Description

Miniaturised single pole thermal circuit breaker with switching function optional (push-push actuation). Reliable snap-acting and trip-free mechanism. Approved to CBE standard EN/IEC 60934. S type, TO. Blade terminals fitting into sockets for rail mounting.

Typical applications

Protection of loads in power distribution systems in control cabinets and process control.

Ordering information

Type No.
1180 - single pole thermal circuit breaker, plug-in mounting

Versions
- 01 with switching function, without label
- 02 reset function only, without label

Current rating range
0.1...10 A

1180 - 01 - 1 A ordering example

Technical data

Voltage rating
AC 250 V; DC 65 V

Current ratings
0.1...10 A

Typical life
6,000 operations at 1 \times I_n (low-inductance)
3,000 operations at 1 \times I_n (inductive)
500 operations at 2 \times I_n (inductive)

Ambient temperature
-20...+60 °C (T 60) -4...+140 °F

Insulation co-ordination
rated impulse withstand voltage 2.5 kV
reinforced insulation in operating area

Dielectric strength
(test voltage)
operating area AC 3,000 V
installation area AC 1,500 V

Insulation resistance
> 100 MΩ (DC 500 V)

Interrupting capacity
I_{on} 0.1...5 A 6 \times I_n
6...10 A 8 \times I_n

Degree of protection
operating area IP40
terminal area IP00

Vibration
5 g (57-500 Hz) ±0.38mm (10-57 Hz)

Shock
25 g (11 ms)

Corrosion
96 hours at 5 % salt mist,
to IEC 60068-2-11, test Ka

Humidity
240 hours at 95 % RH,
to IEC 60068-2-3, test Ca

Mass
approx. 15 g

Standard current ratings and typical internal resistance values

<table>
<thead>
<tr>
<th>Current rating (A)</th>
<th>Internal resistance (Ω)</th>
<th>Current rating (A)</th>
<th>Internal resistance (Ω)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.1</td>
<td>81</td>
<td>2</td>
<td>0.25</td>
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<tr>
<td>0.2</td>
<td>22</td>
<td>2.5</td>
<td>0.18</td>
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<td>0.25</td>
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<td>0.11</td>
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<td>0.3</td>
<td>8.7</td>
<td>3.5</td>
<td>0.08</td>
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<tr>
<td>0.4</td>
<td>5.5</td>
<td>4</td>
<td>0.07</td>
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<tr>
<td>0.5</td>
<td>3.4</td>
<td>5</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>0.6</td>
<td>2.5</td>
<td>6</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>0.7</td>
<td>1.7</td>
<td>7</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>0.8</td>
<td>1.5</td>
<td>8</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>1</td>
<td>0.9</td>
<td>10</td>
<td>≤ 0.05</td>
</tr>
<tr>
<td>1.5</td>
<td>0.4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Approvals

Authority | Voltage rating | Current ratings |
-----------|----------------|-----------------|
VDE        | AC 250 V; DC 65 V | 0.1...10 A |
UL         | AC 250 V; DC 65 V | 0.1...10 A |
UL, Canada | AC 250 V; DC 65 V | 0.1...10 A |
Thermal Automotive Circuit Breaker 1180-...

Dimensions

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

Note: When several devices are mounted together, each device should only carry 80% of its rating or it must be overrated accordingly.

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

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.
Accessories - Terminal block with screw terminals

1 **Label** for circuit breaker 1180, surface for marking 4.5x5 mm (packaging quantity 120 pcs)
   Y 307 374 01

2 **Terminal block** for DIN rail mounting, with screw terminals
   up to 6 mm² conductor, width 8.2 mm,
   dimensions 64x42.5x8.2 mm,
   headroom over the upper rail edge with circuit breaker fitted
   (OFF position) 84 mm.
   Approvals: UL 300 V/ 30 A / AWG 26-8
   X 222 233 01

3 **Terminal block** for DIN rail mounting see item 2, but with
   LED DC24V (lighted after tripping);
   current rating LED 2 mA
   X 222 233 02

4 **Bus connection** for potential bridging of several terminal blocks
   see item 2 and 3 (10pole, separable, mounting hardware
   included), max. current rating 34 A
   X 222 232 01

5 **Insulation barriers** for insertion between two circuits
   (packaging quantity 10 pcs)
   Y 307 373 01

6 **Label** for terminal block, see item 2 and 3,
   surface for marking 4.5 x 5 mm
   (packaging quantity 120 pcs)
   Y 307 375 01

**Dimensions X 222 233 02**

**Vibration**
   with terminal block X 222 233 01
   and X 222 233 02
   5 g (57-500 Hz), ± 0.38 mm (10-57 Hz)
   to IEC 60068-2-6, test Fc,
   10 frequency cycles/axis
   and EN 50155

**Shock**
   with terminal block X 222 233 01
   and X 222 233 02
   25 g (11 ms)
   to IEC 60068-2-27, test Ea
1. **Label** for circuit breaker 1180, surface for marking 4.5x5 mm (packaging quantity 120 pcs)  
   Y 307 374 01

2. **Terminal block** for DIN rail mounting, with spring-loaded terminals up to 4 mm² conductor, width 8.2 mm, dimensions 68.5x36.5x8.2 mm, headroom over the upper rail edge with circuit breaker fitted (OFF position) 82 mm. UL approval pending.  
   X 222 316 01

3. **Terminal block** for DIN rail mounting see item 7, but with LED DC24V (lighted after tripping); current rating LED 2 mA  
   X 222 315 02

4. **Jumper 2pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.  
   X 222 318 01

5. **Jumper 3pole**, max. current rating 32 A for terminal blocks items 7 and 8 and feed supply terminal item 11.  
   X 222 318 02

6. **Feed supply terminal** with spring-loaded terminals up to 6 mm² conductor, width 8.2 mm, suitable for use with jumpers items 9 and 10 (power distribution).  
   X 222 317 01

7. **Cover** for feed supply terminal item 11 for closing the open side at the end of an assembly.  
   Y 307 507 01

8. **Label** for terminal block items 7 and 8, and feed supply terminal item 11, surface for marking 7.5 x 5 mm (packaging quantity 50 pcs)  
   Y 307 508 01

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**Dimensions X 222 316 01**

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**Vibration** with terminal blocks X 222 316 01 and X 222 315 02  
- vibration axis 3-4:  
  - 3 g (57-500 Hz), ± 0.38 mm (10-57 Hz)  
  - other axes:  
    - 6 g (57-500 Hz), ± 0.38 mm (10-57 Hz)  
- to IEC 60068-2-6, test Fc,  
  - 10 frequency cycles/axis  
- and EN 50155

**Shock** with terminal blocks X 222 316 01 and X 222 315 02  
- 25 g (11 ms)  
- to IEC 60068-2-27, test Ea