

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 panel mounting, snap-in or threadneck, or as an integral type. For lower current ratings see types 104, 105, 106. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Motors, transformers, solenoids, hand-held machines and appliances.

Ordering information

Type No.

| | |
|-----------------------------|---|
| 1140 | single pole thermal circuit breaker |
| Mounting | |
| E2 | integral mounting |
| F1 | snap-in panel mounting |
| G1 | threadneck panel mounting 3/8-27UNS with hex nut and knurled nut* |
| Number of poles | |
| 1 | 1-pole protected |
| Actuator style | |
| 1 | black push button |
| Terminal design | |
| P1 | blade terminals A6.3-0.8 (QC .250) |
| Characteristic curve | |
| M1 | medium delaye |
| Current ratings | |
| 3.5...16 A | |

1140 - F1 1 1 - P1 M1 - 10 A = ordering example

*mounting hardware bulk shipped

Preferred types

| Preferred types | Standard current ratings (A) | | | | | | | | | | | | | | | |
|-----------------|------------------------------|---|---|---|---|---|----|----|----|----|----|----|----|---|---|---|
| | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | | | |
| 1140-G111-P1M1- | x | x | x | x | 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) |
|--------------------|-------------------------|--------------------|-------------------------|
| 3.5 | 0.06 | 10 | < 0.02 |
| 4 | 0.04 | 11 | < 0.02 |
| 5 | 0.03 | 12 | < 0.02 |
| 6 | 0.02 | 13 | < 0.02 |
| 7 | < 0.02 | 14 | < 0.02 |
| 8 | < 0.02 | 15 | < 0.02 |
| 9 | < 0.02 | 16 | < 0.02 |

Approvals

| Authority | Voltage ratings | Current ratings |
|-----------|-------------------|-----------------|
| VDE | AC 240 V; DC 48 V | 3.5...16 A |
| CSA, UL | AC 250 V; DC 50 V | 3.5...16 A |



Technical data

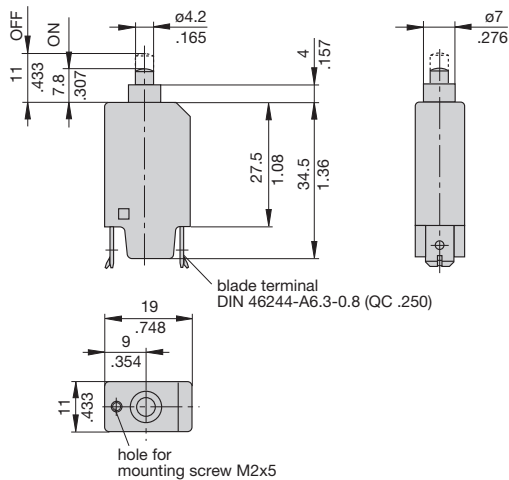
For further details please see chapter: Technical Information

| | | | |
|--|---|------------------------|---|
| Voltage rating | AC 240 V; DC 48 V (UL: AC 250 V; DC 50 V) | | |
| Current ratings | 3.5...16 A | | |
| Typical life | AC + DC 3.5...8 A 200 operations at 2 x I _N , inductive 9...16 A 100 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 2.5 kV | pollution degree 2 | reinforced insulation in operating area |
| Dielectric strength (IEC 60664 and 60664 A) operating area | test voltage AC 3,000 V | | |
| Insulation resistance | > 100 MΩ (DC 500 V) | | |
| Interrupting capacity I _{cn} | 3.5...8 A 8 x I _N | 9...16 A 120 A | |
| Interrupting capacity (UL 10777) | I _N 3.5...16 A | U _N DC 50 V | 2,000 A |
| | 3.5...16 A | AC 250 V | 2,000 A |
| Degree of protection (IEC 60529/DIN 40 050) | 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 | | |

