Safety switch for hinged guards

**TVS 410**

- Metal enclosure
- Adjustable switching angle
- Opening angle 180°
- Mountable on the inside and the outside of the safety guard
- Screw terminals, cage clamps or connector
- Simple mounting, for all common profile systems (30 ... 60 mm)
- Oil and petroleum resistant
- 2 cable entries M16 x 1.5
- For left or right hinged doors

### Technical data

- **Standards:** IEC/EN 60947-5-1
- **Enclosure:** light-alloy diecast
- **Protection class:** IP 65 to EN 60529
- **Contact material:** AgNi10
- **Contact type:** 2x change-over contact with double break, type Zb
- **Switching system:** slow action, NC contact with positive break
- **Connection:** Screw terminals or Cage clamps or connector max. 1 mm²
- **Cable section:** (incl. conductor ferrules)
- **Cable entry:** 2 x M16 x 1.5
- **U_imp:** 2,5 kV
- **U_c:** 250 V
- **I_c:** 2.5 A
- **Utilisation category:** DC-13
- **I_c/U_c:** 1 A / 24 VDC
- **Max. fuse rating:** 2 A gG D-fuse to DIN EN 60269-1
- **Ambient temperature:** -25 °C ... +65 °C
- **Mechanical life:** > 1 million operations
- **Switching frequency:** 1200/h
- **Positive break angle:** min. 5°, max. 8°

### Contact variants

- 2 NO/2 NC

### Screw terminals

### Cage clamps

### Connector ST1 or ST2

#### Version 11/11

#### Version 11/01

### Connector ST4 or ST5

### Ordering details

<table>
<thead>
<tr>
<th>TVS 410</th>
<th>Option</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>SK</td>
<td>Screw terminals</td>
</tr>
<tr>
<td></td>
<td>CC</td>
<td>Cage clamps</td>
</tr>
<tr>
<td></td>
<td>ST1</td>
<td>Connector M12 bottom</td>
</tr>
<tr>
<td></td>
<td>ST2</td>
<td>Connector M12 top</td>
</tr>
<tr>
<td></td>
<td>ST4</td>
<td>Connector M16 bottom</td>
</tr>
<tr>
<td></td>
<td>ST5</td>
<td>Connector M16 top</td>
</tr>
<tr>
<td>2</td>
<td>11/11</td>
<td>2NC/2NO</td>
</tr>
<tr>
<td></td>
<td></td>
<td>versions ST1, ST2 only for PELV circuits</td>
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<tr>
<td></td>
<td></td>
<td>2NC/1NO</td>
</tr>
<tr>
<td></td>
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<td>versions ST1, ST2 with PIN 8 as PE</td>
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</table>

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<thead>
<tr>
<th>No.</th>
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<tbody>
<tr>
<td>3</td>
<td>U</td>
<td>Adjustable switching angle (incl. adjustment tool)</td>
</tr>
<tr>
<td></td>
<td>I</td>
<td>Inside installation (with fixed switching angle)</td>
</tr>
<tr>
<td></td>
<td>A</td>
<td>Outside installation (with fixed switching angle)</td>
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<tr>
<td></td>
<td>N</td>
<td>Without alignment aid</td>
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<tr>
<td></td>
<td></td>
<td>With alignment aid</td>
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</tbody>
</table>

### Note

Contact switch travel diagrams: 0° = safety guard closed.

Caution! The versions ST1 and ST2 11/11 may only be used in PELV circuits to EN 60204-1.

*The factory-set switching angle is 3°. The positive break angle is 5°. Until the limit of the mechanical life has been reached the angle can increase up to 8° under normal wear-out conditions.*
Safety switch for hinged guards

**System components**

- **Bottom connector ST1, ST4**
- **Top connector ST2, ST5**
- **Additional hinge Z 410**
- **Additional hinge Z 410-N**
- **With alignment aid, ordering suffix N**
- **Adjustment tool K 410**

**Ordering details**

| Connector M12, 8 pins, 24 VDC, bottom | Additional hinge
| top | without alignment aid | Z 410 |
| Connector M16, 10 pins, 250 VAC, bottom | Additional hinge
| top | with alignment aid | Z 410-N |
| With alignment aid | Adjustment tool | K 410 |
| ordering suffix N | Further information can be found: | List ELAN, Wettenberg |