

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

Release feature, front																				
HE	Mechanical release can be sealed																			
E	Emergency unlocking																			
HD	Mechanical release for triangular key acc. to DIN 22417 (no automatic return)																			
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																				
RC12	Plug connector 4-pin																			
Connection																				
M	Thread M20x1.5 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																			
M23 (RC18)	Plug connector 18-pin + PE																			
Switching element																				
2 contacts	2 x (1 NC ⊖ + 1 NO)																			
4 contacts	2 x (4 NC ⊖) or 1 x (3 NC ⊖ + 1 NO) + 1 x (2 NC ⊖ + 2 NO)																			
Manual release									Enabling switches	Connection							Switching element		With version	Page
HE	E	HD	ND	NR	○	FS	FD	SB	RC12	M	SR6	MR8	MR10	SR11	MR12	M23 (RC18)	2 contacts	4 contacts		
●										●							●	●	C1925 / C2087	64/69
●											●						●	●	C1638	65
●														●			●	●	C1933	66
●															●	●		●	C1924 / C1826	67/68
●						●				●							●	●	C1815 / C1828	78
●						●								●			●	●	C1815 / C1828	79
●							●			●							●	●	C1684	82
●							●							●			●	●	C1684	83
●								●			●			●			●		C1677	71
●								●								●		●		72
●							●			●								●	C2082	80
●							●									●		●	C2140	81
	●											●	●				●	●	C1903	70
		●								●							●	●	C2159	73
			●							●							●	●	C1816 / C1823	74
				●										●		●	●	●	C1816 / C1823	75
					●			●						●			●			76
					●											●		●	C1937	76
					●											●		●	C2123	84
					●		●	●		●							●	●	C1623 / C2100	85
					●								●					●		86
					●			●							●			●	C1902 / C1971	86
					●				●							●		●	C1803	87

Safety switch TZ with guard locking and guard locking monitoring



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



Approach direction

Horizontal
Adjustable in 90° steps

Mechanical release

Is used for releasing the guard locking with the aid of a tool. Sealing can be fitted to protect against tampering. Lead seal 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 contact
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching contact
4 NC ⊖
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC ⊖ + 2 NO

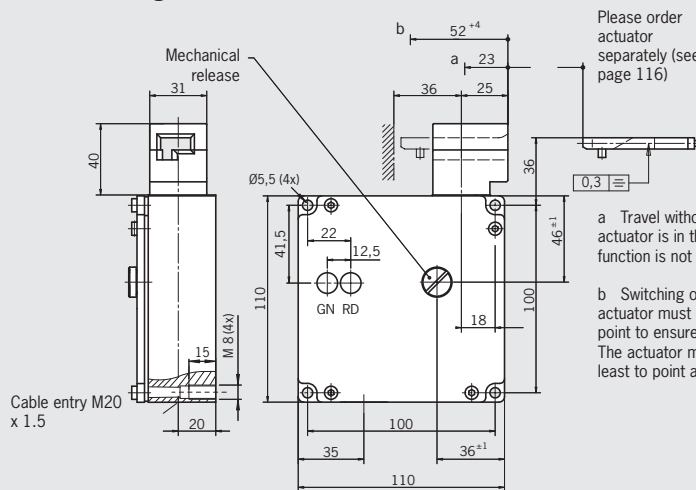
Ordering table

Series	Conne- ction	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 ÜK: 528H, 1 NC ⊖ + 1 NO	082050 TZ1LE024M	083160 TZ1LE110M	083166 TZ1LE220M	083164 TZ1LE024M-R	083168 TZ1LE110M-R
				SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	-	-	-	089464 ¹⁾ TZ1LE024MVFGR-RC1925	-
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	083965 TZ1LE024MVAB	088023 TZ1LE110MVAB	088029 TZ1LE220MVAB	089434 TZ1LE024MVAB-R	-
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	082051 TZ1RE024M	083161 TZ1RE110M	083167 TZ1RE220M	083165 TZ1RE024M-R	089448 TZ1RE110M-R
				SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊖	-	-	-	089465 ¹⁾ TZ1RE024MVFGR-RC1925	-
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	083966 TZ1RE024MVAB	088024 TZ1RE110MVAB	088030 TZ1RE220MVAB	083233 TZ1RE024MVAB-R	-
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	090559 TZ2LE024M	083162 TZ2LE110M	088031 TZ2LE220M	089445 TZ2LE024M-R	-
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	088070 TZ2LE024MVAB	088025 TZ2LE110MVAB	088027 TZ2LE220MVAB	-	-
				SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	090560 TZ2RE024M	083163 TZ2RE110M	088032 TZ2RE220M	089446 TZ2RE024M-R	-
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	088071 TZ2RE024MVAB	088026 TZ2RE110MVAB	088028 TZ2RE220MVAB	-	-
				SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	-	-	-	-	-
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊖ + 2 NO	-	-	-	-	-

