

Selection table for safety switches TZ with guard locking and guard lock monitoring

Release feature, front	
HE	Mechanical release can be sealed
E	Emergency release
HD	Mechanical release for triangular key acc. to DIN 22417 (latching)
ND	Release on the front (pushbutton)
NR	Emergency unlocking on the front (rotary knob can be sealed)
O	Without manual release feature
Release feature, rear	
FS	Escape release on the rear (key button)
FD	Escape release on the rear (pushbutton/button without key)
Version	
SB	Protective plate, tamper protection on the switch head
Enabling switch connection	
BD4	Plug connector 4-pin
RC12	Plug connector 12-pin
Connection	
M	Thread M20 x 1.5 for cable glands
SR6	Plug connector 6-pin + PE
MR8	Plug connector 7-pin + PE
MR10	Plug connector 9-pin + PE
SR11	Plug connector 11-pin + PE
MR12	Plug connector 11-pin + PE
RC18	Plug connector 18-pin + PE
Switching element	
Two contacts	2 x (1 NC ⊖ + 1 NO)
Four contacts	2 x (4 NC ⊖) or 1 x (3 NC ⊖ + 1 NO) + 1 x (2 NC ⊖ + 2 NO)



Manual release							Enabling switch		Connection								Switching element		With version	Page	
HE	E	HD	ND	NR	O	FS	FD	SB	BD4	RC12	M	SR6	MR8	MR10	SR11	MR12	RC18	Two contacts	Four contacts		
•											•							•	•	C1925 / C2087	62/67
•												•						•		C1638	64/68
•																	•		•	C1924	66
•																	•		•	C1826	63
•															•			•	•	C1933	65/68
•						•					•							•	•	C1815 / C1828	78
•						•									•		•	•	•	C1815 / C1828	79
•							•				•							•	•	C1684	82
•							•				•				•			•		C1684	83
•								•			•							•			70
•								•			•				•			•		C1677	71
•								•			•						•		•		72
•							•				•						•		•	C2082	80
•							•				•						•		•	C2140	81
•	•										•		•				•		•	C1903	69
•		•									•			•					•	C2159	73
•			•								•							•	•	C1816 / C1823	74
•			•								•				•		•	•	•	C1816 / C1823	75
•				•				•							•			•			76
•				•				•									•		•	C1937	77
•				•				•									•		•	C2123	84
•				•				•			•						•		•	C1623 / C2100	85
•				•				•			•			•					•		86
•				•				•									•		•	C1902 / C1971	86
•				•				•									•		•	C1662	87
•				•				•									•		•	C1803	88
•				•				•									•		•	C2189/C2198/C2199	89-91



Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Mechanical release

Is used for releasing the guard locking with the aid of a tool. A sealing wire can be fitted to protect against tampering. Lead sealing kit and tool included (already pre-assembled on versions with plug connectors).

Solenoid operating voltage and LED function display

The following voltage ranges are available:

- ▶ 24 V AC/DC -15%, +10%
- ▶ 110 V AC -15%, +10%
- ▶ 230 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching element
4 NC ⊖
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

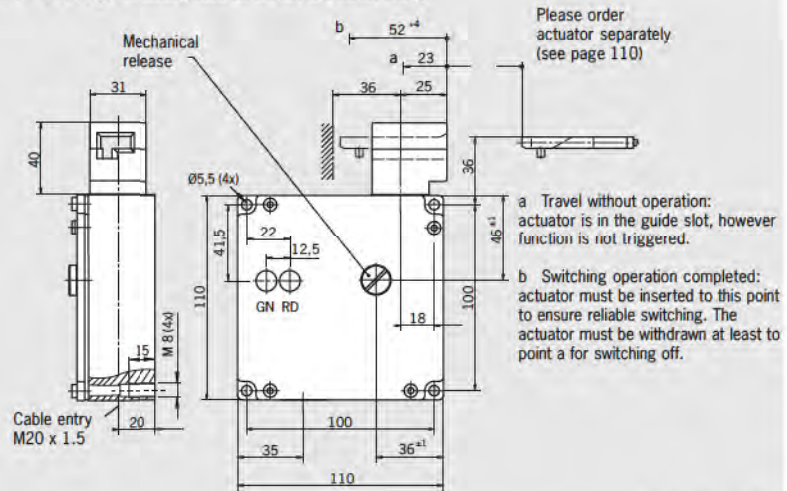
Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Black cover			Red cover		
					24 V	110 V	230 V	24 V	110 V	
					082 050	083 160	083 166	083 164	083 168	
TZ	M20x1.5	1	Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	TZ1LE024M	TZ1LE110M	TZ1LE220M	TZ1LE024MR	TZ1LE110MR
					ÜK: 528H, 1 NC ⊖ + 1 NO	On request	On request	On request	On request	
					SK: 2121H, 4 NC ⊖	On request	On request	On request	089 464 ¹⁾	On request
				ÜK: 2121H, 4 NC ⊖	On request	On request	On request	TZ1LE024MVFG-RC1925	On request	
				SK: 2131H, 3 NC ⊖ + 1 NO	TZ1LE024MVAB	TZ1LE110MVAB	TZ1LE220MVAB	089 434	On request	
				ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ1RE024M	TZ1RE110M	TZ1RE220M	TZ1LE024MVB-R	On request	
		2	Electrical	RE Right	SK: 528H, 1 NC ⊖ + 1 NO	TZ1RE024M	TZ1RE110M	TZ1RE220M	083 165	089 448
					ÜK: 528H, 1 NC ⊖ + 1 NO	On request	On request	On request	TZ1RE024MR	TZ1RE110MR
					SK: 2121H, 4 NC ⊖	On request	On request	On request	089 465 ¹⁾	On request
				ÜK: 2121H, 4 NC ⊖	On request	On request	On request	TZ1RE024MVFG-RC1925	On request	
				SK: 2131H, 3 NC ⊖ + 1 NO	TZ1RE024MVAB	TZ1RE110MVAB	TZ1RE220MVAB	083 233	On request	
				ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ2LE024M	TZ2LE110M	TZ2LE220M	TZ1RE024MVB-R	On request	
LE Left	SK: 528H, 1 NC ⊖ + 1 NO	TZ2LE024M	TZ2LE110M	TZ2LE220M	089 445	On request				
	ÜK: 528H, 1 NC ⊖ + 1 NO	On request	On request	On request	TZ2LE024MR	On request				
	SK: 2131H, 3 NC ⊖ + 1 NO	TZ2LE024MVAB	TZ2LE110MVAB	TZ2LE220MVAB	On request	On request				
RE Right	SK: 528H, 1 NC ⊖ + 1 NO	TZ2RE024M	TZ2RE110M	TZ2RE220M	089 446	On request				
	ÜK: 528H, 1 NC ⊖ + 1 NO	On request	On request	On request	TZ2RE024MR	On request				
	SK: 2131H, 3 NC ⊖ + 1 NO	TZ2RE024MVAB	TZ2RE110MVAB	TZ2RE220MVAB	On request	On request				

1) No BG approval

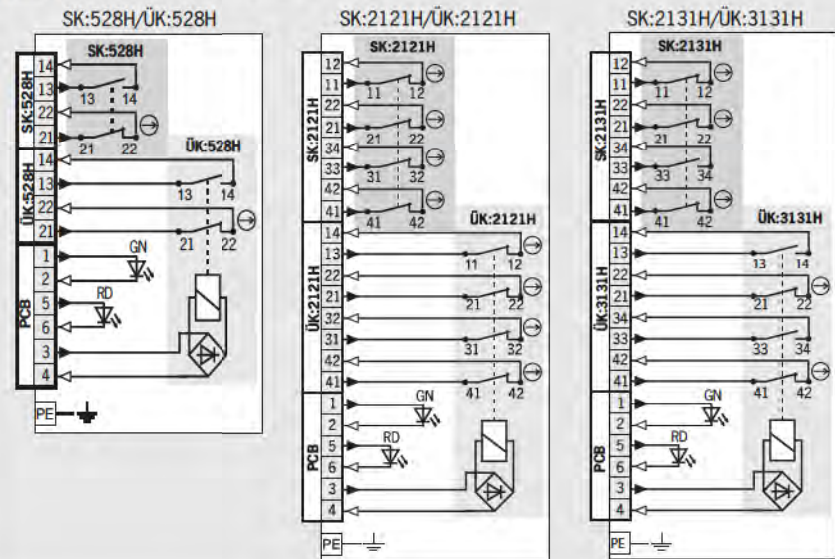
Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 124

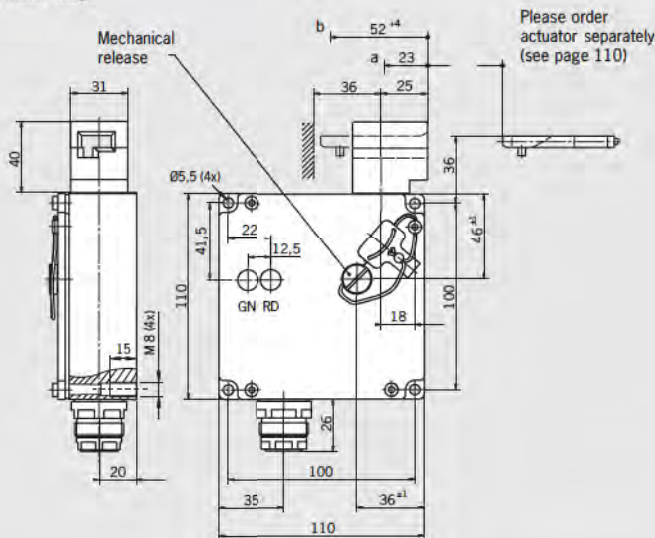
Wiring diagrams Actuator inserted and locked





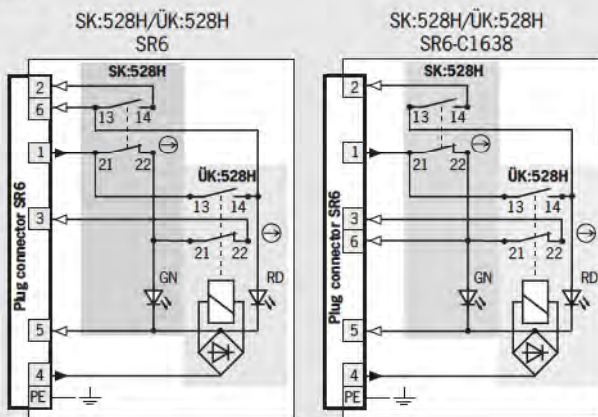
Plug connector SR6 6-pin + PE

Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 120

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover			Red cover
						24 V	110 V	230 V	24 V
TZ	SR6 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1638 ¹⁾ Wiring	046 502 TZ1LE024SR6	046 503 TZ1LE110SR6	046 504 TZ1LE220SR6	On request
				ÜK: 528H, 1 NC ⊖ + 1 NO		089 476 ¹⁾ TZ1LE024SR6-C1638	On request	On request	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	046 190 TZ1RE024SR6	046 191 TZ1RE110SR6	051 879 TZ1RE220SR6	On request	
				ÜK: 528H, 1 NC ⊖ + 1 NO	070 529 ¹⁾ TZ1RE024SR6-C1638	On request	On request	On request	
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1638 ¹⁾ Wiring	049 159 TZ2LE024SR6	052 914 TZ2LE110SR6	045 450 TZ2LE220SR6	046 915 TZ2LE024SR6-R
				ÜK: 528H, 1 NC ⊖ + 1 NO		076 294 ¹⁾ TZ2LE024SR6-C1638	On request	On request	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	049 102 TZ2RE024SR6	049 238 TZ2RE110SR6	047 937 TZ2RE220SR6	059 672 TZ2RE024SR6-R	
				ÜK: 528H, 1 NC ⊖ + 1 NO	055 819 ¹⁾ TZ2RE024SR6-C1638	On request	On request	On request	

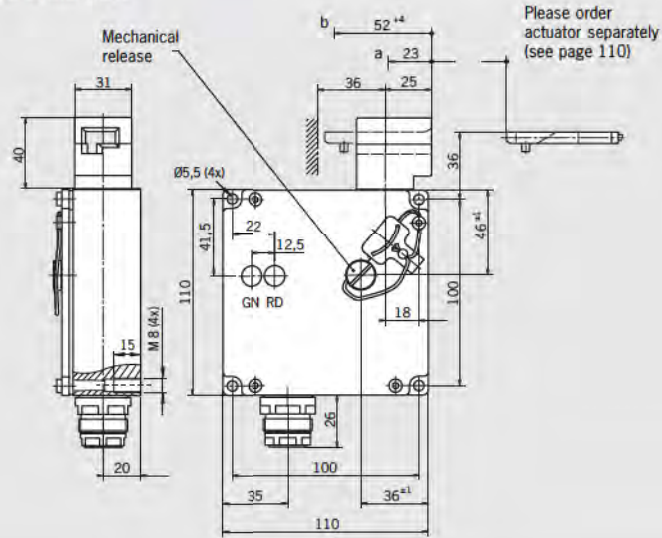
1) No BG approval



Plug connector SR11 11-pin + PE

Dimension drawings

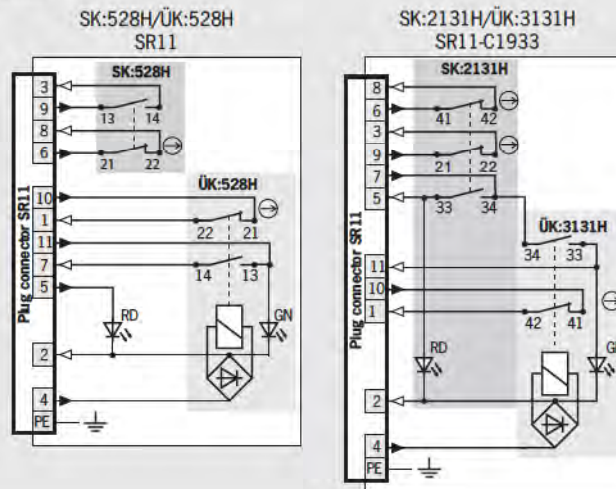
Actuating head on the left is a mirror image