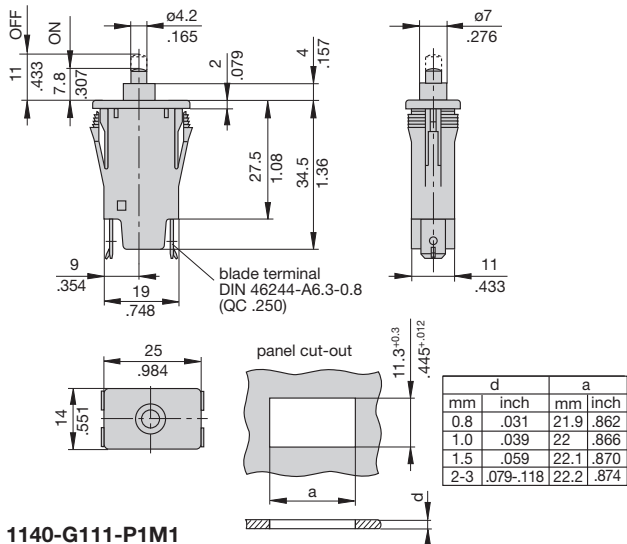
All dimensions without tolerances are for reference only. In the interest of improved design, performance and cost effectiveness the right to make changes in these specifications without notice is reserved. Product markings may not be exactly as the ordering codes. Errors and omissions excepted.

Dimensions

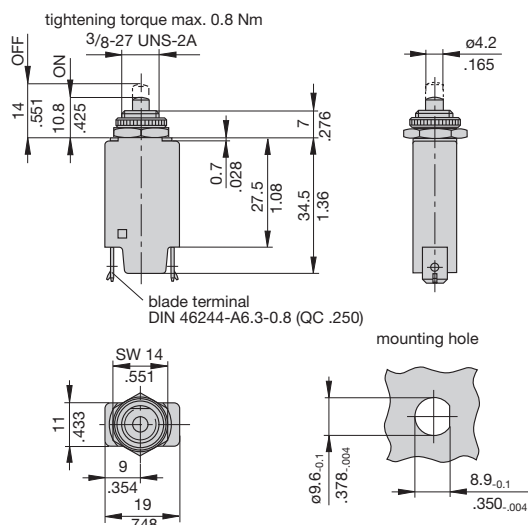
1140-E211-P1M1



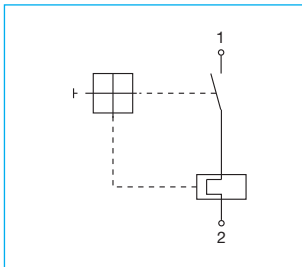
1140-F111-P1M1



1140-G111-P1M1

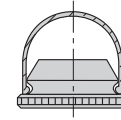


Internal connection diagram

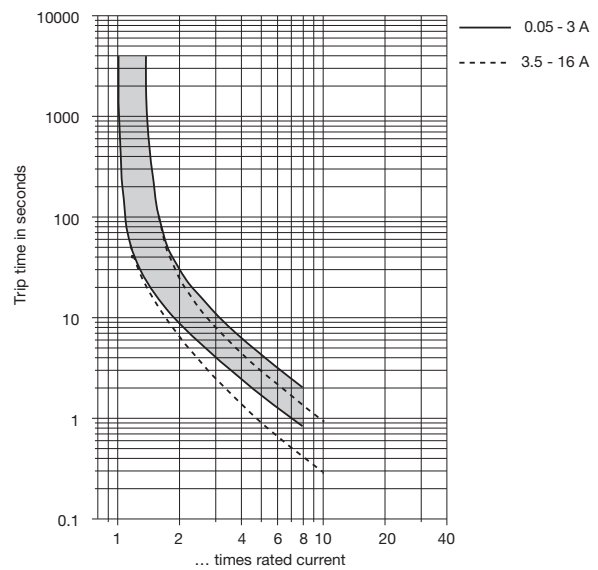


Accessory

Water splash cover/knurled nut assembly, transparent X 201 285 01 (IP64)



Typical time/current characteristics at +23 °C/+73.4 °F

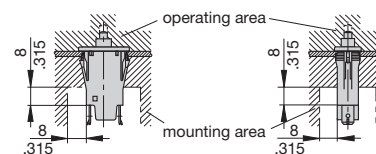


The time/current characteristic curve depends on the ambient temperature prevailing. In order to eliminate nuisance tripping, please multiply the circuit breaker current ratings by the derating factor shown below. See also section Technical information.

