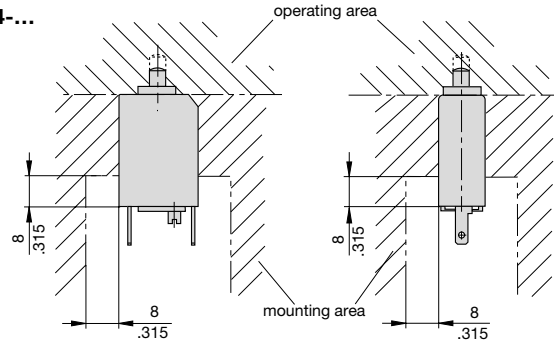
Terminal design

104/105/106-P10

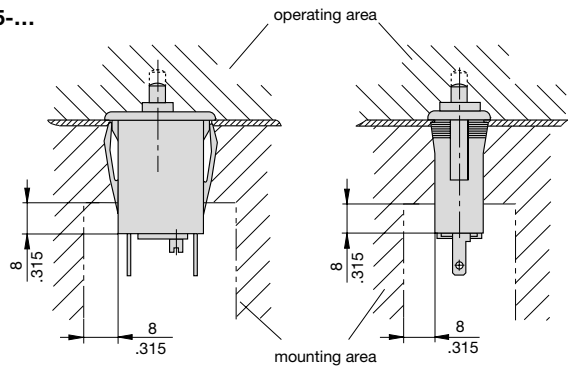


Installation drawings

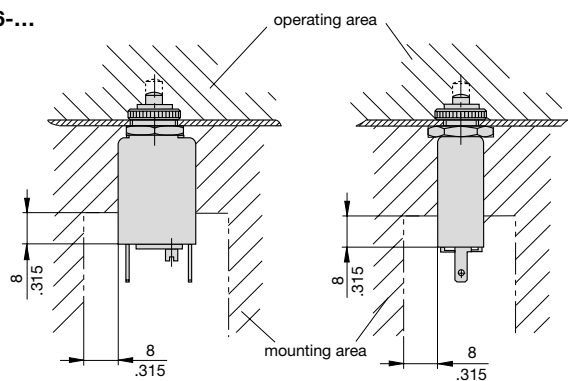
104-...



105-...



106-...



Internal connection diagrams

**Types 104
105
106**

