

Selection table for accessories

| Actuators | | | | | | | | | | | | |
|-----------|-------------------|---------------------------------------|-------------------|-----------------------------------|------|--------------|--------------|---------------|---------------|-------------------------|---------|--|
| | | | Insertion funnels | | | | | | | | | |
| | | | | Mounting plates/mounting brackets | | | | | | | | |
| | | | Connection | | | | | | | | | |
| | | | SGLF | | | | | | | | | |
| | | | | SR6 | | | | | | | | |
| | | | | | SR11 | | | | | | | |
| | | | | | | Cable glands | | | | | | |
| | | | | | | | | LED displays | | | | |
| | | | | | | | | | Miscellaneous | | | |
| | | | | | | | | | | Bolts for safety guards | | |
| Actuators | Insertion funnels | Mounting plates/ mounting brackets | Plug connectors | | | Cable glands | LED displays | Miscellaneous | Bolts | | Page | |
| | | | SGLF | SR6 | SR11 | | | | Metal | Plastic | | |
| • | | | | | | | | | | | 76 - 84 | |
| | • | | | | | | | | | | 85 | |
| | | • | | | | | | | | | 86 - 87 | |
| | | | • | | | | | | | | 87 | |
| | | | | • | | | | | | | 88 | |
| | | | | | • | | | | | | 88 | |
| | | | | | | • | | | | | 89 | |
| | | | | | | | • | | | | 89 | |
| | | | | | | | | • | | | 90 / 91 | |
| | | | | | | | | | • | | 92 - 95 | |
| | | | | | | | | | | • | 96 | |

Actuators for safety switches NM.VZ

- ▶ Actuators made of stainless steel
- ▶ Two stainless safety screws per actuator
- ▶ Actuators with optional rubber bushings
- ▶ Narrow design optional

Straight actuator

The straight actuator is used on sliding doors or hinged doors with door radii greater than 150 mm. Safety screws prevent unscrewing of the actuator.

Actuator with rubber bush

For flexible mounting of the actuator.

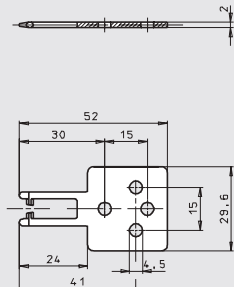
Screws made of stainless steel

The safety screws included can be inserted with a normal tool, but cannot be removed again.

Actuator M-G straight

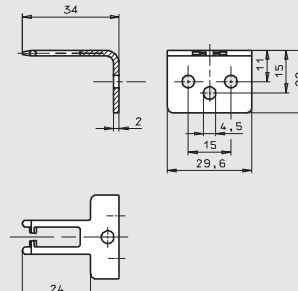
Overtravel 4 mm

Dimension drawings



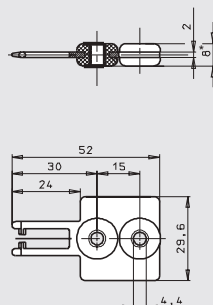
Actuator M-W bent

Overtravel 4 mm



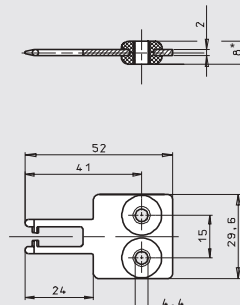
Actuator M-GT straight

Longitudinal rubber bush, overtravel 4 mm



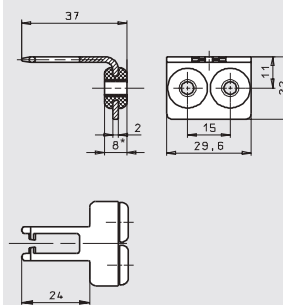
Actuator M-GQ straight

Transverse rubber bush, overtravel 4 mm



Actuator M-WT bent

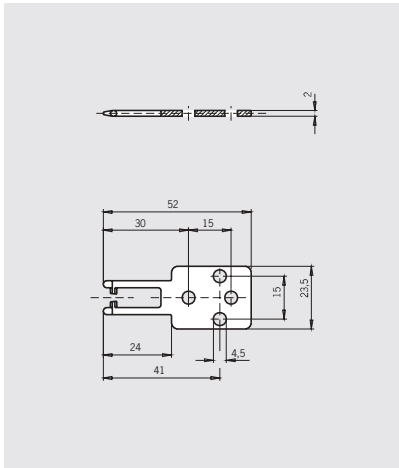
Rubber bush, overtravel 4 mm



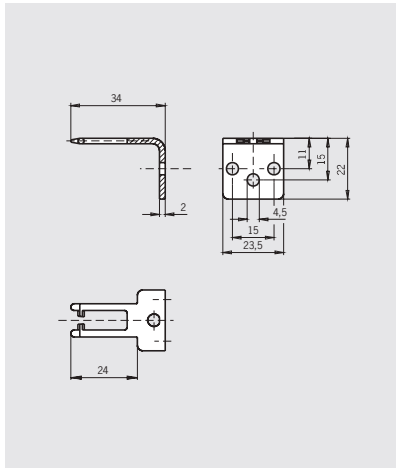
Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|--|---|----------------------------|-------------------|---------------------------------|
| Actuator straight | M-G 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 076 ACTUATOR-M-G |
| Actuator bent | M-W 4 mm overtravel incl. 2 safety screws M5x10 | | 1 ea. | 074 077 ACTUATOR-M-W |
| Actuator straight longitudinal rubber bush | M-GT 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 078 ACTUATOR-M-GT |
| Actuator straight transverse rubber bush | M-GQ 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 079 ACTUATOR-M-GQ |
| Actuator bent rubber bush | M-WT 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 080 ACTUATOR-M-WT |

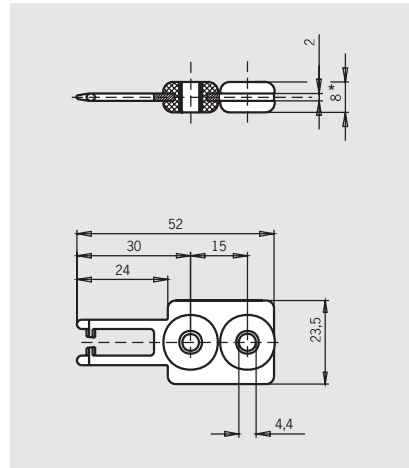
Actuator M-GS straight
Narrow, overtravel 4 mm



Actuator M-WS bent
Narrow, overtravel 4 mm



Actuator M-GTS straight
Rubber bush, narrow, overtravel 4 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|---|--|----------------------------|-------------------|----------------------------------|
| Actuator straight narrow | M-GS 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 128 ACTUATOR-M-GS |
| Actuator bent narrow | M-WS 4 mm overtravel incl. 2 safety screws M5x10 | | 1 ea. | 074 129 ACTUATOR-M-WS |
| Actuator straight, narrow rubber bush | M-GTS 4 mm overtravel incl. 2 safety screws M4 x 14 | | 1 ea. | 074 130 ACTUATOR-M-GTS |

Actuators for safety switches NP/GP/TP

- ▶ Actuators made of stainless steel
- ▶ Two stainless safety screws per actuator
- ▶ Actuators with optional rubber bushings

Straight actuator

The straight actuator is used on sliding doors or hinged doors with door radii greater than 1000 mm. Safety screws prevent unscrewing of the actuator.

Actuator with overtravel

- ▶ **2 mm** for doors with normal play
- ▶ **7 mm** for doors with large play (optional)

Actuator with rubber bush

For flexible mounting of the actuator.

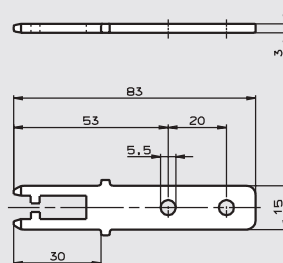
Screws made of stainless steel

The safety screws included can be inserted with a normal tool, but cannot be removed again.

Actuator P-G straight

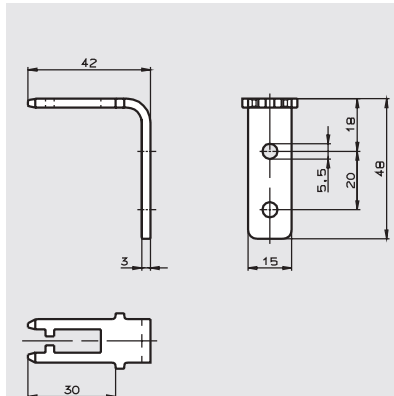
Overtravel 2 mm

Dimension drawings



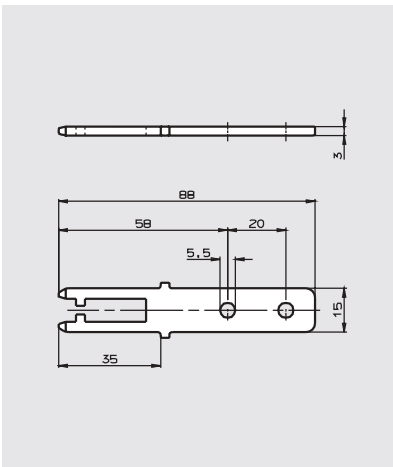
Actuator P-W bent

Overtravel 2 mm



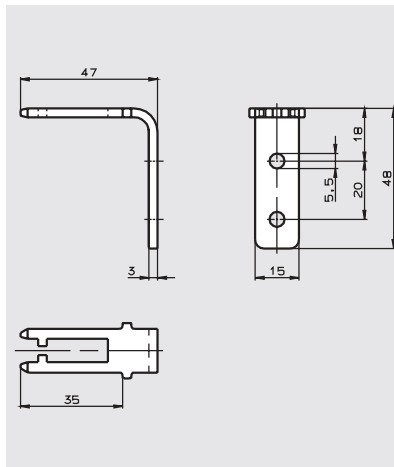
Actuator P-GN straight

Overtravel 7 mm



Actuator P-WN bent

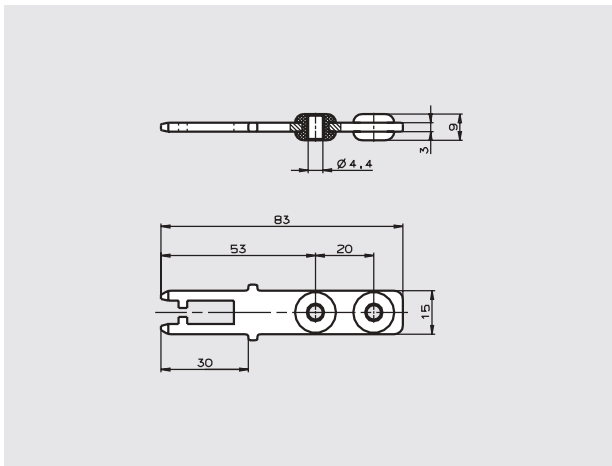
Overtravel 7 mm



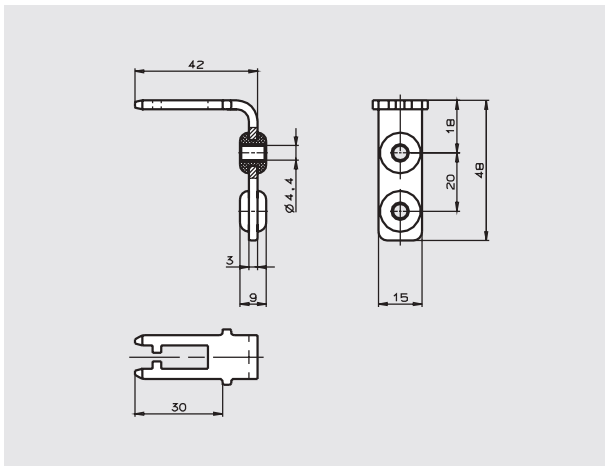
Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|------------------------------------|---|----------------------------|-------------------|---------------------------------|
| Actuator straight | P-G Overtravel 2 mm incl. 2 safety screws M5 x 10 | 1000 | 1 ea. | 059 226 ACTUATOR-P-G |
| Actuator bent | P-W Overtravel 2 mm incl. 2 safety screws M5 x 10 | 1000 | 1 ea. | 059 227 ACTUATOR-P-W |
| Actuator straight overtravel | P-GN Overtravel 7 mm incl. 2 safety screws M5 x 10 | 1000 | 1 ea. | 074 570 ACTUATOR-P-GN |
| Actuator bent overtravel | P-WN Overtravel 7 mm incl. 2 safety screws M5 x 10 | 1000 | 1 ea. | 074 571 ACTUATOR-P-WN |

