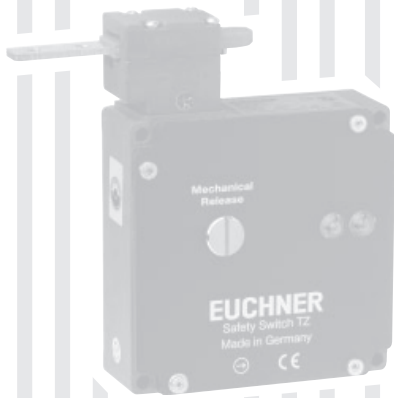


## Selection table for safety switches TZ with guard locking and guard lock monitoring

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)																				
○	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	○	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

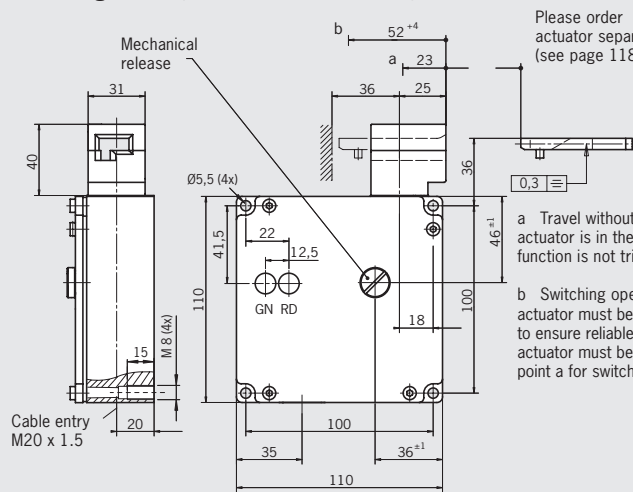
### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Black cover			Red cover	
					24 V	110 V	230 V	24 V	110 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	082050	083160	083166	083164	083168
				ÜK: 528H, 1 NC ⊖ + 1 NO	TZ1LE024M	TZ1LE110M	TZ1LE220M	TZ1LE024M-R	TZ1LE110M-R
				SK: 2121H, 4 NC ⊖	On request	On request	On request	089464 <sup>1)</sup>	On request
			RE Right	ÜK: 2121H, 4 NC ⊖	On request	On request	On request	TZ1LE024MVFGR-C1925	On request
				SK: 2131H, 3 NC ⊖ + 1 NO	083965	088023	088029	089434	On request
				ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ1LE024MVAB	TZ1LE110MVAB	TZ1LE220MVAB	TZ1LE024MVAB-R	On request
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	082051	083161	083167	083165	089448
				ÜK: 528H, 1 NC ⊖ + 1 NO	TZ1RE024M	TZ1RE110M	TZ1RE220M	TZ1RE024M-R	TZ1RE110M-R
				SK: 2121H, 4 NC ⊖	On request	On request	On request	089465 <sup>1)</sup>	On request
			RE Right	ÜK: 2121H, 4 NC ⊖	On request	On request	On request	TZ1RE024MVFGR-C1925	On request
				SK: 2131H, 3 NC ⊖ + 1 NO	083966	088024	088030	083233	On request
				ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ1RE024MVAB	TZ1RE110MVAB	TZ1RE220MVAB	TZ1RE024MVAB-R	On request
LE Left	SK: 528H, 1 NC ⊖ + 1 NO	090559	083162	088031	089445	On request			
	ÜK: 528H, 1 NC ⊖ + 1 NO	TZ2LE024M	TZ2LE110M	TZ2LE220M	TZ2LE024M-R	On request			
	SK: 2131H, 3 NC ⊖ + 1 NO	088070	088025	088027	On request	On request			
RE Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ2LE024MVAB	TZ2LE110MVAB	TZ2LE220MVAB	On request	On request			
	SK: 528H, 1 NC ⊖ + 1 NO	090560	083163	088032	089446	On request			
	ÜK: 528H, 1 NC ⊖ + 1 NO	TZ2RE024M	TZ2RE110M	TZ2RE220M	TZ2RE024M-R	On request			
LE Left	SK: 2131H, 3 NC ⊖ + 1 NO	088071	088026	088028	On request	On request			
	ÜK: 3131H, 2 NC ⊖ + 2 NO	TZ2RE024MVAB	TZ2RE110MVAB	TZ2RE220MVAB	On request	On request			

1) No BG approval

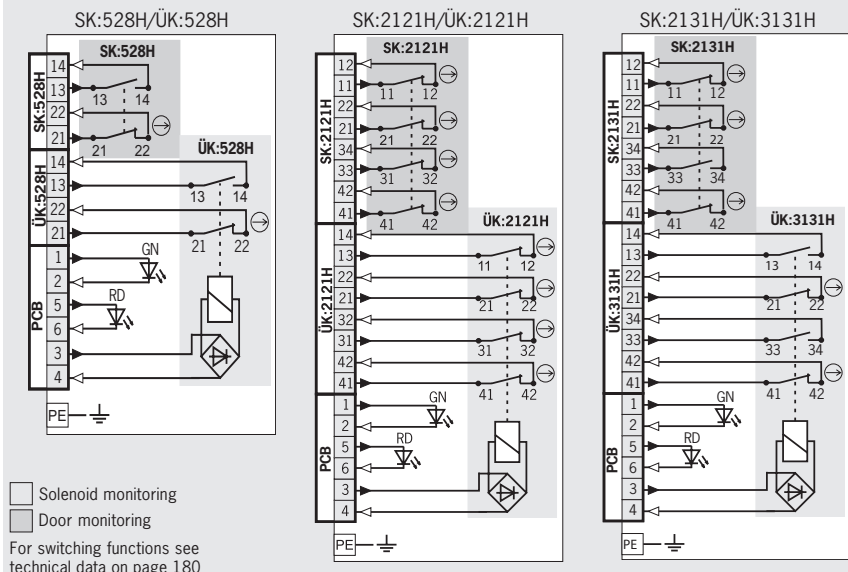
### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 132

### Wiring diagrams Actuator inserted and locked

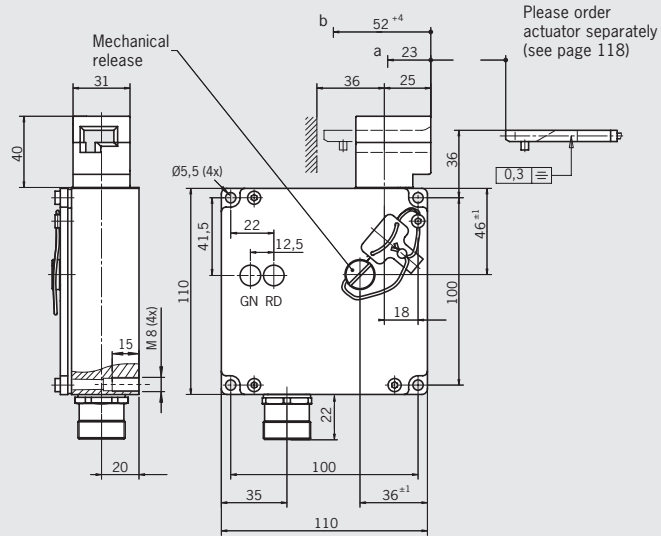




## Plug connector RC18 18-pin + PE

### Dimension drawings

Actuating head on the left is a mirror image

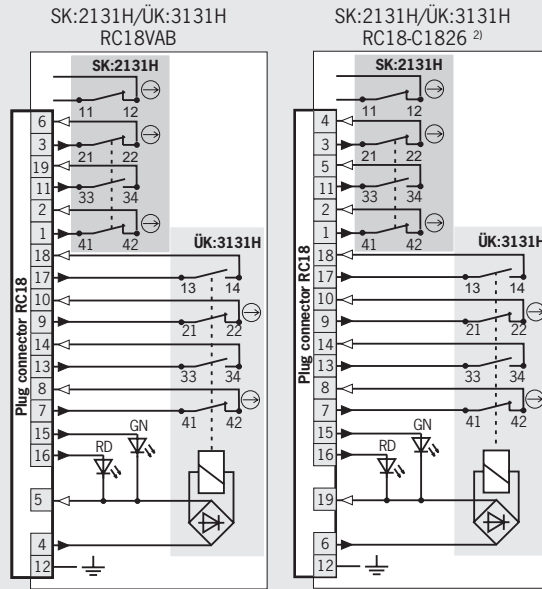


For mating connector see page 129

Please turn over

### Wiring diagrams

Actuator inserted and locked



For switching functions see technical data on page 180

### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover	
						24 V	
TZ	RC18 Plug connector	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C1826</b> Wiring	<b>084242</b> TZ1LE024RC18VAB	
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO		<b>084246</b> <sup>2)</sup> TZ1LE024RC18VAB-C1826	
			2 Electrical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C1826</b> Wiring	<b>084243</b> TZ1RE024RC18VAB
				RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C1826</b> Wiring	<b>084247</b> <sup>2)</sup> TZ1RE024RC18VAB-C1826
							<b>085180</b> <sup>2)</sup> TZ2LE024RC18VAB-C1826
							<b>085181</b> <sup>2)</sup> TZ2RE024RC18VAB-C1826

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

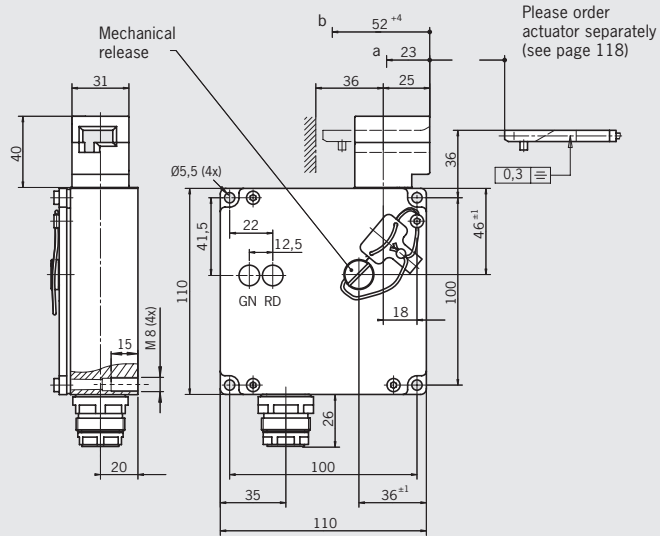
For safety precautions see page 196  
For technical data see page 163



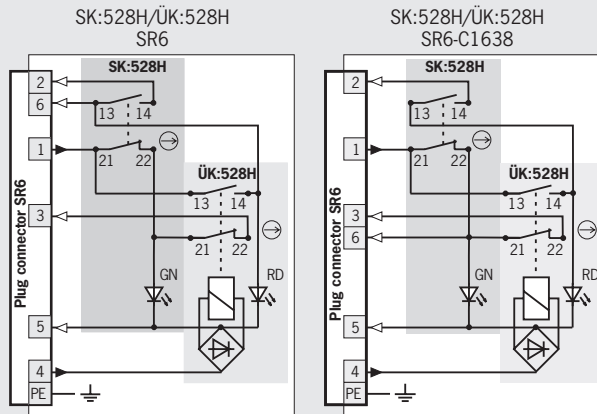


**Plug connector SR6**  
6-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

**Ordering table**

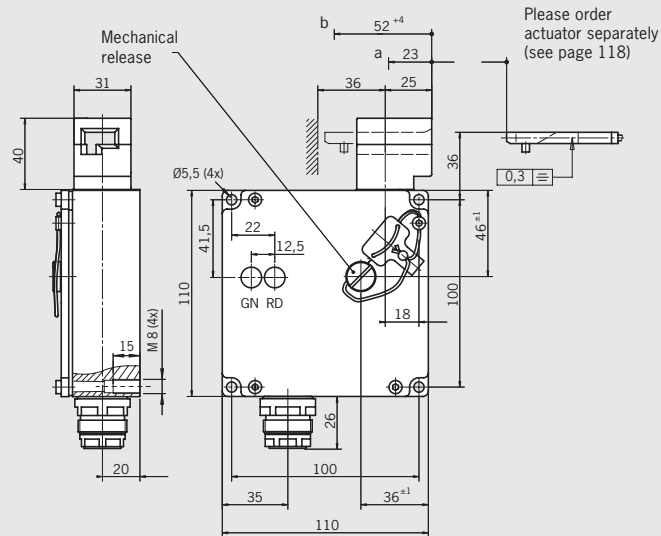
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover			Red cover
						24 V	110 V	230 V	24 V
TZ	SR6 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1638 <sup>1)</sup> Wiring	046502 TZ1LE024SR6	046503 TZ1LE110SR6	046504 TZ1LE220SR6	On request
				ÜK: 528H, 1 NC ⊖ + 1 NO		089476 <sup>1)</sup> TZ1LE024SR6-C1638	On request	On request	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	C1638 <sup>1)</sup> Wiring	046190 TZ1RE024SR6	046191 TZ1RE110SR6	051879 TZ1RE220SR6	On request
				ÜK: 528H, 1 NC ⊖ + 1 NO		070529 <sup>1)</sup> TZ1RE024SR6-C1638	On request	On request	On request
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1638 <sup>1)</sup> Wiring	049159 TZ2LE024SR6	052914 TZ2LE110SR6	045450 TZ2LE220SR6	046915 TZ2LE024SR6-R
				ÜK: 528H, 1 NC ⊖ + 1 NO		076294 <sup>1)</sup> TZ2LE024SR6-C1638	On request	On request	On request
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	C1638 <sup>1)</sup> Wiring	049102 TZ2RE024SR6	049238 TZ2RE110SR6	047937 TZ2RE220SR6	059672 TZ2RE024SR6-R
				ÜK: 528H, 1 NC ⊖ + 1 NO		055819 <sup>1)</sup> TZ2RE024SR6-C1638	On request	On request	On request