1) No DGUV approval

Cable entry M20 x 1.5

Dimension drawings (actuator head on the left is a mirror image)



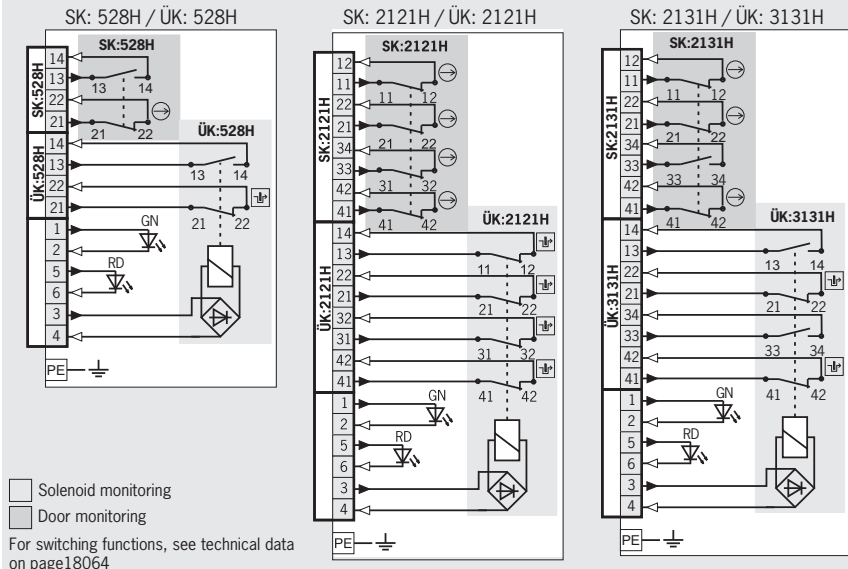
Please order actuator separately (see page 116)

a Travel without operation: actuator is in the guide slot, but 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 132

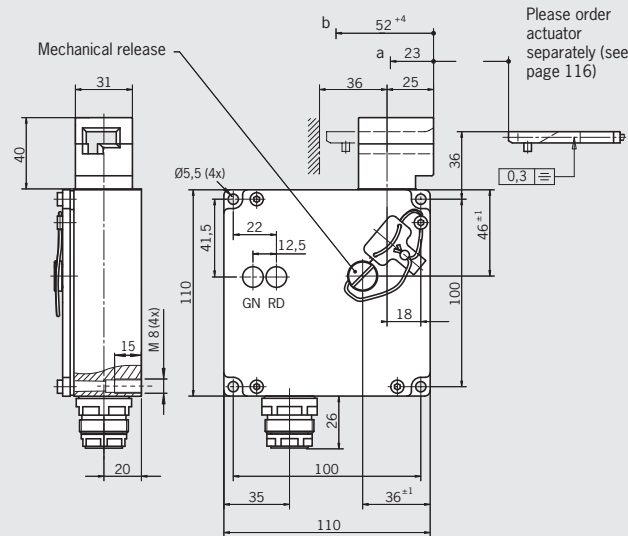
Wiring diagrams actuator inserted and locked





Plug connector SR6 6-pin + PE

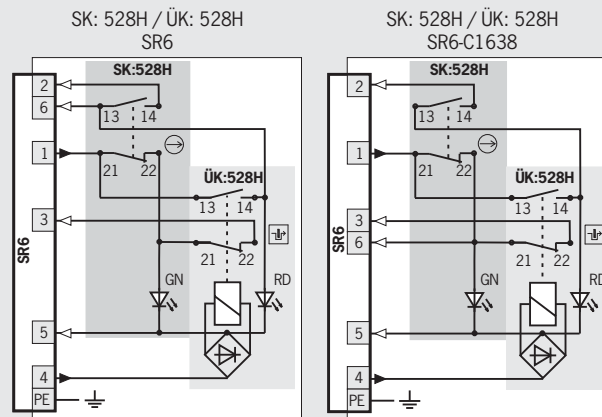
Dimension drawings (actuator head on the left is a mirror image)