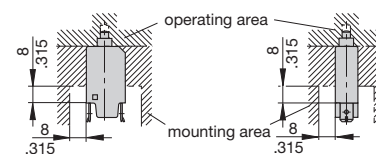
| Ambient temperature °F | -4 | +14 | +32 | +73.4 | +104 | +122 | +140 |
|------------------------|------|------|------|-------|------|------|------|
| °C | -20 | -10 | 0 | +23 | +40 | +50 | +60 |
| Derating factor | 0.76 | 0.84 | 0.92 | 1 | 1.08 | 1.16 | 1.24 |

Installation drawings

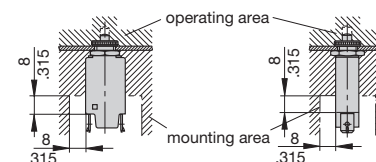
1140-F...



1140-E...



1140-G...



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

Description

Miniaturised double pole thermal circuit breaker with push-to-reset tease-free, trip-free, snap action mechanism (R-type TO CBE to EN 60934). Threadneck panel mounting. Suitable for line and neutral switching - the thermal actuator operating on one pole simultaneously opens both poles under overload conditions. Approved to CBE standard EN 60934 (IEC 60934).

Typical applications

Motors, transformers, solenoids, hand-held machines and appliances. Especially suited to AC duties where the correct orientation of line/neutral is not known/cannot be guaranteed.

Ordering information

Type No.

| | |
|-----------------------------|--|
| 1140 | double pole threadneck panel mounting |
| Mounting | |
| G1 | threadneck panel mounting 3/8-27UNS, with hex nut and knurled nut* |
| Number of poles | |
| 5 | double pole, 1-pole protected |
| Actuator style | |
| 1 | black push button |
| Terminal design | |
| P7 | blade terminals DIN 46244-C (QC 2x.110) |
| Characteristic curve | |
| M1 | medium delay |
| Current ratings | |
| 0,05...16 A | |

1140 - G1 5 1 - P7 M1 - 16 A ordering example

*mounting hardware bulk shipped

Preferred types

| Preferred types | Standard current ratings (A) | | | | | | | | | | | | |
|-----------------|------------------------------|---|-----|---|---|---|---|---|---|----|----|----|---|
| | 0.5 | 1 | 1.5 | 2 | 3 | 4 | 5 | 6 | 8 | 10 | 12 | 15 | |
| 1140-G151-P7M1 | x | 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 | 345 | 1.8 | 0.3 |
| 0.06 | 240 | 2 | 0.3 |
| 0.08 | 142 | 2.5 | 0.2 |
| 0.1 | 88 | 3 | 0.1 |
| 0.2 | 24 | 3.5 | 0.08 |
| 0.3 | 9.9 | 4 | 0.07 |
| 0.4 | 5.9 | 5 | 0.05 |
| 0.5 | 3.7 | 6 | 0.04 |
| 0.6 | 2.2 | 7 | < 0.02 |
| 0.7 | 1.9 | 8 | < 0.02 |
| 0.8 | 1.4 | 10 | < 0.02 |
| 1 | 0.9 | 12 | < 0.02 |
| 1.2 | 0.6 | 15 | < 0.02 |
| 1.5 | 0.5 | 16 | < 0.02 |