For mating connectors see page 120

Wiring diagrams

Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover 24 V
TZ	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1933 ¹⁾ Alternative wiring	070 828
				ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1LE024SR11
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO		083 230 ¹⁾
				ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1LE024SR11VAB-C1933
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1933 ¹⁾ Alternative wiring	070 826
				ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1RE024SR11
		RE Right	SK: 2131H, 3 NC ⊖ + 1 NO		083 231 ¹⁾	
			ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1RE024SR11VAB-C1933	
			SK: 528H, 1 NC ⊖ + 1 NO		070 958	
			ÜK: 528H, 1 NC ⊖ + 1 NO		TZ2LE024SR11	
			SK: 528H, 1 NC ⊖ + 1 NO		070 957	
			ÜK: 528H, 1 NC ⊖ + 1 NO		TZ2RE024SR11	

1) No BG approval

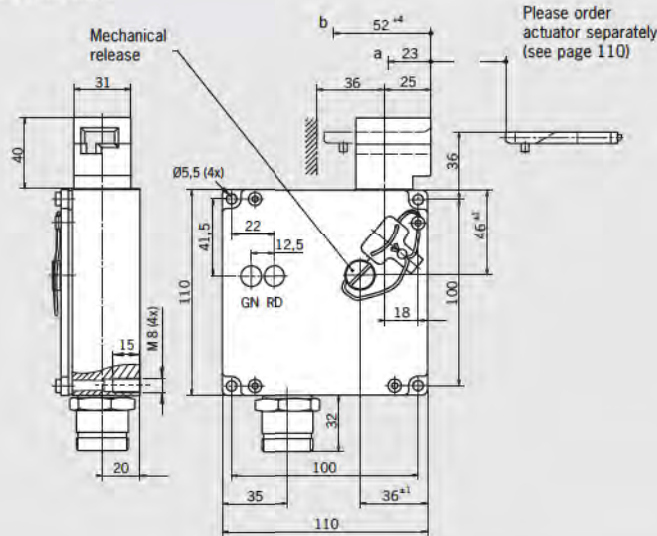
Please turn over

For safety precautions see page 179
For technical data see page 151



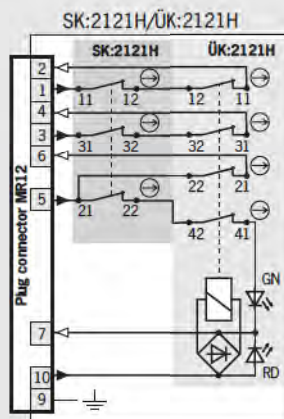
Plug connector MR12 11-pin + PE

Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 123

Wiring diagrams Actuator inserted and locked



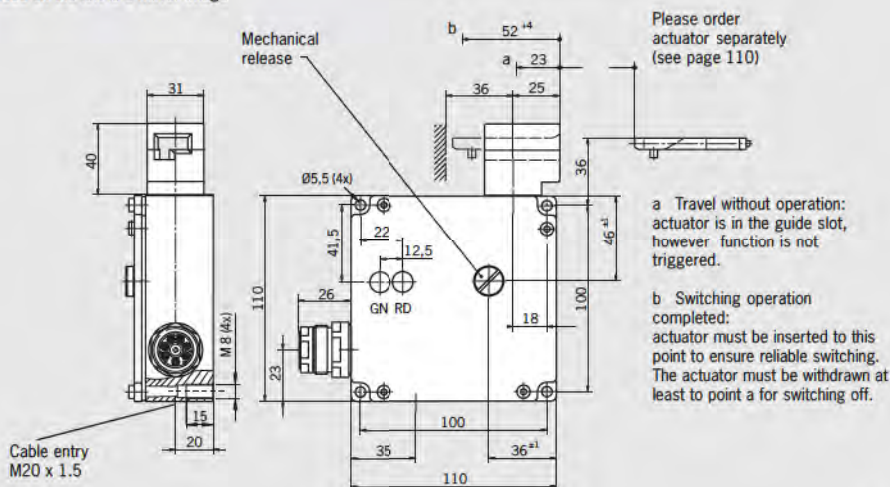
Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Ver-sion	Black cover			Red cover	
						24 V	110 V	230 V	24 V	
TZ	MR12 Plug connector	1 Mechanical	LE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖		On request	On request	On request	083 190 TZ1LE024BHAVFG-RC1924	
			RE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖		On request	On request	On request	083 191 TZ1RE024BHAVFG-RC1924	
			Left							
			Right							

Plug connector SR6 6-pin + PE

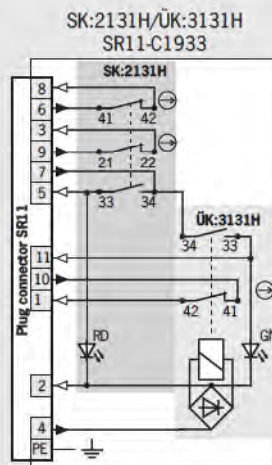
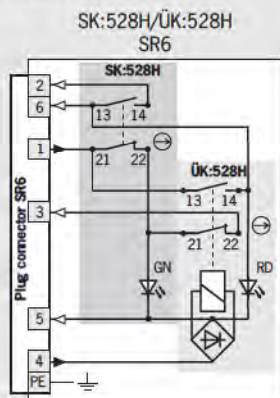
Plug connector SR11 11-pin + PE

Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 120

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR6 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Plug connector right, Cable entry M20x1,5 on bottom	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Plug connector left, Cable entry M20x1,5 on bottom	On request
	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Plug connector right, Cable entry M20x1,5 on bottom	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Plug connector left, Cable entry M20x1,5 on bottom	On request



Safety switch TZ with guard locking and guard lock monitoring

- ▶ Emergency release on the front
- ▶ Two LEDs, red and green
- ▶ Plug connectors
- ▶ Actuating head fitted left or right

Plug connector MR8
7-pin + PE



Plug connector MR10
9-pin + PE



Approach direction

Horizontal
Can be adjusted in 90° steps.

Emergency release

Is used for the manual release of the guard locking without tools. The emergency unlocking mechanism must be returned to the locked state manually.

Solenoid operating voltage and LED function display

The following voltage ranges are available:

- ▶ 24 V AC/DC -15%, +10%
- ▶ 110 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position

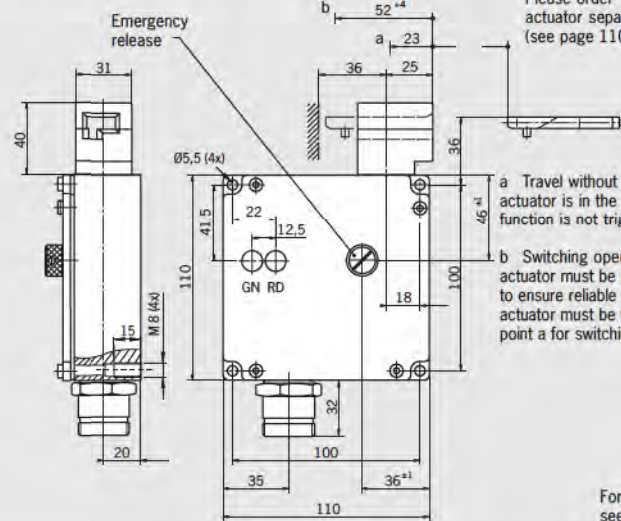
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching element
4 NC ⊖
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Dimension drawings

Actuating head on the left is a mirror image



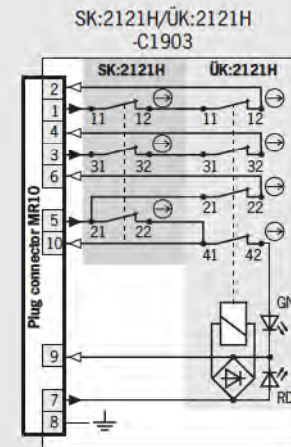
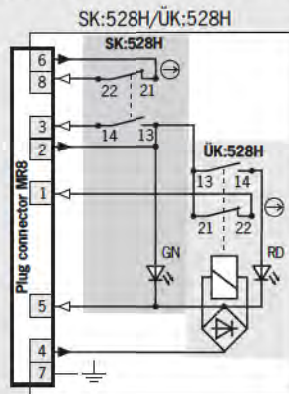
Please order actuator separately (see page 110)

- a Travel without operation: actuator is in the guide slot, however function is not triggered.
- b Switching operation completed: actuator must be inserted to this point to ensure reliable switching. The actuator must be withdrawn at least to point a for switching off.

For mating connectors see page 123

Wiring diagrams

Actuator inserted and locked



Ordering table

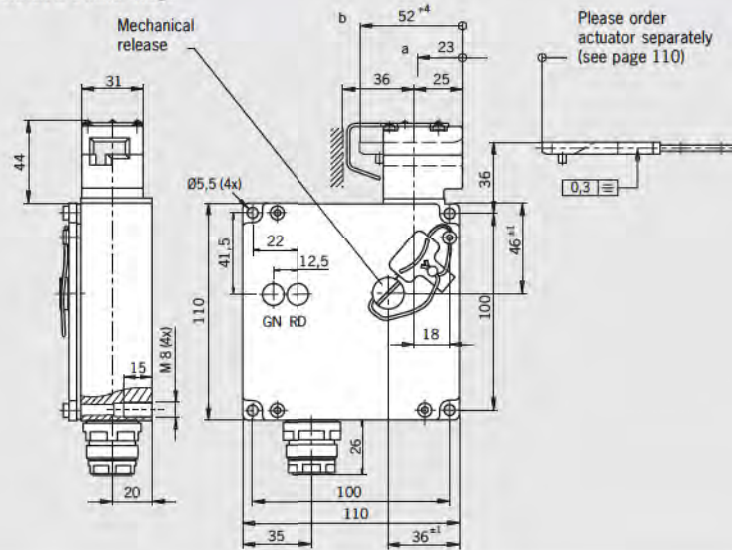
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover		Red cover
						24 V	110 V	24 V
TZ	MR8 Plug connector	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	Emergency release cannot be sealed	054 964	074 917	On request
			Left	ÜK: 528H, 1 NC + 1 NO	Emergency release cannot be sealed	TZ1LE024PGOR8C	TZ1LE110PGOR8C	
			RE	SK: 528H, 1 NC ⊖ + 1 NO	Emergency release cannot be sealed	059 920	074 916	On request
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	Emergency release cannot be sealed	TZ1RE024PGOR8C	TZ1RE110PGOR8C	
	MR10 Plug connector	1 Mechanical	LE	SK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082 095
			Left	ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	TZ1LE024BHA-C1903
			RE	SK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082 096
			Right	ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	TZ1RE024BHA-C1903
MR10 Plug connector	2 Electrical	LE	SK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082 083	
		Left	ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	TZ2LE024BHA-C1903	
		RE	SK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082 084	
		Right	ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	TZ2RE024BHA-C1903	



Plug connector SR6
6-pin + PE

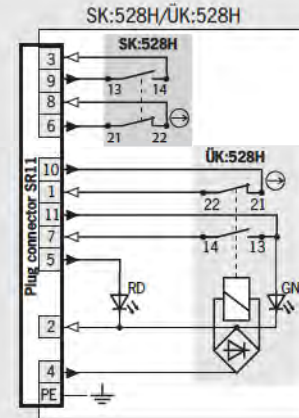
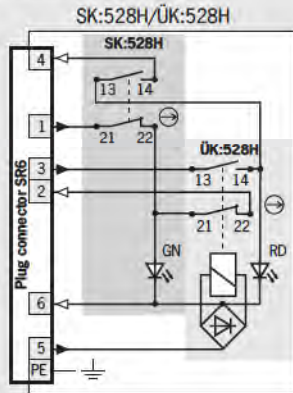
Plug connector SR11
11-pin + PE

Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 120

Wiring diagrams Actuator inserted and locked



Please turn over

Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR6 Plug connector	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With	059 694
			Left	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ1LE024SR6-C1677
		2 Electrical	RE	SK: 528H, 1 NC ⊖ + 1 NO	With	059 692
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ1RE024SR6-C1677
	SR11 Plug connector	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With	059 852
			Left	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ2LE024SR6-C1677
		2 Electrical	RE	SK: 528H, 1 NC ⊖ + 1 NO	With	059 699
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ2RE024SR6-C1677
SR11 Plug connector	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With	093 860	
		Left	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ1LE024SR11-093860	
	2 Electrical	RE	SK: 528H, 1 NC ⊖ + 1 NO	With	093 861	
		Right	ÜK: 528H, 1 NC ⊖ + 1 NO	protective plate	TZ1RE024SR11-093861	