For mating connectors, see page 128

Please turn over

Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 18065

- Solenoid monitoring
- Door monitoring

Ordering table

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

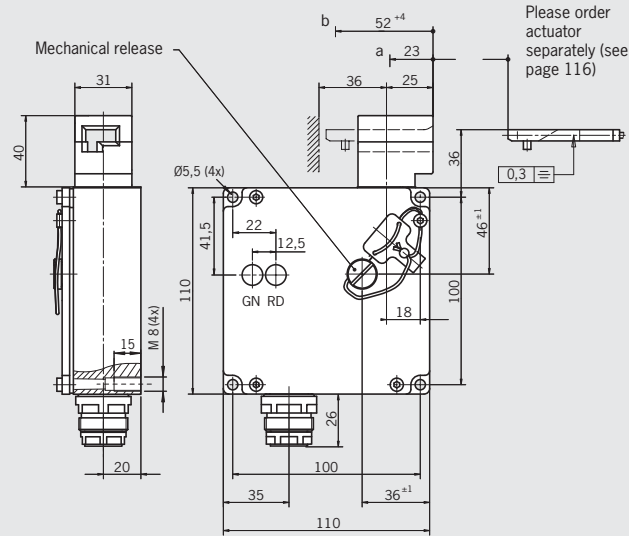
1) Only with solenoid operating voltage AC/DC 24 V 2) No DGUV approval

For technical data, see page 163



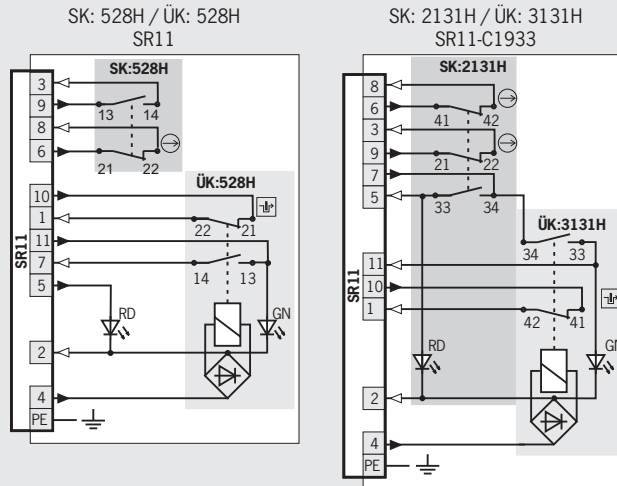
Plug connector SR11 11-pin + PE

Dimension drawings (actuator 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 18066

- Solenoid monitoring
- Door monitoring

Ordering table

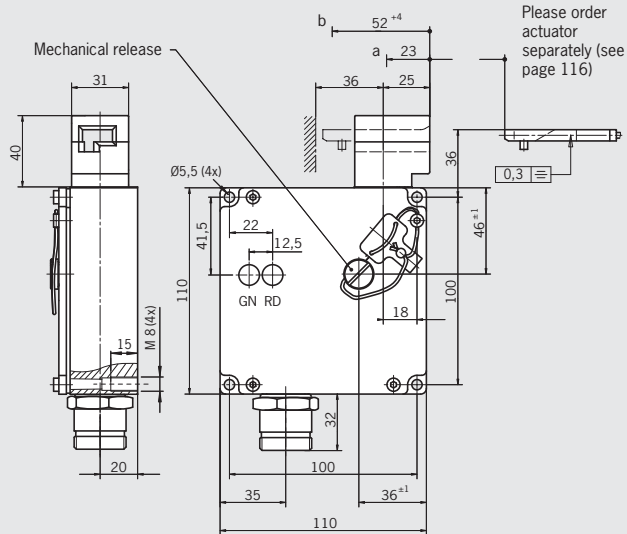
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1933 ¹⁾ Alternative wiring	070828
				ÜK: 528H, 1 NC ⊕ + 1 NO		TZ1LE024SR11
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO		083230 ¹⁾
				ÜK: 3131H, 2 NC ⊕ + 2 NO		TZ1LE024SR11VAB-C1933
		2 Electrical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	C1933 ¹⁾ Alternative wiring	070826
				ÜK: 528H, 1 NC ⊕ + 1 NO		TZ1RE024SR11
RE Right	SK: 2131H, 3 NC ⊖ + 1 NO	083231				
	ÜK: 3131H, 2 NC ⊕ + 2 NO	TZ1RE024SR11VAB-C1933				
						070958
						TZ2LE024SR11
						070957
						TZ2RE024SR11