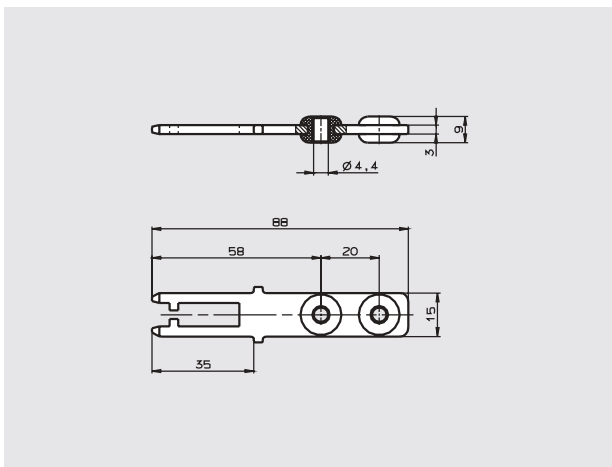
Actuator P-GT straight
Rubber bush, overtravel 2 mm



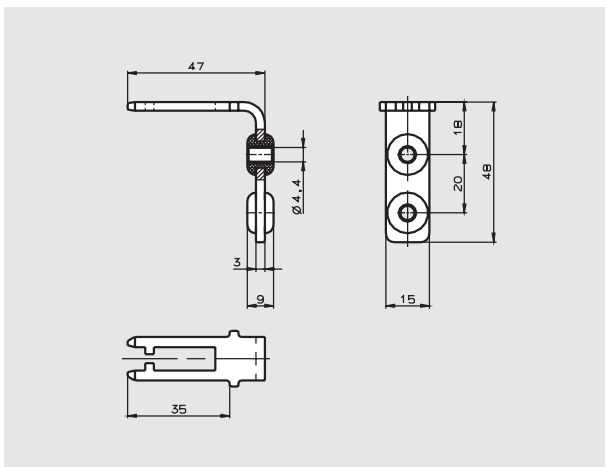
Actuator P-WT bent
Rubber bush, overtravel 2 mm



Actuator P-GNT straight
Rubber bush, overtravel 7 mm



Actuator P-WNT bent
Rubber bush, overtravel 7 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|---|--|----------------------------|-------------------|----------------------------------|
| Actuator straight rubber bush | P-GT Overtravel 2 mm incl. 2 safety screws M4 x 14 | 1000 | 1 ea. | 070 046 ACTUATOR-P-GT |
| Actuator bent rubber bush | P-WT Overtravel 2 mm incl. 2 safety screws M4 x 14 | 1000 | 1 ea. | 070 038 ACTUATOR-P-WT |
| Actuator straight rubber bush, overtravel | P-GNT Overtravel 7 mm incl. 2 safety screws M4 x 14 | 1000 | 1 ea. | 074 576 ACTUATOR-P-GNT |
| Actuator bent rubber bush, overtravel | P-WNT Overtravel 7 mm incl. 2 safety screws M4 x 14 | 1000 | 1 ea. | 074 577 ACTUATOR-P-WNT |

For safety precautions see page 132
For technical data see page 99

Hinged actuators for safety switches NP/GP/TP

- ▶ Actuators made of stainless steel
- ▶ Two stainless safety screws per actuator
- ▶ For top and bottom hinged doors
- ▶ For right and left hinged doors

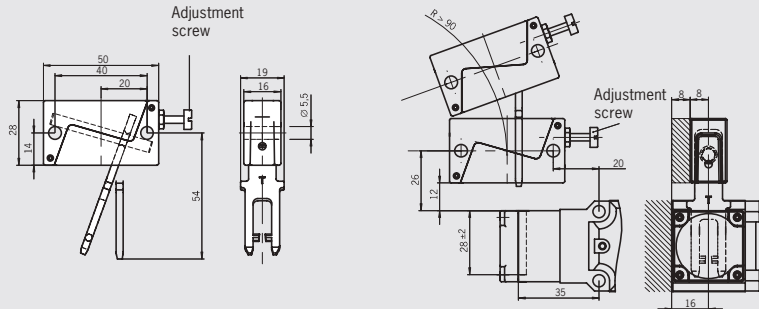
Hinged actuator

For door radii less than 1000 mm a hinged actuator should be used. The spring action movement of the actuator prevents damage due to the actuator jamming in the actuating head. Depending on the movement of the safety guard, the actuator must be selected for left/right or top/bottom.

Hinged actuator P-OU

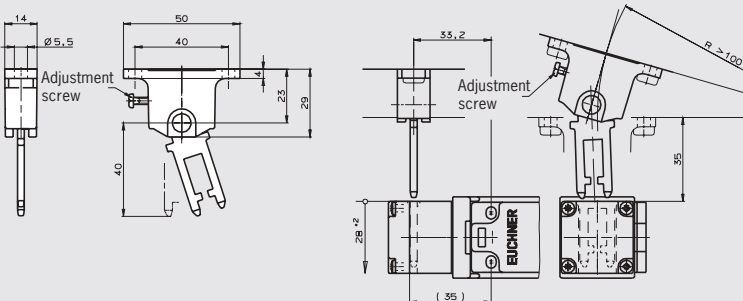
Safety guard hinged at top/bottom, overtravel 2 mm

Dimension drawings



Hinged actuator P-LR

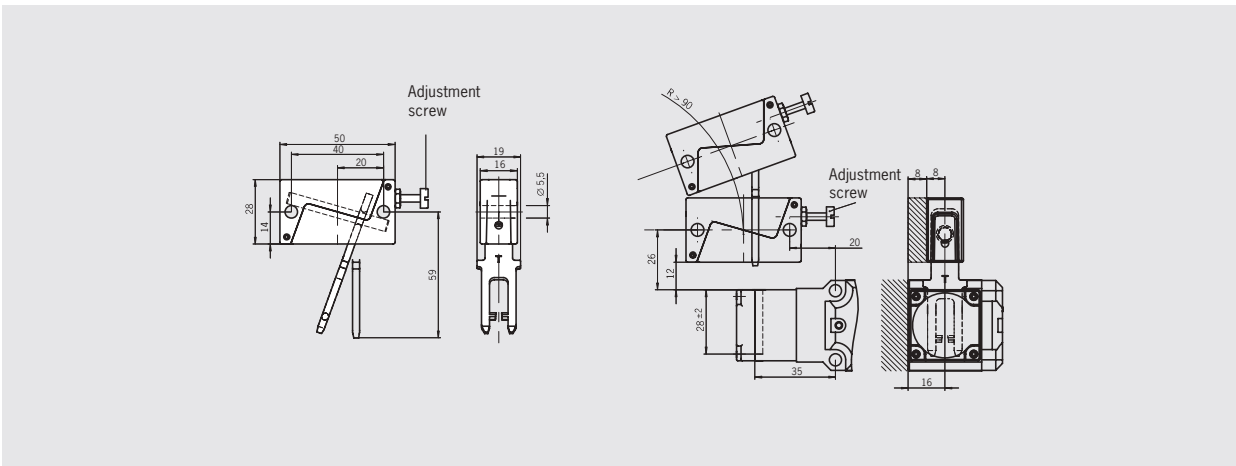
Safety guard hinged on left/right, overtravel 2 mm



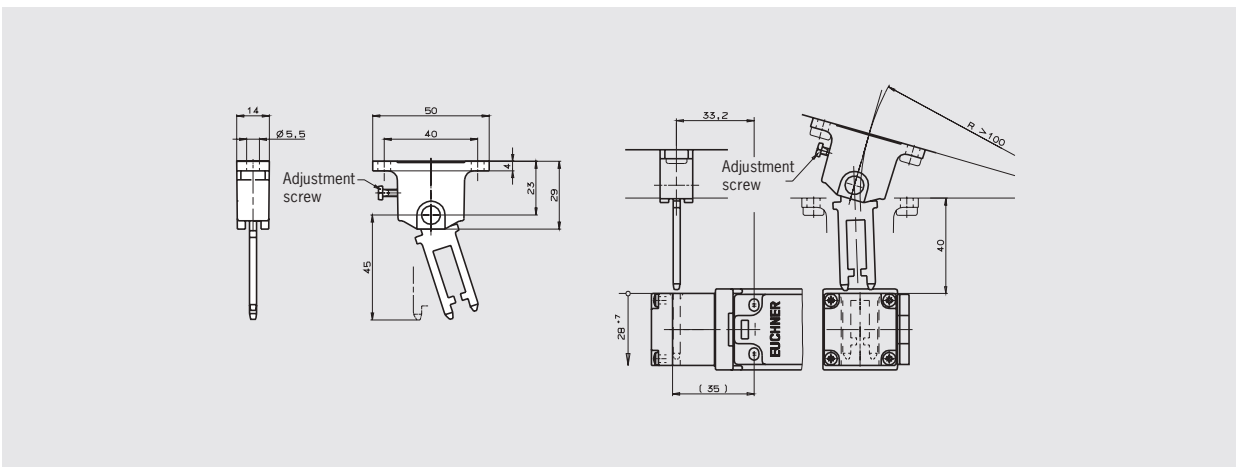
Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|-----------------|--|----------------------------|-------------------|--|
| Hinged actuator | P-OU For top and bottom hinged doors overtravel 2 mm incl. 2 safety screws M5 x 25 | 90 | 1 ea. | 070 050 HINGED ACTUATOR P-OU |
| | P-LR For left and right hinged doors overtravel 2 mm incl. 2 safety screws M5 x 10 | 100 | 1 ea. | 059 440 HINGED ACTUATOR P-LR |

Hinged actuator P-OUN
Safety guard hinged at top/bottom, overtravel 7 mm



Hinged actuator P-LRN
Safety guard hinged on left/right, overtravel 7 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|-----------------|---|----------------------------|-------------------|---|
| Hinged actuator | P-OUN For top and bottom hinged doors overtravel 7 mm incl. 2 safety screws M5 x 25 | 90 | 1 ea. | 074 572 HINGED ACTUATOR P-OUN |
| | P-LRN For left and right hinged doors overtravel 7 mm incl. 2 safety screws M5 x 10 | 100 | 1 ea. | 074 573 HINGED ACTUATOR P-LRN |

Actuators for safety switches SGP/STA/STF/STP/STM

- ▶ Two stainless safety screws per actuator
- ▶ Actuators with rubber bushings

Note

Type S actuators must not be used in conjunction with insertion funnels.
L actuators must be used for insertion funnels.