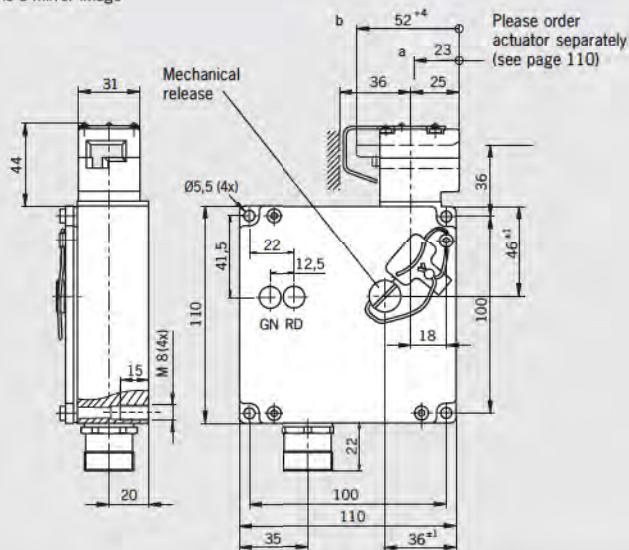
For safety precautions see page 179
For technical data see page 151



Plug connector RC18

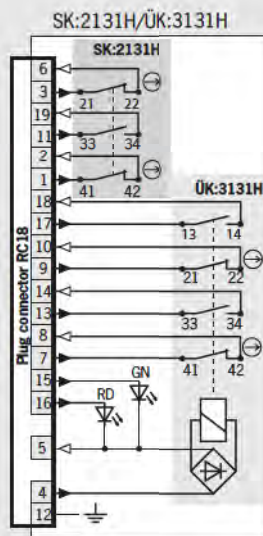
18-pin + PE

Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 121

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 Plug connector	1 Mechanical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	With protective plate	093 862
			Left	ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1LE024RC18VAB-093862
			RE	SK: 2131H, 3 NC ⊖ + 1 NO	With protective plate	093 863
			Right	ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1RE024RC18VAB-093863

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Mechanical release on the front, release with a triangular key acc. to DIN 22417
- ▶ Two LEDs, red and green
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Mechanical release

This releases the guard locking with a triangular key acc. to DIN 22417.

Solenoid operating voltage and LED function display

The following voltage range is available:
24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position

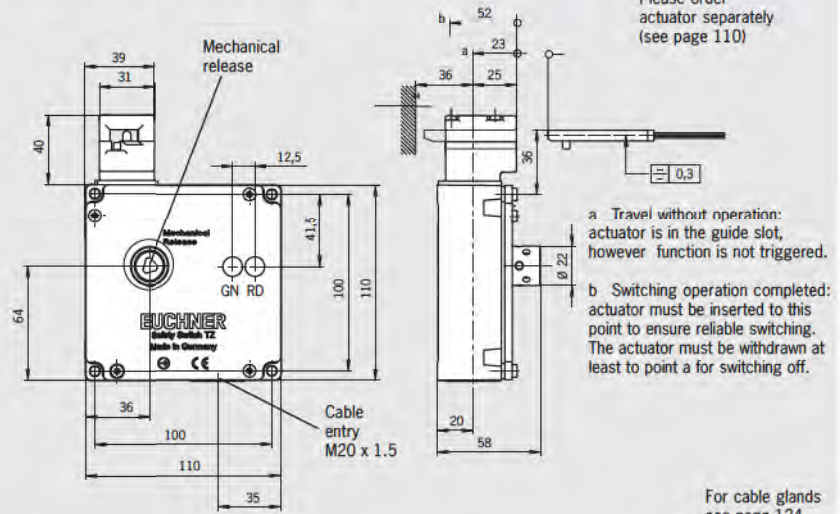
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

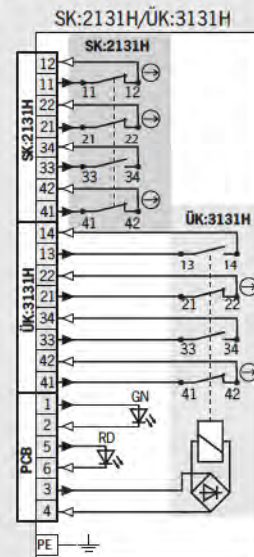
Cable entry M20 x 1.5

Dimension drawings Actuating head on the right is a mirror image



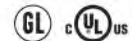
For cable glands see page 124

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Mechanical release with triangular key	098 718 TZ1LB024MVAB-C2159
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Mechanical release with triangular key	098 717 TZ1RB024MVAB-C2159



Safety switch TZ with guard locking and guard lock monitoring

- ▶ Release on the front with pushbutton
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Release

Is used for the manual release of the guard locking without tools. It is possible to remove the disable and return the switch to its operating state by hand without tools.

Solenoid operating voltage and LED function display

The following voltage range is available:
= 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

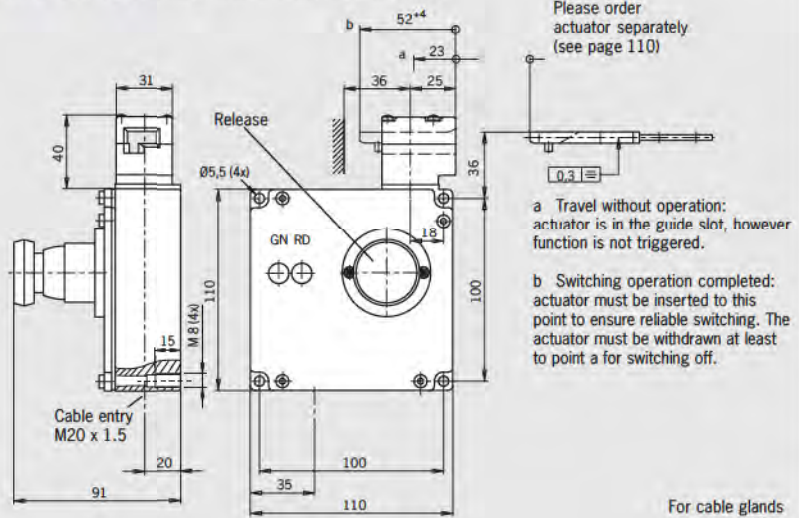
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

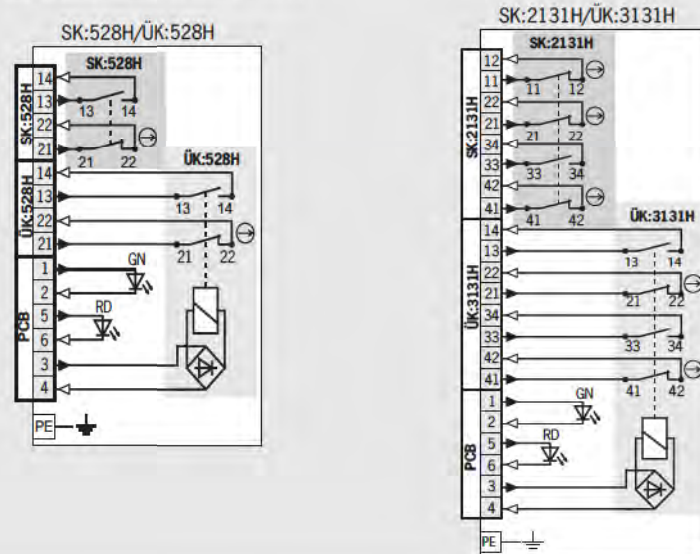
Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 115

Wiring diagrams Actuator inserted and locked



Ordering table

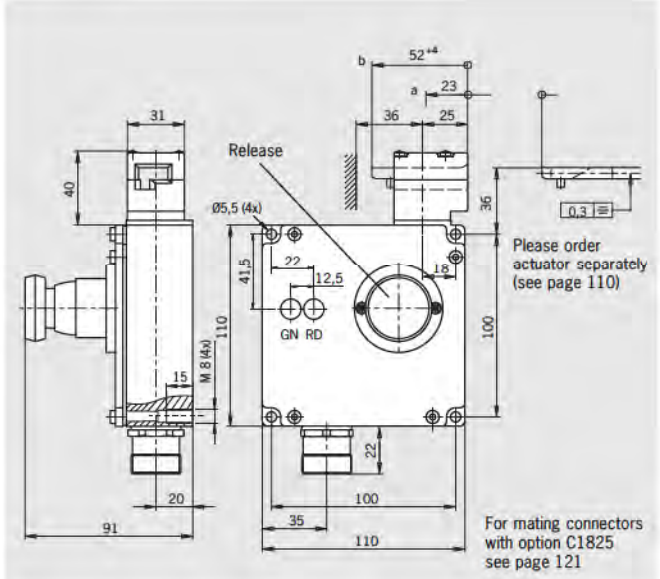
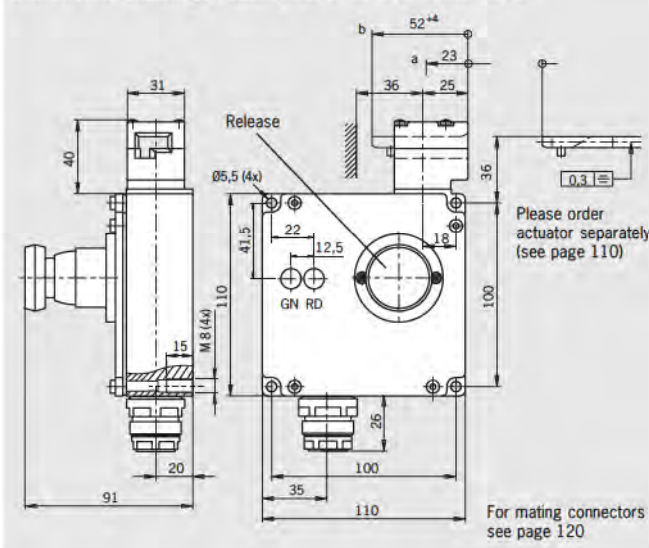
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Release	089 477
				ÜK: 528H, 1 NC ⊖ + 1 NO	(blue pushbutton)	TZ1LE024M-C1816
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	Release	096 901
				ÜK: 528H, 1 NC ⊖ + 1 NO	(blue pushbutton)	TZ1RE024M-C1816
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Release	087 992
				ÜK: 528H, 1 NC ⊖ + 1 NO	(blue pushbutton)	TZ2LE024M-C1816
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO	Release	089 455
				ÜK: 3131H, 2 NC ⊖ + 2 NO	(blue pushbutton)	TZ2LE024MVAB-C1823
RE Right	SK: 528H, 1 NC ⊖ + 1 NO	Release	087 993			
	ÜK: 528H, 1 NC ⊖ + 1 NO	(blue pushbutton)	TZ2RE024M-C1816			
RE Right	SK: 2131H, 3 NC ⊖ + 1 NO	Release	089 456			
	ÜK: 3131H, 2 NC ⊖ + 2 NO	(blue pushbutton)	TZ2RE024MVAB-C1823			



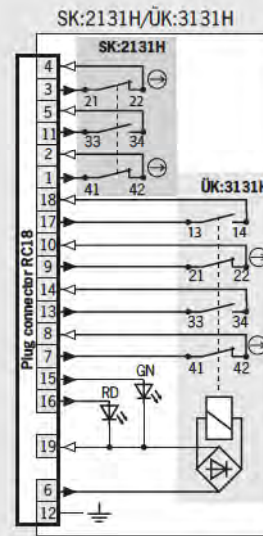
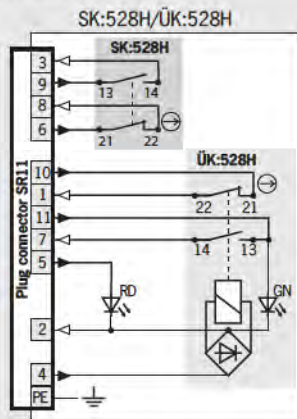
Plug connector SR11 11-pin + PE

Plug connector RC18 18-pin + PE

Dimension drawings Actuating head on the left is a mirror image



Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	1	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	077 044 TZ1LE024SR11-C1816
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	077 042 TZ1RE024SR11-C1816
	RC18 ¹⁾ Plug connector	1	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	088 090 TZ1LE024RC18VAB-C1823
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	088 091 TZ1RE024RC18VAB-C1823

1) **Important:** use suitable mating connector with option C1825!

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Emergency unlocking on the front with rotary knob
- ▶ Protective plate for switch head optional
- ▶ Two LEDs, red and green
- ▶ Plug connectors
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Emergency unlocking

Is used for the manual release of the guard locking without tools. The emergency unlocking mechanism must be returned to the locked state manually. A sealing wire can be fitted to protect against tampering. Lead sealing kit and tool included (already pre-assembled on versions with plug connectors).

Protective plate for switch head

Makes it more difficult to tamper with the switch.