1) No BG approval



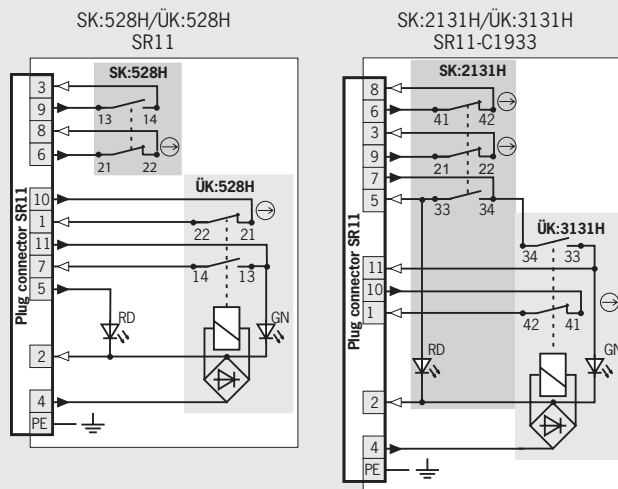
## Plug connector SR11 11-pin + PE

### Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 128

### Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

Solenoid monitoring  
 Door monitoring

### 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 <sup>1)</sup> Alternative wiring	070828
				ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1LE024SR11
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO		083230 <sup>1)</sup>
				ÜK: 3131H, 2 NC ⊖ + 2 NO		TZ1LE024SR11VAB-C1933
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1933 <sup>1)</sup> Alternative wiring	070958
				ÜK: 528H, 1 NC ⊖ + 1 NO		TZ2LE024SR11
		RE Right	SK: 528H, 1 NC ⊖ + 1 NO		070957	
			ÜK: 528H, 1 NC ⊖ + 1 NO		TZ2RE024SR11	

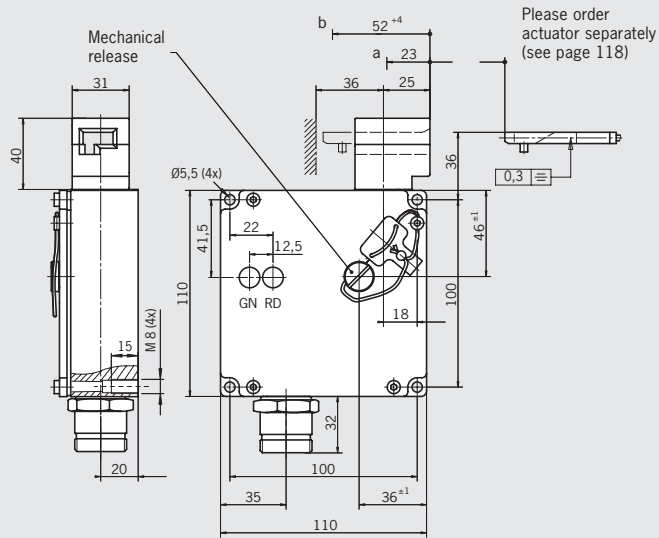
1) No BG approval





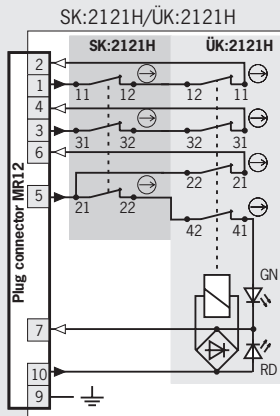
**Plug connector MR12**  
11-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



For mating connectors see page 131

**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

**Ordering table**

Series	Connection	Guard locking	Switch head	Switching element	Version	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	<b>083190</b> TZ1LE024BHAVFG-RC1924	
			RE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖		On request	On request	On request	<b>083191</b> TZ1RE024BHAVFG-RC1924	

## Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ Two cable entries M20x1,5
- ▶ Two LEDs, red and green
- ▶ Plug connector on request
- ▶ 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%

### 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

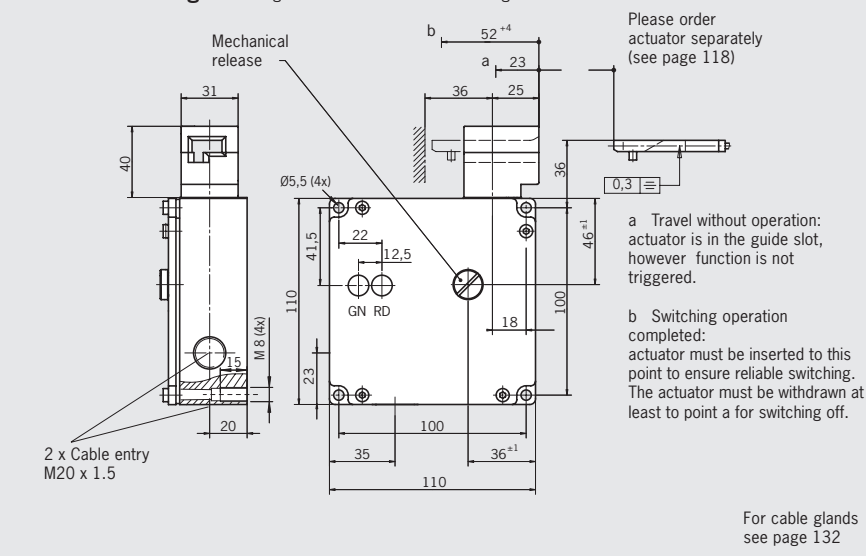
**ÜK** For monitoring the guard locking (built-in solenoid)

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

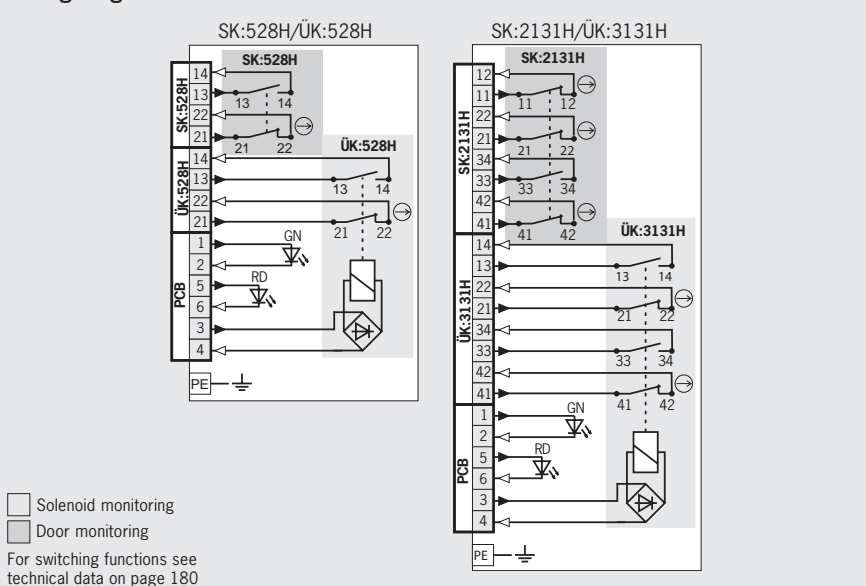
Cable entry 2 x M20 x 1,5

Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 132

Wiring diagrams Actuator inserted and locked



□ Solenoid monitoring  
■ Door monitoring

For switching functions see technical data on page 180

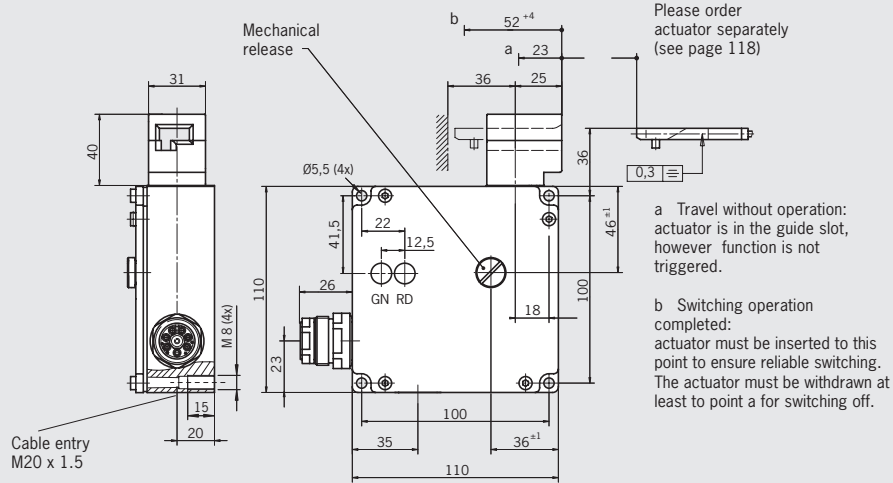
### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	2 x M20x1,5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊕ + 1 NO	2 cable entries	<b>095245</b>
				ÜK: 528H, 1 NC ⊕ + 1 NO		TZ1LE024M-C2087
				SK: 2131H, 3 NC ⊕ + 1 NO	2 cable entries	On request
			RE Right	ÜK: 3131H, 2 NC ⊕ + 2 NO		
				SK: 528H, 1 NC ⊕ + 1 NO	2 cable entries	<b>095253</b>
				ÜK: 528H, 1 NC ⊕ + 1 NO		TZ1RE024M-C2087
			SK: 2131H, 3 NC ⊕ + 1 NO	2 cable entries	<b>098205</b>	
			ÜK: 3131H, 2 NC ⊕ + 2 NO		TZ1RE024MVAB-C2087	

**Plug connector SR6**  
6-pin + PE

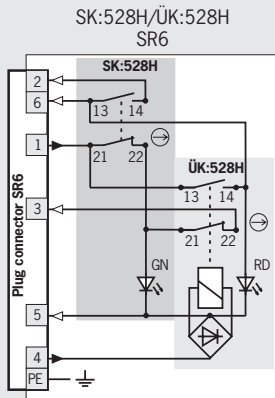
**Plug connector SR11**  
11-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



For mating connectors see page 128

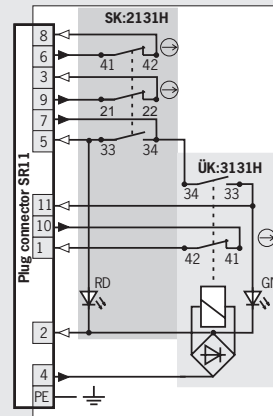
**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

Solenoid monitoring  
 Door monitoring

SK:2131H/ÜK:3131H  
SR11-C1933



For switching functions see technical data on page 180

Solenoid monitoring  
 Door monitoring

**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



### 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:

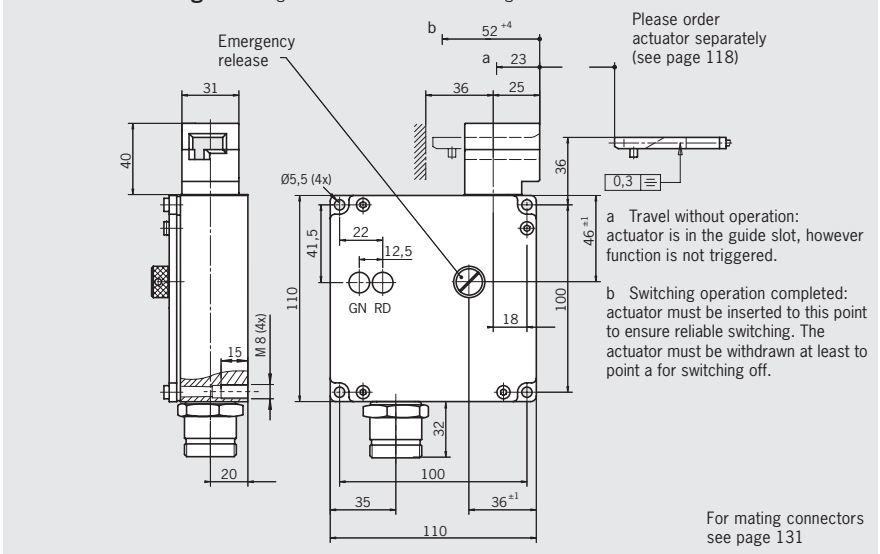
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching element  
4 NC ⊖
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

**Plug connector MR8**  
7-pin + PE



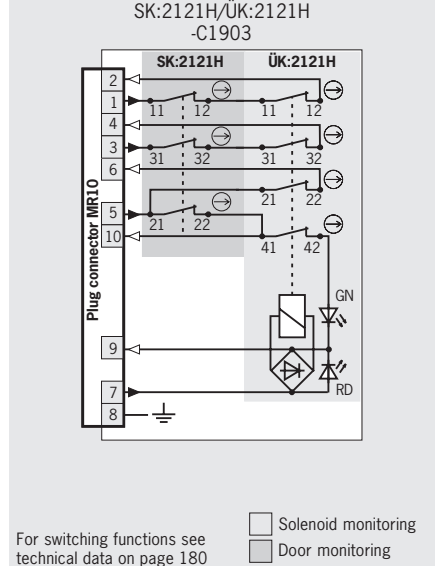
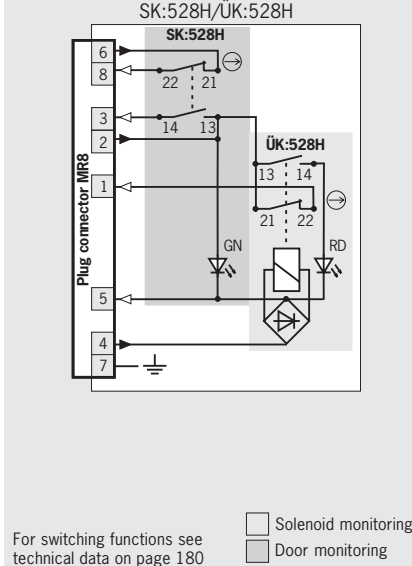
**Plug connector MR10**  
9-pin + PE

### Dimension drawings



### 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 ÜK: 528H, 1 NC + 1 NO	Emergency release cannot be sealed	054964 TZ1LE024PGOR8C	074917 TZ1LE110PGOR8C	On request
			RE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Emergency release cannot be sealed	059920 TZ1RE024PGOR8C	074916 TZ1RE110PGOR8C	On request
	MR10 Plug connector	1 Mechanical	LE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082095 TZ1LE024BHA-C1903
			RE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082096 TZ1RE024BHA-C1903
		2 Electrical	LE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082083 TZ2LE024BHA-C1903
			RE	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	Emergency release cannot be sealed	On request	On request	082084 TZ2RE024BHA-C1903





## Safety switch TZ with guard locking and guard lock monitoring

- ▶ Mechanical release on the front
- ▶ Protective plate for switch head
- ▶ 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).