Straight actuator

Suitable for a maximum tensile force of 2500 N for STP, or 3000 B for STA
The straight actuator is used on sliding doors or hinged doors with door radii greater than 300 mm. Safety screws prevent unscrewing of the actuator.

Bent actuator

Suitable for a maximum tensile force of 1500 N.

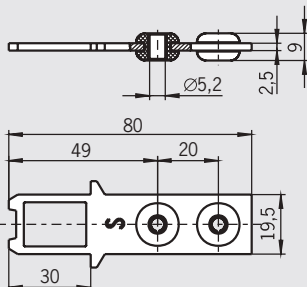
Screws made of stainless steel

The safety screws included can be inserted with a normal tool, but cannot be removed again.

Standard actuator S, straight

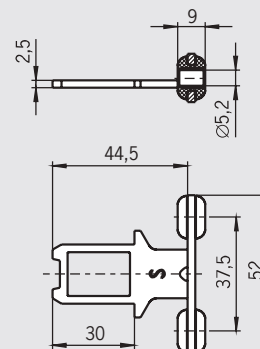
Rubber bush, overtravel 5 mm

Dimension drawings



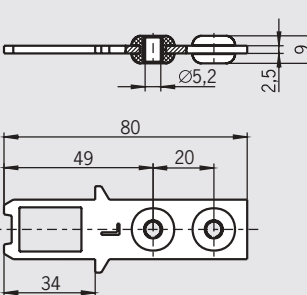
Standard actuator S, bent

Rubber bush, overtravel 5 mm



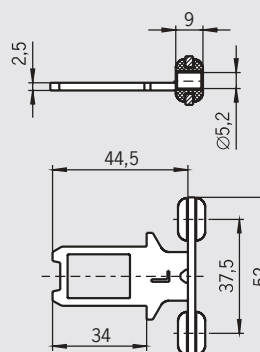
Actuator L, straight, for insertion funnel

Rubber bush, overtravel 5 mm



Actuator L, bent, for insertion funnel

Rubber bush, overtravel 5 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|------------------------|--|----------------------------|-------------------|------------------------------------|
| Actuator S straight | S-GT-SN Overtravel 5 mm incl. 2 safety screws M4 x 14 | 300 | 1 ea. | 095 738 ACTUATOR S-GT-SN |
| Actuator S bent | S-WQ-SN Overtravel 5 mm incl. 2 safety screws M4 x 14 | 300 | 1 ea. | 095 740 ACTUATOR S-WQ-SN |
| Actuator L straight | S-GT-LN Overtravel 5 mm incl. 2 safety screws M4 x 14 | 300 | 1 ea. | 095 739 ACTUATOR S-GT-LN |
| Actuator L bent | S-WQ-LN Overtravel 5 mm incl. 2 safety screws M4 x 14 | 300 | 1 ea. | 095 741 ACTUATOR S-WQ-LN |

Hinged actuators for safety switches SGP/STA/STF/STP/STM

- ▶ Actuators made of stainless steel
- ▶ Two stainless safety screws per actuator
- ▶ For top and bottom hinged doors
- ▶ For right and left hinged doors

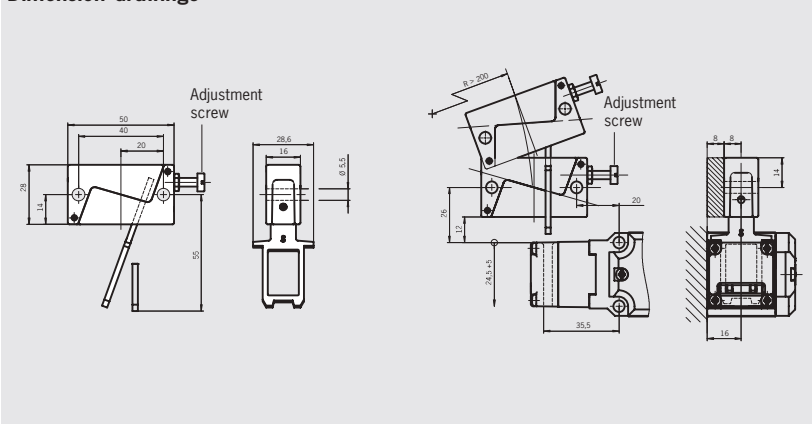
Hinged actuator

For door radii less than 1000 mm a hinged actuator should be used. The spring action movement of the actuator prevents damage due to the actuator jamming in the actuating head. Depending on the movement of the safety guard, the actuator must be selected for left/right or top/bottom.

Hinged actuator S-OU-SN

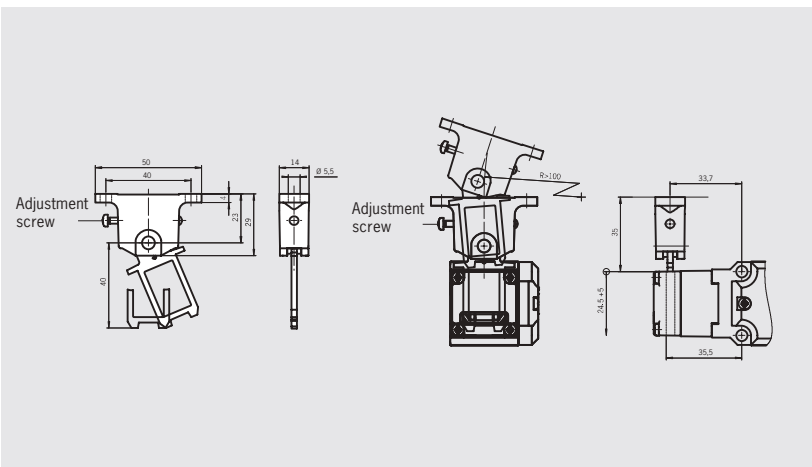
Safety guard hinged at top/bottom, overtravel 5 mm

Dimension drawings



Hinged actuator S-LR-SN

Safety guard hinged on left/right, overtravel 5 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|-----------------|---|-------------------------|----------------|---|
| Hinged actuator | S-OU-SN For top and bottom hinged doors overtravel 5 mm incl. 2 safety screws M5 x 25 | 200 | 1 ea. | 095 315 HINGED ACTUATOR-S-OU-SN |
| | S-LR-SN For left and right hinged doors overtravel 5 mm incl. 2 safety screws M5 x 10 | 100 | 1 ea. | 096 838 HINGED ACTUATOR-S-LR-SN |

For safety precautions see page 132
 For technical data see page 99

Hinged actuators for safety switches SGP/STA/STF/STP/STM

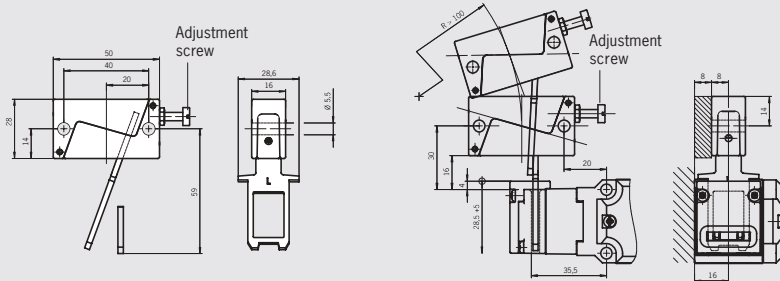
- ▶ Actuators made of stainless steel
- ▶ Two stainless safety screws per actuator
- ▶ For top and bottom hinged doors
- ▶ For right and left hinged doors

Hinged actuator

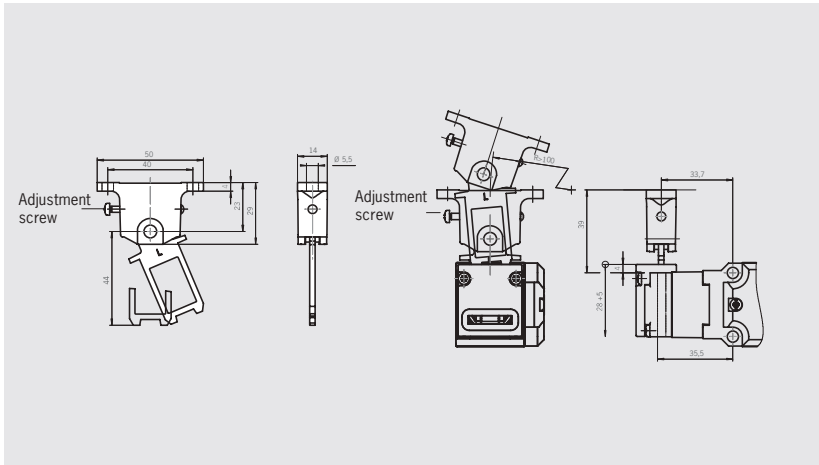
For door radii less than 1000 mm a hinged actuator should be used. The spring action movement of the actuator prevents damage due to the actuator jamming in the actuating head. Depending on the movement of the safety guard, the actuator must be selected for left/right or top/bottom.

Hinged actuator S-OU-LN for insertion funnel
Safety guard hinged at top/bottom, overtravel 5 mm

Dimension drawings



Hinged actuator S-LR-LN for insertion funnel
Safety guard hinged on left/right, overtravel 5 mm



Ordering table

| Designation | Version | Min. door radius r [mm] | Packaging unit | Order No. |
|-----------------|---|-------------------------|----------------|---|
| Hinged actuator | S-OU-LN For top and bottom hinged doors overtravel 5 mm incl. 2 safety screws M5 x 25 | 200 | 1 ea. | 096 697 HINGED ACTUATOR-S-OU-LN |
| | S-LR-LN For left and right hinged doors overtravel 5 mm incl. 2 safety screws M5 x 10 | 100 | 1 ea. | 096 844 HINGED ACTUATOR-S-LR-LN |

Insertion funnels/adapters

- ▶ **Insertion funnel**
- ▶ **Adapter NP-K**

Insertion funnel

If an insertion funnel is used, even inexactly positioned actuators are inserted reliably in the actuating head due to the large opening aperture, thus protecting the safety switch against mechanical influences.

