

## 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.

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

### Terminal design

<b>P10</b>	blade terminals A6.3-0.8 (QC .250)
<b>P30</b>	blade terminals A2.8-0.8 (QC .110)
<b>PR</b>	solder terminal pins for PCB mounting (type 104 only)
<b>PR3</b>	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](http://www.e-t-a.de/ti_e)

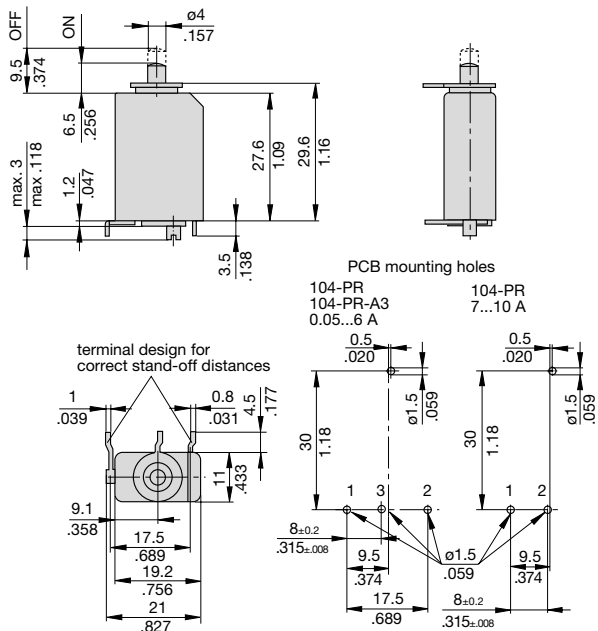
Voltage rating	AC 240 V; DC 48 V (UL: AC 250 V; DC 48 V)		
Current ratings	0.05...10 A		
Typical life	0.05...5 A	1,000 operations at 2 x I <sub>N</sub> , inductive	
	DC 28 V:	3,000 operations at 2 x I <sub>N</sub> , inductive	
	6...8 A	500 operations at 2 x I <sub>N</sub> , inductive	
	10 A	50 operations at 2 x I <sub>N</sub> , 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 <sub>cn</sub>	0.05...8 A	6 x I <sub>N</sub> AC	
	0.05...10 A	6 x I <sub>N</sub> DC	
Interrupting capacity (UL 1077)	I <sub>N</sub>	U <sub>N</sub>	
	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

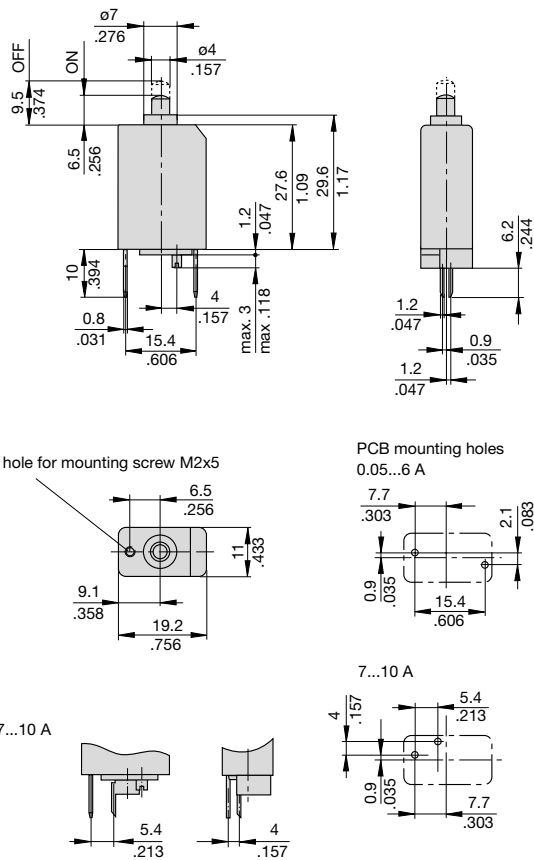
Authority	Standard	Rated voltage	Current ratings
VDE	EN 60934	AC 240 V DC 48 V	0.02 A... 8 A 0.02 A... 10 A
UL	UL1077	AC 250 V DC 48 V	0.05 A... 10 A 0.05 A... 10 A
CSA	C22.2 No 235	AC 250 V DC 48 V	0.05 A... 10 A 0.05 A... 10 A
CQC	GB 17701	AC 240 V DC 48 V	0.05 A... 8 A 0.05 A... 10 A

