

Plug connectors SS4, C16-1, RC12 and solenoid plugs

For safety switches series NZ and TZ

- Plugs and sockets
- Dummy plug
- Solenoid plugs

Blanking plug

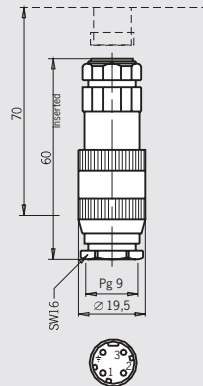
To cover the socket for the enabling switch on the safety switch TZ with socket RC12.

Plug connector for solenoid locking NZ.VZ.VS

- Without rectifier
For the connection of DC.
- With rectifier
For the connection of AC 110 V - AC 230 V.

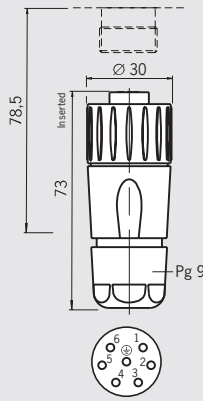
Male plug SS4 3-pin + PE

Dimension drawings



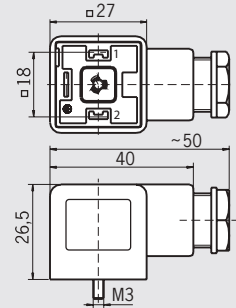
View of connection side, plug

Female plug C16-1 6-pin + PE

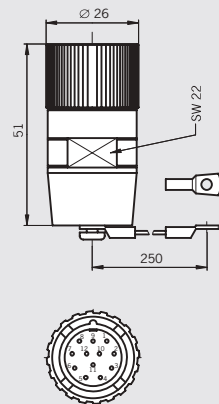


View of connection side, socket

Solenoid plug NZ.VZ.VS 2-pin + PE

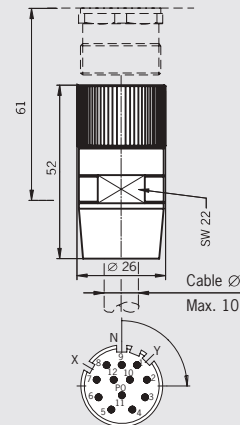


Blanking plug RC12 12-pin



View of connection side, plug

Male plug RC12 12-pin



View of connection side, plug

Ordering table

Designation	Version	Order No.
SS4 3-pin + PE	Male plug to socket BD4	002 787 SS4
C16-1 ¹⁾ 6-pin + PE	Female plug	043 861 Cable socket 6 + PE
RC12 ¹⁾ 12-pin	Male connector	073 294 RC-12P1N8A8096
	Blanking plug without bridges	073 293 RC-12P1N8A8300
Solenoid plug NZ..VZ..VS 2-pin + PE	For DC without rectifier	028 345 Plug connector for solenoid locking
	For AC with rectifier AC 110 V - AC 230 V	028 338 Plug connector with rectifier for solenoid locking

For information on crimp contacts see page 124.

1) Crimp contacts are included.

For safety precautions see page 164
For technical data see page 139

Plug connectors SR6 and SR11

For safety switches series NZ and TZ

- 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)

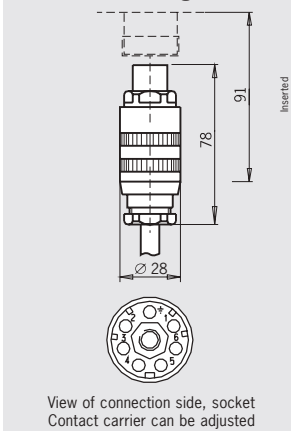
Cable sleeve PUR, color gray, wire cross-section 1.0 mm².

Pin assignment for plug with cable

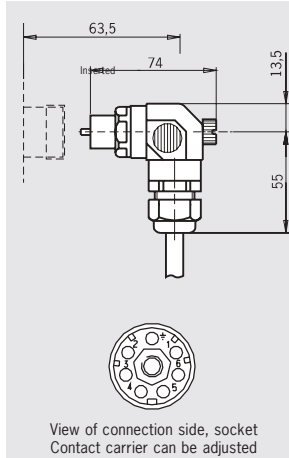
SR6		SR11	
Pin	Wire	Pin	Wire
1	1	1	1
2	2	2	2
3	3	3	3
4	4	4	4
5	5	5	5
6	6	6	6
y	7	7	7
		8	8
		9	9
		10	10
		11	11
		⊕	12

Female plug SR6 EF 6-pin + PE

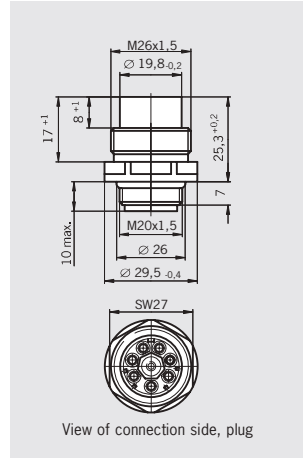
Dimension drawings



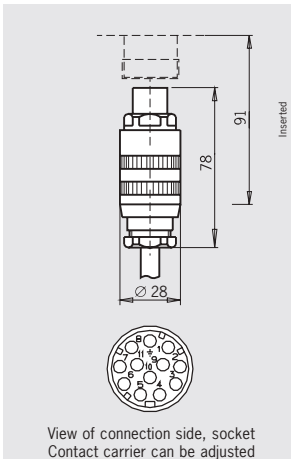
Female plug SR6 WF angled 6-pin + PE



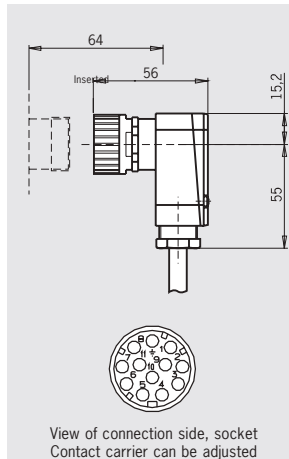
Male socket SR6 AM 6-pin + PE



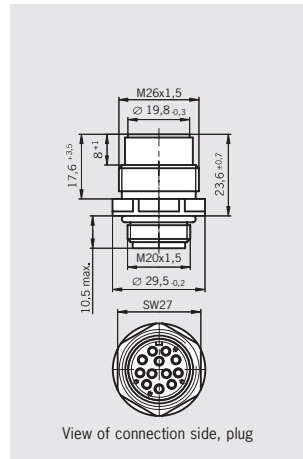
Female plug SR11 EF 11-pin + PE



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	20 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	098 128 SR6EF-20000	—
	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	096 632 SR11EF-20000	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 contact 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	—	—	—	—	—

For information on crimp contacts see page 124.

1) Crimp contacts are included.