- ▶ Cannot be used in conjunction with TP safety switches with increased overtravel from top
- ▶ The insertion funnel for TP can only be used in conjunction with an actuator with long overtravel
- ▶ The insertion funnel for STP can only be used in conjunction with an actuator for insertion funnel

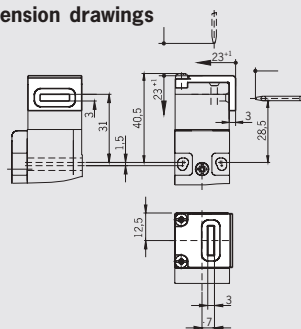
Adapter NP-K

The adapter NP-K is used for top entry overtravel applications for the NP series.

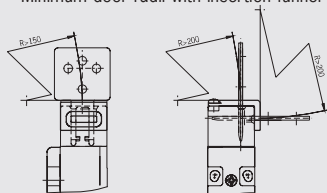
- ▶ The adapter **cannot** be used for safety switches of the GP/TP series
- ▶ 4 screws 3 x 38 (not safety screws) are supplied

Insertion funnel For safety switches NM..VZ

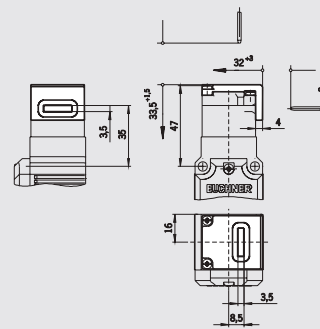
Dimension drawings



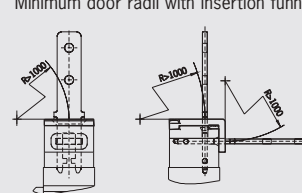
Minimum door radii with insertion funnel



Insertion funnel For safety switches NP..A/GP/TP..A

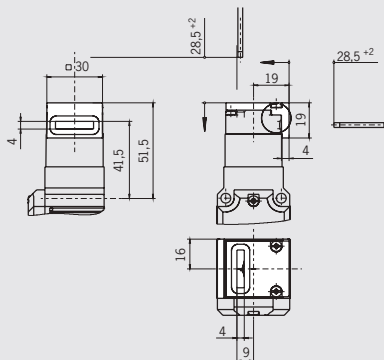


Minimum door radii with insertion funnel



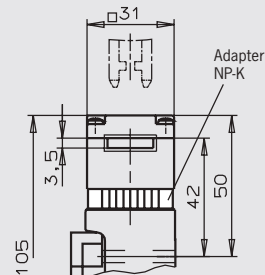
Insertion funnel For safety switches SGP/STA/STF/STP/STM

Dimension drawings



Minimum door radius with insertion funnel
R > 300 mm

Adapter NP-K For safety switches NP



Ordering table

| Designation | Version | Use | Order No. |
|------------------|-----------------------------|---|---|
| Insertion funnel | Incl. 2 fastening screws | For safety switches NM..VZ | 083 565 Insertion funnel M |
| | | For safety switches NP..A/GP/TP..A without adapter | 086 237 Insertion funnel NP/GP/TP |
| | | For safety switches SGP/STA/STF/STP/STM | 093 157 Insertion funnel STP/STM |
| Adapter NP-K | Incl. 4 fastening screws | For safety switches NP | 074 578 Adapter NP-K |

Mounting plates EMP for safety switches TP...A, STA, STF and STP

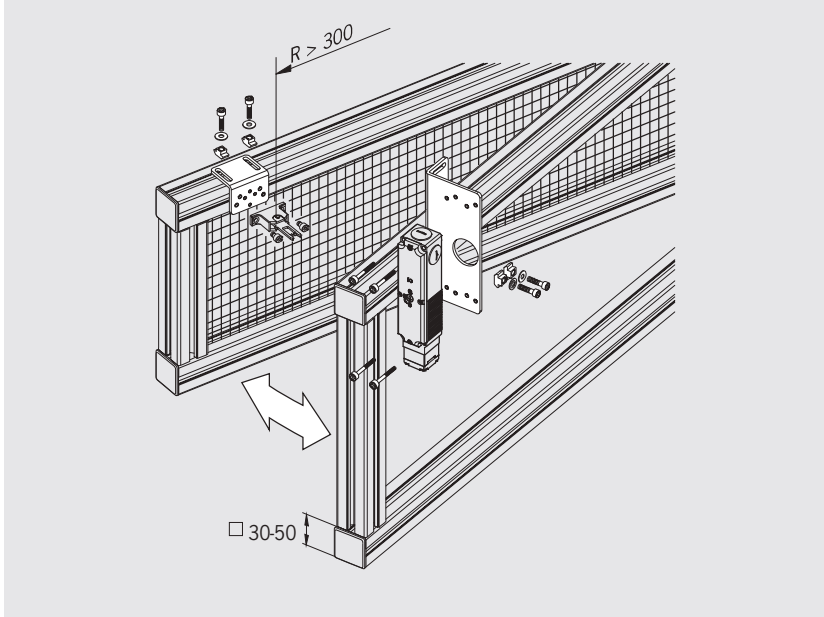
- ▶ For vertical and horizontal mounting of safety switches TP...A, STA, STF and STP

The mounting plates are used for fastening safety switches TP...A, STA, STF and STP and actuators to safety guards. The safety switches can be attached vertically and horizontally.

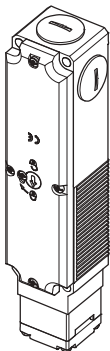
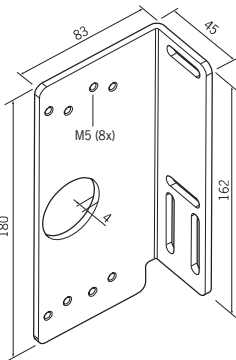
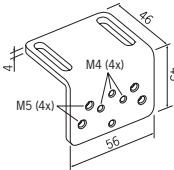


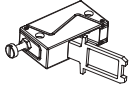
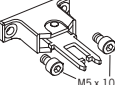
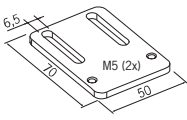
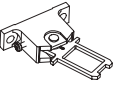
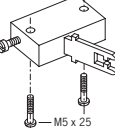
Note

- ▶ Mounting plate material: St37 galvanized

Mounting example, safety switch vertical



Ordering table

| Switch | Installation method switch | Mounting plate switch | Mounting plate actuator | Actuator | | Minimum distance hinged axis to switch | |
|---|--------------------------------|--|---|--|--|--|-----------|
| | | | | ST... | TP...A | ST... | TP...A |
|  <p>TP...A... STA... STF... STP...</p> | <p>A Vertical</p> | <p>093 456 EMP-SB</p>  | <p>093 457 EMP-B1</p>  | <p>095 740</p>  <p>page 82</p> | <p>070 038 074 577</p>  <p>page 79</p> | > 300 mm | > 1000 mm |
| | | | | <p>095 315 096 697</p>  <p>page 83/84</p> | <p>059 440 074 573</p>  <p>page 80/81</p> | > 200 mm | > 100 mm |
| | <p>B Horizontal</p> | <p>093 458 EMP-B2</p>  | <p>096 838 096 844</p>  <p>page 83/84</p> | <p>070 050 074 572</p>  <p>page 80/81</p> | > 100 mm | > 90 mm | |

Mounting bracket for safety switches NM and NP

- ▶ For vertical and horizontal mounting of safety switches NM and NP

The mounting bracket is used for fastening safety switches NM and NP to safety guards. The safety switches can be attached horizontally or vertically.

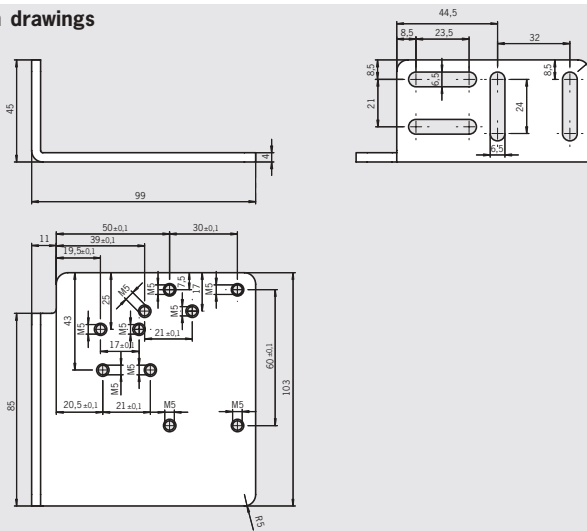
Notes

- ▶ Mounting plate material: St37 galvanized

Mounting bracket

For safety switches series NM and NP

Dimension drawings



Ordering table

| Designation | Use | |
|--------------------------------|---|---|
| Mounting bracket NM, NP | For safety switches series NM and NP horizontal and vertical mounting | 085 753 Mounting bracket NM, NP |

Plug connector M12

- ▶ Plug connector M12 with cable
- ▶ 90° angled optional

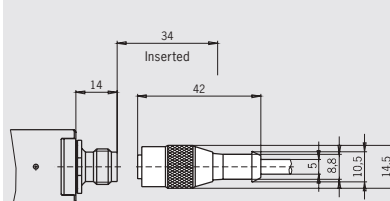
Cable

Cable sleeve PUR, color black, halogen-free, flame retardant. Reduction of toxic gases and smoke in case of fire. Wire cross-section 0.25 mm².

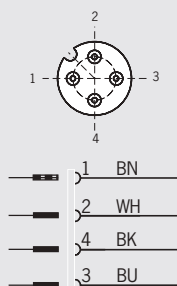
Plug connector SGLF with cable

M12 plug, 4-pin

Dimension drawings

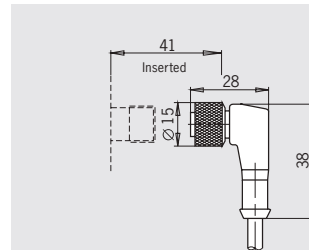


Wiring diagram (view of connection side)

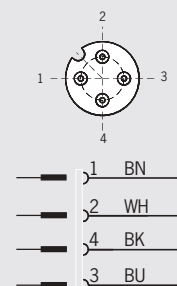


Plug connector SWLF with cable

M12 plug, 4-pin



Wiring diagram (view of connection side)



Ordering table

| Designation | Number of pins | Version | Cable length |
|-------------|----------------|--|-------------------------------|
| | | | 5 m |
| SGLF | 4 | Female plug M12 for male plug SM4 | 035 613 SGLF4-5000P |
| SWLF | 4 | Female plug M12 bent for male plug SM4 | 041 091 SWLF4-5000P |

Plug connectors SR6 and SR11

- ▶ Plugs and sockets
- ▶ Crimp contacts
- ▶ 90° angled optional
- ▶ Cable optional
- ▶ Coding shells

Angled plug connector

On plug connectors with cables the direction of the cable exit can be chosen. On plug connectors without cables the direction can be adjusted.

Male socket

For fitting in safety switches.

Coding shells

Two coding shells and screws. If used only matching connectors can be mated.

Cable (optional)

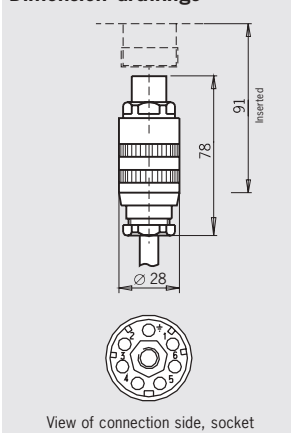
Cable sleeve PUR, color gray, wire cross-section 1.0 mm² (individual lines numbered).