### 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.
- 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:

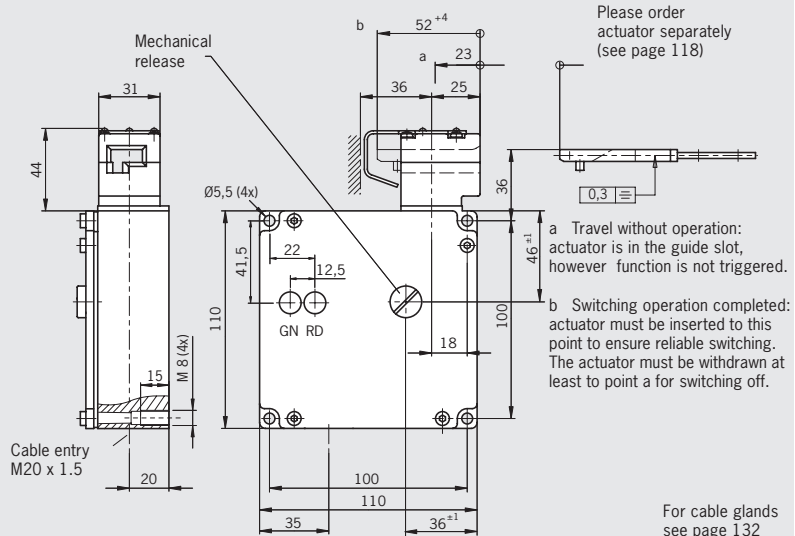
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Ordering table

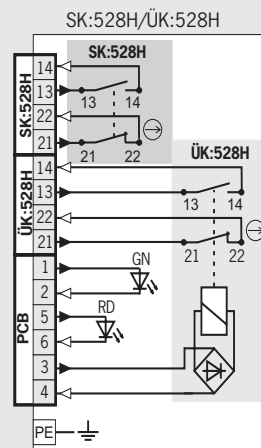
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>089470</b>
			Left	ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1LE024M-089470
			RE	SK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>089471</b>
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO		TZ1RE024M-089471

### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

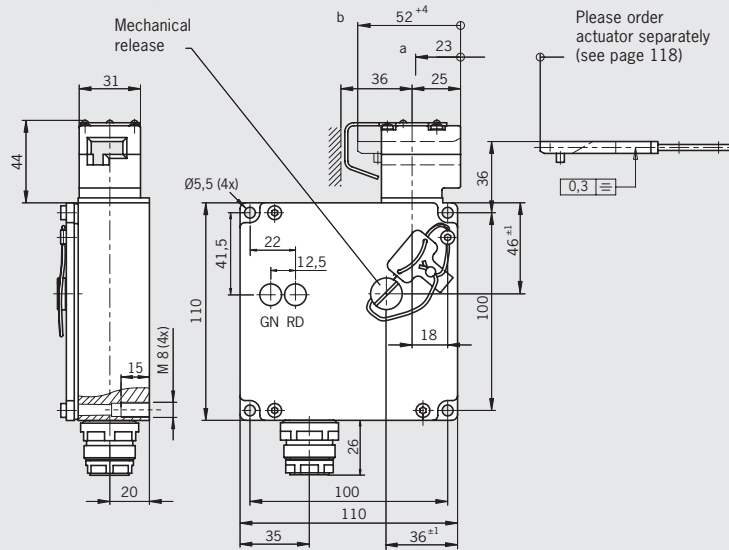
- Solenoid monitoring
- Door monitoring



**Plug connector SR6**  
6-pin + PE

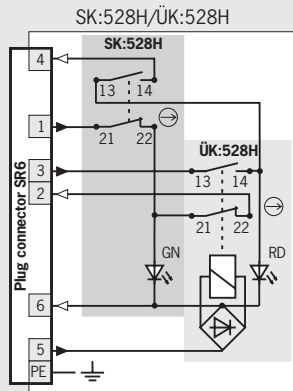
**Plug connector SR11**  
11-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



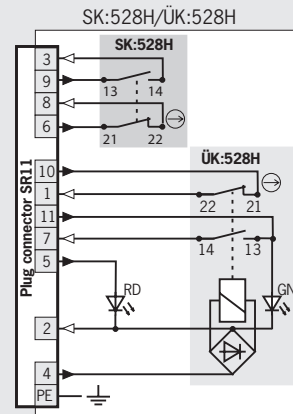
For mating connectors see page 128

**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

## 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 protective plate	<b>059694</b> TZ1LE024SR6-C1677
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>059692</b> TZ1RE024SR6-C1677
		2 Electrical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>059852</b> TZ2LE024SR6-C1677
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>059699</b> TZ2RE024SR6-C1677
	SR11 Plug connector	1 Mechanical	LE	SK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>093860</b> TZ1LE024SR11-093860
			Right	ÜK: 528H, 1 NC ⊖ + 1 NO	With protective plate	<b>093861</b> TZ1RE024SR11-093861

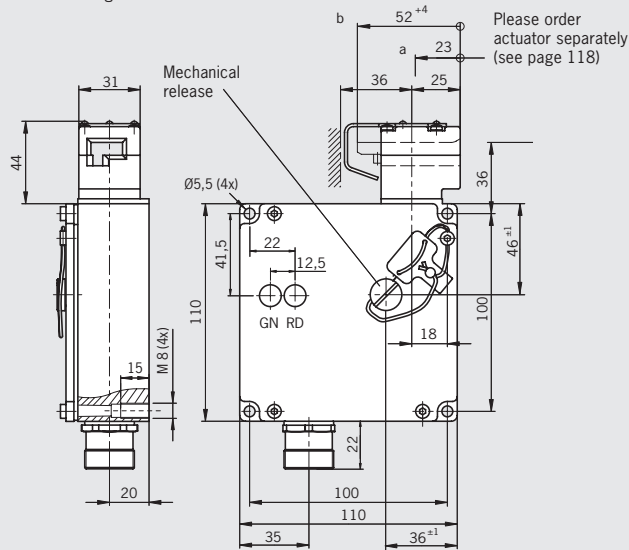
For safety precautions see page 196  
For technical data see page 163





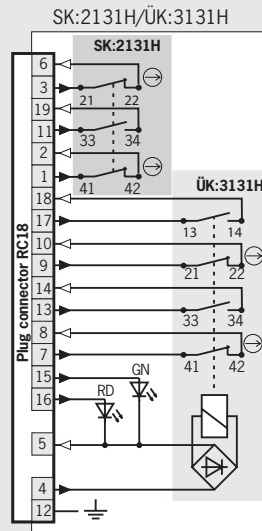
**Plug connector RC18**  
18-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



For mating connectors see page 129

**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

**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	<b>093862</b>
			Left	ÜK: 3131H, 2 NC ⊕ + 2 NO		TZ1LE024RC18VAB-093862
			RE	SK: 2131H, 3 NC ⊕ + 1 NO	With protective plate	<b>093863</b>
			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

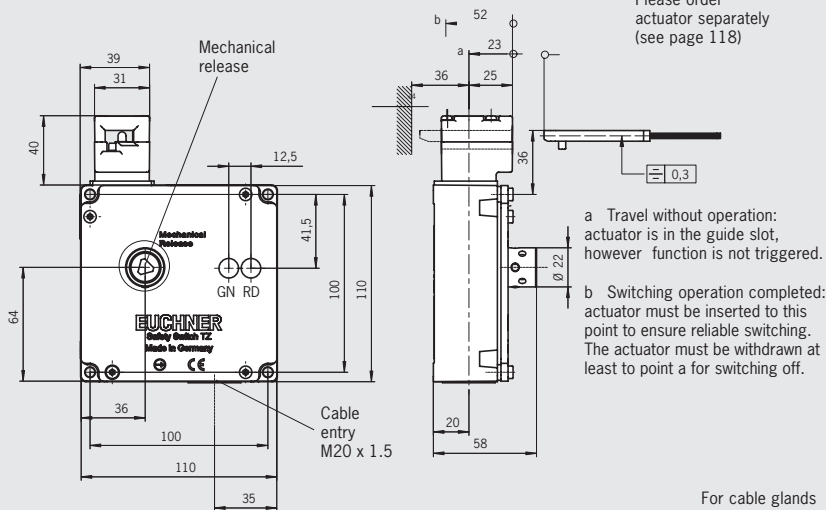
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

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

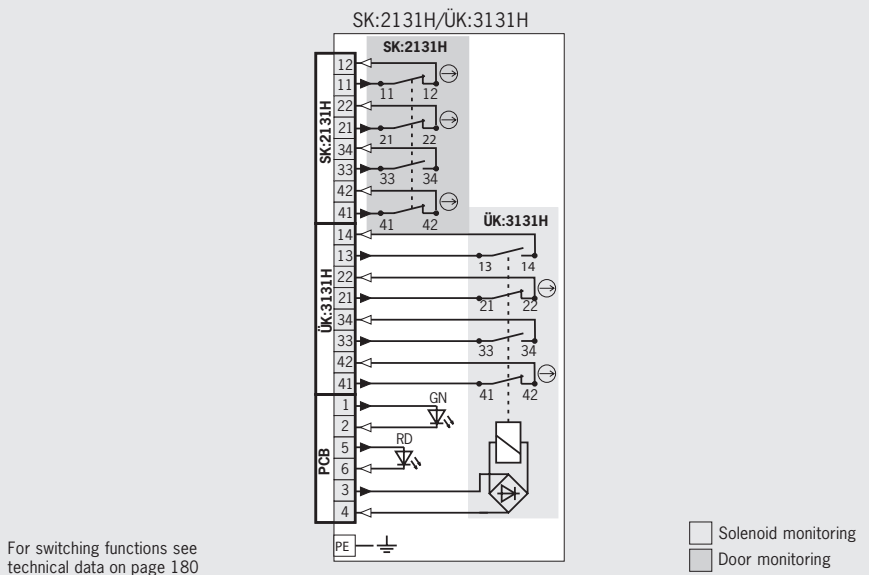
Cable entry M20 x 1.5

Dimension drawings Actuating head on the right is a mirror image



For cable glands see page 132

Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

### 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	<b>098718</b> TZ1LB024MVAB-C2159
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Mechanical release with triangular key	<b>098717</b> TZ1RB024MVAB-C2159

For safety precautions see page 196  
For technical data see page 163



## 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

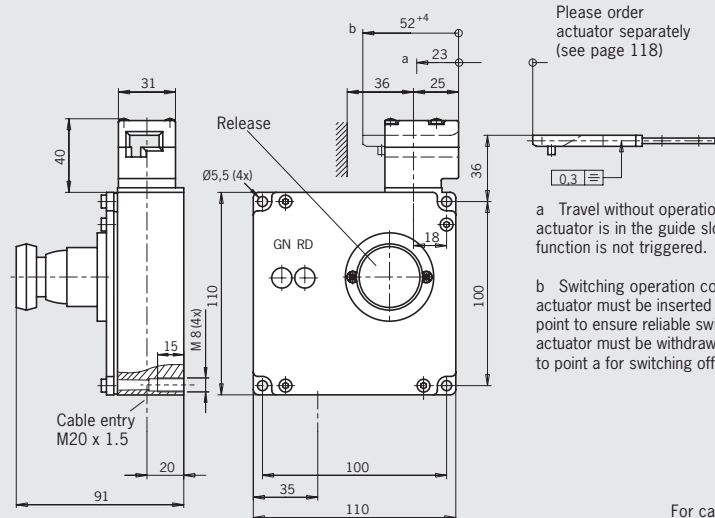
**ÜK** For monitoring the guard locking (built-in solenoid)

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

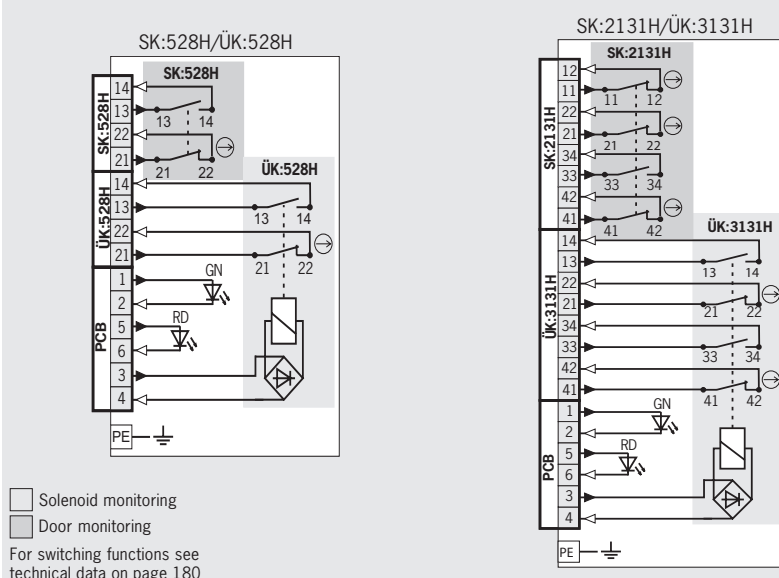
### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