Plug connectors SGLF and SWLF with cable

For safety switches series NZ and N1A

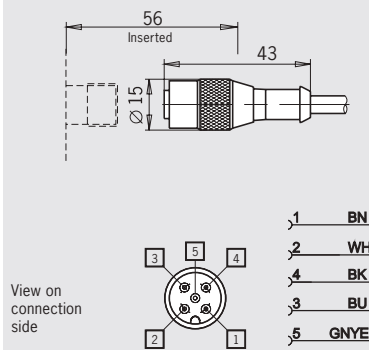
- Plug connector M12 with cable
- 90° angled optional

Cable

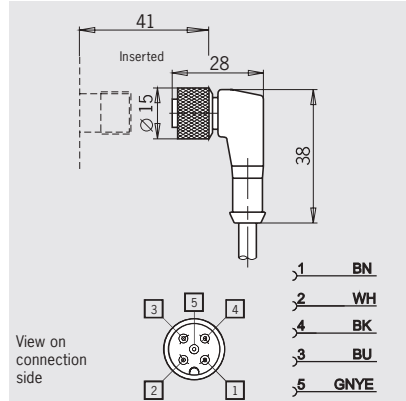
Cable sleeve PUR, color black, halogen-free, flame retardant. Reduction of toxic gases and smoke in case of fire. Wire cross-section 0.34 mm².

Plug connector SGLF with cable M12 plug, 5-pin

Dimension drawings



Plug connector SWLF with cable angled, M12 plug, 5-pin



Ordering table

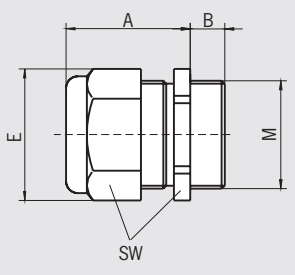
Type	Number of pins	Version	Cable length 5 m
SGLF	5	Female plug M12 for male plug SVM5	073 461 SGLF5-5000P
SWLF	5	Female plug M12 angled for male plug SVM5	073 462 SWLF5-5000P

Cable glands

- M12 x 1.5
- M16 x 1.5
- M20 x 1.5

Cable glands

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



Item	Thread	Cable Ø [mm]	A [mm]	B [mm]	E [mm]	SW [mm]
EKV.12/04	M12 x 1.5	4 - 6.5	20	5	15.5	14
EKV.16/04	M16 x 1.5	4 - 6.5	20	6	20	18
EKP.16/05	M16 x 1.5	5 - 10	28	8	22	20
EKV.16/06	M16 x 1.5	6.5 - 9.5	20	6	20	18
EKV.20/06	M20 x 1.5	6.5 - 9.5	20	6	24.4	22
EKP.20/06	M20 x 1.5	6 - 12	26	11	27	24
EKV.20/09	M20 x 1.5	9 - 13	20	6	24.4	22
EKV.12/06	NPT 1/2"	6 - 12	22	13	27	24
EKVP.12/06	NPT 1/2"	6 - 12	26	13	27	24

Ordering table

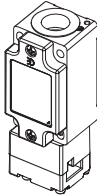
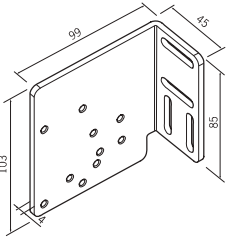
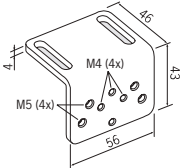
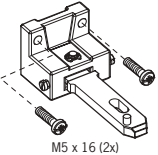
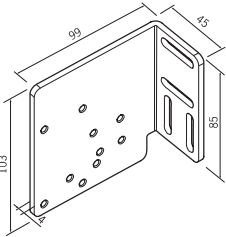
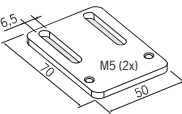
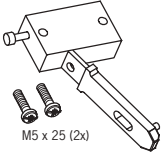
Thread	Version	Material	
		Metal	Plastic
M12 x 1.5	Cable diameter 4 - 6.5 mm	086 327 EKVM12/04	—
	Cable diameter 4 - 6.5 mm	086 328 EKVM16/04	—
M16 x 1.5	Cable diameter 5 - 10 mm	—	084 572 EKPM16/05
	Cable diameter 6.5 - 9.5 mm	086 330 EKVM16/06	—
M20 x 1.5	Cable diameter 6 - 12 mm	—	077 679 EKPM20/06
	Cable diameter 6.5 - 9.5 mm	077 683 EKVM20/06	—
	Cable diameter 9 - 13 mm	077 684 EKVM20/09	—
NPT 1/2"	Cable diameter 6 - 12 mm	077 691 EKVN12/06	077 692 EKPN12/06

► For vertical and horizontal mounting of safety switch NZ

Note

- ▶ Mounting plate material: St37 galvanized

[illegible]

Switch	Installation method	Mounting plate switch	Mounting plate actuator	Actuator	Minimum distance hinge axis to switch
NZ... 	A Vertical	085 753 Mounting plate NZ 	093 457 EMP-B1 	024 298 024 299  Page 104	> 400 mm
	B Horizontal		093 458 EMP-B2 	048 850 057 950  Page 104	> 165 mm

Miscellaneous accessories

- Lockout bar
- Insertion funnel

Lockout bar

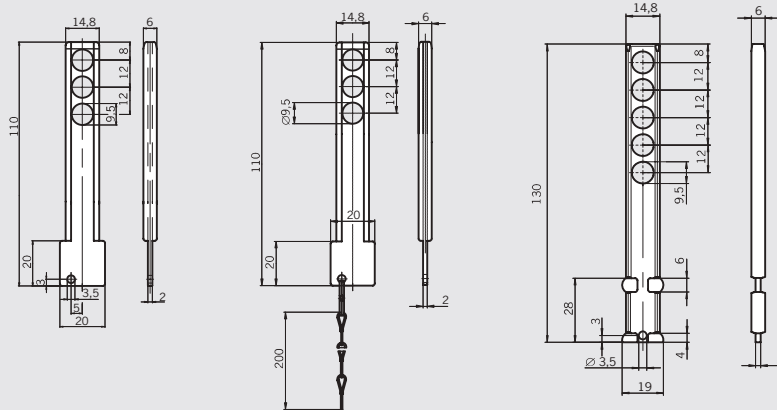
With the safety door open, can be slid into the actuating head on a switch with separate actuator instead of an actuator. Removal can be prevented using a commercially available padlock. For the protection of people in areas with a possible hazard. Cannot be used in combination with the protective plate.