Pin assignment for plug with cable

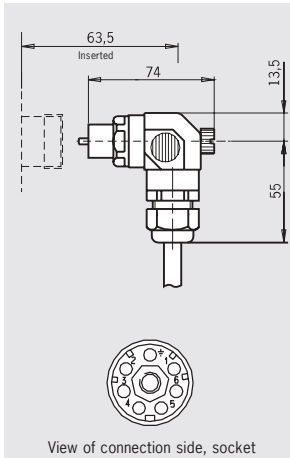
| SR6 | | SR11 | |
|-----|------|------|------|
| Pin | Wire | Pin | Wire |
| 1 | 1 | 1 | 1 |
| 2 | 2 | 2 | 2 |
| 3 | 3 | 3 | 3 |
| 4 | 4 | 4 | 4 |
| 5 | 5 | 5 | 5 |
| 6 | 6 | 6 | 6 |
| ⊕ | 7 | 7 | 7 |
| | | 8 | 8 |
| | | 9 | 9 |
| | | 10 | 10 |
| | | 11 | 11 |
| | | ⊕ | 12 |

Female plug SR6 EF 6-pin + PE

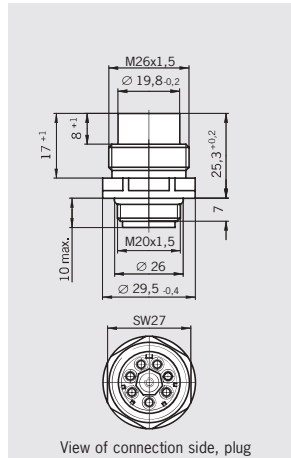
Dimension drawings



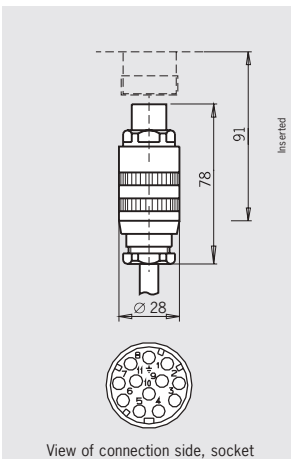
Female plug SR6 WF angled 6-pin + PE



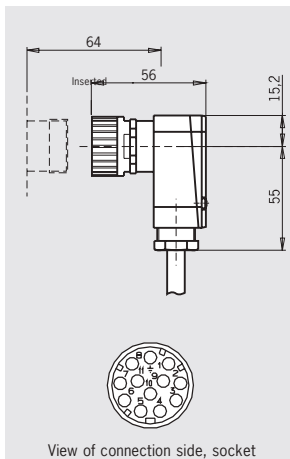
Male socket SR6 AM 6-pin + PE



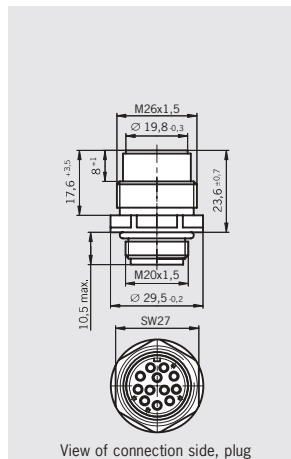
Female plug SR11 EF 11-pin + PE



Female plug SR11 WF angled 11-pin + PE



Male socket SR11 AM 11-pin + PE



Ordering table

| Designation | Version | Cable | | | | |
|-----------------------------------|---|------------------------|------------------------|-------------------------|-------------------------|-------------------------|
| | | None | 5 m | 10 m | 15 m | 25 m |
| SR6 ¹⁾ 6-pin + PE | EF Female plug | 013 176 SR6EF | 077 632 SR6EF-5000 | 077 633 SR6EF-10000 | 077 634 SR6EF-15000 | - |
| | WF Female plug angled | 024 999 SR6WF | 077 638 SR6WF-5000 | 077 639 SR6WF-10000 | 077 640 SR6WF-15000 | - |
| | K Coding shells | 013 178 SR6K | - | - | - | - |
| | AM Male socket, connection M20 x 1.5 | 087 180 SR6AM2-M20 | - | - | - | - |
| SR11 ¹⁾ 11-pin + PE | EF Female plug | 070 859 SR11EF | 077 629 SR11EF-5000 | 077 630 SR11EF-10000 | 077 631 SR11EF-15000 | 094 749 SR11EF-25000 |
| | WF Female plug angled | 054 773 SR11WF | 077 635 SR11WF-5000 | 077 636 SR11WF-10000 | 077 637 SR11WF-15000 | - |
| | AM Male socket, connection M20 x 1.5 | 091 296 SR11AM2-M20 | - | - | - | - |
| SR6 and SR11 | Socket crimp contacts Wire cross-section 0.5 - 1.5 mm | 071 260 SRF | - | - | - | - |
| | Pin crimp contacts Wire cross-section 0.5 - 1.5 mm | 071 261 SRM | - | - | - | - |

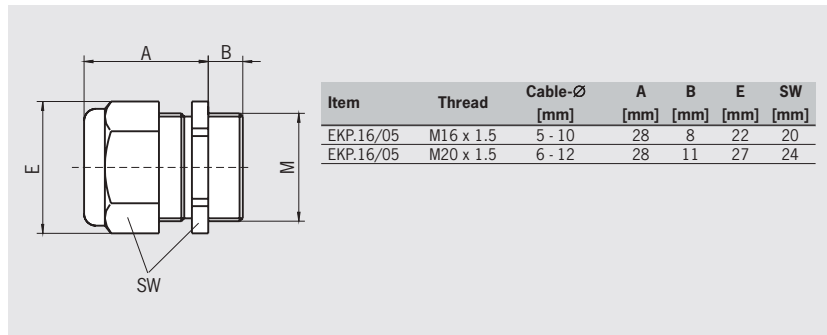
1) Crimp contacts supplied. For information on crimp contacts see page 95.

Cable glands

- ▶ M16 x 1.5
- ▶ M20 x 1.5

Cable glands

Suitable for various cable diameters. Versions available in plastic and metal.



Ordering table

| Thread | Version | Material | |
|-----------|-----------------------------|----------|----------------------|
| | | Metal | Plastic |
| M16 x 1.5 | Cable diameter 5 - 10 mm | - | 084 572 EKPM16/05 |
| | | - | 086 233 EKPM20/06 |
| M20 x 1.5 | Cable diameter 6 - 12 mm | - | 086 233 EKPM20/06 |
| | | - | 086 233 EKPM20/06 |

LED displays for safety switches GP/ TP and STP

- ▶ LED set
- ▶ Built-in LED

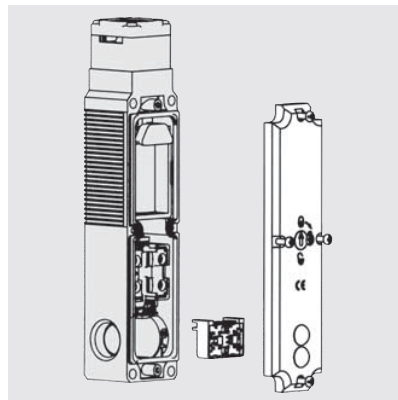
LED set

Consisting of cover with lamp caps, LED module with rectifier and two LEDs (green/red). For retrofitting safety switches TP and STP with an LED display.
Operating voltage AC/DC 24 V +10%, -15%.

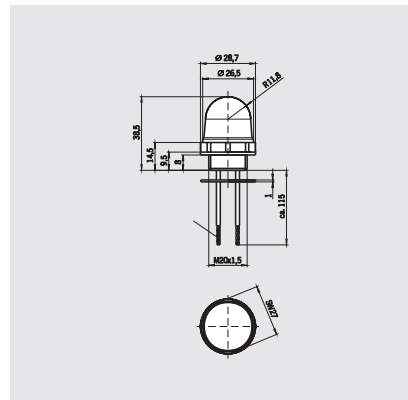
Built-in LED

The built-in LED is suitable for direct installation in one of the M20 x 1.5 threads of the three cable entries of the safety switches GP/TP/STP. The built-in LED indicates to the user whether the switch is locked or whether the door is open/closed.
The switching element can be wired individually.
Operating voltage DC 24 V +10%, -15%.

LED set
For safety switches TP/STP



Built-in LED
For safety switches GP/TP/STP



Ordering table

| Designation | Version | Use | Packaging unit | Order No. |
|------------------------|---|-----------------------------------|----------------|---------------------------------|
| LED set | Incl. cover with lamp caps and LED module with rectifier and 2 LEDs (red/green) | For safety switches TP | 1 ea. | 093 752 LED set TP |
| | | For safety switches STP | 1 ea. | 098 035 LED set STP |
| Built-in LED (IP65) | Color red for cable entry M20 x 1.5, with seal light radiation to side | For safety switches GP/TP/STA/STP | 1 ea. | 087 423 LED M20x1.5 |
| | Color red for cable entry M20 x 1.5, with seal light radiation to front | For safety switches GP/TP/STA/STP | 1 ea. | 095 510 LED-F M20x1.5 |

For safety precautions see page 132
For technical data see page 99

Miscellaneous accessories

- ▶ **Latch spring for increased retention force**
- ▶ **Lockout bar**
- ▶ **Lock for mechanical release**

Latch spring

Provides an increased retention force of approx. 30N for the safety switches NP and GP or TP in unlocked condition.

May only be used in conjunction with the straight actuator with rubber bush (Order No. 070 046).

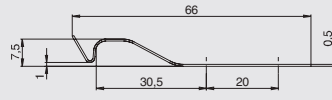
Lockout bar

With the safety door open, can be slid into the actuating head on a switch with separate actuator (NP/GP/TP) instead of an actuator. Removal can be prevented using a commercially available padlock (max. 2 ea.). For the protection of people in areas with a possible hazard.

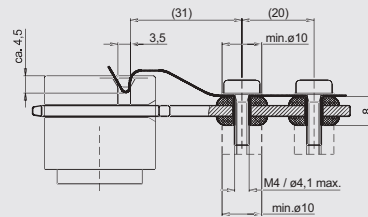
Latch spring for increased retention force

For safety switches NP/GP/TP

Dimension drawings

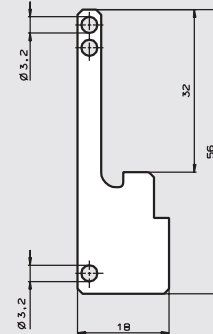


Installation example



Lockout bar

For safety switches NP/GP/TP



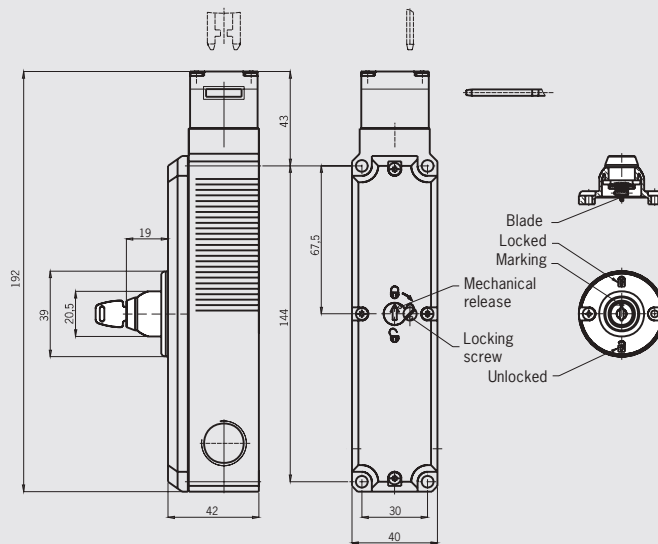
Lock

The lock is used in combination with safety switch TP/STP. The mechanical key release enables authorized personnel to actuate the mechanical release using the related key in certain situations. The unlocking mechanism holds the solenoid in the "unlocked" position. Two screws are used to fix the lock to the cover of the safety switch TP/STP (above the mechanical release).