For cable glands see page 132

### Wiring diagrams Actuator inserted and locked



### Ordering table

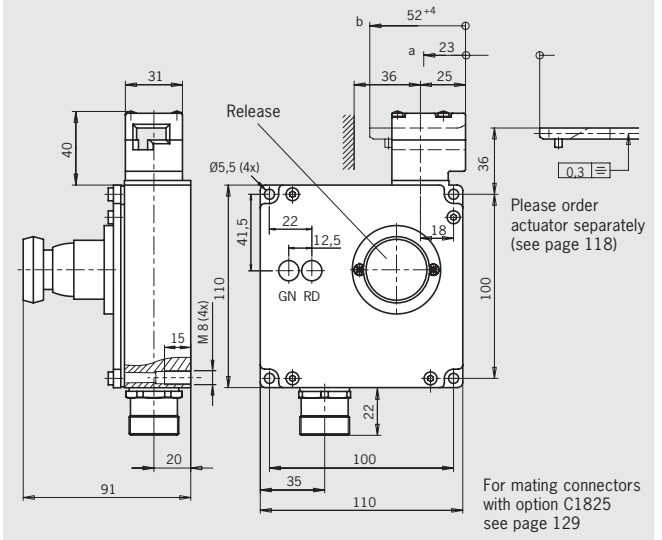
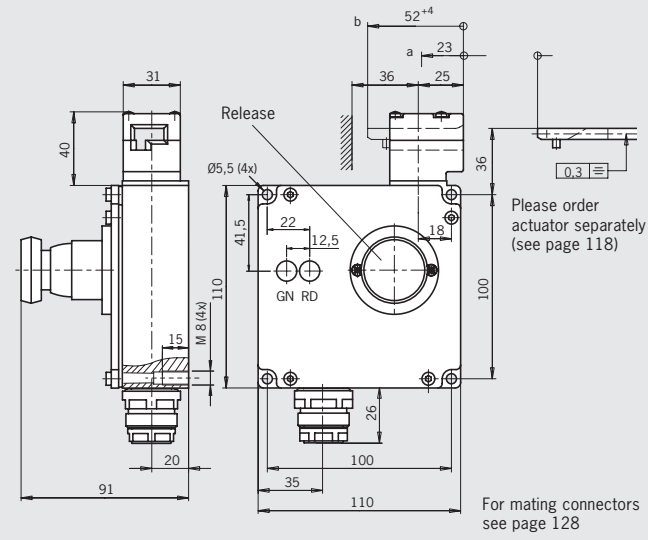
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>089477</b> TZ1LE024M-C1816
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>096901</b> TZ1RE024M-C1816
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>087992</b> TZ2LE024M-C1816
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	<b>089455</b> TZ2LE024MVAB-C1823
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>087993</b> TZ2RE024M-C1816
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	<b>089456</b> TZ2RE024MVAB-C1823



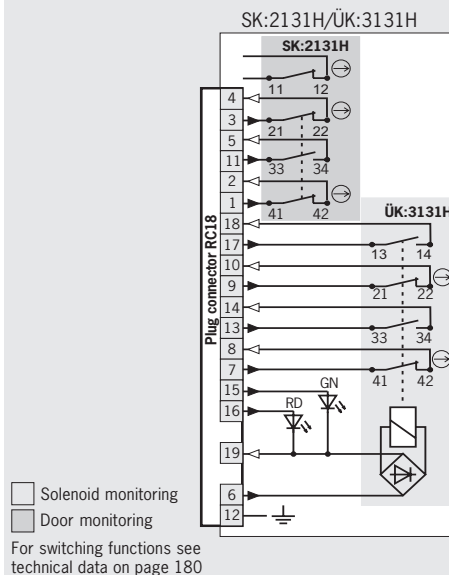
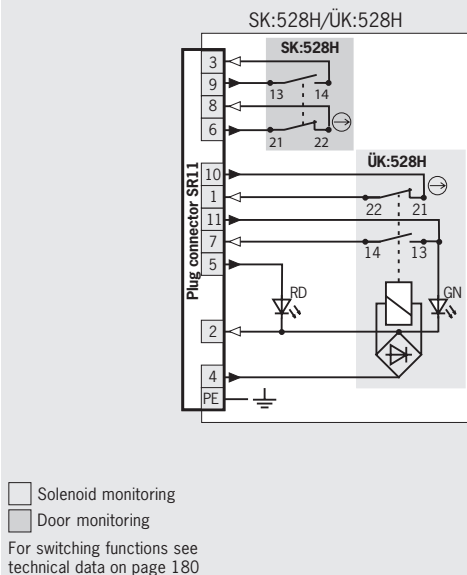
## Plug connector SR11 11-pin + PE

## 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 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>077044</b> TZ1LE024SR11-C1816
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	<b>077042</b> TZ1RE024SR11-C1816
	RC18 <sup>1)</sup> Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	<b>088090</b> TZ1LE024RC18VAB-C1823
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	Release (blue pushbutton)	<b>088091</b> TZ1RE024RC18VAB-C1823

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

For safety precautions see page 196  
For technical data see page 163



## 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:

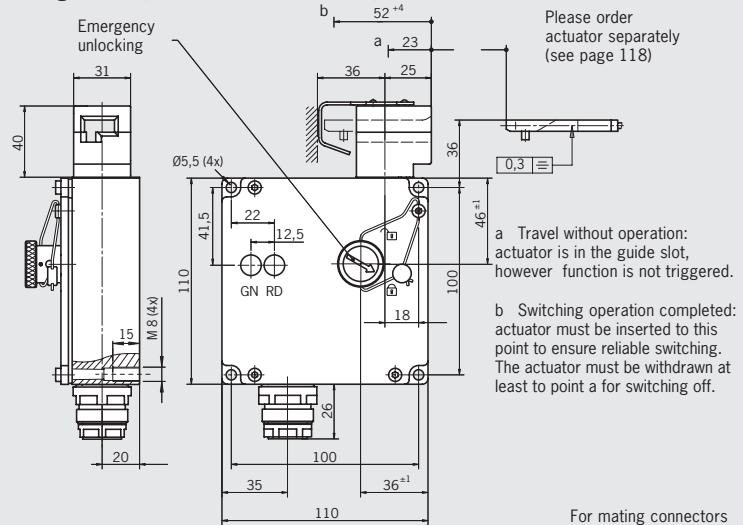
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Ordering table

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

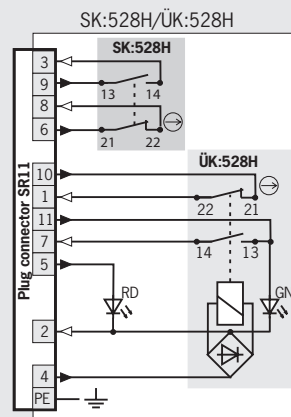
### Plug connector SR11 with protective plate 11-pin + PE

### Dimension drawings



For mating connectors see page 128

### Wiring diagrams



For switching functions see technical data on page 180

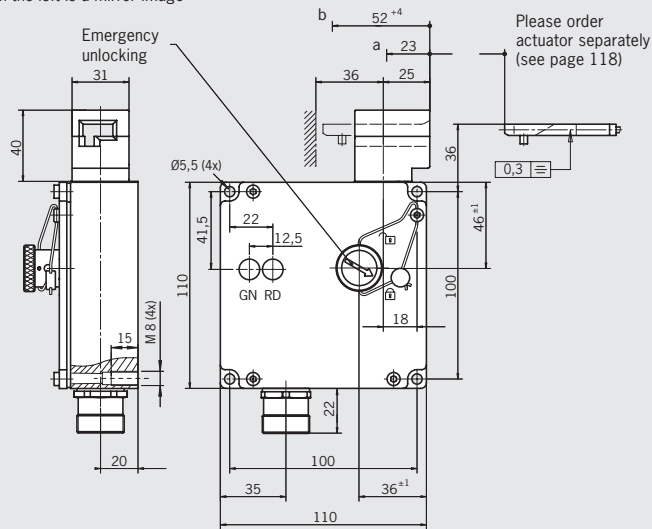
- Solenoid monitoring
- Door monitoring



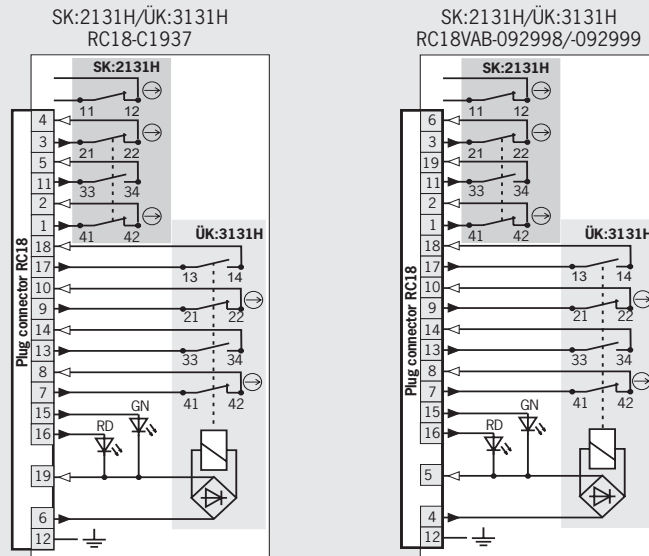


## Plug connector RC18 18-pin + PE

**Dimension drawings** Actuating head on the left is a mirror image



**Wiring diagrams** Actuator inserted and locked



For switching functions see technical data on page 180

## Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 <sup>1)</sup> Plug connector	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob)	<b>074260</b> TZ1LE024RC18VAB-C1937
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob)	<b>074261</b> TZ1RE024RC18VAB-C1937
		2 Electrical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob)	<b>100778</b> TZ2LE024RC18VAB-C1937
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob)	<b>100777</b> TZ2RE024RC18VAB-C1937
	RC18 Plug connector	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob), alternative wiring	<b>092998</b> TZ1LE024RC18VAB-092998
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	Emergency unlocking (rotary knob), alternative wiring	<b>092999</b> TZ1RE024RC18VAB-092999

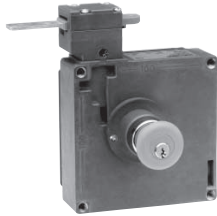
1) **Important:** use suitable mating connector with option C1825!





## 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).

### 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

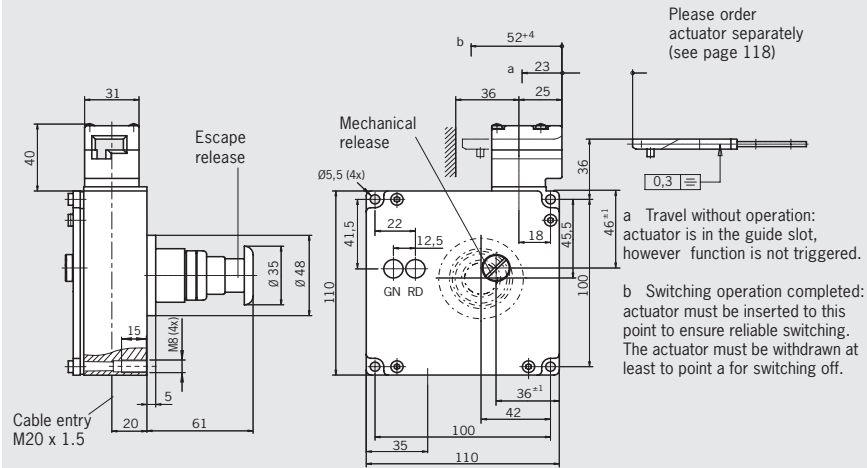
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

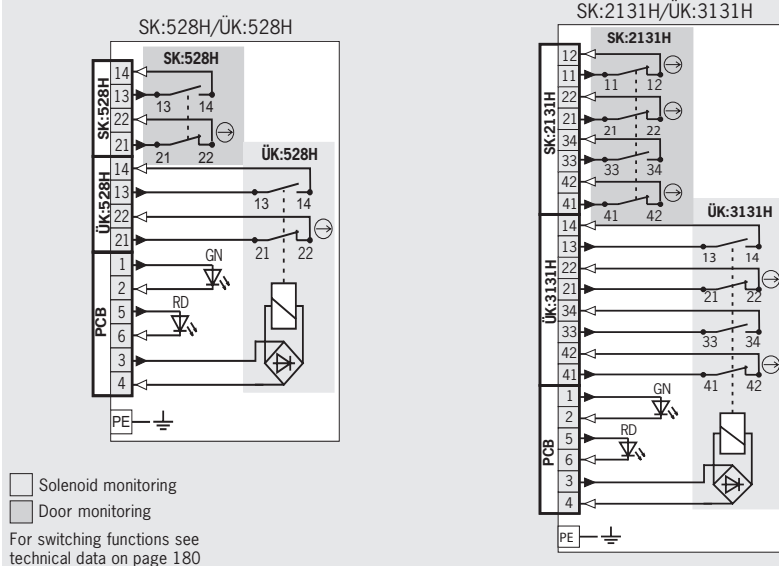
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