Insertion funnel

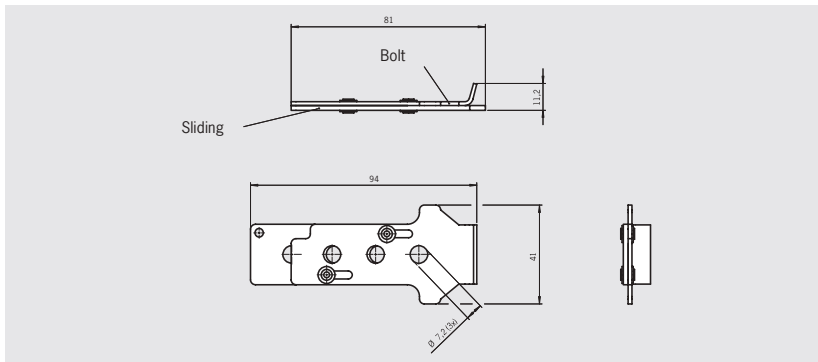
If an insertion funnel is used, even inexactly positioned actuators are inserted reliably in the actuating head due to the large opening aperture, thus protecting the safety switch against mechanical influences.

Lockout bars for safety switches NZ..VZ and TZ

Dimension drawings

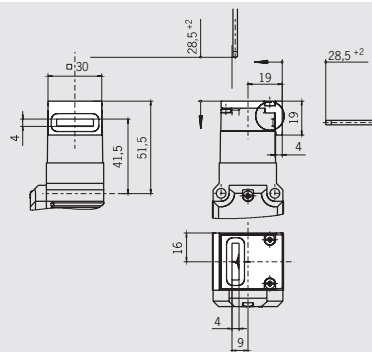


Lockout bar for safety switches NX and TX



Insertion funnel for safety switches STA/STP

Dimension drawings



Minimum door radius with insertion funnel
R > 300 mm

Ordering table

Designation	Version	Use	Order No.
Lockout bar	3 holes	For safety switches series NZ..VZ and TZ without protective plate	046 730 Lockout bar Z
	3 holes with chain	For safety switches series NZ..VZ and TZ without protective plate	091 305 Lockout bar with chain
	5 holes	For safety switches series NZ..VZ and TZ without protective plate	086 538 Lockout bar Z
	3 holes	For safety switches NX and TX	096 098 Lockout bar TX
Insertion funnel	Incl. 2 fastening screws	For safety switches STA/STP	093 157 Insertion funnel STA

Miscellaneous accessories

- ▶ Protective plate
- ▶ Replacement head for NZ..VZ
- ▶ Lead seal kit
- ▶ LED function display
- ▶ Safety screws

Protective plate

Optimal protection against tampering on safety switches with separate actuator (NZ..VZ and TZ). The protective plate prevents modification of the switch via the actuator outlet opening.

Replacement head for NZ..VZ

Replacement head for a safety switch with separate actuator (NZ..VZ). With 4 safety screws and replacement screws. As the switches are safety components, in case of defects we recommend replacing the entire safety switch. Not suitable for the safety switches TZ!

Lead seal kit

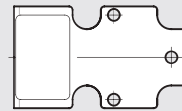
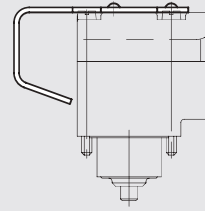
For sealing the mechanical release on the safety switch TZ. The locking screw is included.

Safety screws

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

Protective plate

Dimension drawings



Ordering table

Designation	Version	Use	Order No.
Protective plate		For safety switches with separate safety function (NZ..VZ and TZ)	059 136 Protective plate NZ/TZ
Replacement head NZ..VZ		Not suitable for safety switches TZ!	076 250 Actuating head NZVZ
Lead seal kit	Comprising seal and wire	For safety switches TZ with locking screw and key	048 257 Lead seal kit TZ
		For safety switches TZ with rotary emergency unlocking	087 256 Lead seal kit TZ-C1937
Safety screws VPE: 100 ea.	M4 x 14	For actuators 079 739, 079 740, 079 741 and 079 742	074 063 M4X14/V100
	M5 x 10	For straight actuators 016849 and 072251	073 455 M5X10/V100
	M5 x 16	For hinged actuators 024299 and 024298	073 456 M5X16/V100
	M5 x 25	For hinged actuators 048850 and 057950	073 457 M5X25/V100
	M3 x 40	For actuator head NZ and TZ	075 530 M3X40/V100
	M3 x 70	For actuator head NZ..VZ..VSE and NZ..VZ..VSM	075 531 M3X70/V100

For safety precautions see page 164
For technical data see page 139

Miscellaneous accessories

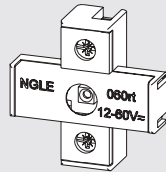
► LED function display

LED function display

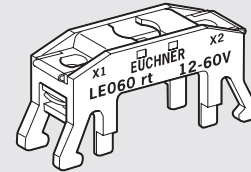
Upgrade kits with LEDs are available for the safety switches N1A and NZ. The intensity of the light from the indicators is always the same independent of the voltage applied.

LED function display

Dimension drawings



NGLE...



LE...

Ordering table

Designation	Version	Voltage					
		12-60 V red LED	12-60 V yellow	12-60 V green	110 V red LED	230 V red LED	230 V yellow LED
LED function display NGLE	For safety switches NZ	029 220	029 222	029 221	045 822	045 825	045 827
		NGLE060RT	NGLE060GE	NGLE060GR	NGLE110RT	NGLE220RT	NGLE220GE
LED function display LE	For safety switches N1A	035 495	035 497	035 496	045 579	045 582	045 584
		LE060RT	LE060GE	LE060GR	LE110RT	LE220RT	LE220GE

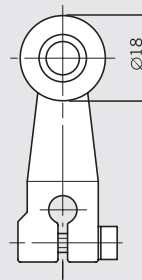
► Replacement roller arm

Replacement roller arm

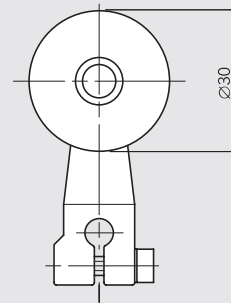
Replacement roller lever for safety switches with safety function with lever arm. As the switches are safety components, in case of defects we recommend replacing the entire switch. Complete switch heads are not available.