1140-G15

Technical data

For further details please see chapter: **Technical Information**

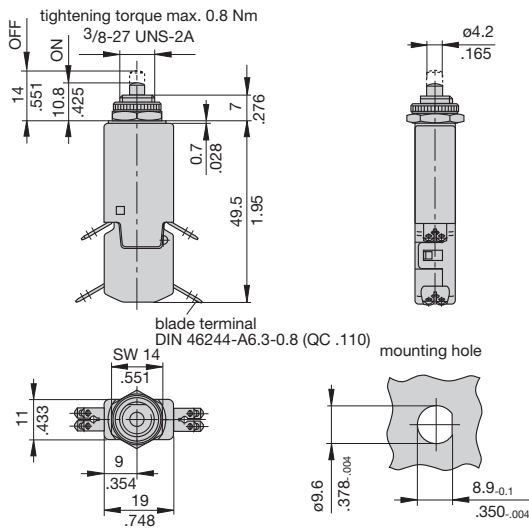
| | | | |
|---|--|---|---|
| Voltage rating | AC 240 V; DC 48 V (UL: AC 250 V; DC 50 V) | | |
| Current ratings | 0.05...16 A | | |
| Typical life | AC + DC | | |
| | 0.05...3 A | 300 operations at 2 x I _N , inductive | |
| | 3.5...8 A | 200 operations at 2 x I _N , inductive | |
| | 9...16 A | 100 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 2.5 kV | pollution degree 2 | reinforced insulation in operating area |
| Dielectric strength (IEC 60664 and 60664 A) | test voltage operating area pole/pole | AC 3,000 V AC 1,500 V | |
| Insulation resistance | > 100 MΩ (DC 500 V) | | |
| Interrupting capacity I _{cn} | 0.05...3 A 3.5...8 A 9...16 A | 6 x I _N 8 x I _N 120 A | |
| Interrupting capacity (UL 1077) | I _N 0.05...16 A 0.05...16 A | U _N DC 50 V AC 250 V | 2,000 A 2,000 A |
| Degree of protection (IEC 60529/DIN 40 050) | 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. 13 g | | |

Approvals

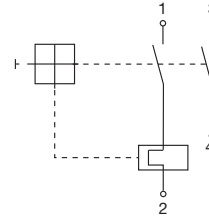
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| VDE | AC 240 V; DC 48 V | 0.05...16 A |
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Dimensions

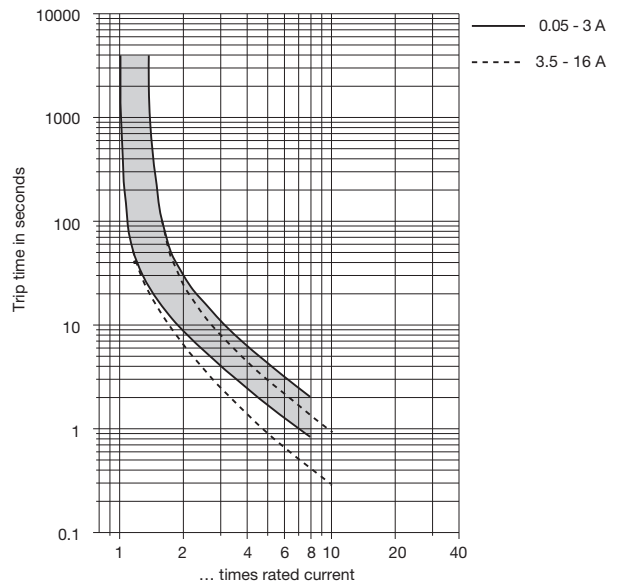
1140-G15...



Internal connection diagram



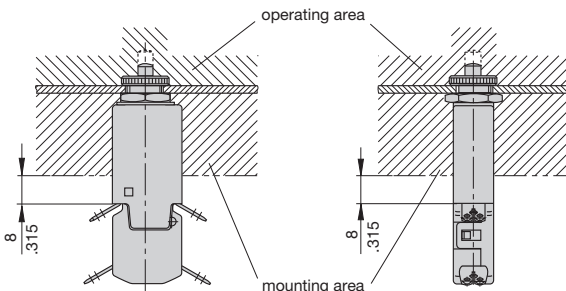
Typical time/current characteristics at +23 °C/+73.4 °F



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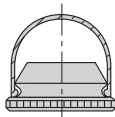
| Ambient temperature °F | -4 | +14 | +32 | +73.4 | +104 | +122 | +140 |
|------------------------|------|------|------|-------|------|------|------|
| °C | -20 | -10 | 0 | +23 | +40 | +50 | +60 |
| Derating factor | 0.76 | 0.84 | 0.92 | 1 | 1.08 | 1.16 | 1.24 |

Installation drawing



Accessories

Water splash cover/knurled nut assembly, transparent X 201 285 01 (IP64)



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

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