Solenoid operating voltage and LED function display

The following voltage range is available:
 - 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

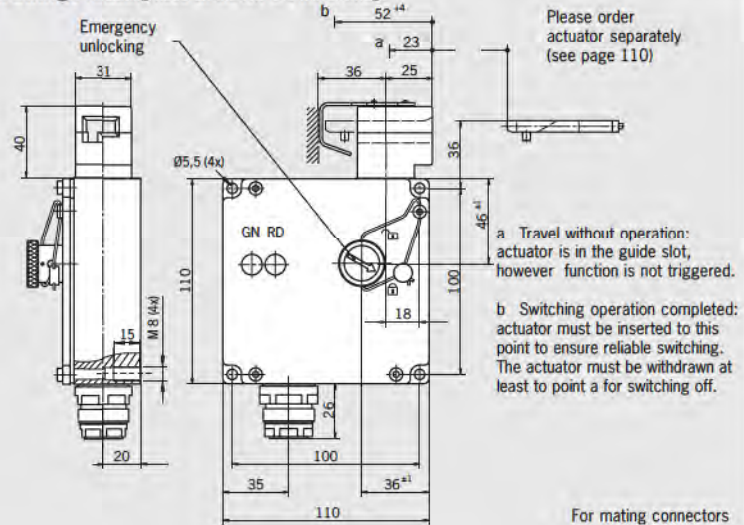
- **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Ordering table

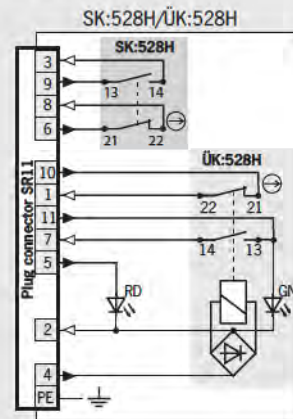
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H, 1NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	094 342 TZ1LE024SR11-094342
				ÜK: 528H, 1NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	094 343 TZ1RE024SR11-094343
			RE Right	SK: 528H, 1NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	094 342 TZ1RE024SR11-094342
				ÜK: 528H, 1NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	094 343 TZ1RE024SR11-094343

Plug connector SR11 with protective plate 11-pin + PE

Dimension drawings



Wiring diagrams

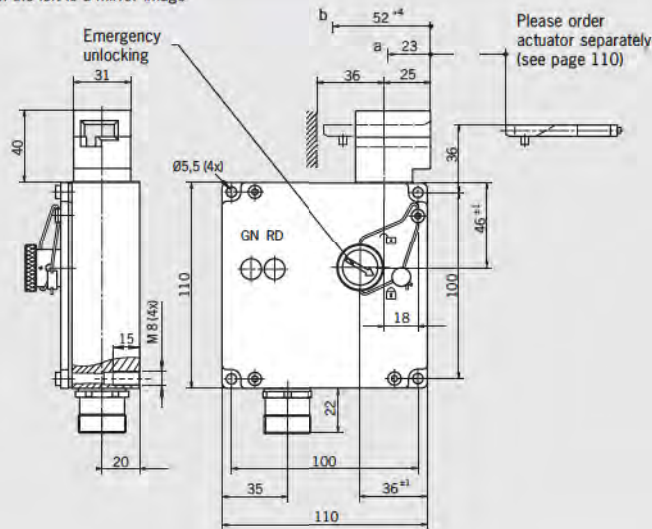




Plug connector RC18 18-pin + PE

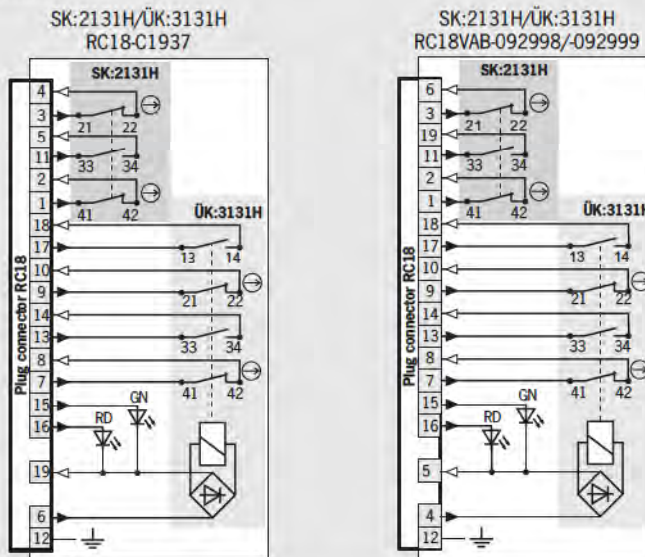
Dimension drawings

Actuating head on the left is a mirror image



Wiring diagrams

Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 ¹⁾ Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	074 260 TZ1LE024RC18VAB-C1937
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	074 261 TZ1RE024RC18VAB-C1937
		2 Electrical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	100 778 TZ2LE024RC18VAB-C1937
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	100 777 TZ2RE024RC18VAB-C1937
	RC18 Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob), alternative wiring	092 998 TZ1LE024RC18VAB-092998
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob), alternative wiring	092 999 TZ1RE024RC18VAB-092999

1) **Important:** use suitable mating connector with option C1825!

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Mechanical release on the front
- ▶ Escape release on the rear with key button
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Escape release

Is used for the manual release of the guard locking from within the danger area without tools. The disable can only be removed and the switch returned to its operating state using a key included (2 keys included).

A sealing wire can be fitted to protect against tampering. Lead sealing kit and tool included (already pre-assembled on versions with plug connectors).

Solenoid operating voltage and LED function display

- The following voltage range is available:
- 24 V AC/DC -15%, +10%
 - 110 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

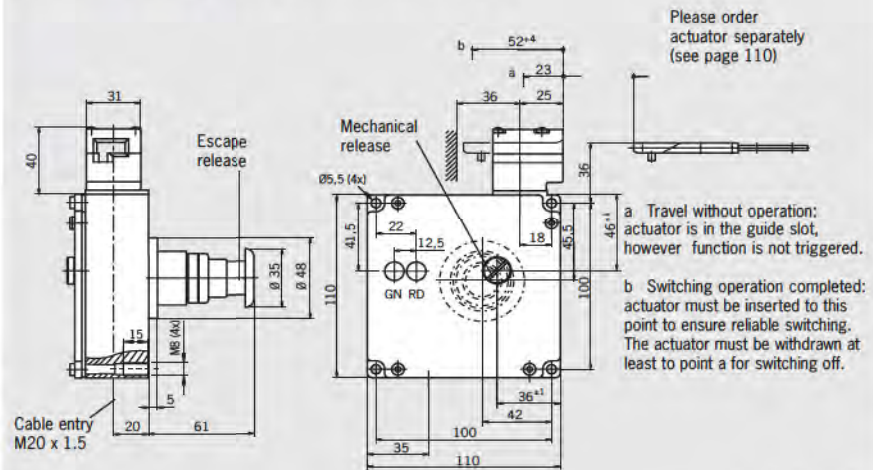
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image

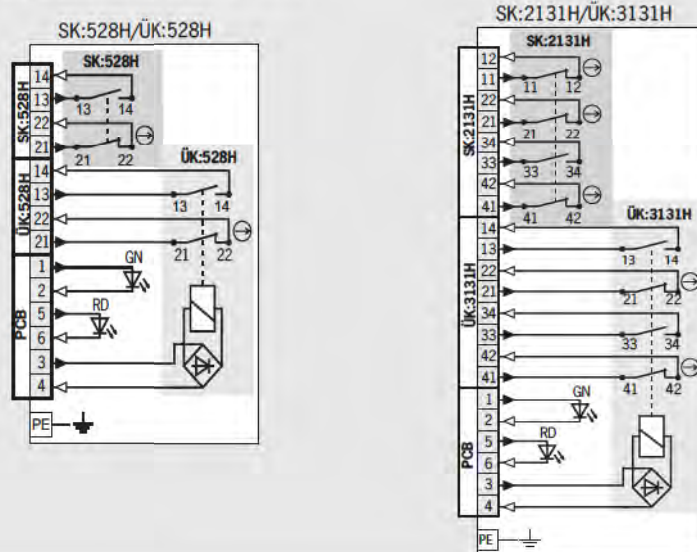


Please order actuator separately (see page 110)

- a Travel without operation: actuator is in the guide slot, however function is not triggered.
- b Switching operation completed: actuator must be inserted to this point to ensure reliable switching. The actuator must be withdrawn at least to point a for switching off.

For cable glands see page 124

Wiring diagrams Actuator inserted and locked



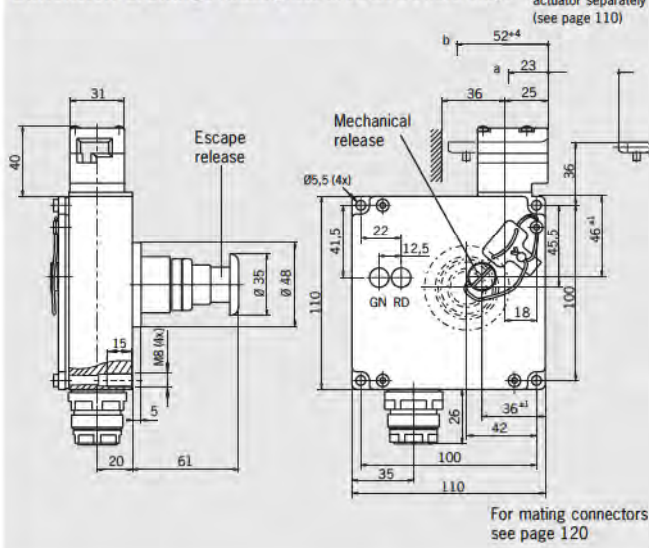
Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover		
						24 V	110 V	
TZ	M20x1.5	1	Mechanical	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	087 990	On request	
				ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ1LE024M-C1815		
				SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	089 468	094 311	
			ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ1LE024MVAB-C1828	TZ1LE110MVAB-C1828		
			SK: 528H, 1 NC ⊖ + 1 NO	Escape release	087 991	On request		
			ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ1RE024M-C1815			
		2	Electrical	Left	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	089 469	094 312
					ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ1RE024MVAB-C1828	TZ1RE110MVAB-C1828
			Right	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	089 460	On request	
				ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ2LE024M-C1815		
Electrical	Left	Left	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	087 290	On request		
			ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ2LE024MVAB-C1828			
	Right	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	089 461	On request			
		ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ2RE024M-C1815				
Right	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	087 291	On request				
	ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ2RE024MVAB-C1828					

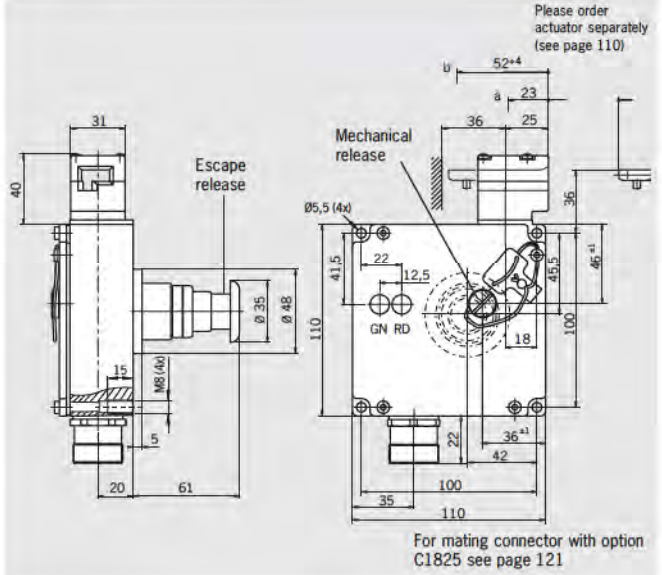


Plug connector SR11 11-pin + PE

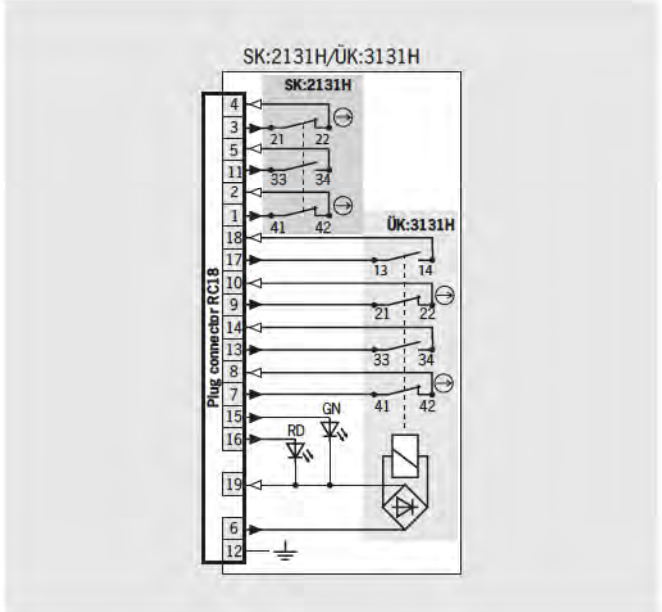
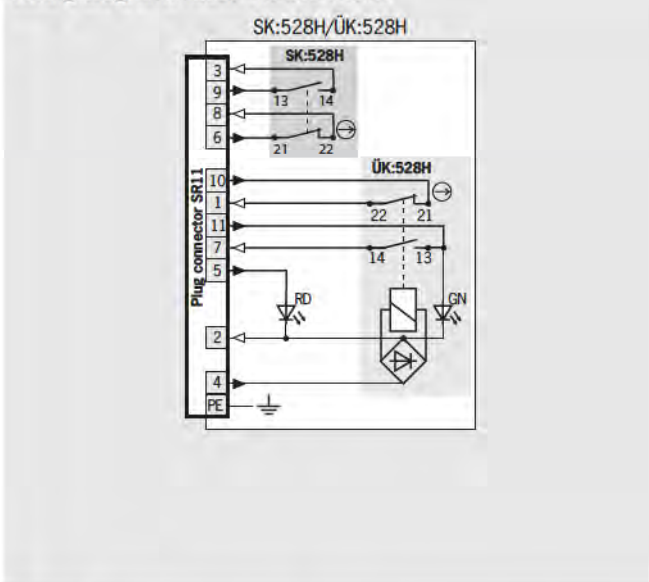
Dimension drawings



Plug connector RC18 18-pin + PE



Wiring diagrams



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	2 Electrical	LE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 2 NO	Escape release (key button)	079 660 TZ2LE024SR11-C1815
			RE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Escape release (key button)	079 661 TZ2RE024SR11-C1815
	RC18 ¹⁾ Plug connector	1 Mechanical	LE	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	090 352 TZ1LE024RC18VAB-C1828
			RE	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	090 353 TZ1RE024RC18VAB-C1828
		2 Electrical	LE	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	093 103 TZ2LE024RC18VAB-C1828
			RE	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	093 104 TZ2RE024RC18VAB-C1828

1) Important: use suitable mating connector with option C1825!