Replacement roller arm

Dimension drawings



NHS (steel roller)
NHB (plastic roller)



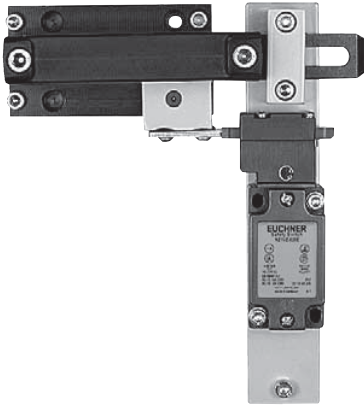
NHBC569

Ordering table

Designation	Version	Order No.
Replacement roller arm	Replacement plunger for NZ.HS	012 043 Roller arm NHS
	Replacement plunger for NZ.HB	012 042 Roller arm NHB
	Replacement plunger for NZ.HB...C569	012 044 Roller arm NHBC569

Bolts for safety guards

- ▶ For safety switches NZ.VZ und NZ.VZ.VS
- ▶ Bolt NZ-B with ball detent mechanism
- ▶ Bolt NZ-R2 with detent knob
- ▶ For right or left hinged doors



Special features

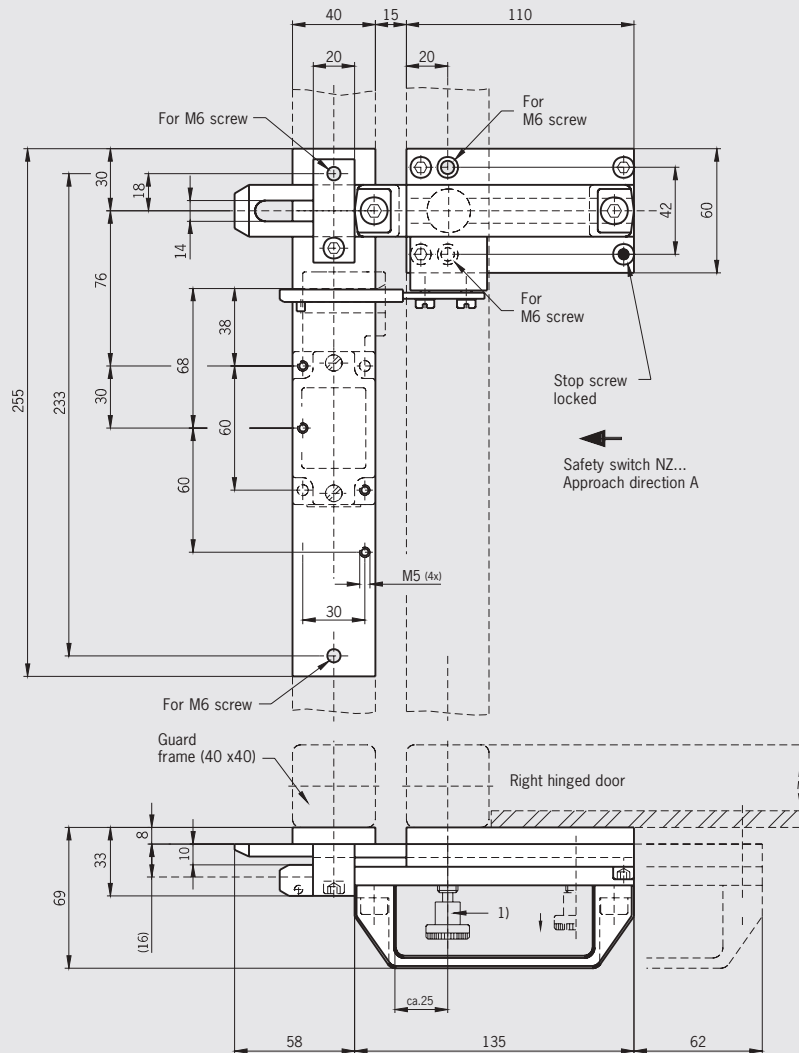
- ▶ **NZ-B** bolt engages in open and closed position
 - ▶ Prevents accidental opening and closing of the bolt
- ▶ **NZ-R2** bolt engages in open and closed position. Unlocked by pulling the detent knob upward

Features

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

Bolt for safety switches NZ.VZ und NZ.VZ.VS

Dimension drawings (here: shown with detent knob)



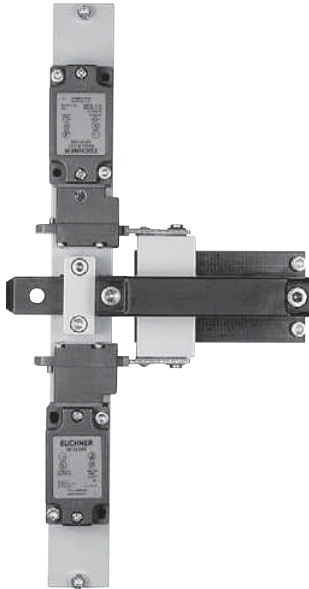
- 1) Bolt with detent mechanism:
Latches in open position and prevents unintended closing of the bolt.
When the bolt is closed, the knob engages and prevent unintended opening.
Unlocked by pulling the detent knob upward.

Ordering table

Designation	Detent mechanism	Version	Order No.
Bolt NZ-A	None	For right hinged doors, actuator included	057 734 Bolt NZ-A
Bolt NZ-C	None	For left hinged doors, actuator included	057 735 Bolt NZ-C
Bolt NZ-AB	Ball detent mechanism	For right hinged doors, actuator included	083 890 Bolt NZ-AB
Bolt NZ-CB	Ball detent mechanism	For left hinged doors, actuator included	083 892 Bolt NZ-CB
Bolt NZ-AR2	Detent knob	For right hinged doors, actuator included	078 455 Bolt NZ-AR2
Bolt NZ-CR2	Detent knob	For left hinged doors, actuator included	078 456 Bolt NZ-CR2

Bolts for safety guards

- For 2 safety switches NZ.VZ on one bolt



Special features

- One bolt for 2 safety switches
 - High control category (e. g. category 4) is achieved
- Bolt can be used for doors hinged on the right or left

