Electronic Fuse Module (EFM) M83530

- Overcurrent protection for sensor supply
- Six independent electronic fuses with automatic protection
- Wide range of operating voltage: 9 ... 32V
- Overvoltage protection of all inputs and outputs
- Mounting on DIN rail (35 x 7.5mm)

Pin assignment

![Pin Assignment Diagram](ME 45 UTG/GN)

Electrical and mechanical characteristics

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Pin</th>
<th>Min</th>
<th>Typ</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supply voltage (DC)</td>
<td>2</td>
<td>9V</td>
<td>12 ... 24V</td>
<td>32V</td>
</tr>
<tr>
<td>Quiescent current ¹)</td>
<td>2</td>
<td>10mA</td>
<td>15mA</td>
<td>20mA</td>
</tr>
<tr>
<td>Turn off current ²)</td>
<td>3 ... 8</td>
<td>200mA ³)</td>
<td>250mA ⁴)</td>
<td>330mA ⁵)</td>
</tr>
<tr>
<td>Output resistance</td>
<td>3 ... 8</td>
<td>2 Ω</td>
<td>2.2 Ω</td>
<td>2.4 Ω</td>
</tr>
<tr>
<td>Response time ⁶)</td>
<td>3 ... 8</td>
<td>&lt;500ms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operating temperature</td>
<td></td>
<td>-40°C</td>
<td></td>
<td>+75°C</td>
</tr>
</tbody>
</table>

Fuse T0.8A (time lag): 5 x 20mm (fuse for internal circuitry)

Housing dimensions [width x height x depth]: 45 x 110 x 115mm

Terminal (pluggable): Wire cross section from 0.25 to 1.5mm²

¹) Depends on supply voltage
²) Turn off current is related to ambient temperature
³) Typical value at +60°C
⁴) Typical value at +25°C
⁵) Typical value at +40°C
⁶) Response time for short detection
Principle of operation

The Electronic Fuse Module includes the following blocks:

- **Stabilised voltage source to supply the internal circuit**
- **Restart single generator**
  - Produces a continuous signal to trigger the restart of the electronically switched paths
- **Six independent electronically switched paths (Fuse 1 ... Fuse 6)**
  - Electronically switched paths are protected against overcurrent
    - As long as load current is lower than the specified turn off current, the path is connected through (supply voltage is available at the output).
    - If the current through the considered path is higher than the specified turn off value, this path is switched off.
    - After a period of time the path is activated again by the restart signal. If the overcurrent condition still exists, the path is switched off within the specified response time.

**Note**

The peak-current in each path is limited by output resistance of the module (M83530).
The current drawn by each load must be lower than the specified turn off current.

**Do not connect any outputs in parallel.**