1) No DGUV approval



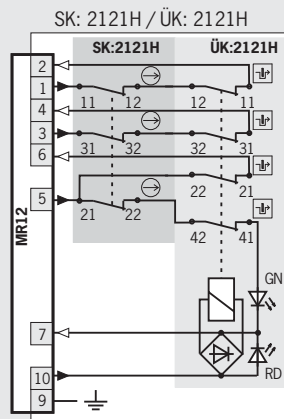
Plug connector MR12 11-pin + PE

Dimension drawings (actuator 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 18067

- Solenoid monitoring
- Door monitoring

Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Red cover 24 V
TZ	MR12 Plug connector	1 Mechanical	LE Left	SK: 2121H, 4 NC \ominus ÜK: 2121H, 4 NC \oplus	083190 TZ1LE024BHAVFG-RC1924
			RE Right	SK: 2121H, 4 NC \ominus ÜK: 2121H, 4 NC \oplus	083191 TZ1RE024BHAVFG-RC1924

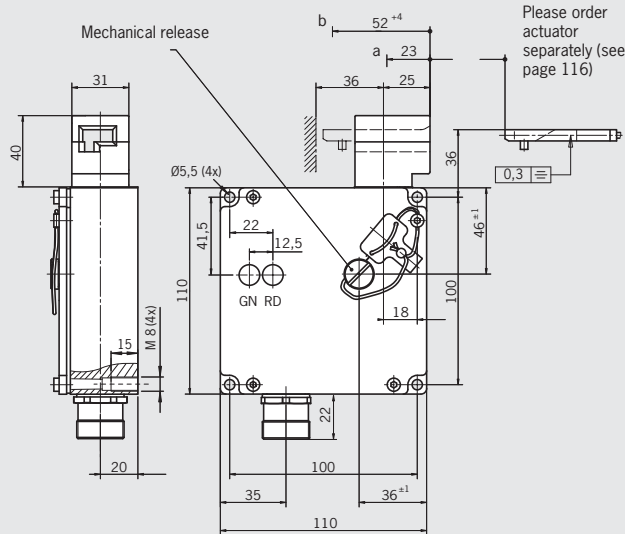
Please turn over

For technical data, see page 163

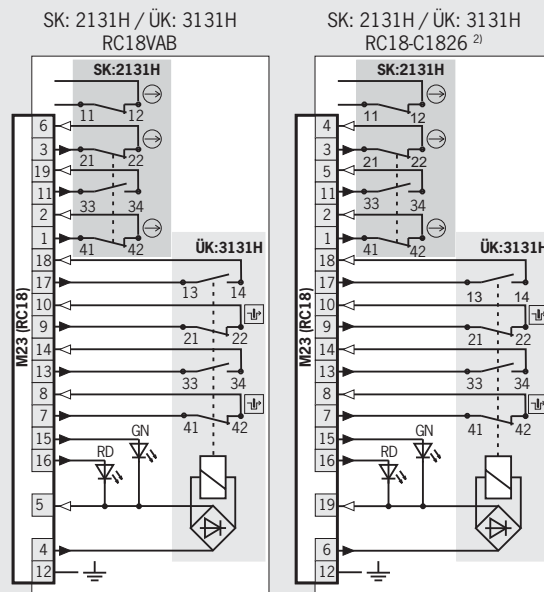


Plug connector M23 (RC18) 18-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams (actuator inserted and locked)



- Solenoid monitoring
- Door monitoring

Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover 24 V
TZ	M23 (RC18) Plug connector	1 Mechanical	LE Left	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊕ + 2 NO	C1826 Wiring	084242 TZ1LE024RC18VAB
			RE Right	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊕ + 2 NO		084246 ²⁾ TZ1LE024RC18VAB-C1826
		2 Electrical	LE Left	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊕ + 2 NO	C1826 Wiring	084243 TZ1RE024RC18VAB
			RE Right	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊕ + 2 NO		084247 ²⁾ TZ1RE024RC18VAB-C1826