Features

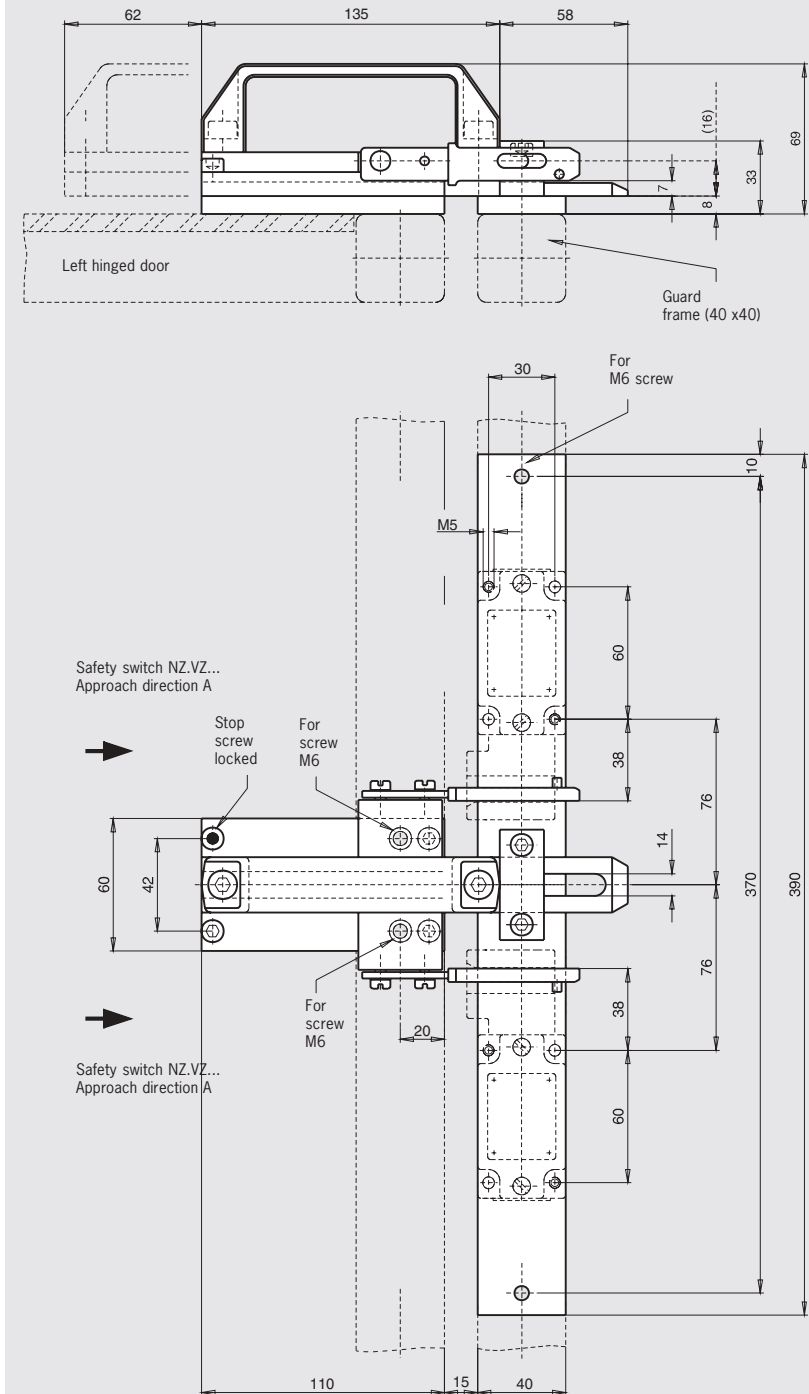
- Easily fitted to standard aluminum profiles and machine covers by screw connection
- Distinctive yellow color for easy recognition
- Robust version for heavy doors
- No additional door handle necessary
- Slot on the bolt permits attachment of padlocks

Notes

- The function of the bolt NZ-ACF with escape release is the same as the function of the bolt NZ/TZ-ACF (see page 133)

Bolt for 2 safety switches NZ.VZ on one bolt

Dimension drawings

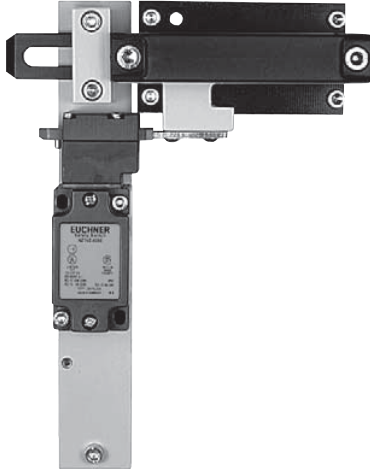


Ordering table

Designation	Detent mechanism	Version	Order No.
Bolt NZ-AC	None	For right or left hinged doors, 2 safety switches on one bolt, actuator included	076 188 Bolt NZ-AC

Bolts for safety guards

- ▶ For safety switches NZ.VZ
- ▶ Lever for escape release from the danger area
- ▶ Bolt with detent knob
- ▶ For right or left hinged doors



Special features

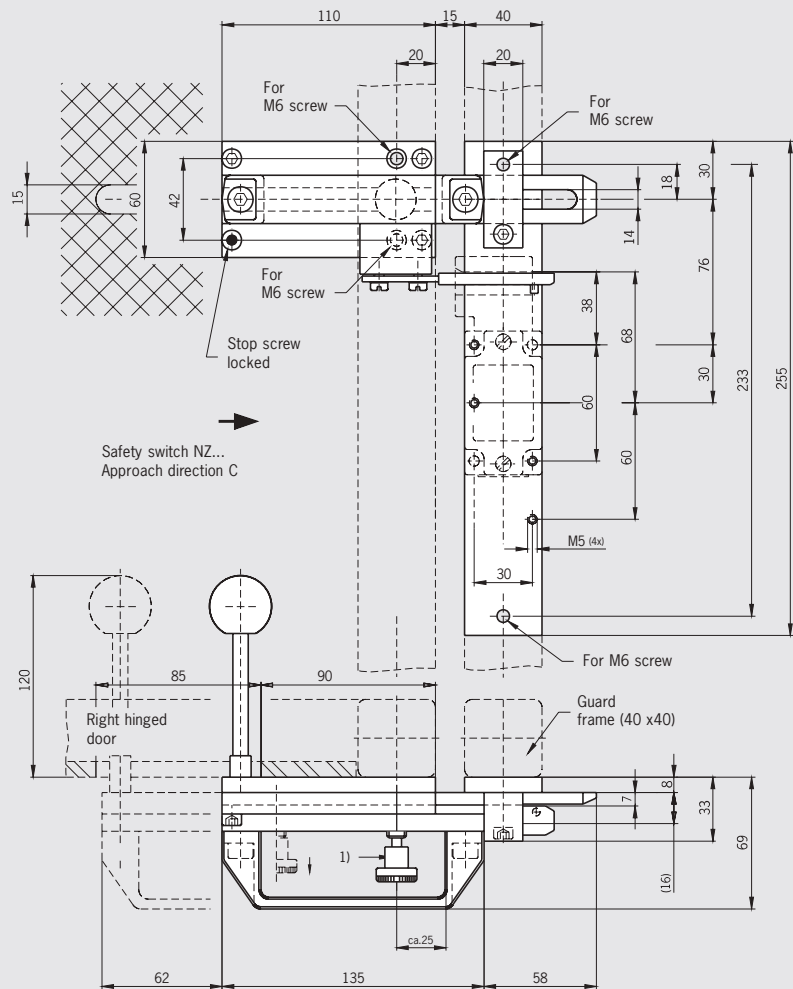
- ▶ Bolt with detent mechanism
 - ▶ The bolt latches in open position to prevent unintended closing

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

Bolt for safety switches NZ.VZ

Dimension drawings



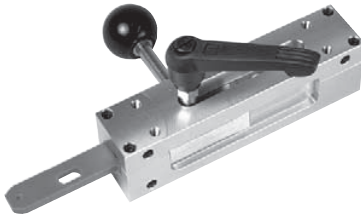
- 1) Bolt with detent mechanism:
Latches in open position and prevents unintended closing of the bolt.
Unlocked by pulling the detent knob upward.