### Ordering table

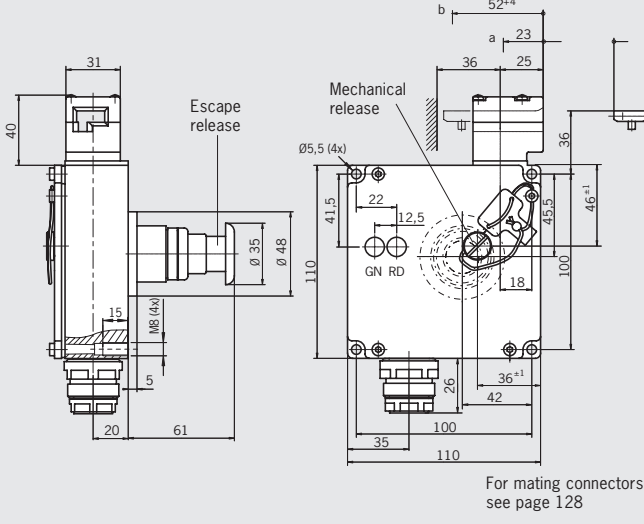
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover		
						24 V	110 V	
TZ	M20x1.5	1	Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	<b>087990</b>	On request
					ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ1LE024M-C1815	
					SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	<b>089468</b>	<b>094311</b>
				ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ1LE024MVAB-C1828	TZ1LE110MVAB-C1828	
				RE Right	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	<b>087991</b>	On request
					ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ1RE024M-C1815	
		SK: 2131H, 3 NC ⊖ + 1 NO	Escape release		<b>089469</b>	<b>094312</b>		
		ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ1RE024MVAB-C1828	TZ1RE110MVAB-C1828			
		2	Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Escape release	<b>089460</b>	On request
					ÜK: 528H, 1 NC ⊖ + 1 NO	(red key button)	TZ2LE024M-C1815	
					SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	<b>087290</b>	On request
				ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ2LE024MVAB-C1828		
RE Right	SK: 528H, 1 NC ⊖ + 1 NO			Escape release	<b>089461</b>	On request		
	ÜK: 528H, 1 NC ⊖ + 1 NO			(red key button)	TZ2RE024M-C1815			
	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release	<b>087291</b>	On request				
ÜK: 3131H, 2 NC ⊖ + 2 NO	(red key button)	TZ2RE024MVAB-C1828						



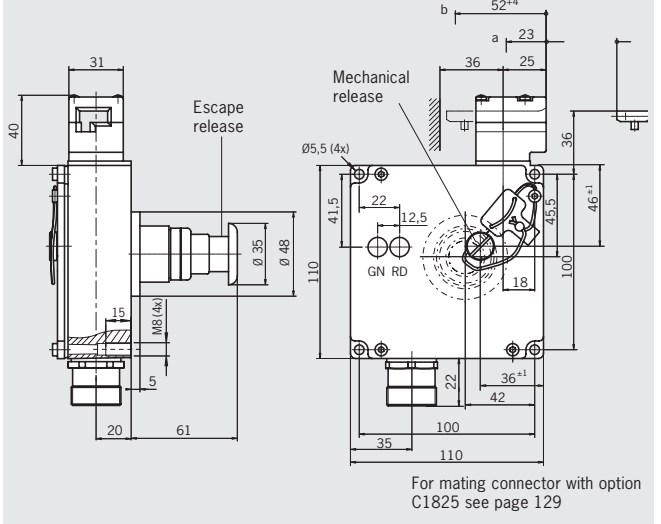
## Plug connector SR11 11-pin + PE

## Plug connector RC18 18-pin + PE

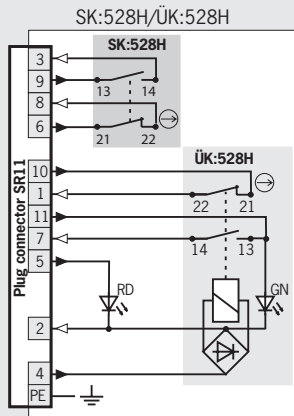
**Dimension drawings** Actuating head on the left is a mirror image Please order actuator separately (see page 118)



Please order actuator separately (see page 118)

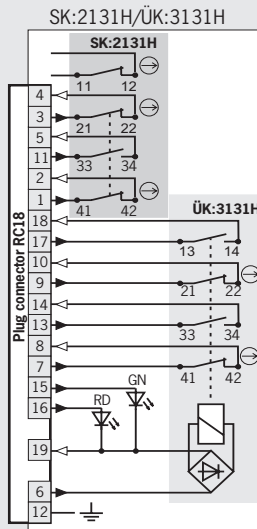


**Wiring diagrams** Actuator inserted and locked



- Solenoid monitoring
- Door monitoring

For switching functions see technical data on page 180



- Solenoid monitoring
- Door monitoring

For switching functions see technical data on page 180

## 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	Escape release (key button)	<b>079660</b> TZ2LE024SR11-C1815
			Right	ÜK: 528H, 1 NC ⊖ + 2 NO	Escape release (key button)	<b>079661</b> TZ2RE024SR11-C1815
	RC18 <sup>1)</sup> Plug connector	1 Mechanical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release (key button)	<b>090352</b> TZ1LE024RC18VAB-C1828
			Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	<b>090 353</b> TZ1RE024RC18VAB-C1828
		2 Electrical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Escape release (key button)	<b>093103</b> TZ2LE024RC18VAB-C1828
			Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	Escape release (key button)	<b>093104</b> TZ2RE024RC18VAB-C1828

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

For safety precautions see page 196  
For technical data see page 163



## 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)

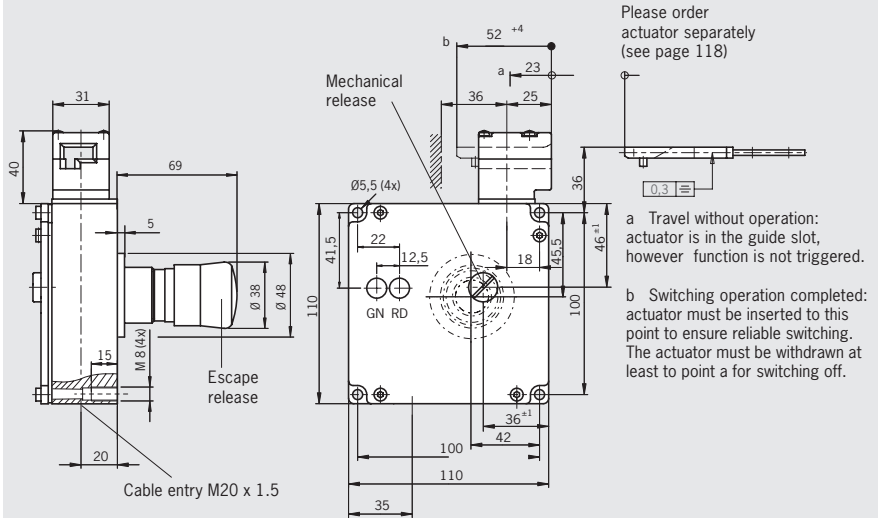
**SK** For monitoring the door/actuator position  
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

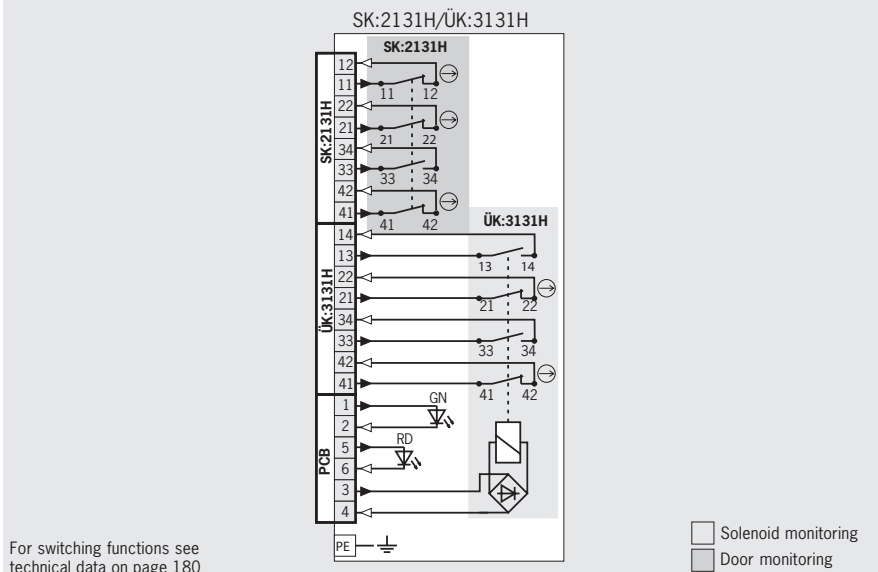
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



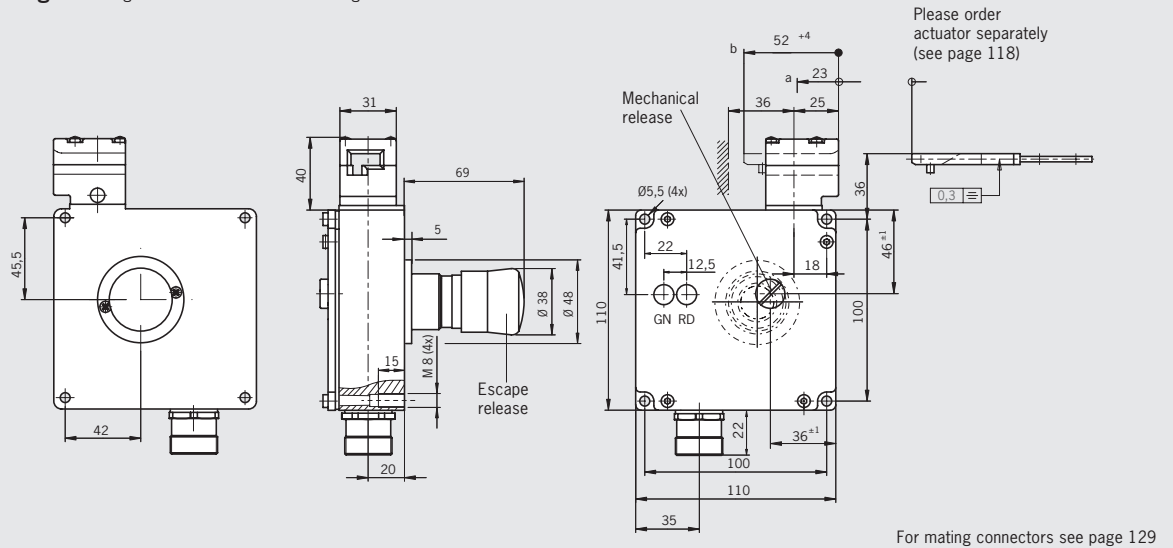
### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover		
						24 V	110 V	
TZ	M20x1.5	1	Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C2082</b> Escape release (pushbutton)	<b>096487</b> TZ1LE024MVAB-C2082	<b>095992</b> TZ1LE110MVAB-C2082
				RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C2082</b> Escape release (pushbutton)	<b>096488</b> TZ1RE024MVAB-C2082	<b>095103</b> TZ1RE110MVAB-C2082



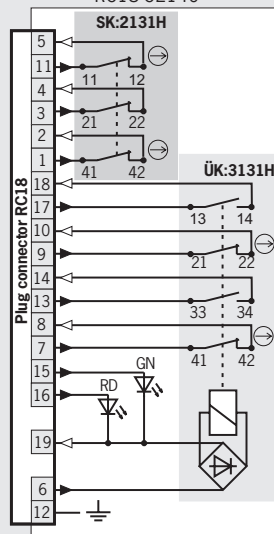
## Plug connector RC18 18-pin + PE

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked

SK:2131H/ÜK:3131H  
RC18-C2140



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	RC18 Plug connector	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C2140</b> Escape release (pushbutton)	<b>098297</b> TZ1LE024RC18VAB-C2140
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ + 1 NO ÜK: <b>3131H</b> , 2 NC ⊖ + 2 NO	<b>C2140</b> Escape release (pushbutton)	<b>098298</b> TZ1RE024RC18VAB-C2140

For safety precautions see page 196  
For technical data see page 163



## 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%
- ▶ 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.

**SK** For monitoring the door/actuator position

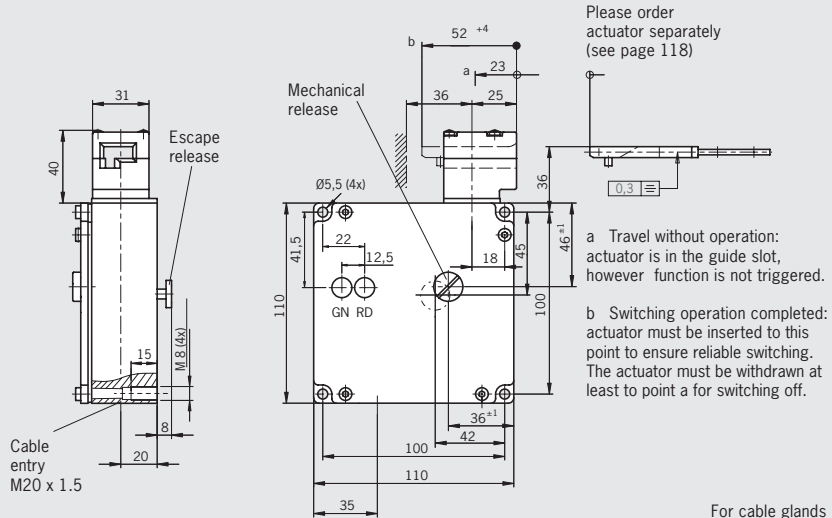
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