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Mechanical release on the front
- ▶ Escape release on the rear with pushbutton
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Escape release

Is used for the manual release of the guard locking from within the danger area without tools.

Solenoid operating voltage and LED function display

The following voltage ranges are available:

- ▶ 24 V AC/DC -15%, +10%
- ▶ 110 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

Switching elements (see also Page 13/14)

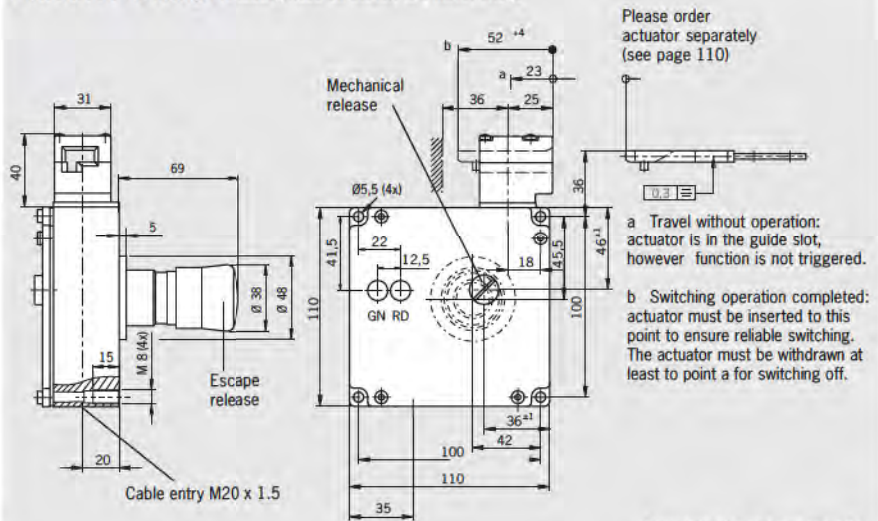
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

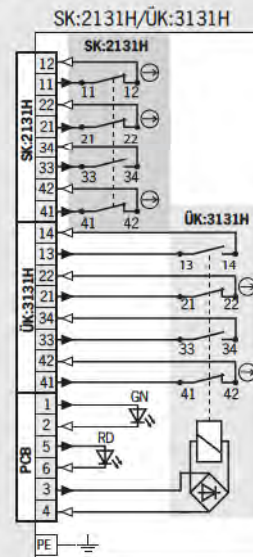
Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 124

Wiring diagrams Actuator inserted and locked



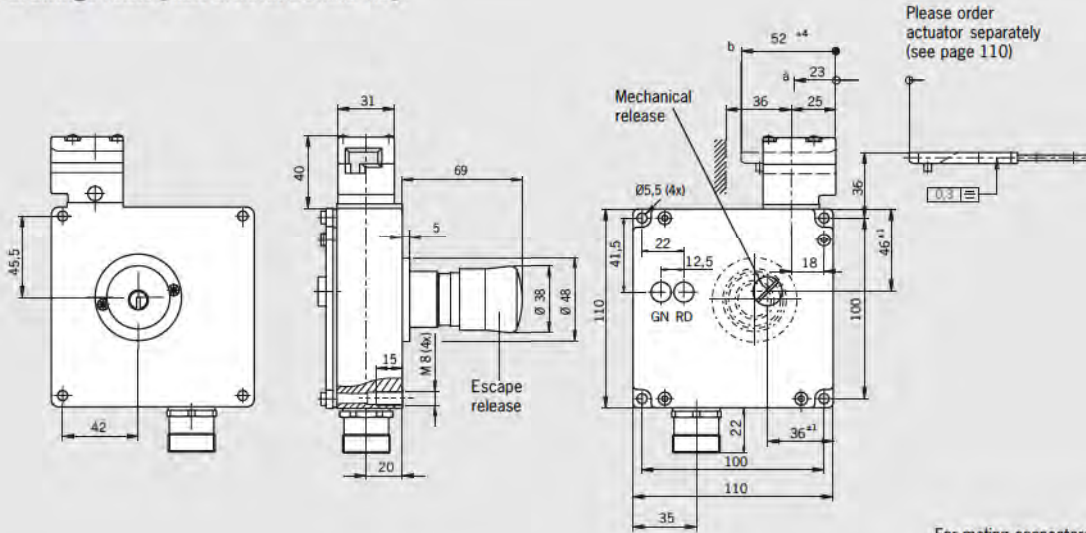
Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover	
						24 V	110 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C2082 Escape release (pushbutton)	096 487 TZ1LE024MVAB-C2082	095 992 TZ1LE110MVAB-C2082
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C2082 Escape release (pushbutton)	096 488 TZ1RE024MVAB-C2082	095 103 TZ1RE110MVAB-C2082



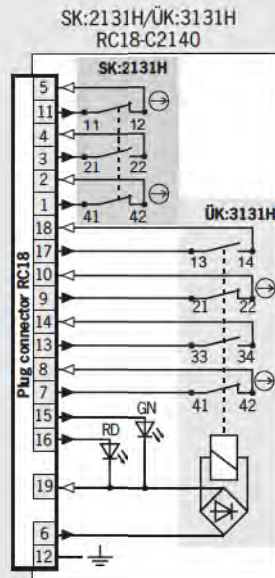
Plug connector RC18 18-pin + PE

Dimension drawings Actuating head on the left is a mirror image



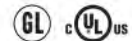
For mating connectors see page 121

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C2140 Escape release (pushbutton)	098 297 TZ1LE024RC18VAB-C2140
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C2140 Escape release (pushbutton)	098 298 TZ1RE024RC18VAB-C2140



Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ Escape release on the rear with pushbutton
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

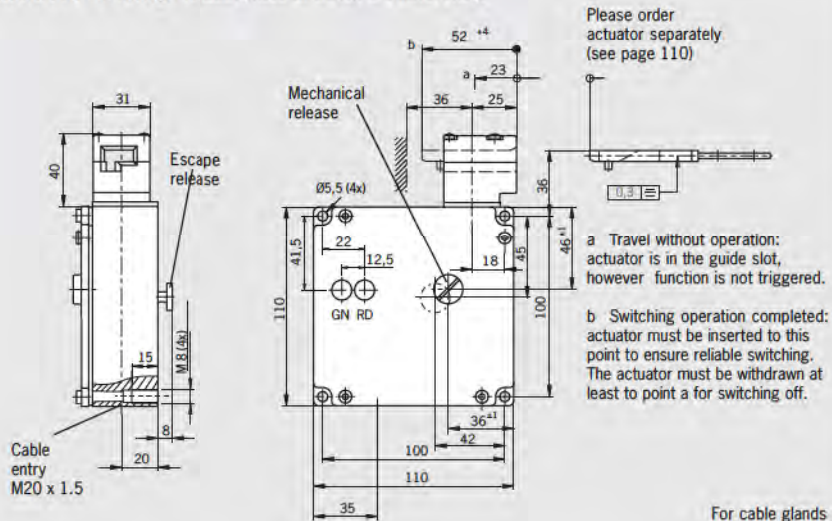
- Horizontal
- Can be adjusted in 90° steps.

Escape release

Is used for the manual release of the guard locking from within the danger area without tools. A sealing wire can be fitted to protect against tampering. Lead sealing kit and tool included (already pre-assembled on versions with plug connectors).

Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 124

Solenoid operating voltage and LED function display

- The following voltage ranges are available:
- ▶ 24 V AC/DC -15%, +10%
 - ▶ 110 V AC -15%, +10%
 - ▶ 230 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

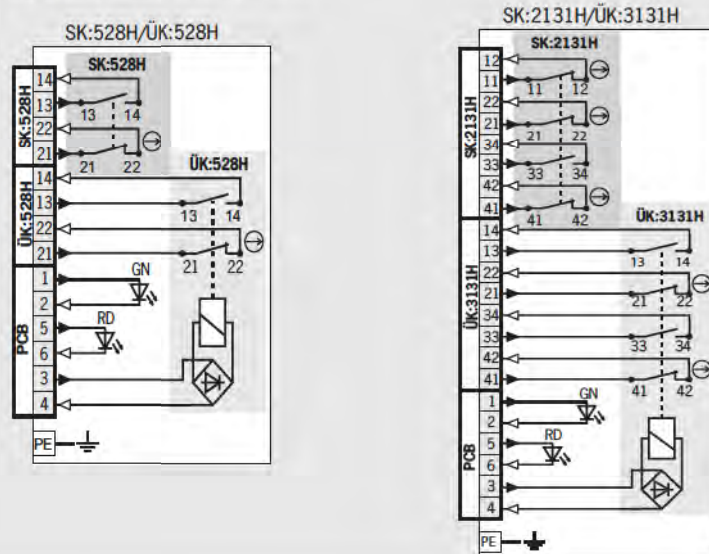
Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Wiring diagrams Actuator inserted and locked



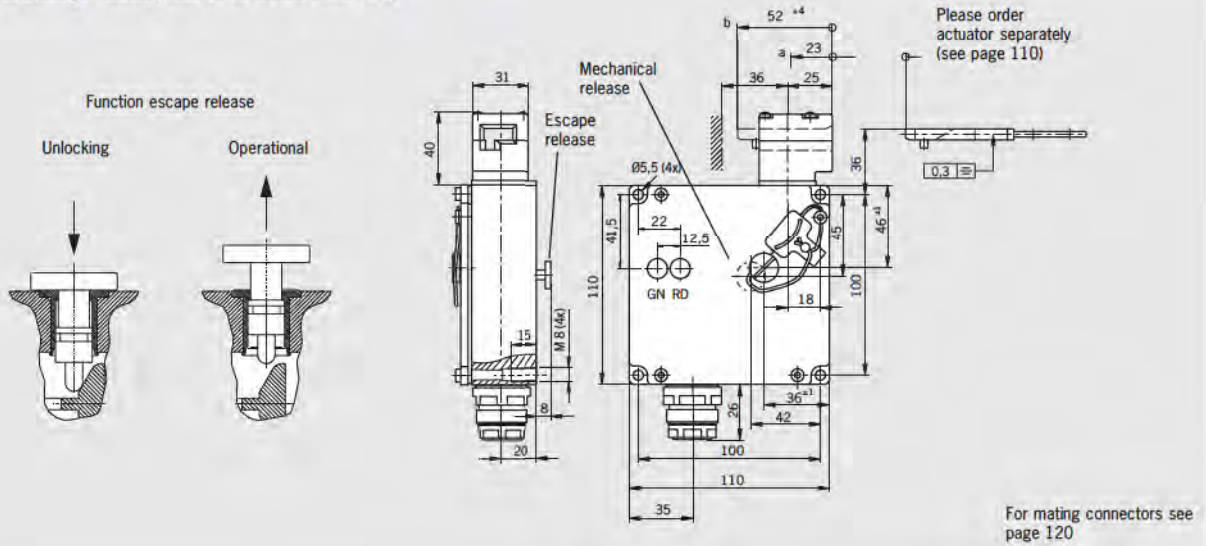
Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover		
						24 V	110 V	230 V
TZ	M20x1.5	1	Mechanical	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	083 170 TZ1LE024M-C1684	089 924 TZ1LE110M-C1684	093 770 TZ1LE220M-C1684
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C1684 Escape release (pushbutton)	084 820 TZ1LE024MVAB-C1684	on request	On request
				SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	083 171 TZ1RE024M-C1684	089 475 TZ1RE110M-C1684	093 771 TZ1RE220M-C1684
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	C1684 Escape release (pushbutton)	088 084 TZ1RE024MVAB-C1684	On request	On request

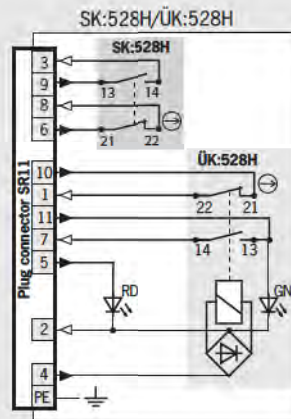


Plug connector SR11 11-pin + PE

Dimension drawings Actuating head on the left is a mirror image



Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	070 886 TZ1LE024SR11-C1684
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	070 884 TZ1RE024SR11-C1684

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Emergency unlocking on the front with rotary knob
- ▶ Escape release on the rear with pushbutton
- ▶ Protective plate for switch head
- ▶ Two LEDs, red and green
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Emergency unlocking

Is used for the manual release of the guard locking without tools. The emergency unlocking mechanism must be returned to the locked state manually. A sealing wire can be fitted to protect against tampering. Lead sealing kit and tool included (already pre-assembled on versions with plug connectors).