Ordering table

Designation	Detent mechanism	Version	Order No.
Bolt NZ-AF	Detent knob	For right hinged doors, escape release from the danger area, actuator included	078 451 Bolt NZ-AF
Bolt NZ-CF	Detent knob	For left hinged doors, escape release from the danger area, actuator included	078 452 Bolt NZ-CF

Bolts for safety guards

- ▶ For safety switches NZ.VZ, NZ.VZ.VS and TZ...C1828
- ▶ Lever for escape release from the danger area
- ▶ Bolt with hand lever
- ▶ For right or left hinged doors



Special features

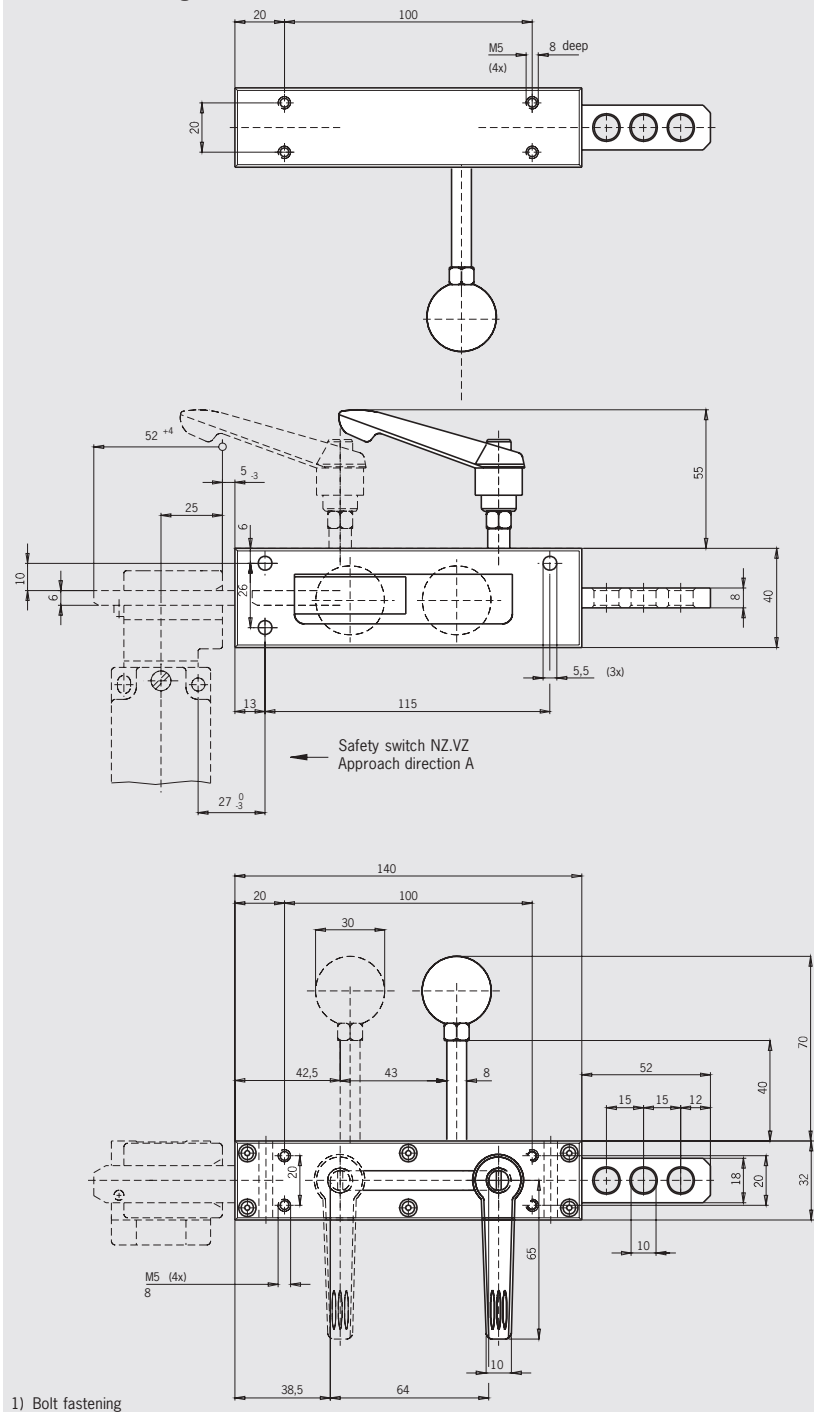
- ▶ The hand lever can be permanently set to 20 rotary positions (in 18° increments)
- ▶ After the door is opened, the actuator is automatically withdrawn into the bolt by a built-in return spring
 - ▶ The operator is protected
When the door is open there is no risk of injury due to protruding actuator
 - ▶ The actuator is protected
When hinged doors are closed it is ensured that the actuator is not used as an end stop

Features

- ▶ The lever for the escape release only enables the doors to be **opened** from inside the danger area
- ▶ Three holes enable padlocks to be attached

Bolt for safety switches NZ.VZ, NZ.VZ.VS and TZ...C1828

Dimension drawings

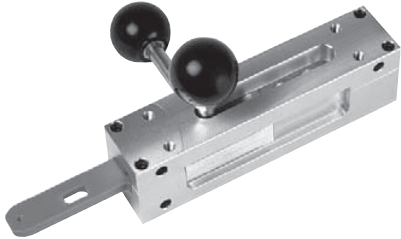


Ordering table

Designation	Detent mechanism	Version	Order No.
Bolt NZ/TZ-G1/AF	None	For right or left hinged doors, escape release from the danger area, actuator included	079 788 Bolt NZ/TZ-G1/AF
Bolt NZ/TZ-G1/CF	None	For right or left hinged doors, escape release from the danger area, actuator included	079 787 Bolt NZ/TZ-G1/CF

Bolts for safety guards

- ▶ For safety switches NZ.VZ, NZ.VZ.VS and TZ...C1828
- ▶ Lever for escape release from the danger area
- ▶ Bolt with ball handle
- ▶ For right or left hinged doors