**Dimensions**

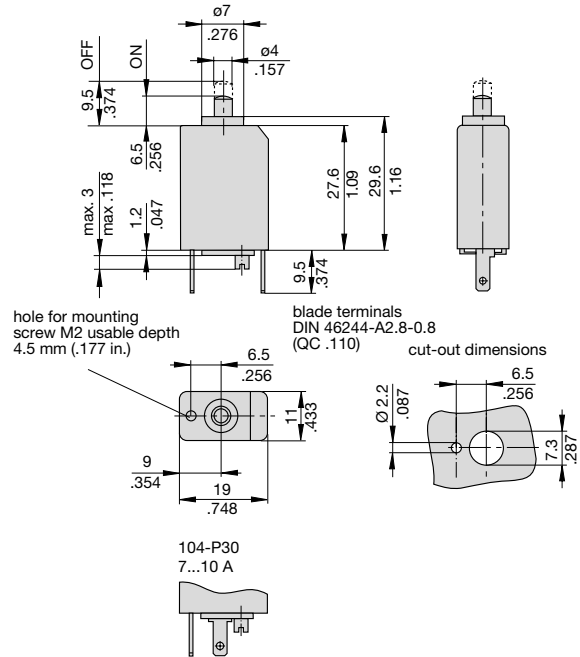
**104-PR**



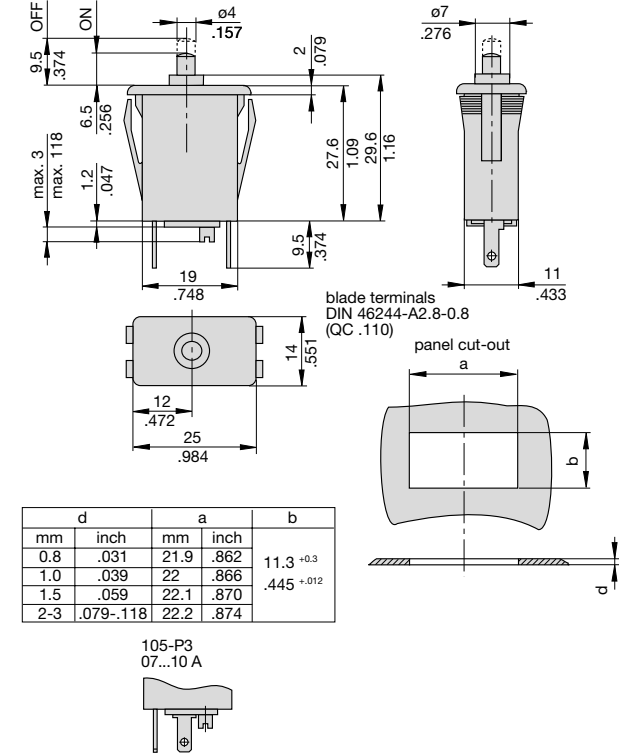
**104-PR3**  
0.05...6 A



**104-P30**

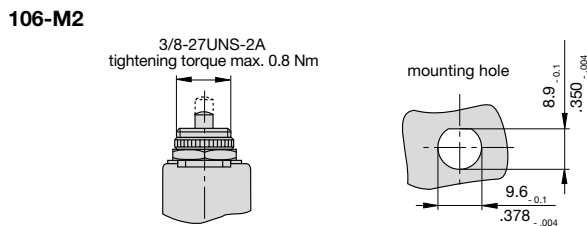
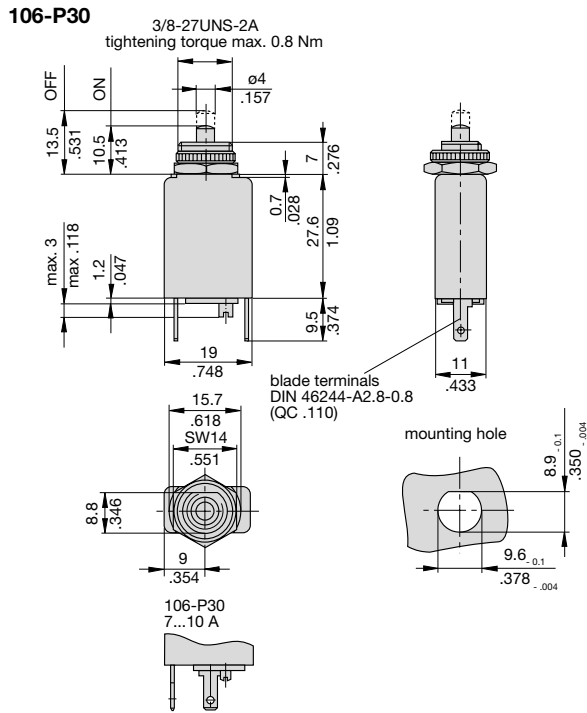