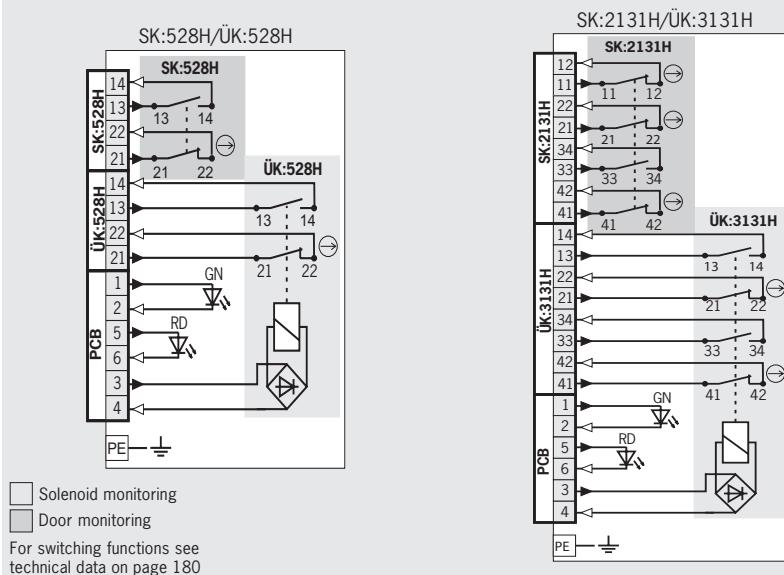
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



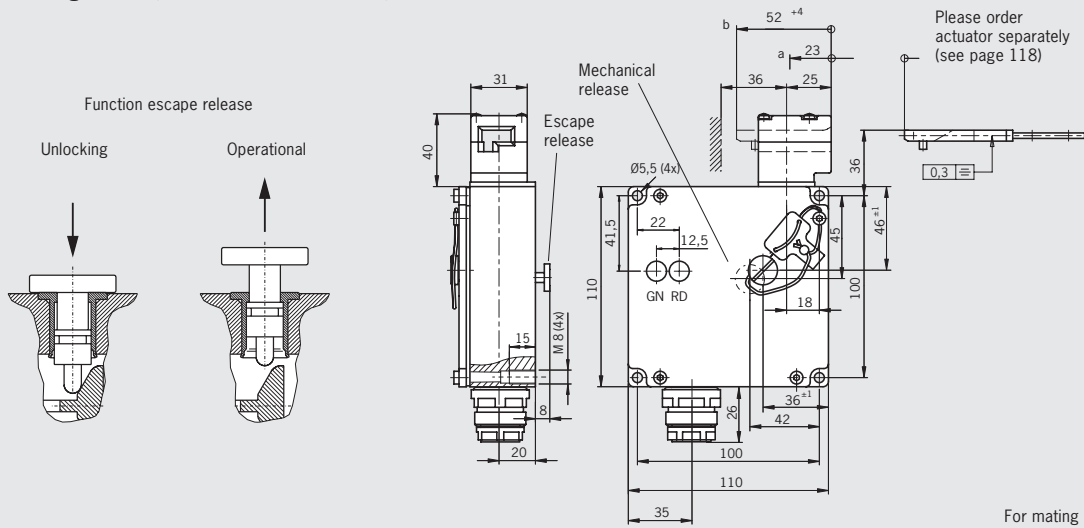
### Ordering table

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)	083170 TZ1LE024M-C1684	089924 TZ1LE110M-C1684	093770 TZ1LE220M-C1684	
					C1684 Escape release (pushbutton)	084820 TZ1LE024MVAB-C1684	on request	On request	
				RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	083171 TZ1RE024M-C1684	089475 TZ1RE110M-C1684	093771 TZ1RE220M-C1684
						C1684 Escape release (pushbutton)	088084 TZ1RE024MVAB-C1684	On request	On request

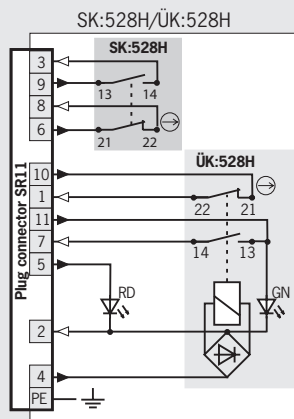


## Plug connector SR11 11-pin + PE

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

### 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	C1684 Escape release (pushbutton)	<b>070886</b> TZ1LE024SR11-C1684
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	C1684 Escape release (pushbutton)	<b>070884</b> TZ1RE024SR11-C1684

For safety precautions see page 196  
For technical data see page 163



## 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

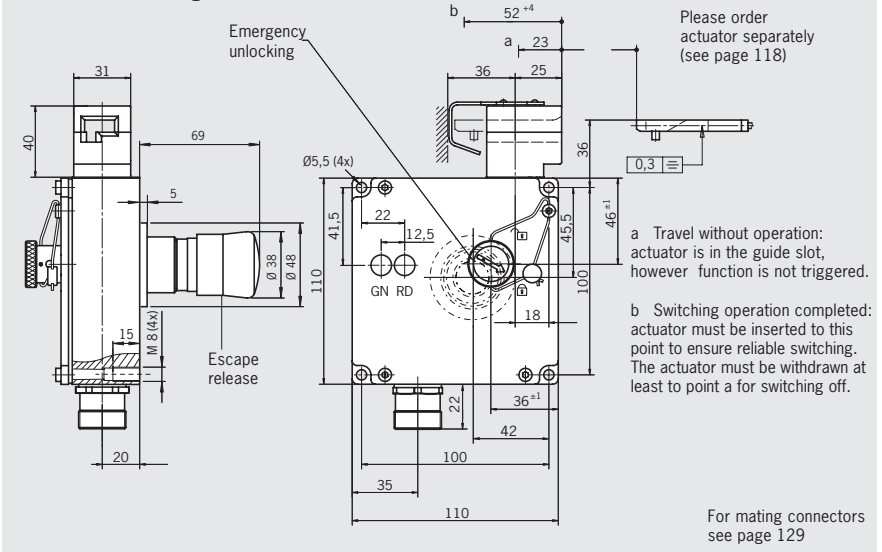
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

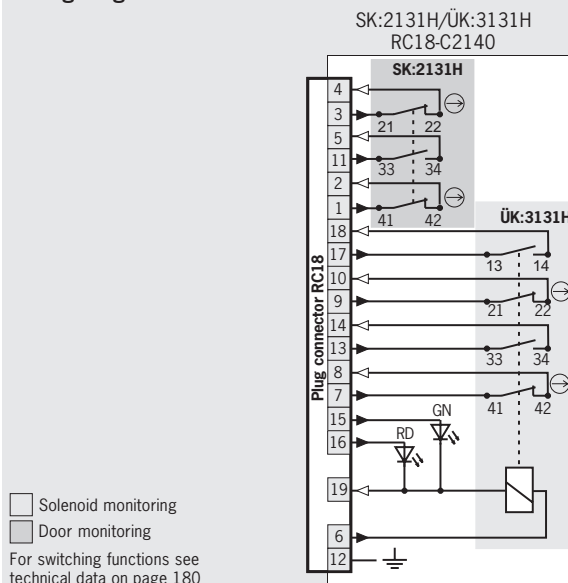
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Plug connector RC18 18-pin + PE

### Dimension drawings



### 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	<b>097347</b> 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	<b>097348</b> 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)

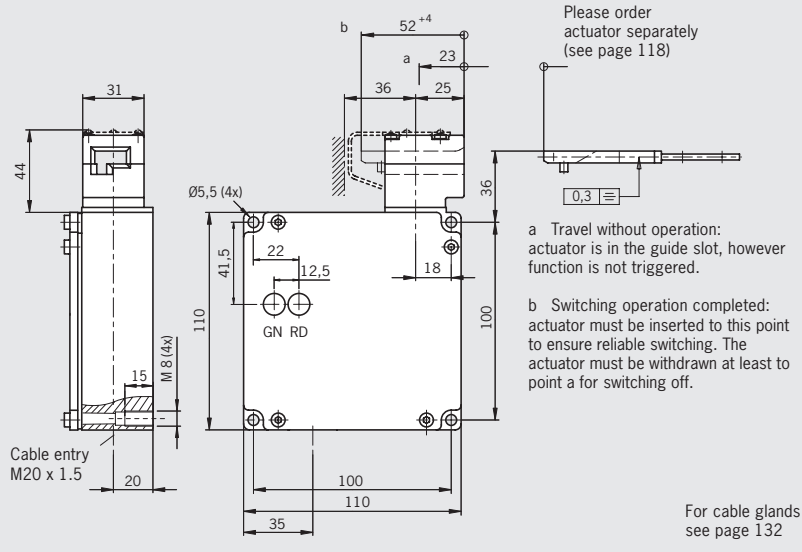
**SK** For monitoring the door/actuator position  
**ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

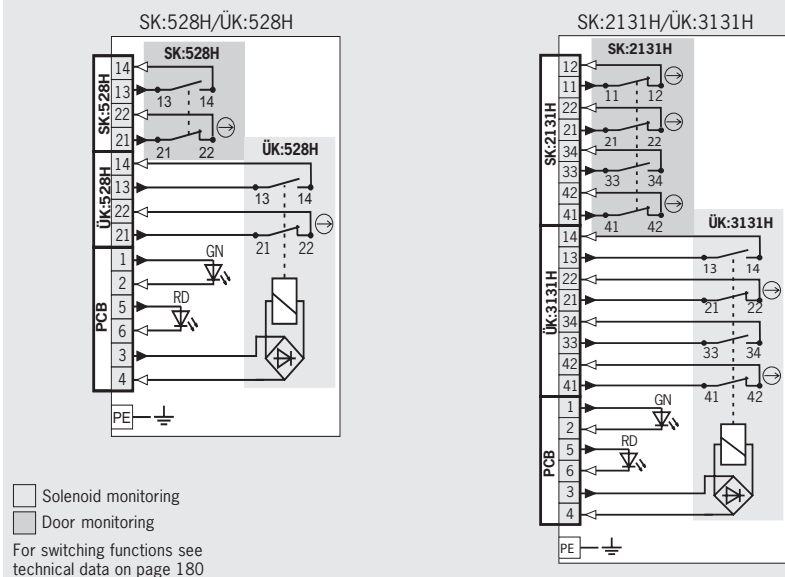
- ▶ **528H** Slow-action switching element  
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching element  
4 NC ⊖
- ▶ **2131H** Slow-action switching element  
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching element  
2 NC ⊖ + 2 NO

### Cable entry M20 x 1.5

### Dimension drawings Actuating head on the left is a mirror image



### Wiring diagrams Actuator inserted and locked



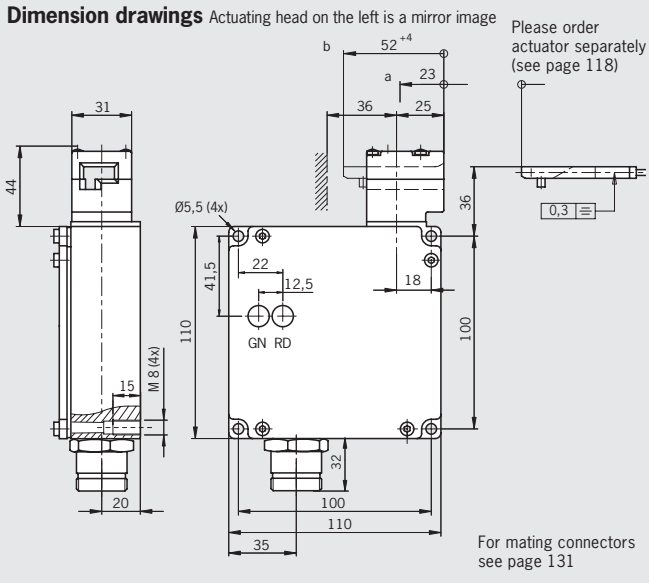
### Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Red cover			Black cover								
						24 V	24 V	110 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	-	-	083246	TZ1LE024M-C1623	On request						
					ÜK: 528H, 1 NC ⊖ + 1 NO												
					SK: 2131H, 3 NC ⊖ + 1 NO							Without mechanical release, with protective plate	-	-	085170	TZ1LE024MVAB-C1623	089 466
					ÜK: 3131H, 2 NC ⊖ + 2 NO												
					SK: 2131H, 3 NC ⊖ + 1 NO												
					ÜK: 3131H, 2 NC ⊖ + 2 NO												
				RE Right	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release, with protective plate	-	-	083247	TZ1RE024M-C1623	On request						
					ÜK: 528H, 1 NC ⊖ + 1 NO												
					SK: 2131H, 3 NC ⊖ + 1 NO							Without mechanical release, with protective plate	-	-	085171	TZ1RE024MVAB-C1623	088063
					ÜK: 3131H, 2 NC ⊖ + 2 NO												
					SK: 2131H, 3 NC ⊖ + 1 NO												
					ÜK: 3131H, 2 NC ⊖ + 2 NO												