Special features

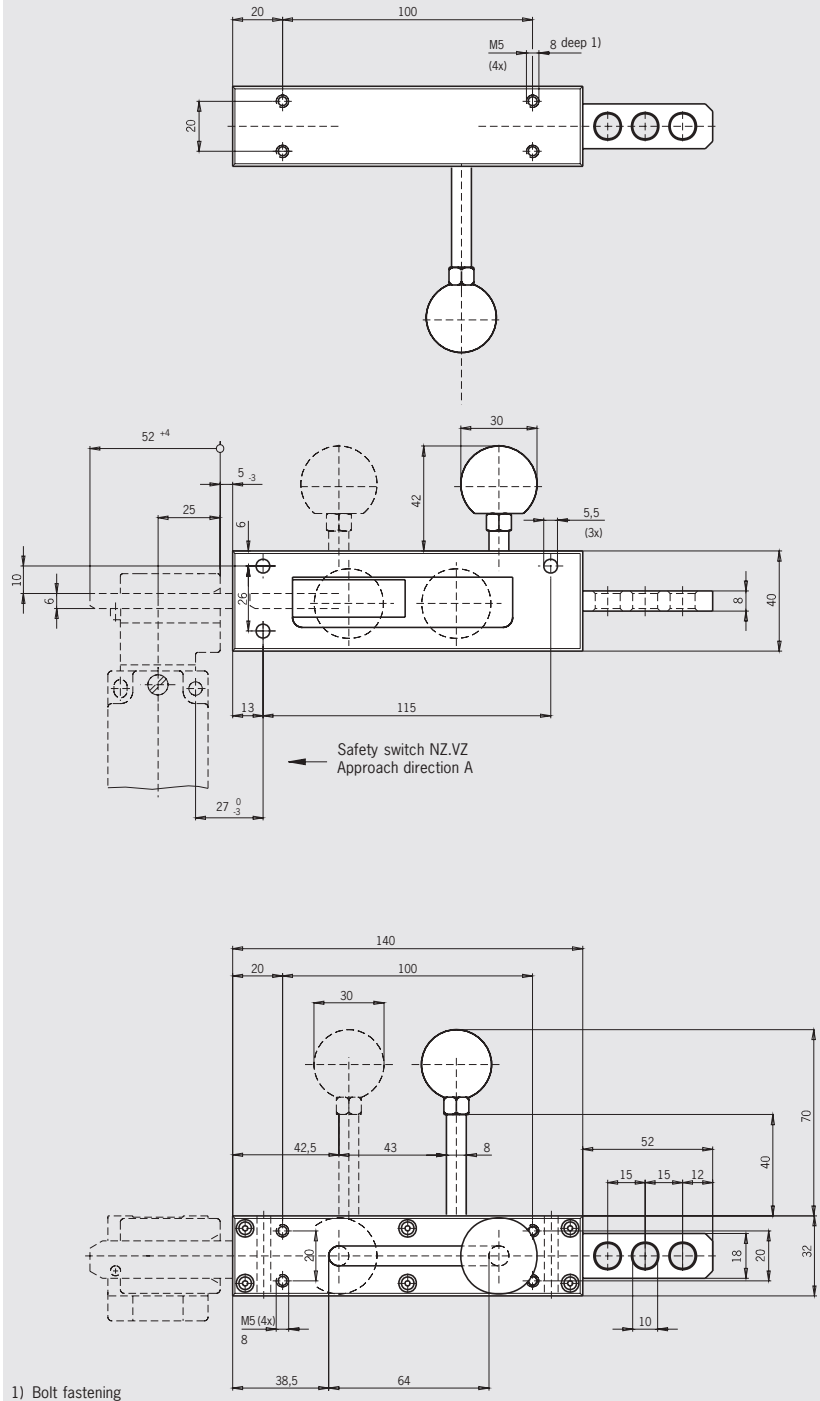
- ▶ After the door is opened, the actuator is automatically withdrawn into the bolt by a built-in return spring
- ▶ The operator is protected
When the door is open there is no risk of injury due to protruding actuator
- ▶ The actuator is protected
When hinged doors are closed it is ensured that the actuator is not used as an end stop

Features

- ▶ The lever for the escape release only enables the doors to be **opened** from inside the danger area
- ▶ Three holes enable padlocks to be attached

Bolt for safety switches NZ.VZ, NZ.VZ.VS and TZ...C1828

Dimension drawings

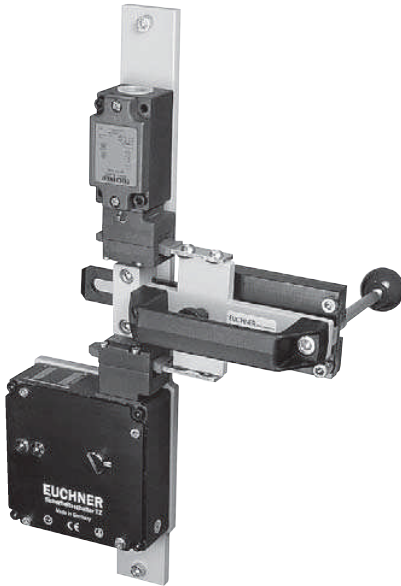


Ordering table

Designation	Detent mechanism	Version	Order No.
Bolt NZ/TZ-S1/AF	None	For right or left hinged doors, escape release from the danger area, actuator included	079 786 Bolt NZ/TZ-S1/AF
Bolt NZ/TZ-S1/CF	None	For right or left hinged doors, escape release from the danger area, actuator included	079 785 Bolt NZ/TZ-S1/CF

Bolts for safety guards

- ▶ For safety switches NZ.VZ, TZ...C1684, TZ...C1815 and TZ...C1828
- ▶ Lever for escape release from the danger area
- ▶ For 2 safety switches on one bolt (NZ and TZ)
- ▶ For right or left hinged doors



