Description

Very cost effective design to meet international requirements. No exposed metal parts which are, or could become, current-carrying except for terminals. R-type TO CBE to EN 60934.

- Manual reset, cycling trip free mechanism
- Extremely small and lightweight
- UL, CSA, VDE and EN 60934 (IEC 60934) approved

Typical applications

Battery chargers, consumer products, power supplies, motors.

Ordering information

Type No.

1658  single pole thermal circuit breaker

Threadneck design

G21  manual reset type, 3/8”-27 threadneck
G41  manual reset type, 7/16”-28 threadneck
E20  manual reset without threadneck
F01  snap-in type
F02  press to reset, snap-in type
A21  auto reset type, 3/8”-27 threadneck
A41  auto reset type, 7/16”-28 threadneck
A00  auto reset type, without threadneck
A01  auto reset, snap-in type

Hardware

<table>
<thead>
<tr>
<th>configuration</th>
<th>bulk</th>
<th>mounted</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>hex nut</td>
<td>knurled nut</td>
</tr>
<tr>
<td>00</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>01</td>
<td>1 (PAL)</td>
<td>0</td>
</tr>
<tr>
<td>02</td>
<td>1 (PAL)</td>
<td>1</td>
</tr>
<tr>
<td>03</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>04</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>05</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>06</td>
<td>0</td>
<td>1</td>
</tr>
<tr>
<td>07</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>08</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>09</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>10</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>12 (B8-27 UNS)</td>
<td>1 (PAL)</td>
<td>1 (plastic)</td>
</tr>
<tr>
<td>14 (B8-27 UNS)</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>15 (B8-27 UNS)</td>
<td>0 (plastic)</td>
<td>1 (PAL)</td>
</tr>
<tr>
<td>16 (B8-27 UNS)</td>
<td>1 (plastic)</td>
<td>1 (plastic)</td>
</tr>
<tr>
<td>19 (B8-27 UNS)</td>
<td>1 (plastic)</td>
<td>1 (plastic)</td>
</tr>
<tr>
<td>20 (B8-27 UNS)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Terminals

P10  blade terminals A6.3-0.8 (QC .250)
P13  blade terminals A6.3-0.8 (QC .250), 90°
S80  straight screw terminals*
S83  90° bent screw terminals*

Current ratings

5...30 A

Standard current ratings and typical voltage drop values

<table>
<thead>
<tr>
<th>Current rating (A)</th>
<th>Voltage drop (mV)</th>
<th>Current rating (A)</th>
<th>Voltage drop (mV)</th>
</tr>
</thead>
<tbody>
<tr>
<td>5</td>
<td>≤ 150</td>
<td>12</td>
<td>≤ 140</td>
</tr>
<tr>
<td>6</td>
<td>≤ 150</td>
<td>15</td>
<td>≤ 240</td>
</tr>
<tr>
<td>7</td>
<td>≤ 150</td>
<td>16</td>
<td>≤ 240</td>
</tr>
<tr>
<td>8</td>
<td>≤ 150</td>
<td>20</td>
<td>≤ 240</td>
</tr>
<tr>
<td>9</td>
<td>≤ 150</td>
<td>25</td>
<td>≤ 240</td>
</tr>
<tr>
<td>10</td>
<td>≤ 140</td>
<td>30</td>
<td>≤ 240</td>
</tr>
</tbody>
</table>

Approvals

<table>
<thead>
<tr>
<th>Authority</th>
<th>Voltage rating</th>
<th>Current ratings</th>
</tr>
</thead>
<tbody>
<tr>
<td>VDE (EN 60934)</td>
<td>AC 240 V; DC 28 V</td>
<td>5...25 A</td>
</tr>
<tr>
<td>UL, CSA</td>
<td>AC 250 V</td>
<td>5...15 A</td>
</tr>
<tr>
<td>UL</td>
<td>AC 240 V</td>
<td>16 A</td>
</tr>
<tr>
<td>CSA</td>
<td>AC 240 V</td>
<td>16 A</td>
</tr>
<tr>
<td>VDE</td>
<td>AC 250 V</td>
<td>16 A</td>
</tr>
<tr>
<td>EN 60934</td>
<td>DC 28 V</td>
<td>5...30 A</td>
</tr>
</tbody>
</table>

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**

- **A00**
  - 3/8-27UNS-2A

- **A21**
  - 3/8-27UNS-2A
  - Tightening Torque=0.8 Nm

- **G21**
  - 3/8-27UNS-2A

- **A41**
  - 10-32 UNC

- **G41**
  - 10-32 UNC

See ordering information for mounting hardware.

**Installation drawing**

**Terminal design**

- **P10**
  - Blade terminals DIN 46244-A6.3-0.8 (QC .250)
  - Terminal screw 6-32 UNC
  - Lock washer

- **P13**
  - Blade terminals DIN 46244-A6.3-0.8 (QC .250)
  - Terminal screw 6-32 UNC

- **S80**
  - Blade terminals DIN 46244-A6.3-0.8 (QC .250)
  - Terminal screw 6-32 UNC
  - Lock washer

- **S83**
  - Blade terminals DIN 46244-A6.3-0.8 (QC .250)
  - Terminal screw 6-32 UNC
  - Lock washer

This is a metric design and millimeter dimensions take precedence.
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 9 - Technical information.

<table>
<thead>
<tr>
<th>Ambient temperature °C</th>
<th>-4</th>
<th>-20</th>
<th>-10</th>
<th>0</th>
<th>+23</th>
<th>+32</th>
<th>+73.4</th>
<th>+104</th>
<th>+140</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multiplication factor</td>
<td>0.76</td>
<td>0.84</td>
<td>0.92</td>
<td>1</td>
<td>1.08</td>
<td>1.16</td>
<td>1.24</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The time in seconds

- 10000
- 1000
- 100
- 10
- 1
- 0.1
- times rated current...
**Accessories**

- **Mounting nut 3/8", 27-thread**
  - Y306 671 01

- **Mounting nut 7/16", 28-thread**
  - Y303 200 01

- **Knurled nut 3/8", 27-thread**
  - Nickel-plated brass
  - Y300 190 03

- **Knurled nut 7/16", 28-thread**
  - Nickel-plated brass
  - Y302 294 03

- **Hex nut 3/8", 27-thread**
  - Nickel-plated brass
  - Y300 192 01

- **Hex nut 7/16", 28-thread**
  - Nickel-plated brass
  - Y302 295 01

- **Press to Reset Plate for 3/8", 27-thread, aluminium**
  - Y301 059 02

- **Press to Reset Plate for 7/16", 28-thread, aluminium**
  - Y302 732 01

- **Plastic knurled nut**
  - For 3/8", 27-thread
  - Y307 117 02

- **Reset button seal for 3/8", 27-thread**
  - Short
  - X201 285 01
  - Long
  - X200 799 01

- **Reset button seal for 7/16", 28-thread**
  - Short
  - X222 119 01
  - Long
  - X222 119 02

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

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USA (847) 827-7600  -  www.e-t-a.com  -  CANADA (905) 764-9510  
Issue D