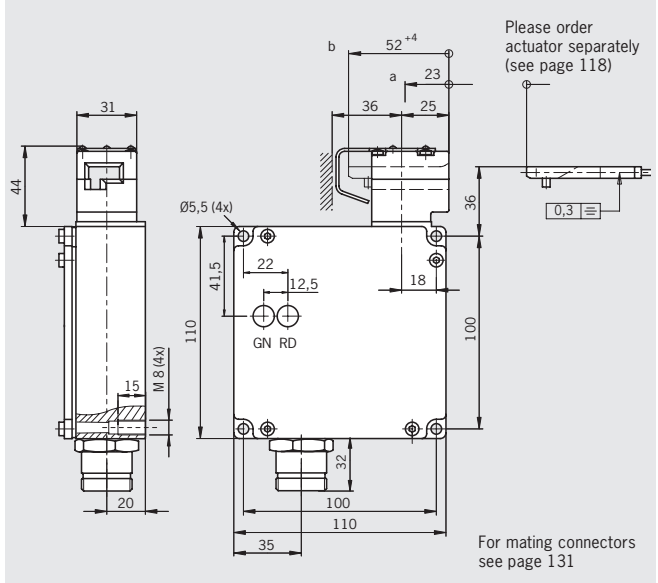




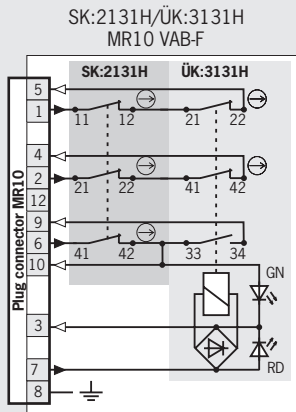
## Plug connector MR10 9-pin + PE



## Plug connector MR12 11-pin + PE

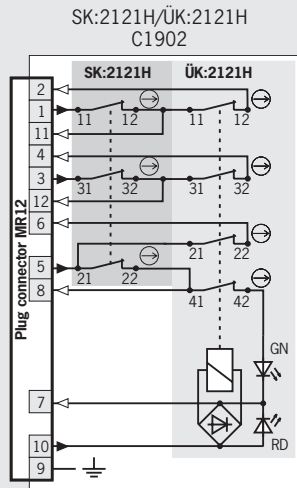


## Wiring diagrams Actuator inserted and locked



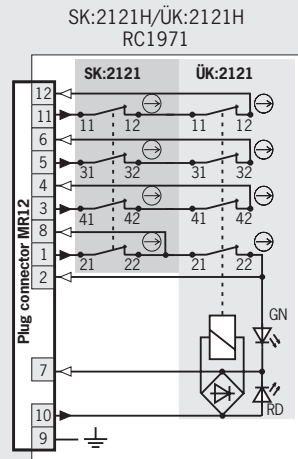
For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring



For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring



- Solenoid monitoring
- Door monitoring

## Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Red cover
						24 V
TZ	MR10 Plug connector	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC ⊖ ÜK: <b>3131H</b> , 2 NC ⊖ + 1 NO	Without mechanical release	<b>095902</b> <sup>1)</sup> TZ1LE024MVAB-10C-FW
			RE Right	SK: <b>2131H</b> , 3 NC ⊖ ÜK: <b>3131H</b> , 2 NC ⊖ + 1 NO	Without mechanical release	<b>095903</b> <sup>1)</sup> TZ1RE024MVAB-10C-FW
	MR12 Plug connector	Mechanical	LE Left	SK: <b>2121H</b> , 4 NC ⊖ ÜK: <b>2121H</b> , 4 NC ⊖	Without mechanical release, with protective plate	<b>079692</b> TZ1LE024BHA-C1902
					Alternative wiring, without mechanical release, with protective plate	<b>085569</b> TZ1LE024BHAVFG-RC1971
			RE Right	SK: <b>2121H</b> , 4 NC ⊖ ÜK: <b>2121H</b> , 4 NC ⊖	Without mechanical release, with protective plate	<b>079693</b> TZ1RE024BHA-C1902
					Alternative wiring, without mechanical release, with protective plate	<b>085570</b> 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)

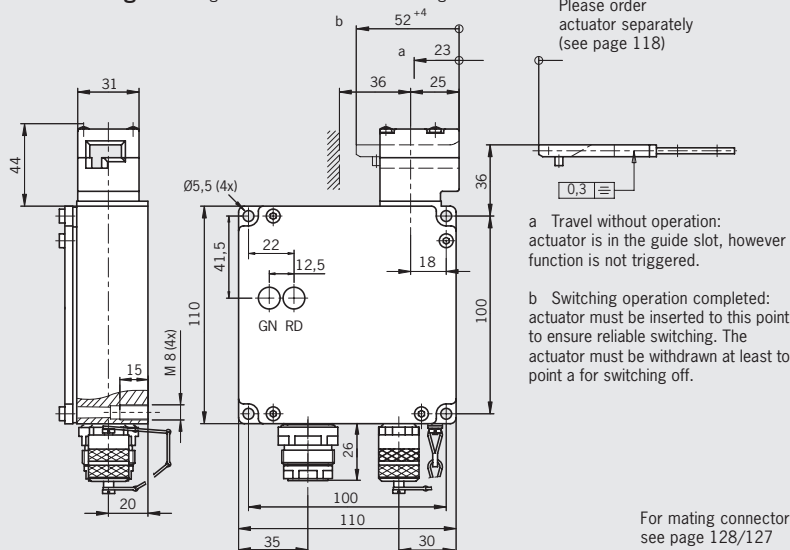
**SK** For monitoring the door/actuator position  
**ÜK** For monitoring the guard locking (built-in solenoid)

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

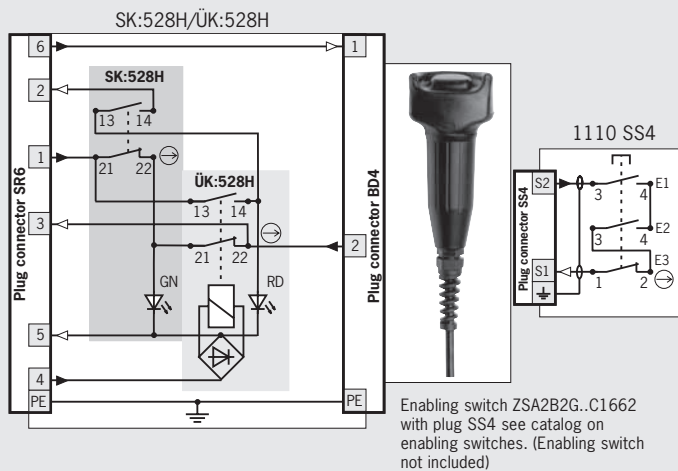
### Plug connector SR6 and BD4 (enabling switch) 6-pin + PE / 4-pin

### Dimension drawings Actuating head on the left is a mirror image



For mating connectors see page 128/127

### Wiring diagrams Actuator inserted and locked



Enabling switch ZSA2B2G..C1662 with plug SS4 see catalog on enabling switches. (Enabling switch not included)

For switching functions see technical data on page 180

- Solenoid monitoring
- Door monitoring

### 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 ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>070527</b> TZ1LE024SR6-C1662
				RE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>054781</b> TZ1RE024SR6-C1662
				LE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>059307</b> TZ2LE024SR6-C1662
			2 Electrical	LE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>059305</b> TZ2LE024SR6-C1662
				RE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>059305</b> TZ2RE024SR6-C1662
				RE	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release	<b>059305</b> TZ2RE024SR6-C1662

Please turn over

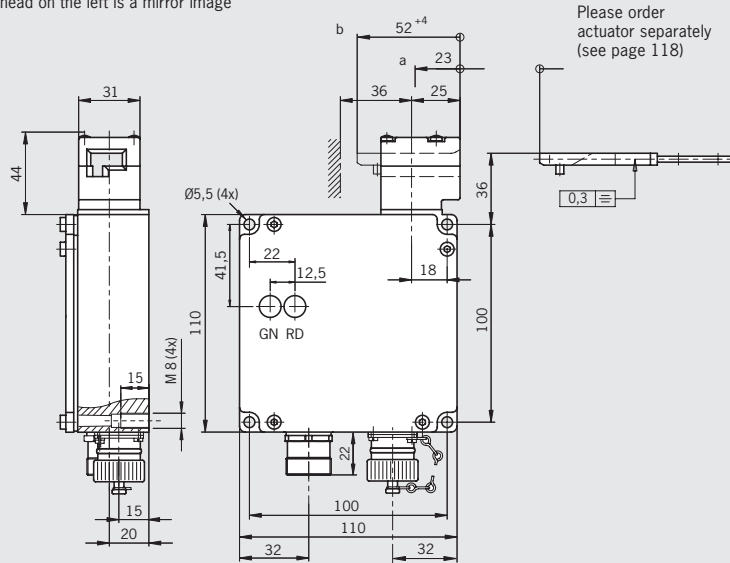
For safety precautions see page 196  
For technical data see page 163



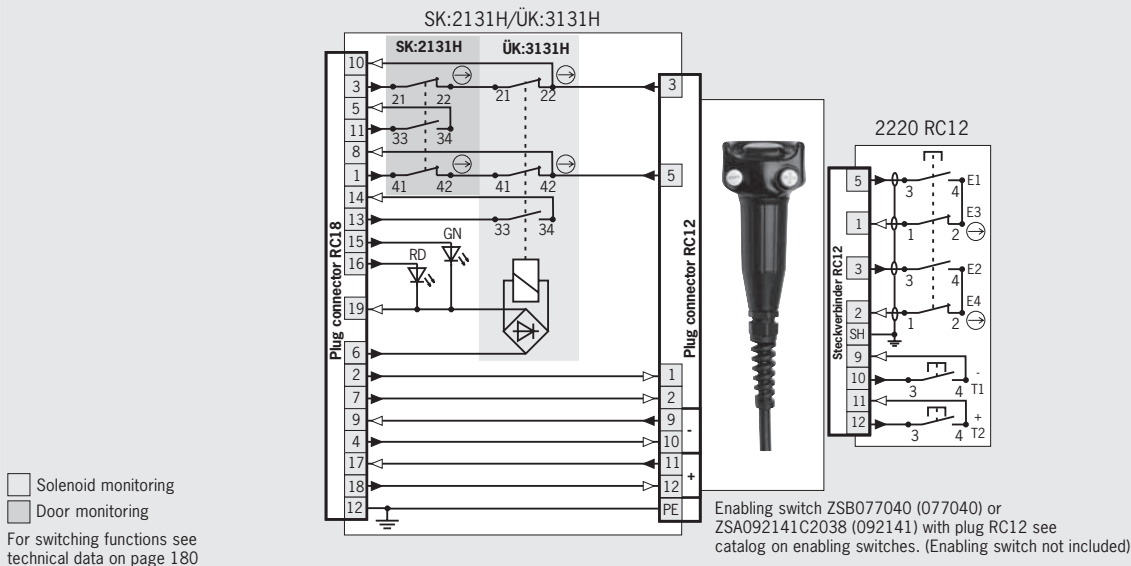


**Plug connector RC18 and RC12 (enabling switch)**  
18-pin + PE / 12-pin

**Dimension drawings** Actuating head on the left is a mirror image



**Wiring diagrams** Actuator inserted and locked



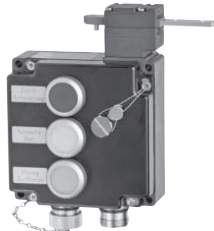
**Ordering table**

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 <sup>1)</sup> Plug connector	Enabling switch plug RC12	1 Mechanical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Without	<b>091062</b>
				Left	ÜK: 3131H, 2 NC ⊖ + 2 NO	mechanical release	TZ1LE024RC18VAB-C1803
				RE	SK: 2131H, 3 NC ⊖ + 1 NO	Without	<b>091063</b>
				Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	mechanical release	TZ1RE024RC18VAB-C1803
			2 Electrical	LE	SK: 2131H, 3 NC ⊖ + 1 NO	Without	<b>075955</b>
				Left	ÜK: 3131H, 2 NC ⊖ + 2 NO	mechanical release	TZ2LE024RC18VAB-C1803
				RE	SK: 2131H, 3 NC ⊖ + 1 NO	Without	<b>077149</b>
				Right	ÜK: 3131H, 2 NC ⊖ + 2 NO	mechanical release	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)

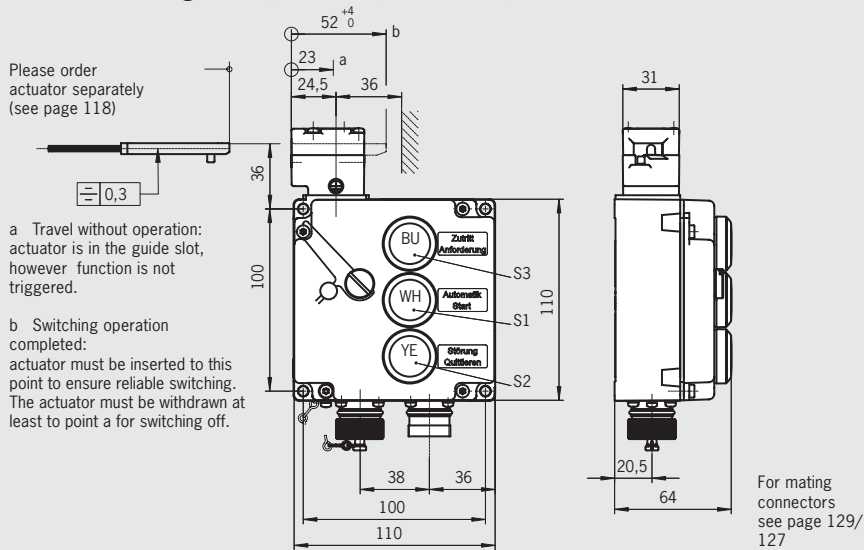
- SK** For monitoring the door/actuator position
- ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