- ▶ Order safety switch TP/STP separately
- ▶ 2 keys are included
- ▶ Every safety switch of the series TP/STP can be upgraded to include a lock

Lock

For safety switches TP/STP



Ordering table

| Designation | Version | Use | Order No. |
|--------------|---|------------------------------|--|
| Lockout bar | 2 holes | For safety switches NP/GP/TP | 070 651 Lockout bar P |
| Latch spring | | For safety switches NP/GP/TP | 076 501 Latch spring NP/TP |
| Lock | Unique locking (unique key needed to open) | For safety switches TP/STP | 084 177 Lock TP |
| | Identical locking (identical locks) | For safety switches TP/STP | 086 236 Lock TP |
| | Replacement key (2 ea.) for identical locking | For safety switches TP/STP | 099 434 Replacement key for identical TP |

Miscellaneous accessories

- ▶ Wire front release (bowden)
- ▶ Safety screws
- ▶ Replacement screws

Wire front release (bowden)

As escape release or emergency unlocking facility in the case of inaccessible installation.

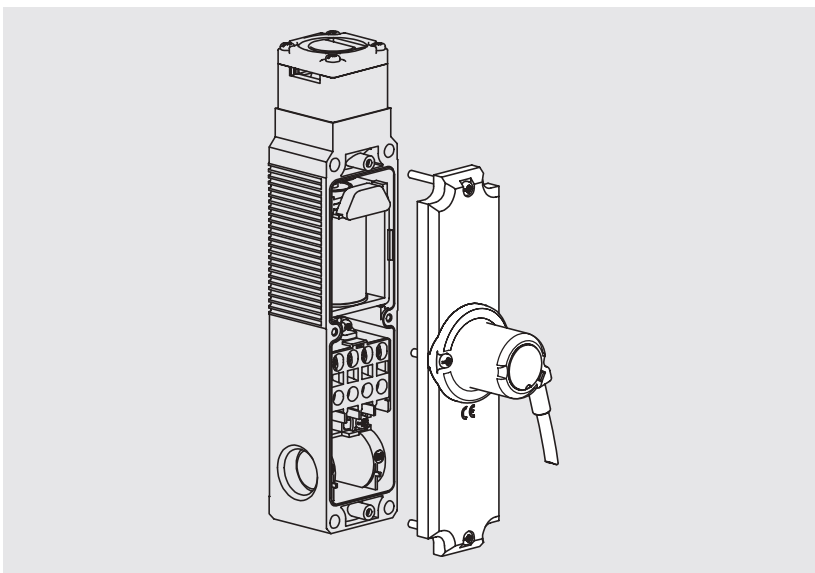
Safety screws

To prevent unscrewing of actuators and actuating heads. The screws can be tightened using a normal tool, but cannot be removed again.

Replacement screws

For mounting actuating heads (not safety screws).

Front wire release (bowden) for safety switches TP/STP



Ordering table

| Designation | Version | Use | Order No. |
|---|--|---|---------------------------------|
| Wire front release (bowden) | Pre-assembled incl. cover and pull wire with 3 m length (2 m sheathed) | For safety switches TP | 096 230 BW-TP-C-2000 |
| | | For safety switches STP | 097 952 BW-STP-C-2000 |
| Safety screws VPE: 100 ea. | M5 x 25 | For hinged actuators for top and bottom hinged doors of series NM..VZ, NP..., GP... and TP... | 073 457 M5x25/V100 |
| | M5 x 10 Material: stainless steel | For actuators straight/bent/hinged actuators for right and left hung doors of series NM..VZ, NP..., GP... and TP... | 073 455 M5x10/V100 |
| | M4 x 14 | For all actuators in series NM..VZ | 074 063 M4x14/V100 |
| | M4 x 14 Material: stainless steel | For actuators straight/bent/hinged with bush of series NP..., GP... and TP... | 086 232 M4x14/V100 |
| | PL3x30 | Cap screws for series NP...A, GP... and TP...A | 075 532 PL3x30/V100 |
| | PL3x26 | Cap screws for series NM..AL, NM..AG, NM..AK, NM..AV and NM..VZ | 085 576 PL3x26/V100 |
| | PL3x8 | Cap screws for series NM..HB, NM..KB, NM..RB and NM..WO | 085 577 PL3x8/V100 |
| Replacement screws VPE: 100 ea. (not safety screws) | PL3x30 Material: stainless steel | Cap screws for series NP...A, GP... and TP...A | 082 237 PL3x30/V100 |
| | PL3x38 | Cap screws for series NP...K and TP...K | 076 755 PL3x38/V100 |

For safety precautions see page 132
For technical data see page 99

Bolts for safety guards for safety switches NM

- ▶ For left or right hinged doors



Features

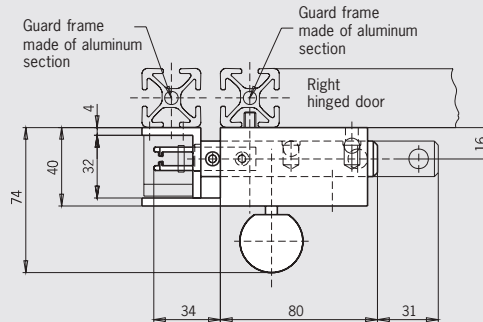
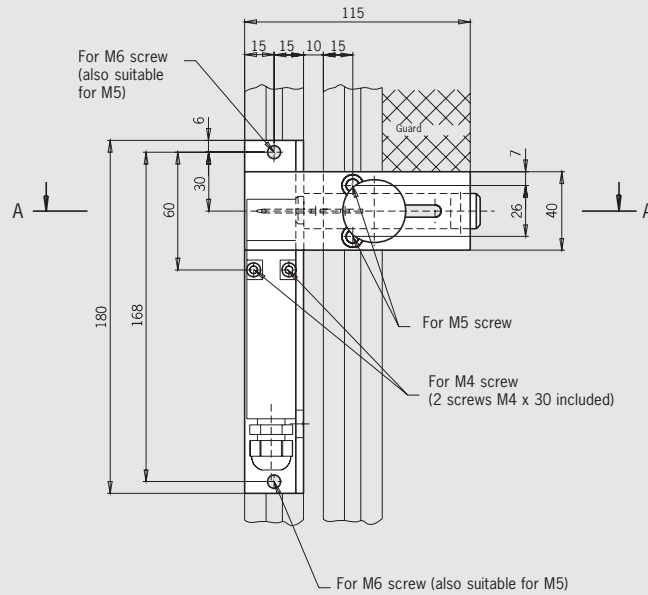
- ▶ Easily fitted to standard aluminum profiles and machine covers by screw connection
- ▶ Distinctive yellow color for easy recognition
- ▶ Symmetrical design for doors hinged on the right or left
- ▶ No additional door handle necessary
- ▶ Bolt with detent mechanism in opened position
- ▶ Through hole on the bolt permits attachment of padlocks

Notes

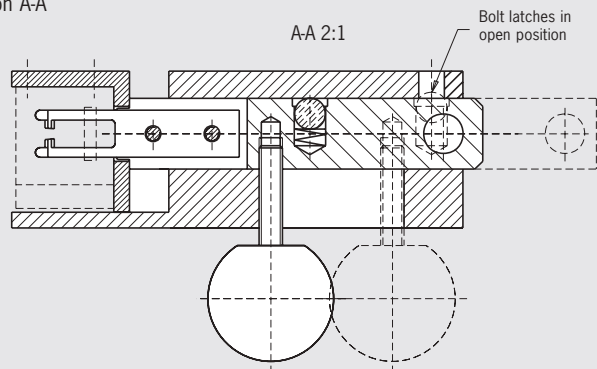
- ▶ Actuator and switch bracket included
- ▶ Please order safety switch separately

Bolt for safety switches NM..VZ

Dimension drawings



Section A-A

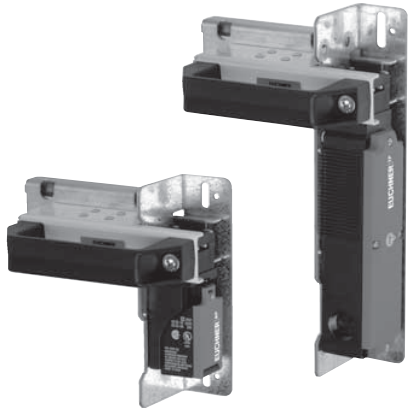


Ordering table

| Designation | Detent mechanism | Version | Order No. |
|-------------------|------------------|--|-------------------------------------|
| Bolt NM | None | For right or left hinged doors Actuator and switch bracket included | 077 233 Bolt NM |
| Switch bracket NM | | Separate | 077 245 Switch bracket NM |