Escape release

Is used for the manual release of the guard locking from within the danger area without tools.

Protective plate for switch head

Makes it more difficult to tamper with the switch.

Solenoid operating voltage and LED function display

The following voltage range is available:

- 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position

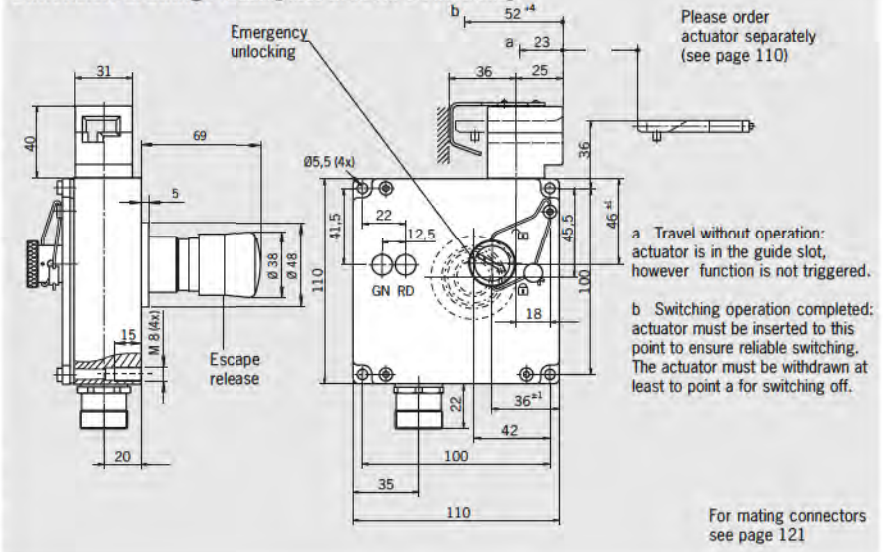
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

- **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

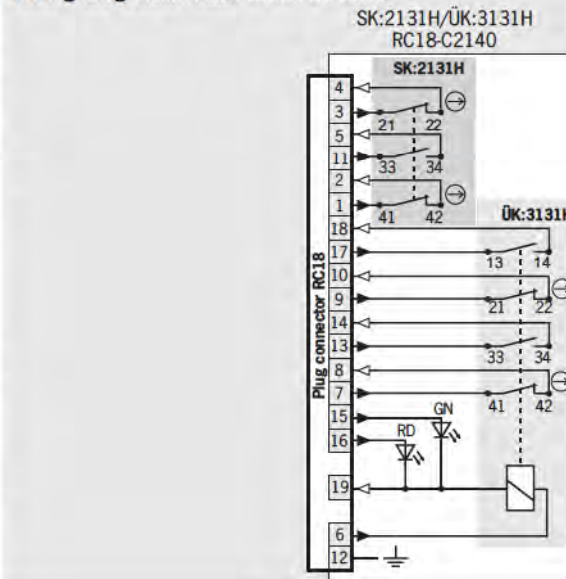
Plug connector RC18
18-pin + PE

Dimension drawings



For mating connectors see page 121

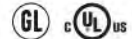
Wiring diagrams



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob), escape release (pushbutton), with protective plate	097 347 TZ1LE024RC18VAB-C2123
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob), escape release (pushbutton), with protective plate	097 348 TZ1RE024RC18VAB-C2123

Safety switch TZ with guard locking and guard lock monitoring



- ▶ Without mechanical release
- ▶ Protective plate for switch head optional
- ▶ Two LEDs, red and green
- ▶ Plug connector optional
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Protective plate for switch head

Makes it more difficult to tamper with the switch.

Solenoid operating voltage and LED function display

The following voltage ranges are available:

- ▶ 24 V AC/DC -15%, +10%
- ▶ 110 V AC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

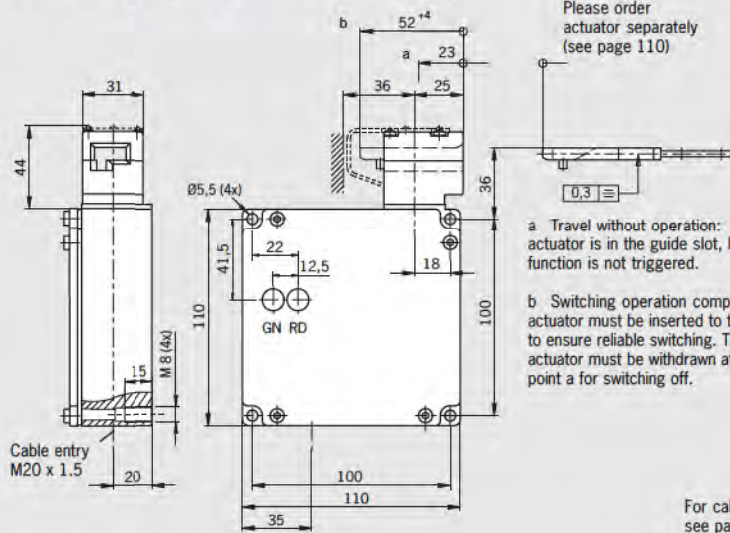
For combinations available see ordering table:

- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching element
4 NC ⊖
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Cable entry M20 x 1.5

Dimension drawings

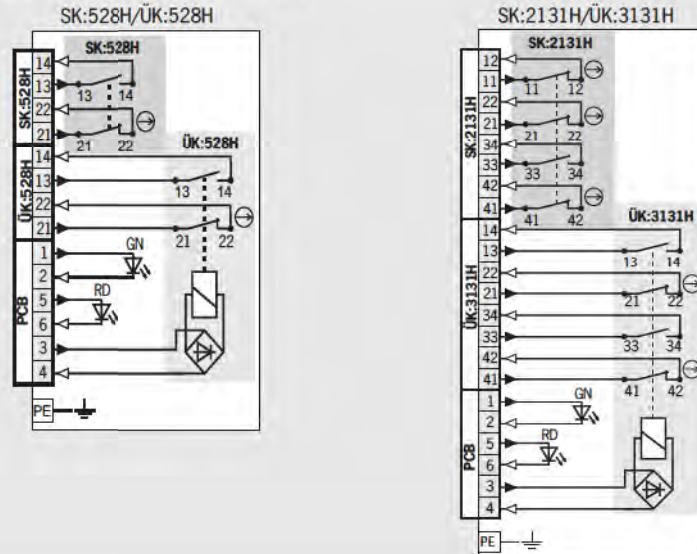
Actuating head on the left is a mirror image



For cable glands see page 124

Wiring diagrams

Actuator inserted and locked

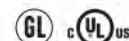


Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Red cover		Black cover							
						24 V	24 V	24 V	110 V						
TZ	M20x1.5	1	Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release, with protective plate		083 246	TZ1LE024M-C1623	On request					
					ÜK: 528H, 1 NC ⊖ + 1 NO										
					SK: 2131H, 3 NC ⊖ + 1 NO						Without mechanical release, with protective plate		085 170	TZ1LE024M/AB-C1623	089 466
					ÜK: 3131H, 2 NC ⊖ + 2 NO										
				RE Right	SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	TZ1RE024M/AB-C1623	096 052	TZ1RE024M/AB-C1623						
					ÜK: 3131H, 2 NC ⊖ + 2 NO										
					SK: 528H, 1 NC ⊖ + 1 NO						Without mechanical release, with protective plate		083 247	TZ1RE024M-C1623	On request
					ÜK: 528H, 1 NC ⊖ + 1 NO										
SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release, with protective plate		085 171	TZ1RE024M/AB-C1623	088 063										
ÜK: 3131H, 2 NC ⊖ + 2 NO						TZ1RE110M/AB-C1623									
SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	TZ1RE024M/AB-C1623	096 051												
ÜK: 3131H, 2 NC ⊖ + 2 NO						TZ1RE024M/AB-C1623									

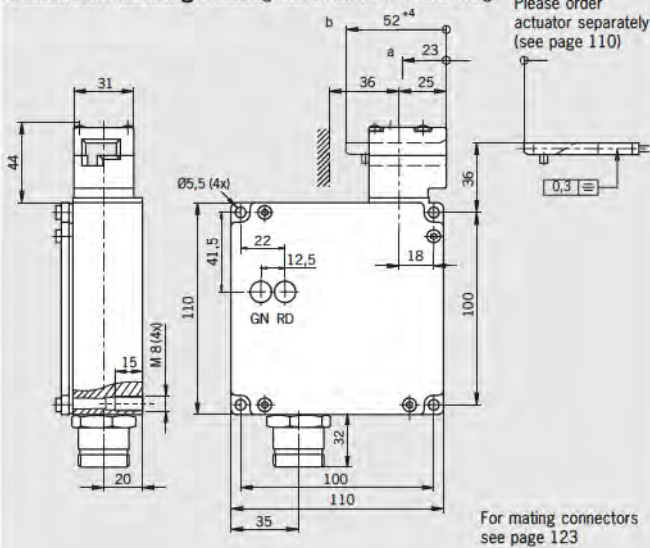
Please turn over

For safety precautions see page 179
For technical data see page 151

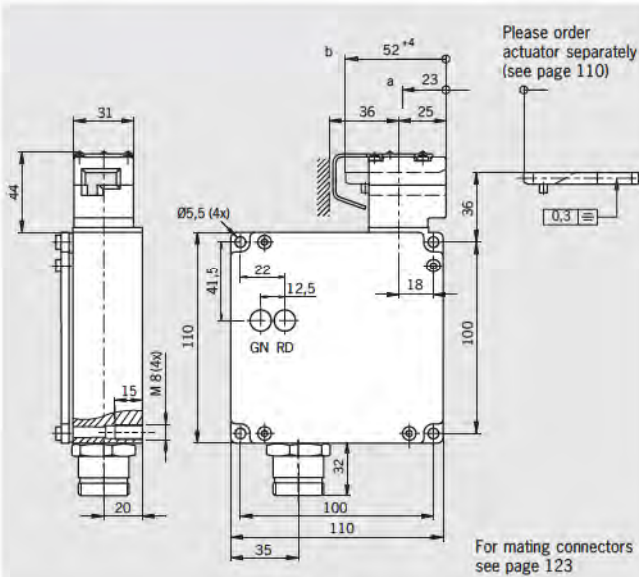


Plug connector MR10 9-pin + PE

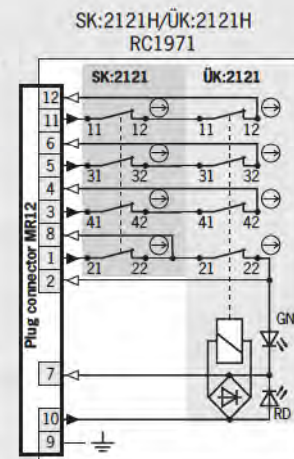
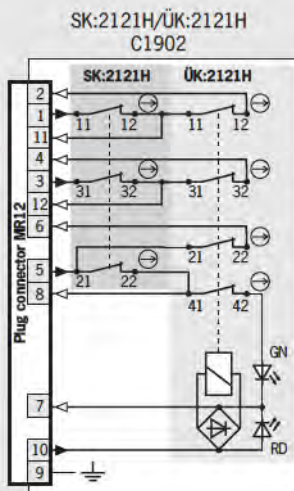
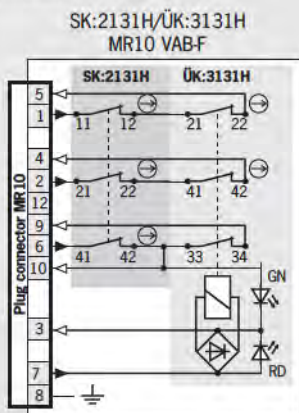
Dimension drawings Actuating head on the left is a mirror image



Plug connector MR12 11-pin + PE



Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Red cover
						24 V
TZ	MR10 Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ ÜK: 3131H, 2 NC ⊖ + 1 NO	Without mechanical release	095 904 ¹⁾ TZ1LE024MVAB-F
			RE Right	SK: 2131H, 3 NC ⊖ ÜK: 3131H, 2 NC ⊖ + 1 NO	Without mechanical release	095 905 ¹⁾ TZ1RE024MVAB-F
	MR12 Plug connector	Mechanical	LE Left	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Without mechanical release, with protective plate	079 692 TZ1LE024BHA-C1902
				C1971 Alternative wiring, without mechanical release, with protective plate	085 569 TZ1LE024BHAVFG-RC1971	
			RE Right	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Without mechanical release, with protective plate	079 693 TZ1RE024BHA-C1902
				C1971 Alternative wiring, without mechanical release, with protective plate	085 570 TZ1RE024BHAVFG-RC1971	

1) No BG approval



Safety switch TZ with guard locking and guard lock monitoring

- ▶ Without mechanical release
- ▶ Two LEDs, red and green
- ▶ Plug connector for switch connection
- ▶ Plug connector for enabling switch
- ▶ Actuating head fitted left or right



Approach direction

Horizontal
Can be adjusted in 90° steps.