**105-P30**

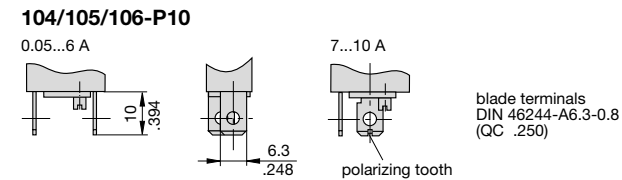


This is a metric design and millimeter dimensions take precedence (mm/inch)

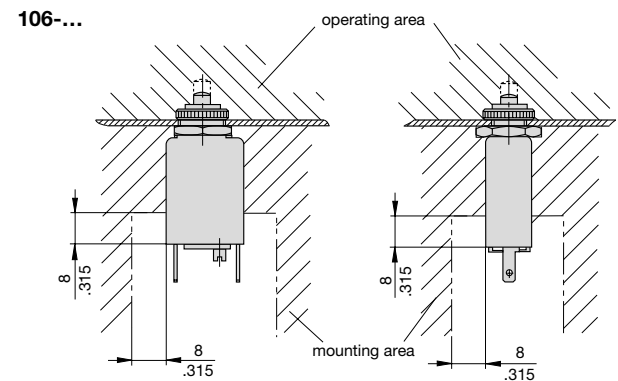
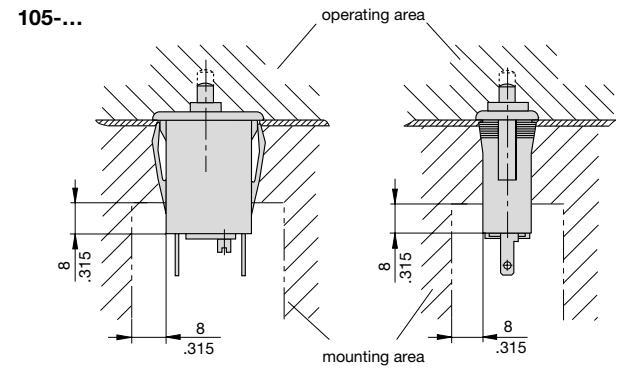
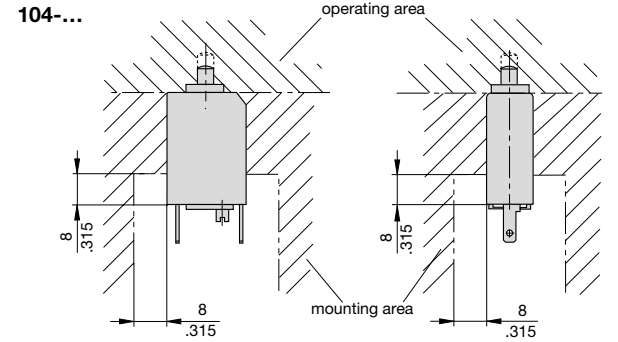
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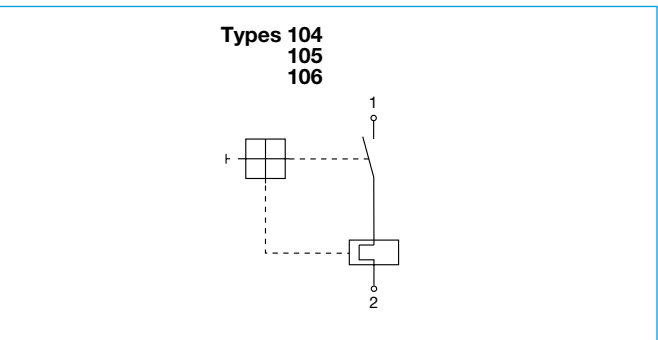
**Terminal design**



**Installation drawings**



**Internal connection diagrams**



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