Bolt for safety guards for safety switches NP, GP and TP

- ▶ For left or right hinged doors



Features

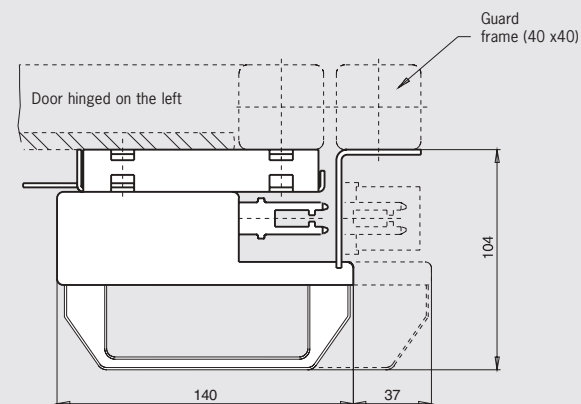
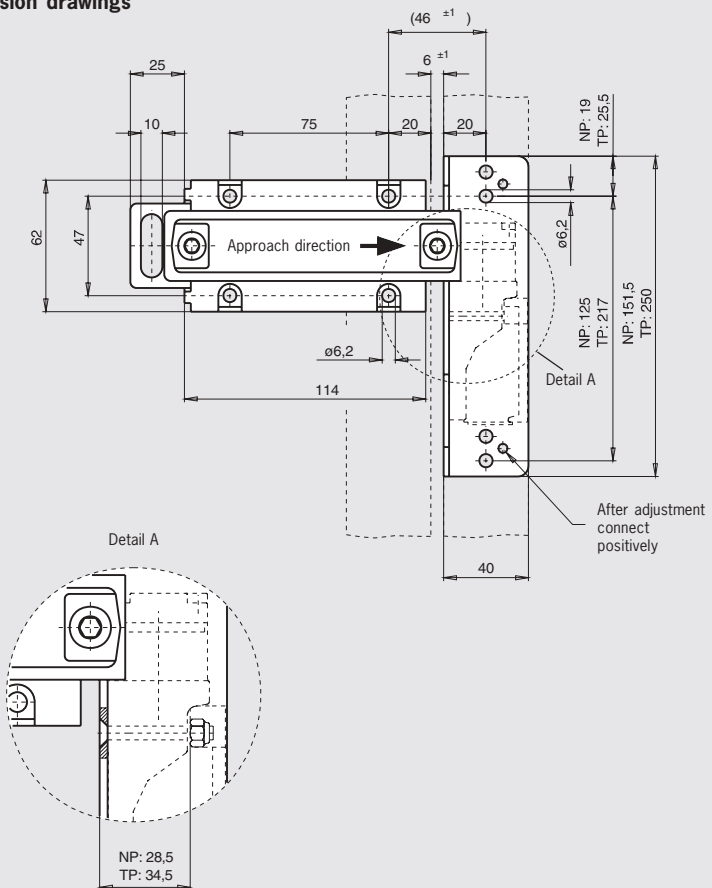
- ▶ Easily fitted to standard aluminum profiles and machine covers by screw connection
- ▶ Distinctive yellow color for easy recognition
- ▶ Symmetrical design for doors hinged on the right or left
- ▶ No additional door handle necessary
- ▶ Automatic detent mechanism when bolt is moved to the locked position (only available on **bolt 1 NP/TP** version)
- ▶ Detent mechanism prevents unintentional opening of the hinged door
- ▶ Slot on the bolt permits attachment of padlocks
- ▶ Identical bolt for safety switches series **NP...AS** and **TP...A**

Notes

- ▶ Switch bracket **NP** is suitable only for the series **NP...AS**
- ▶ Switch bracket **TP** is suitable only for the series **TP...A** and **GP**
- ▶ Actuator included
- ▶ Please order safety switch and switch bracket separately

Bolt for safety switches NP..AS/GP.../TP...A

Dimension drawings



Ordering table

| Designation | Detent mechanism | Version | Order No. |
|--------------------------|--|---|-------------------------------------|
| Bolt 0 NP/TP | None | For right or left hinged doors (also for GP) | 073 535 Bolt 0 NP/TP |
| Bolt 1 NP/TP | 1 x detent mechanism closed | For right or left hinged doors (also for GP) | 073 536 Bolt 1 NP/TP |
| Switch bracket NP | | Separate | 073 538 Switch bracket NP |
| Switch bracket TP | | Separate (also for GP) | 073 539 Switch bracket TP |

Bolt for safety guards for safety switches GP and TP

- ▶ Lever for escape release from the danger area (optional)



Special features

(only for bolt TP-AF and TP-CF with escape release)

- ▶ Bolt with detent mechanism
The bolt latches in open position to prevent unintended closing
- ▶ Lever for escape release from the danger area

Features

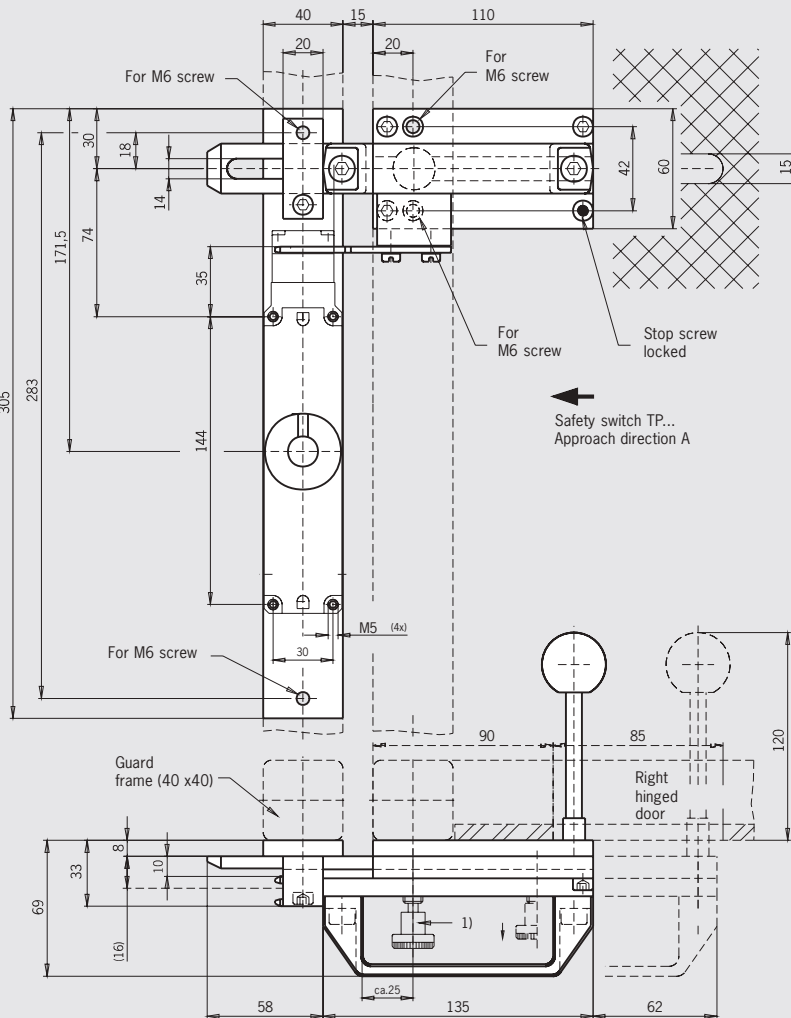
- ▶ Easily fitted to standard aluminum profiles and machine covers by screw connection
- ▶ Distinctive yellow color for easy recognition
- ▶ Robust version for heavy doors
- ▶ No additional door handle necessary
- ▶ Slot on the bolt permits attachment of padlocks

Notes

- ▶ The bolts are suitable only for the series **TP...A** and **GP**
- ▶ Actuator included
- ▶ Please order safety switch separately

Bolt for safety switches GP.../TP...A/TP..A.-C1743/TP...A.-C1993

Dimension drawings (here: shown with escape release)



1) Bolt with detent mechanism (only for bolt TP-AF and TP-CF with escape release):
Latches in open position and prevents unintended closing of the bolt.
Unlocked by pulling the detent knob upward.

Ordering table

| Designation | Detent mechanism | Version | Order No. |
|-------------|------------------|---|------------------------------|
| Bolt TP-AF | Detent knob | For right hinged doors with escape release | 086 186 Bolt TP-AF |
| Bolt TP-CF | Detent knob | For left hinged doors with escape release | 086 188 Bolt TP-CF |
| Bolt TP-A | None | For right hinged doors without escape release (also for GP) | 084 430 Bolt TP-A |
| Bolt TP-C | None | For left hinged doors without escape release (also for GP) | 084 432 Bolt TP-C |

Bolts for safety guards for safety switches STP/STA/SGP

- ▶ Lever for escape release from the danger area (optional)



Special features

(only for bolt STP-AF and STP-CF with escape release)

- ▶ Bolt with detent mechanism
The bolt latches in open position to prevent unintended closing
- ▶ Lever for escape release from the danger area (optional)

Features

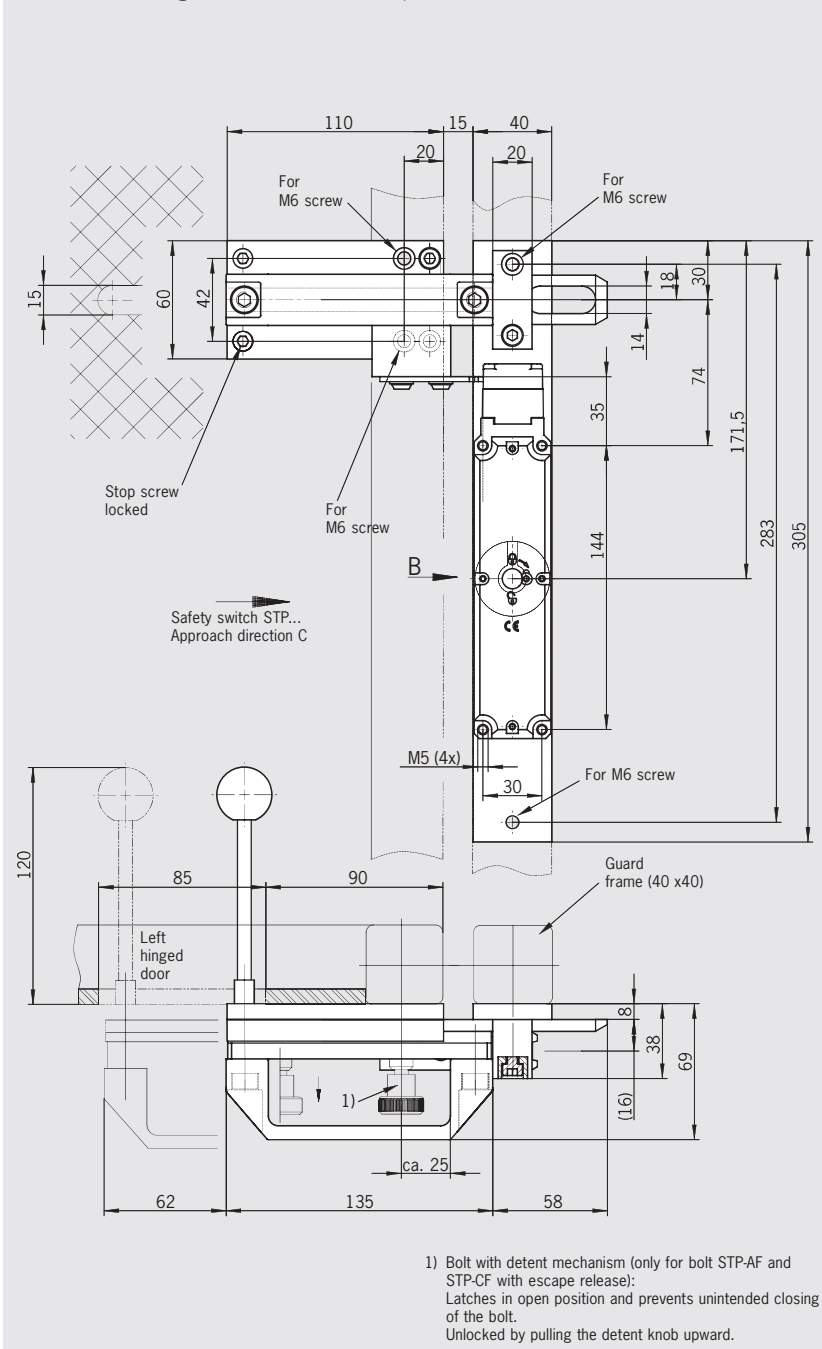
- ▶ Easily fitted to standard aluminum profiles and machine covers by screw connection
- ▶ Distinctive yellow color for easy recognition
- ▶ Robust version for heavy doors
- ▶ No additional door handle necessary
- ▶ Slot on the bolt permits attachment of padlocks

Notes

- ▶ The bolts are only suitable for series **STP.../STA.../SGP...**
- ▶ Actuator included
- ▶ Please order safety switch separately

Bolts for safety switches series STP.../STA.../SGP...