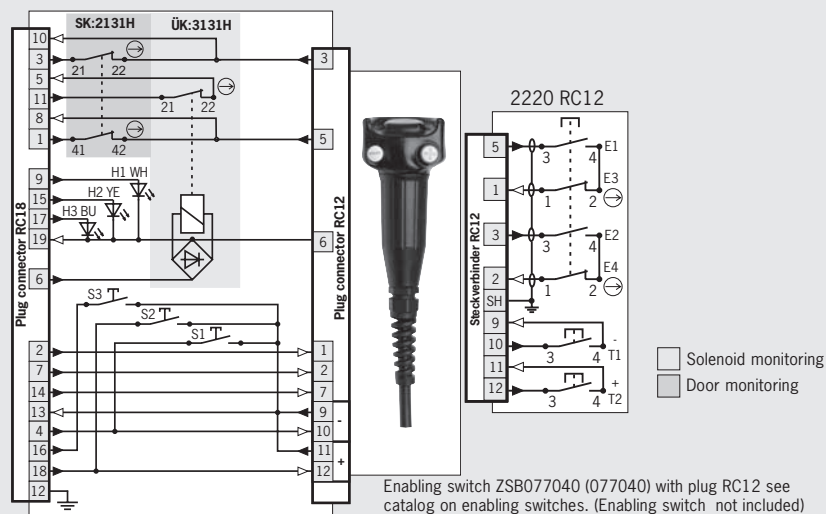
- ▶ **2131H** Slow-action switching element  
3  $\bar{O}$  + 1 S
- ▶ **3131H** Slow-action switching element  
2  $\bar{O}$  + 2 S

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

#### Dimension drawings Actuating head on the right is a mirror image



#### Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

### Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 <sup>1)</sup> Plug connector	Enabling switch plug RC12	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC $\bar{O}$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\bar{O}$ + 2 NO	3 Push buttons with LED	<b>100445</b> TZ1LE024RC18-C2198
				RE Right	SK: <b>2131H</b> , 3 NC $\bar{O}$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\bar{O}$ + 2 NO	3 Push buttons with LED	<b>100444</b> TZ1RE024RC18-C2198
				2 Electrical	LE Left	SK: <b>2131H</b> , 3 NC $\bar{O}$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\bar{O}$ + 2 NO	3 Push buttons with LED
			RE Right	SK: <b>2131H</b> , 3 NC $\bar{O}$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\bar{O}$ + 2 NO	3 Push buttons with LED	<b>100446</b> 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.

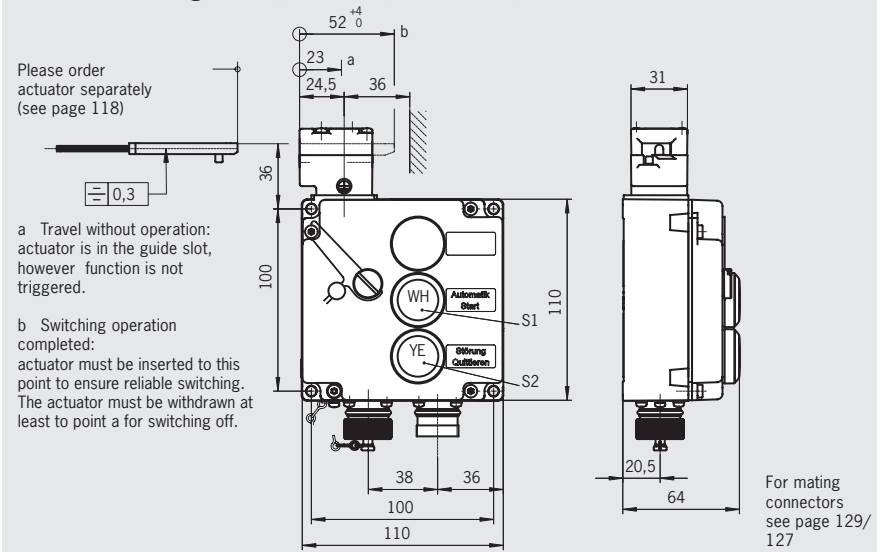
### Operating voltage of LED function display

The following voltage ranges are available:

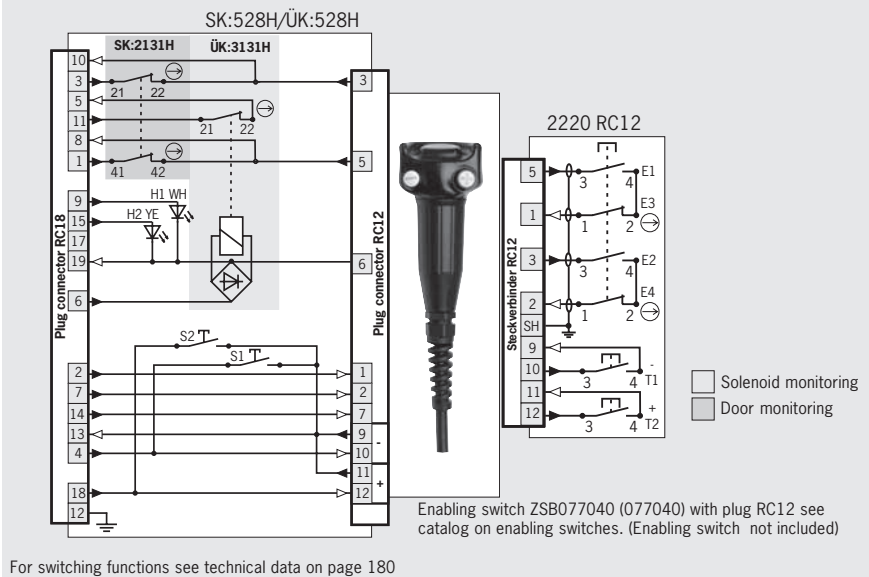
- ▶ 24 V AC/DC -15%, +10%

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

#### Dimension drawings Actuating head on the right is a mirror image



#### Wiring diagrams Actuator inserted



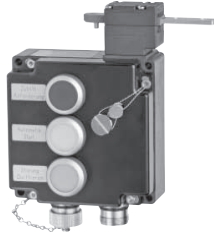
### Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 <sup>1)</sup> 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	<b>100449</b> TZ1LE000RC18-C2199
				RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	2 Push buttons with LED	<b>100448</b> 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)

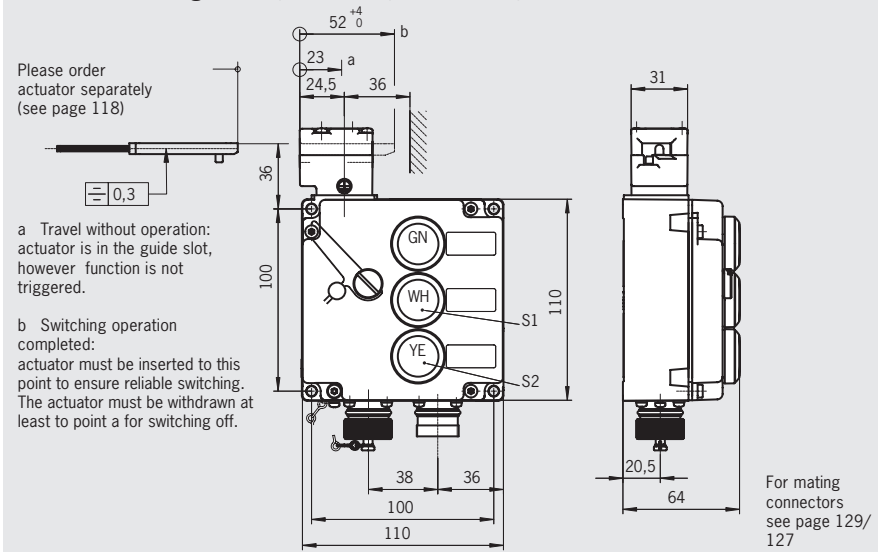
- SK** For monitoring the door/actuator position
- ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:

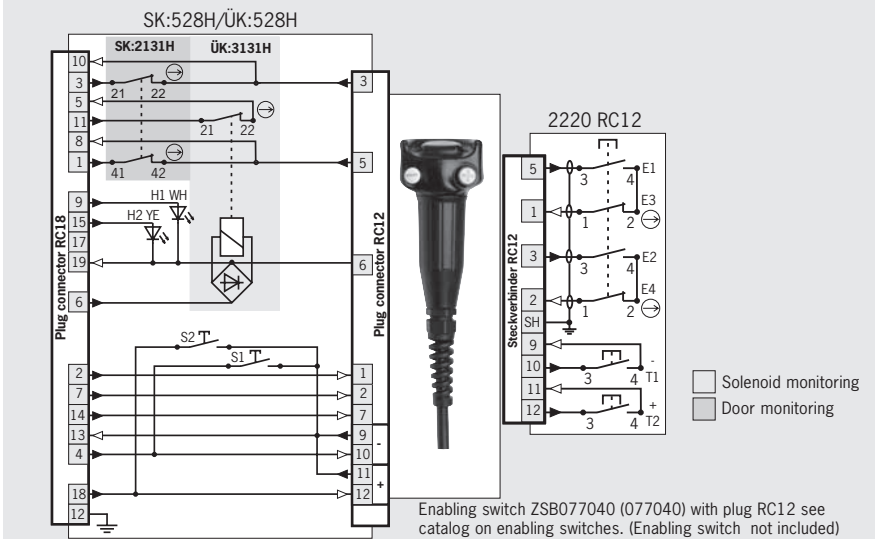
- ▶ **2131H** Slow-action switching element  
3  $\bar{O}$  + 1 S
- ▶ **3131H** Slow-action switching element  
2  $\bar{O}$  + 2 S

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

### Dimension drawings Actuating head on the right is a mirror image



### Wiring diagrams Actuator inserted and locked



For switching functions see technical data on page 180

### Ordering table

Series	Connection	Enabling switch connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	RC18 <sup>1)</sup> Plug connector	Enabling switch plug RC12	1 Mechanical	LE Left	SK: <b>2131H</b> , 3 NC $\ominus$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\ominus$ + 2 NO	2 Push buttons with LED + 1 LED	<b>100176</b> TZ1LE024RC18VAB-C2189
				RE Right	SK: <b>2131H</b> , 3 NC $\ominus$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\ominus$ + 2 NO	2 Push buttons with LED + 1 LED	<b>100175</b> TZ1RE024RC18VAB-C2189
			2 Electrical	LE Left	SK: <b>2131H</b> , 3 NC $\ominus$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\ominus$ + 2 NO	2 Push buttons with LED + 1 LED	On request
				RE Right	SK: <b>2131H</b> , 3 NC $\ominus$ + 1 NO ÜK: <b>3131H</b> , 2 NC $\ominus$ + 2 NO	2 Push buttons with LED + 1 LED	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.


### Reliability values acc. to EN ISO 13849-1

Parameter	Value	Unit
B10d	3 x 10 <sup>6</sup> operating cycles	

Switch		Value	Unit
Parameter			
Housing material		Anodized die-cast alloy	
Mechanical life		1 x 10 <sup>6</sup> 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 <sub>zh</sub> in accordance with test principles GS-ET-19		1500	N


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


Guard locking		Value	Unit
Parameter	 		
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		Value	Unit
Parameter			
Connection		Screw terminal	
Version		M20 x 1.5	
Conductor cross-section max.		per wire 1.5 mm <sup>2</sup>	
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 <sub>i</sub>		250	V AC/DC
Conventional thermal current I <sub>th</sub>		4	A
Short circuit protection according to IEC 60269-1 (control circuit fuse)		4	A gG
Utilization category to IEC 60947-5-1	AC15   DC13	le 4 A Ue 230 V   le 4 A Ue 24 V	

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



Connection, plug connector RC18			
Parameter		Value	Unit
Connection		Plug connector	
Version		RC18 (18-pin + PE)	
Degree of protection according to IEC 60529		IP 65 <sup>1)</sup>	
Rated insulation voltage U <sub>i</sub>		110	V AC/DC
Conventional thermal current I <sub>th</sub>		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 <sub>e</sub> 4 A U <sub>e</sub> 110 V	
	DC13	I <sub>e</sub> 4 A U <sub>e</sub> 24 V	

Connection, plug connector SR6			
Parameter		Value	Unit
Connection		Plug connector	
Version		SR6 (6-pin + PE)	
Degree of protection according to IEC 60529		IP 65 <sup>1)</sup>	
Rated insulation voltage U <sub>i</sub>		250	V AC/DC
Conventional thermal current I <sub>th</sub>		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 <sub>e</sub> 4 A U <sub>e</sub> 230 V	
	DC13	I <sub>e</sub> 4 A U <sub>e</sub> 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 <sup>1)</sup>	
Rated insulation voltage U <sub>i</sub>		50	V AC/DC
Conventional thermal current I <sub>th</sub>		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 <sub>e</sub> 4 A U <sub>e</sub> 50 V	
	DC13	I <sub>e</sub> 4 A U <sub>e</sub> 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 <sup>1)</sup>	
Rated insulation voltage U <sub>i</sub>		250	V AC/DC
Conventional thermal current I <sub>th</sub>		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 <sub>e</sub> 4 A U <sub>e</sub> 230 V	
	DC13	I <sub>e</sub> 4 A U <sub>e</sub> 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 <sup>1)</sup>	
Rated insulation voltage U <sub>i</sub>		250	V AC/DC
Conventional thermal current I <sub>th</sub>		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 <sub>e</sub> 4 A U <sub>e</sub> 230 V	
	DC13	I <sub>e</sub> 4 A U <sub>e</sub> 24 V	

1) Screwed tight with the related plug connector (see page 128, 129 and 131)

## Connection, plug connector MR12



Parameter		Value	Unit
Connection		Plug connector	
Version		MR12 (11-pin + PE)	
Degree of protection according to IEC 60529		IP 65 <sup>1)</sup>	
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 131)

## Switching functions TZ

Actuator:  
Switching  
position:

Inserted  
locked

Inserted  
not locked

Removed  
not locked