Special features

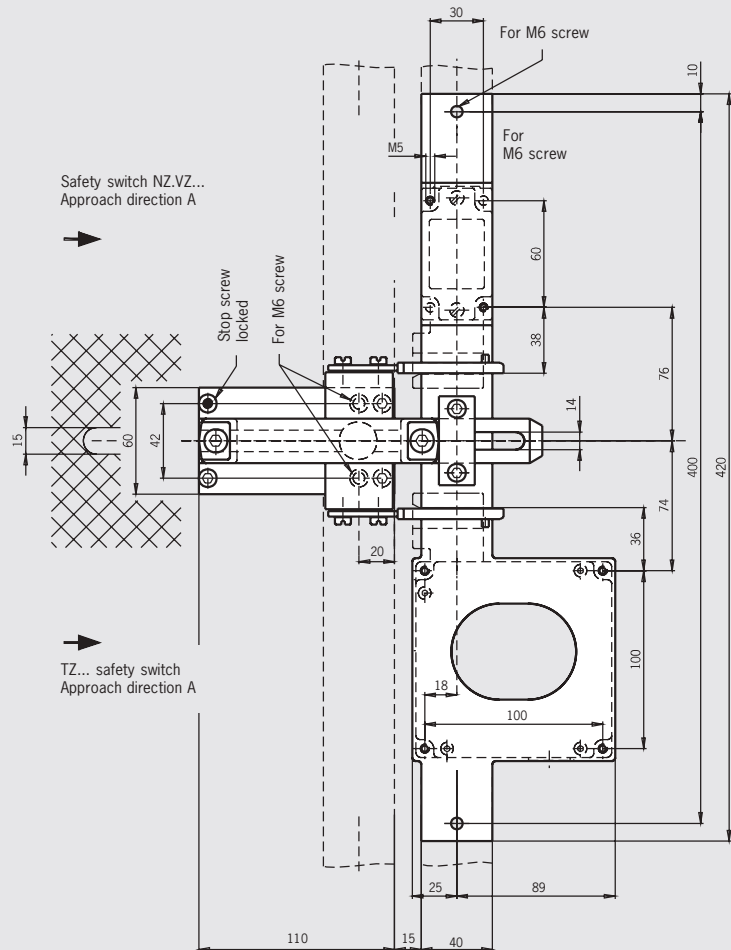
- ▶ One bolt for 2 safety switches (NZ and TZ with guard locking)
 - ▶ High control category (e. g. category 4) is achieved
- ▶ Bolt with detent mechanism
 - ▶ The bolt latches in open position to prevent unintended closing

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

Bolt for 2 safety switches NZ.VZ on one bolt

Dimension drawings



- 1) Bolt with detent mechanism:
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 NZ/TZ-ACF	Detent knob	For right or left hinged doors, 2 safety switches on one bolt, escape release from the danger area, actuator included	083 900 Bolt NZ/TZ-ACF

Accessories for bolts

- ▶ Adapter NZ/TZ... for safety switches NZ.../TZ... for Bosch EcoSafe 45x45 and 30x30
- ▶ Replacement handle for EUCHNER bolts

Adapter NZ/TZ

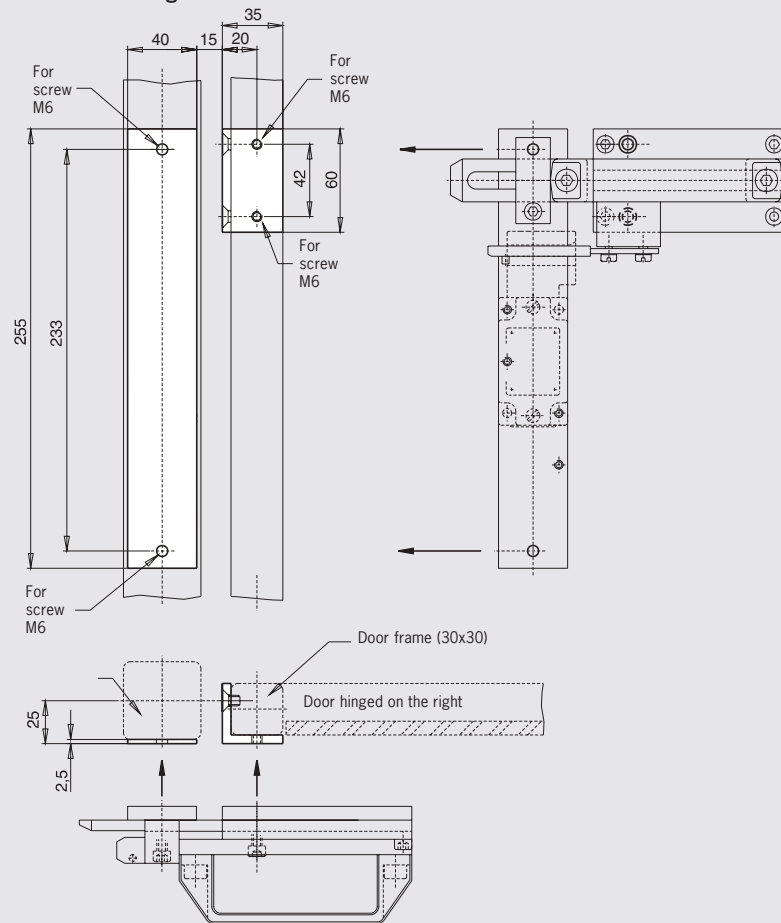
Using the adapter set the **NZ...** and **TZ...** bolts can be fastened to aluminum profiles (Bosch EcoSafe)

The adapter set is only suitable for protection cross-beams 45x45 mm in combination with safety doors 30x30 mm

- ▶ Simple screw mounting
- ▶ Symmetrical design for doors hinged on the right or left

Adapter NZ/TZ...

Dimension drawings

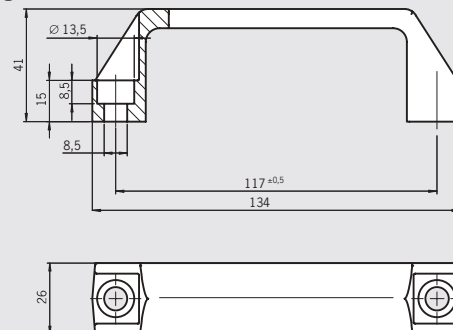


Replacement handle

- ▶ Material: plastic, reinforced polypropylene (PP)
- ▶ Color: black, mat
- ▶ Temperature resistance up to 100 °C

Adapter NZ/TZ...


Dimension drawings





Ordering table

Designation	Version	Order No.
Adapter NZ/TZ 45/30	Incl. 4 fastening screws for elbow adapter	079 033 Adapter NZ/TZ 45/30
Bolt handle/V5	Packaging unit 5 pieces, screws not included	093 500 Bolt handle/V5


Accessories for safety switches


Solenoid plug 		
Parameter	Value	Unit
Housing material	Plastic	
Number of pins	3 (2 + PE)	
Nominal voltage max.	240	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 65	
Connection	Pillar terminals and tab terminals	


SS4 		
Parameter	Value	Unit
Housing material	Brass matt chromium plated	
Number of pins	4 (3 + PE)	
Cable diameter	6 - 8	mm
Nominal voltage max.	250	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 67	
Connection	Soldered connections	

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	

RC18 		
Parameter	Value	Unit
Housing material	Metal	
Number of pins	19 (18 + PE)	
Cable diameter	10 - 14	mm
Nominal voltage max.	32	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 65	
Connection	19 crimp contacts 0.75 to 1.0 mm ²	

RC18..C1825 		
Parameter	Value	Unit
Housing material	Metal	
Number of pins	19 (18 + PE)	
Cable diameter	10 - 14	mm
Nominal voltage max.	32	V AC/DC
Degree of protection according to IEC 60529 (inserted)	IP 65	
Connection	16 crimp contacts 0.38 to 0.5 mm ² 3 crimp contacts 0.75 to 1.0 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	