Dimension drawings (here: shown with escape release)



Ordering table

| Designation | Detent mechanism | Version | Order No. |
|--------------------|--------------------|---|-------------------------------|
| Bolt STP-AF | Detent knob | For right hinged doors with escape release | 096 390 Bolt STP-AF |
| Bolt STP-CF | Detent knob | For left hinged doors with escape release | 096 391 Bolt STP-CF |
| Bolt STP-A | None | For right hinged doors without escape release | 096 384 Bolt STP-A |
| Bolt STP-C | None | For left hinged doors without escape release | 096 385 Bolt STP-C |

Bolt for safety guards for safety switches GP, SGP, TP, STA and STP

- ▶ **Material:** reinforced plastic
- ▶ **Lever for escape release from the danger area**
- ▶ **For left or right hinged doors**



Special features

- ▶ Bolt with detent mechanism (only for bolts with escape release)
The bolt latches in open position to prevent unintended closing

Features

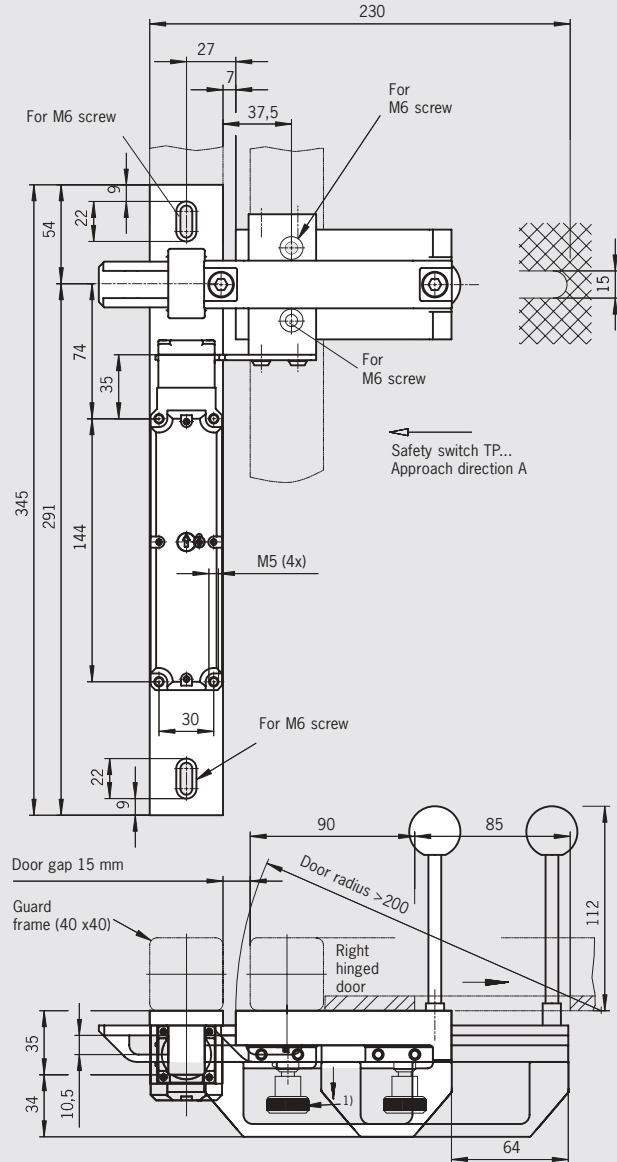
- ▶ Easily fitted to standard aluminum profiles and machine covers by screw connection
- ▶ Distinctive yellow color for easy recognition
- ▶ Robust version for heavy doors
- ▶ No additional door handle necessary
- ▶ Slot on the bolt permits attachment of padlocks

Notes

- ▶ Functions only in conjunction with switch bracket **TP-GFK**
- ▶ Actuator included
- ▶ Please order safety switch separately
- ▶ Order switch bracket separately

Bolt for safety switches GP.../TP...A/TP.A.-C1743/TP...A.-C1993

Dimension drawings (here: shown with escape release)



1) Bolt with detent mechanism (only for bolts with escape release):
Latches in open position and prevents unintended closing of the bolt.
Unlocked by pulling the detent knob upward.

Ordering table

| Designation | Detent mechanism | Version | Order No. |
|------------------------------|--------------------|--|---|
| Bolt TP-GFK-F | Detent knob | For right or left hinged doors with escape release (also for GP) | 097 602 Bolt TP-GFK-F |
| Bolt TP-GFK | Detent knob | For right or left hinged doors without escape release (also for GP) | 096 616 Bolt TP-GFK |
| Bolt STP-GFK | Detent knob | For right or left hinged doors without escape release (also for SGP/STA) | 098 121 Bolt STP-GFK |
| Switch bracket TP-GFK | | Separate (also for GP/SGP/STP/STA) | 096 613 Switch bracket TP-GFK |

List of plug connector suppliers

We provide no guarantee for the completeness and correctness of the ordering data given. The data was valid in October 2004. The related manufacturers reserve the right to make changes without notice. The plug connectors and accessories listed are also available from other manufacturers.

► Plug connectors and accessories

| Type | Version | Manufacturer's designation | |
|--------------------------------------|--|---|---|
| SVM5 5 pins | Female plug M12 | 99-0436-57-05 Cable socket | Binder www.binder-conector.de |
| | Female flange connector M12 | 09-3442-700-05 Flange connector with wires | |
| | Dummy plug M12 | 08-2425-000-000 Protective cap for socket with retaining strap | |
| CE5 3 pins + N + PE | Mating connector (socket) | CEE plug as per CEE standard | |
| C16-1 6 pins + PE | Female flange connector | T3107 500 Female receptacle | Amphenol-Tuchel www.amphenol-tuchel.com |
| | Female crimp contacts for C16-1, VPE 100 pcs. | VN02 016 0002 (1) Single contact, silver, 0.5-1.5 mm ² | |
| | Dummy plug | T6483 000 Protective cap for female receptacle | |
| MR 7, 8, 9, 10 and 12 pins | Straight female plug (7-pin), pre-assembled for built-in connector MR7 | MIN-7FPX-.. Female plugs with cable | MENCOM www.mencomcorp.com |
| | Straight female plug (8-pin), pre-assembled for built-in connector MR8 | MIN-8FPX-.. Female plugs with cable | |
| | Straight female plug (9-pin), pre-assembled for built-in connector MR9 | MIN-9FP-.. Female plugs with cable | |
| | Straight female plug (10-pin), pre-assembled for built-in connector MR10 | MIN-10FP-.. Female plugs with cable | |
| | Straight female plug (12-pin), pre-assembled for built-in connector MR12 | MIN-12FP-.. Female plugs with cable | |
| HAN10 10 pins + PE | Flange connector 1 cable exit | 19 20 010 0251 Socket housing 1 cable exit | Harting www.harting.com |
| | Socket contacts (installation for flange socket) | 09 20 010 3101 Socket contact insert crimp connection | |
| | Socket contacts for crimping | 09 33 000 6220 Socket crimp contacts 0.5 mm ² | |
| | Dummy plug | 09 20 010 5425 Cover | |
| RC17-Y coded 17-pin | Female flange connector, solder for male plug RC17Y) | RC-17S1Y122000 Flange plug connector 17-pin | Coninvers www.coninvers.com |
| | Blanking plug | RC-17P1N8A83NN Protective cap for socket with retaining strap | |

► Crimp and extraction tools

| For plug connectors | Function | Manufacturer's designation | |
|---------------------|-----------------|---|---|
| SR6 and SR11 | Crimp tool | 932 507-002 XCZ 0701 | Hirschmann www.hirschmann.com |
| | Extraction tool | 931 812-001 XWA 164 | |
| C16-1 | Crimp tool | TA0500 + TA0000163 + TA0002016001 Crimp pliers, jaws and contact receptacle | Amphenol-Tuchel www.amphenol-tuchel.com |
| | Extraction tool | FG 0300 1461 Extraction tool | |
| RC12 | Crimp tool | RC-Z 2378 Crimp pliers for machined contacts | Coninvers www.coninvers.com |
| | Extraction tool | RC-Z 2097 Extraction tool/insertion tool | |
| RC18 | Crimp tool | RC-Z 2378 Crimp pliers for machined contacts | Coninvers www.coninvers.com |
| | Extraction tool | RC-Z 2274 Extraction tool | |
| VP19 | Crimp tool | T98143 DAK 83S-30 / 11-7576T3 Insertion tool | Litton/Veam www.littonveam.com |
| | Extraction tool | 46592-MT50 / 11-7576T3 Removal tool | |
| UT23 | Crimp tool | Y16RCM Crimping tool for machined contacts | Burndy www.burndy.com |
| | Extraction tool | RX2025GE1 Extraction tool | |
| TB24 | Crimp tool | WT10-04 Crimp tool | Thomas & Betts www.tb.com |
| | Extraction tool | TRT16 Contact removal tool | |



Accessories for safety switches

| SR6 | | |
|--|---|-------------|
| Parameter | Value | Unit |
| Housing material | Plastic | |
| Number of pins | 7 (6 + PE) | |
| Cable diameter | 7 - 9 | mm |
| Nominal voltage max. | 250 | V AC/DC |
| Degree of protection according to IEC 60529 (inserted) | IP 65 | |
| Connection | Crimp contacts 0.5 to 1.5 mm ² | |



| SR11 | | |
|--|---|-------------|
| Parameter | Value | Unit |
| Housing material | Plastic | |
| Number of pins | 12 (11 + PE) | |
| Cable diameter | 8 - 10 | mm |
| Nominal voltage max. | 50 | V AC/DC |
| Degree of protection according to IEC 60529 (inserted) | IP 65 | |
| Connection | Crimp contacts 0.5 to 1.5 mm ² | |



| M12 with cable (SGLF, SWLF) | | |
|--|-------------------|-------------|
| Parameter | Value | Unit |
| Housing material | Metal / plastic | |
| Number of pins | 5 | |
| Nominal voltage max. | 30 | V AC/DC |
| Degree of protection according to IEC 60529 (inserted) | IP 68 | |
| Connection | 5 open cable ends | |



| Built-in LED | | |
|----------------------------------|---------------------------|-------------|
| Parameter | Value | Unit |
| Material of housing | ABS/PC blend, black | |
| Material of cap | Transparent polycarbonate | |
| Degree of protection (installed) | IP 65 | |
| Ambient temperature | -20 ... +50 | °C |
| Connection | 2 wires | |
| Mounting | M20 x 1.5 | |
| Operating voltage | 24 | V DC |
| Switch-on current | < 0.5 | A |
| Current consumption | 45 | mA |