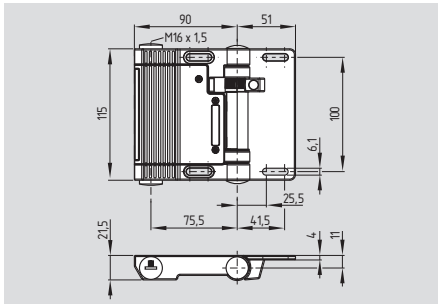


# Safety switch for hinged guards

## 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

### Approvals

in preparation



## Ordering details

TVS 410 ①-②③④

No.	Replace	Description
①	SK	Screw terminals
	CC	Cage clamps
	ST1	Connector M12 bottom
	ST2	Connector M12 top
	ST4	Connector M16 bottom
	ST5	Connector M16 top
②	11/11	2NC/2NO versions ST1, ST2 only for PELV circuits
	11/01	2NC/1NO versions ST1, ST2 with PIN 8 as PE

## Technical data

Standards: IEC/EN 60947-5-1  
BG-GS-ET-15

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: ⊖ IEC 60947-5-1 slow action, NC contact with positive break

Connection: Screw terminals or Cage clamps or connector max. 1 mm<sup>2</sup> (incl. conductor ferrules)

Cable section: 2 x M16 x 1.5

Cable entry: 2 x M16 x 1.5

U<sub>imp</sub>: 2.5 kV

U<sub>i</sub>: 250 V

I<sub>the</sub>: 2.5 A

Utilisation category: DC-13

I<sub>e</sub>/U<sub>e</sub>: 1 A / 24 VDC

Max. fuse rating: 2 A gG D-fuse to DIN EN 60269-1

Ambient temperature: -25 °C ... +65 °C

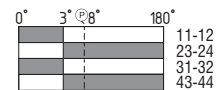
Mechanical life: > 1 million operations

Switching frequency: 1200/h

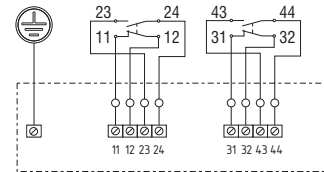
Positive break angle: min. 5°, max. 8°

## Contact variants

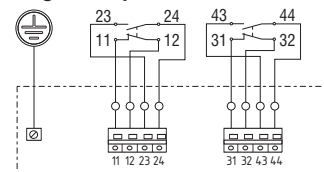
### 2 NO/2 NC



### Screw terminals

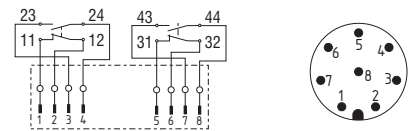


### Cage clamps

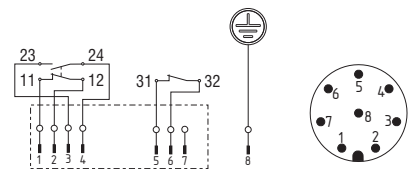


### Connector ST1 or ST2

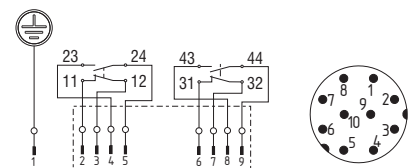
#### Version 11/11



#### Version 11/01



### Connector ST4 or ST5



## Note

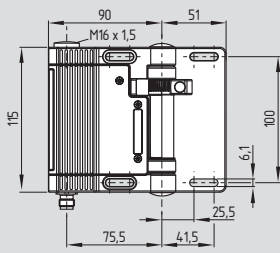
Contact switch travel diagrams: 0° = safety guard closed.

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.

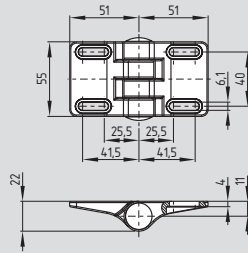
# Safety switch for hinged guards

## System components

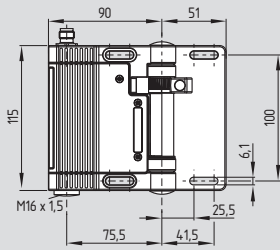


Bottom connector ST1, ST4

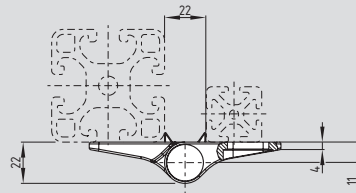
## System components



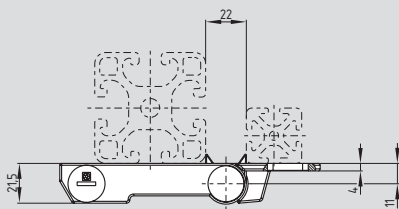
Additional hinge Z 410



Top connector ST2, ST5



Additional hinge Z 410-N



With alignment aid, ordering suffix N



Adjustment tool K 410

## Ordering details

Connector M12, 8 pins, 24 VDC,  
bottom

top

Connector M16, 10 pins, 250 VAC,  
bottom

top

With alignment aid

ordering suffix N

## Ordering details

Additional hinge

without alignment aid

with alignment aid

Adjustment tool

Z 410

Z 410-N

K 410

Further information can be found:  
List TESH/05 ELAN, Wettenberg