Solenoid operating voltage and LED function display

The following voltage range is available:

- ▶ 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

SK For monitoring the door/actuator position

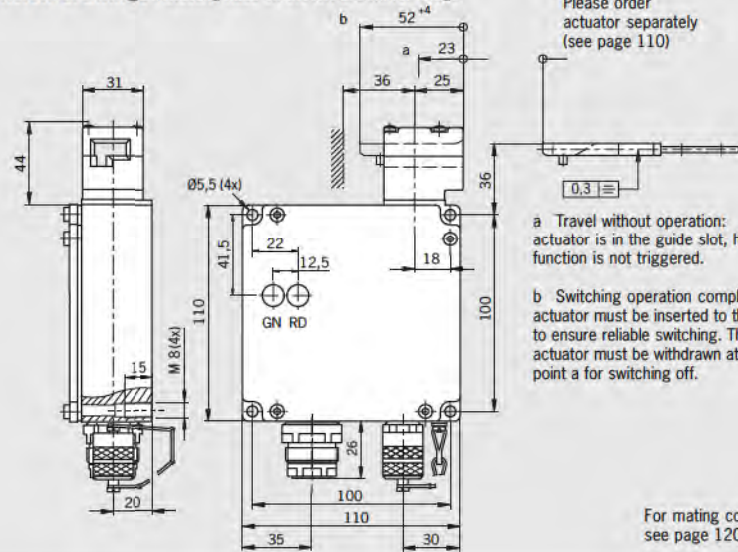
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

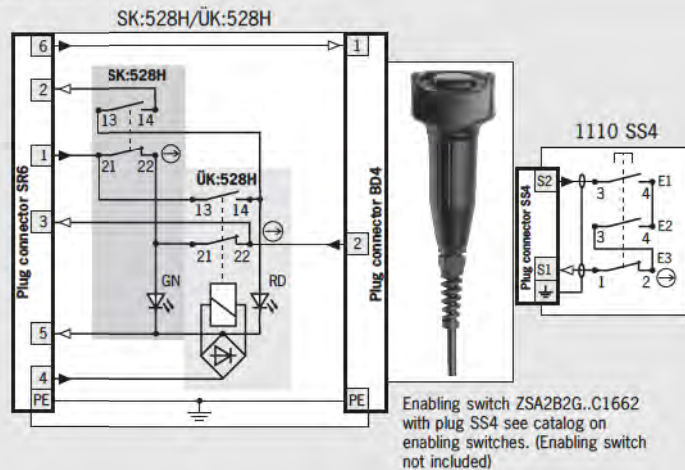
- ▶ **528H** Slow-action switching element
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element
2 NC ⊖ + 2 NO

Plug connector SR6 and BD4 (enabling switch)
6-pin + PE / 4-pin

Dimension drawings



Wiring diagrams



Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	SR6 Plug connector	Enabling switch plug BD4	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	070 527
				Left	ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1LE024SR6-C1662
				RE	SK: 528H, 1 NC ⊖ + 1 NO		054 781
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	TZ1RE024SR6-C1662		
			2 Electrical	LE	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	059 307
				Left	ÜK: 528H, 1 NC ⊖ + 1 NO		TZ2LE024SR6-C1662
RE	SK: 528H, 1 NC ⊖ + 1 NO	059 305					
Right	ÜK: 528H, 1 NC ⊖ + 1 NO	TZ2RE024SR6-C1662					

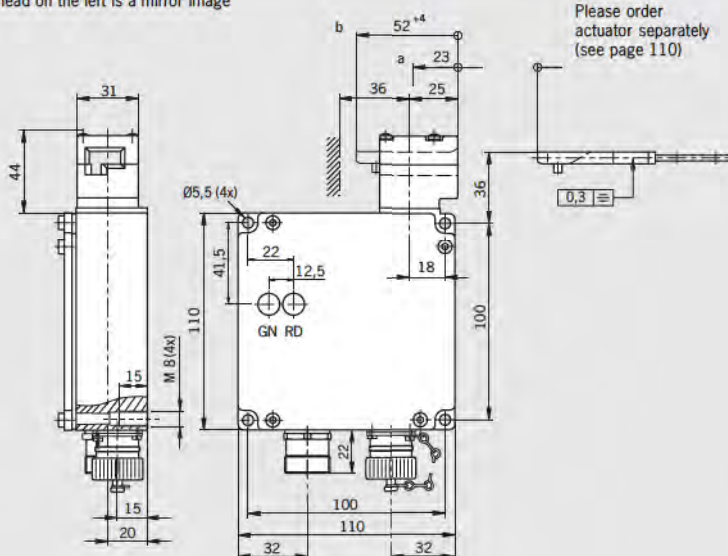
Please turn over

For safety precautions see page 179
For technical data see page 151



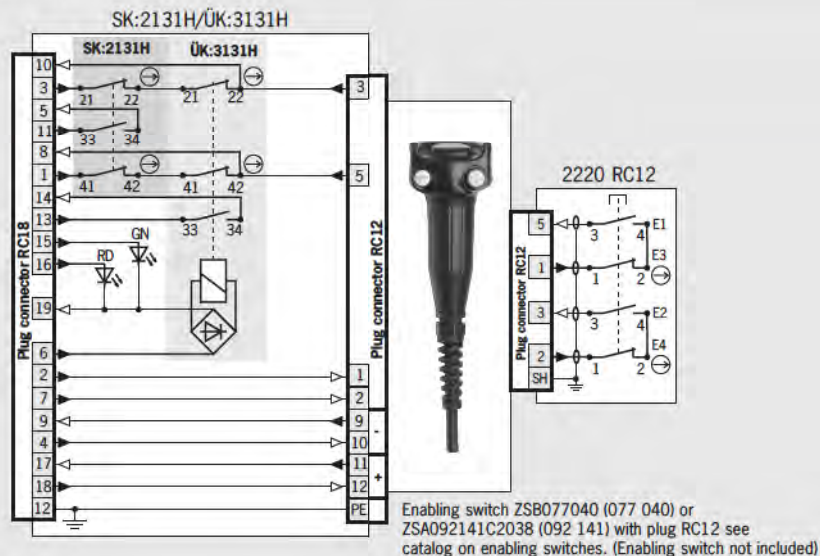
Plug connector RC18 and RC12 (enabling switch) 18-pin + PE / 12-pin

Dimension drawings Actuating head on the left is a mirror image



For mating connector with option C1825 see page 121/119

Wiring diagrams Actuator inserted and locked



Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 ¹⁾ Plug connector	Enabling switch plug RC12	1 Mechanical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	091 062
				Left	ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1LE024RC18VAB-C1803
				RE	SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	091 063
				Right	ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1RE024RC18VAB-C1803
			2 Electrical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	075 955
				Left	ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ2LE024RC18VAB-C1803
	RE	SK: 2131H, 3 NC ⊖ + 1 NO	Without mechanical release	077 149			
Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ2RE024RC18VAB-C1803					

1) **Important:** use suitable mating connector with option C1825!

Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ 3 Push buttons with LED (blue/white/yellow)
- ▶ Plug connector for switch connection
- ▶ Plug connector for enabling switch
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Solenoid operating voltage and LED function display

- The following voltage ranges are available:
- 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

- SK** For monitoring the door/actuator position
- ÜK** For monitoring the guard locking (built-in solenoid)

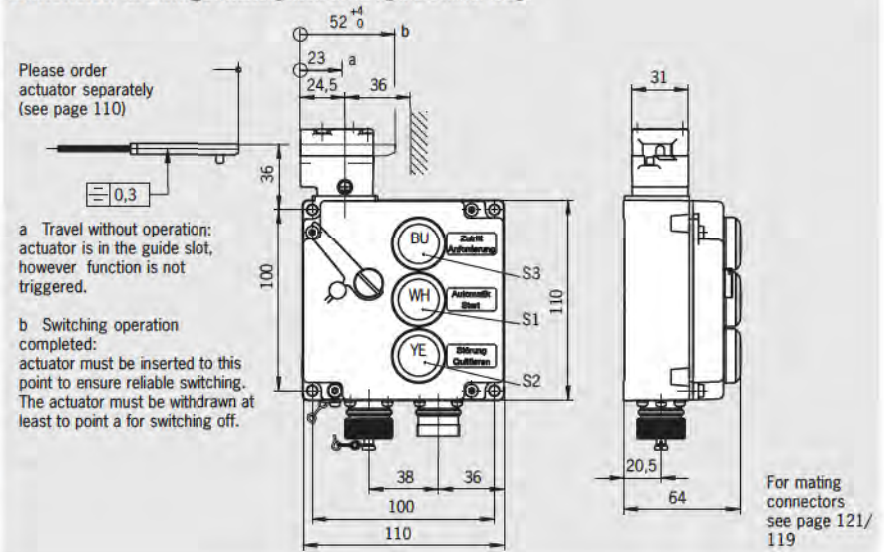
For combinations available see ordering table:

- ▶ **2131H** Slow-action switching element
3 $\bar{O} \ominus + 1 S$
- ▶ **3131H** Slow-action switching element
2 $\bar{O} \ominus + 2 S$

Plug connector RC18 and RC12 (enabling switch)
18-pin + PE / 12-pin

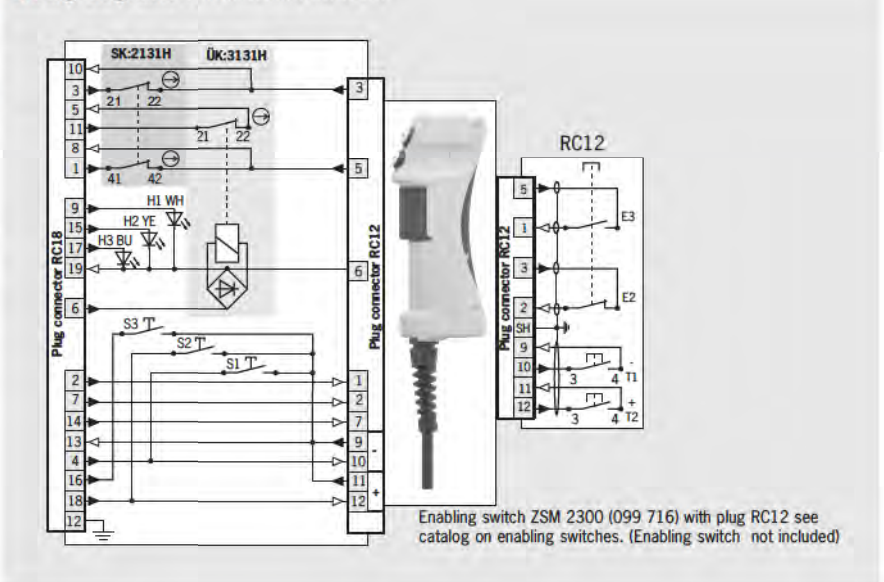
Dimension drawings

Actuating head on the right is a mirror image



Wiring diagrams

Actuator inserted and locked



Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 ¹⁾ Plug connector	Enabling switch plug RC12	1 Mechanical	LE Left	SK: 2131H, 3 NC \ominus + 1 NO	3 Push buttons with LED	100 445
					ÜK: 3131H, 2 NC \ominus + 2 NO		TZ1LE024RC18-C2198
				RE Right	SK: 2131H, 3 NC \ominus + 1 NO	3 Push buttons with LED	100 444
					ÜK: 3131H, 2 NC \ominus + 2 NO		TZ1RE024RC18-C2198
			2 Electrical	LE Left	SK: 2131H, 3 NC \ominus + 1 NO	3 Push buttons with LED	100 447
					ÜK: 3131H, 2 NC \ominus + 2 NO		TZ2LE024RC18-C2198
RE Right	SK: 2131H, 3 NC \ominus + 1 NO	3 Push buttons with LED	100 446				
	ÜK: 3131H, 2 NC \ominus + 2 NO		TZ2RE024RC18-C2198				

1) **Important:** use suitable mating connector with option C1825!

Safety switch TZ

- ▶ Mechanical release on the front
- ▶ 2 Push buttons with LED (white/yellow)
- ▶ Plug connector for switch connection
- ▶ Plug connector for enabling switch
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

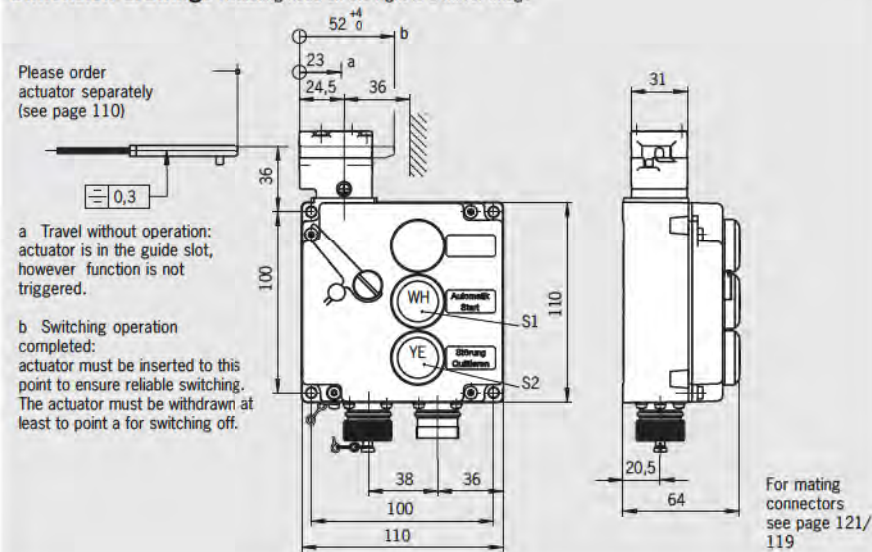
Operating voltage of LED function display

The following voltage ranges are available:

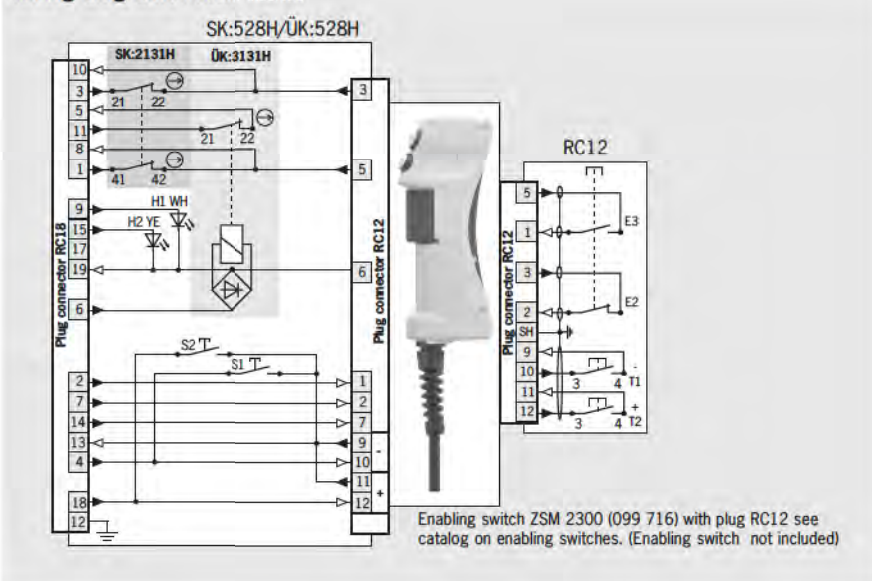
- 24 V AC/DC -15%, +10%

Plug connector RC18 and RC12 (enabling switch)
18-pin + PE / 12-pin

Dimension drawings



Wiring diagrams



Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 ¹⁾ Plug connector	Enabling switch plug RC12	non	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	2 Push buttons with LED	100 449 TZ1LE000RC18-C2199
				RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	2 Push buttons with LED	100 448 TZ1RE000RC18-C2199

1) Important: use suitable mating connector with option C1825!

Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ 2 Push buttons with LED (white/yellow)
- ▶ Additional LED green
- ▶ Plug connector for switch connection
- ▶ Plug connector for enabling switch
- ▶ Actuating head fitted left or right



Approach direction

- Horizontal
- Can be adjusted in 90° steps.

Solenoid operating voltage and LED function display

- The following voltage ranges are available:
- 24 V AC/DC -15%, +10%

Guard locking types

TZ1 Closed-circuit current principle, guard locking by spring force. Release by applying voltage to the solenoid.

TZ2 Open-circuit current principle, guard locking by applying voltage to the solenoid. Release by spring force.

Switching elements (see also Page 13/14)

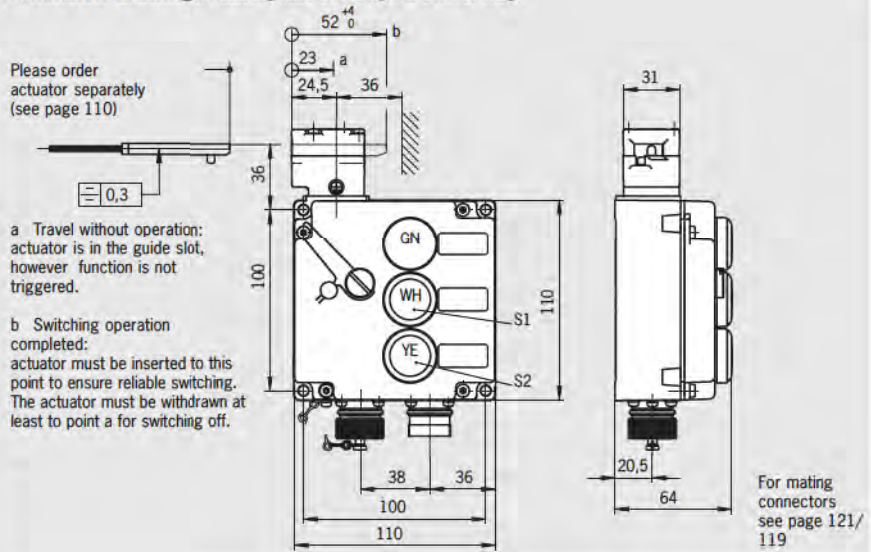
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

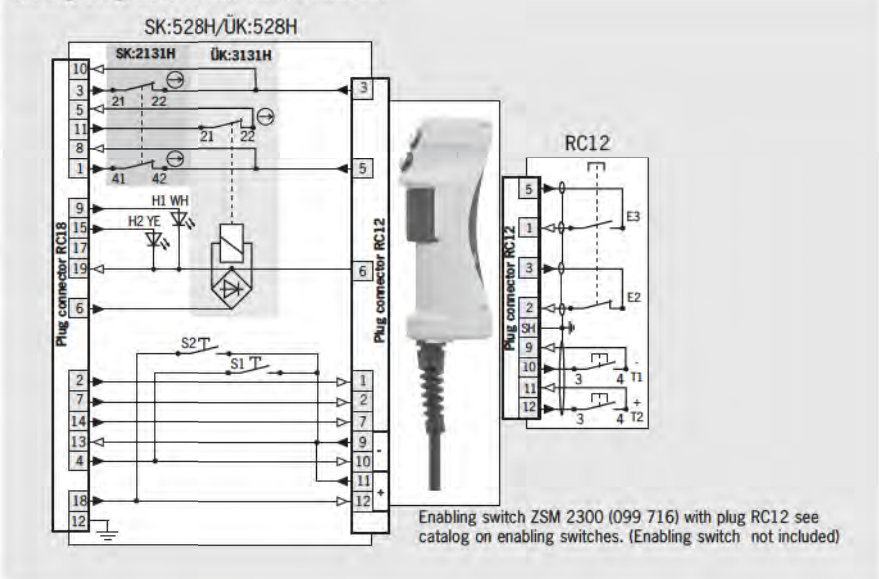
- ▶ **2131H** Slow-action switching element
3 \bar{O} + 1 S
- ▶ **3131H** Slow-action switching element
2 \bar{O} + 2 S

Plug connector RC18 and RC12 (enabling switch)
 18-pin + PE / 12-pin

Dimension drawings



Wiring diagrams



Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 ¹⁾ Plug connector	Enabling switch plug RC12	1 Mechanical	LE Left	SK: 2131H, 3 NC \ominus + 1 NO	2 Push buttons with LED + 1 LED	100 176
					ÜK: 3131H, 2 NC \ominus + 2 NO		TZ1LE024RC18VAB-C2189
				RE Right	SK: 2131H, 3 NC \ominus + 1 NO	2 Push buttons with LED + 1 LED	100 175
					ÜK: 3131H, 2 NC \ominus + 2 NO		TZ1RE024RC18VAB-C2189
			2 Electrical	LE Left	SK: 2131H, 3 NC \ominus + 1 NO	2 Push buttons with LED + 1 LED	On request
					ÜK: 3131H, 2 NC \ominus + 2 NO		On request
RE Right	SK: 2131H, 3 NC \ominus + 1 NO	2 Push buttons with LED + 1 LED	On request				
	ÜK: 3131H, 2 NC \ominus + 2 NO		On request				


1) **Important:** use suitable mating connector with option C1825!





Safety switch TZ with guard locking and guard lock monitoring





The technical data on switches, switching elements and guard locking apply to all connections. Further technical data are given for the connection selected.

Switch			
Parameter		Value	Unit
Housing material		Anodized die-cast alloy	
Mechanical life		2 x 10 ⁶ operating cycles	
Ambient temperature		-25 ... +80	°C
Weight		Approx. 1.2	kg
Max. approach speed		20	m/min
Actuating force		35	N
Extraction force		30	N
Retention force		10	N
Locking force, max.		2000	N
Locking force F _{ZH} in accordance with test principles GSET-19		1500	N

Switching element			
Parameter		Value	Unit
Switching principle		Slow-action switching element	
Switching elements		SK: 528H / UK: 528H	
with 2 switching elements		1 NC + 1 NO / 1 NC + 1 NO	
Switching elements		SK: 2131H / UK: 3131H	SK: 2121H / UK: 2121H
with 4 switching elements		3 NC + 1 NO / 2 NC + 2 NO	4 NC / NC
Switching current, min., at 24 V		1	mA
Rated impulse withstand voltage U _{imp}		2.5	kV
Contact material		Silver alloy, gold flashed	

Guard locking			
Parameter		Value	Unit
Solenoid operating voltage	AC/DC 24 V +10/-15%	AC 110 V +10/-15%	AC 230 V +10/-15%
Duty cycle ED		100	%
Power consumption		10	W

Connection, cable entry M20 x 1.5			
Parameter		Value	Unit
Connection		Screw terminal	
Version		M20 x 1.5	
Conductor cross-section max.		per wire 1.5 mm ²	
Degree of protection acc. to IEC 60529	IP 67	IP 65: With escape release TZ...C1815, TZ...C1828 With emergency release TZ...C1816, TZ...C1823	
Rated insulation voltage U _i		250	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector RC18			
Parameter		Value	Unit
Connection		Plug connector	
Version		RC18 (18-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		110	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 110 V	
	DC13	I _e 4 A U _e 24 V	

1) Screwed tight with the related plug connector (see page 121)

Connection, plug connector SR6



Parameter		Value	Unit
Connection		Plug connector	
Version		SR6 (6-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

1) Screwed tight with the related plug connector (see page 112)

Standard wiring TZ...SR6

The green LED indicates the state of the safety circuit and the red LED the state of the monitoring circuit.

Green only: Safety circuit closed

Red only: Actuator unlocked, safety circuit open

LED		Actuator		Safety circuit	
Red	Green	Locked	Unlocked	Closed	Open
ON	ON		X	X	
ON	OFF		X		X
OFF	ON	X		X	
OFF	OFF	Not defined or no power			

The exact states of the safety circuit and the actuator can be seen in the adjacent table for the safety switch TZ...SR6.

Connection, plug connector SR11



Parameter		Value	Unit
Connection		Plug connector	
Version		SR11 (11-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		50	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 50 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector MR8



Parameter		Value	Unit
Connection		Plug connector	
Version		MR8 (7-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector MR10



Parameter		Value	Unit
Connection		Plug connector	
Version		MR10 (9-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		250	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 230 V	
	DC13	I _e 4 A U _e 24 V	

Connection, plug connector MR12



Parameter		Value	Unit
Connection		Plug connector	
Version		MR12 (11-pin + PE)	
Degree of protection according to IEC 60529		IP 65 ¹⁾	
Rated insulation voltage U _i		230	V AC/DC
Conventional thermal current I _{th}		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15	I _e 4 A U _e 60 V	
	DC13	I _e 4 A U _e 24 V	

1) Screwed tight with the related plug connector (see page 120 and 123)

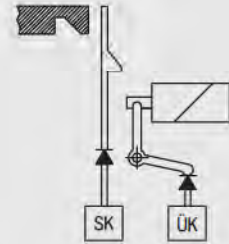
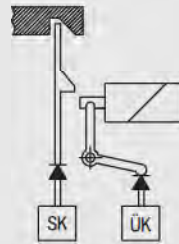
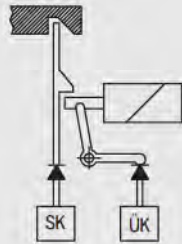
Switching functions TZ

Actuator:
Switching
position:

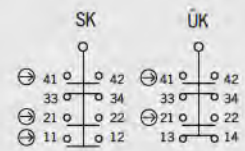
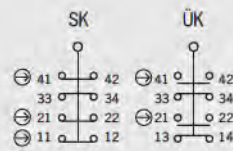
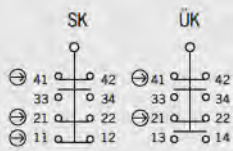
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Inserted
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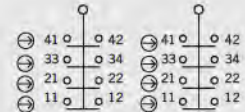
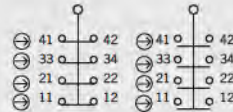
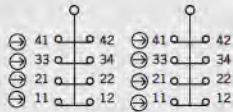
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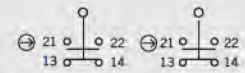
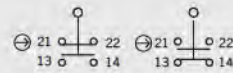
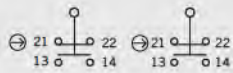
SK 2131H
ÜK 3131H



SK 2121H
ÜK 2121H



SK 528H
ÜK 528H



SK 538H
ÜK 538H