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

Safety switch TZ with guard locking and guard locking monitoring



- ▶ Mechanical release on the front
- ▶ Two cable entries M20x1.5
- ▶ Two LED indicators, red and green
- ▶ Plug connector on request
- ▶ Actuator head fitted left or right



Approach direction

- ▶ Horizontal
- ▶ Adjustable in 90° steps

Mechanical release

Is used for releasing the guard locking with the aid of a tool. Sealing can be fitted to protect against tampering. Lead seal 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)

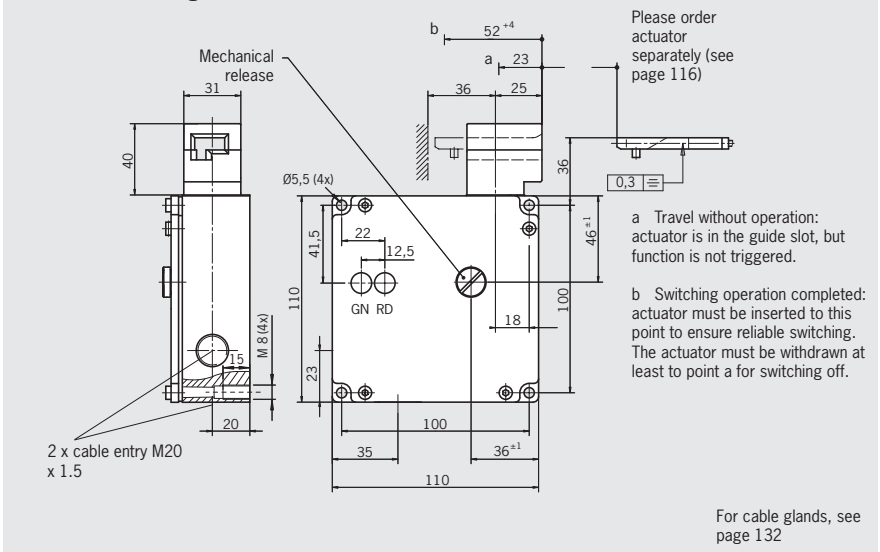
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available, see ordering table:

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

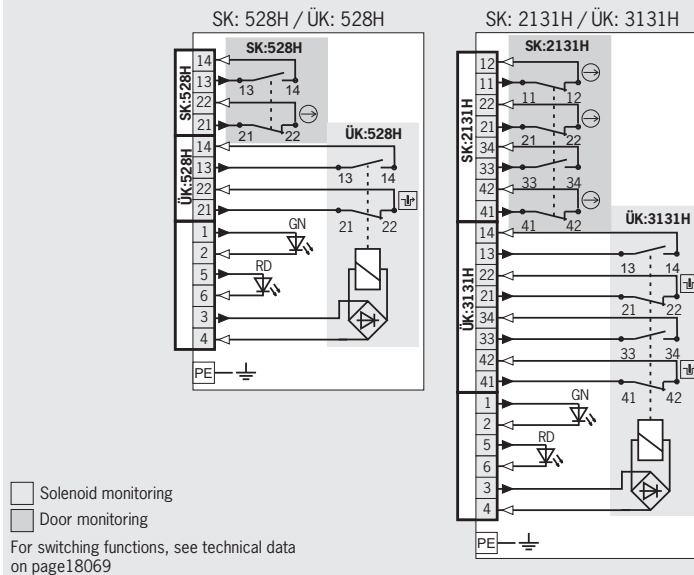
Cable entry 2 x M20 x 1.5

Dimension drawings (actuator 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	2 x M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊕ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	2 cable entries	095245 TZ1LE024M-C2087
				SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	2 cable entries	113504 TZ1LE024MVB-C2087
			RE Right	SK: 528H, 1 NC ⊕ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	2 cable entries	095253 TZ1RE024M-C2087
				SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	2 cable entries	098205 TZ1RE024MVB-C2087

Safety switch TZ with guard locking and guard locking monitoring



- ▶ Emergency unlocking on the front
- ▶ Two LED indicators, red and green
- ▶ Plug connector
- ▶ Actuator head fitted left or right

Plug connector MR8
7-pin + PE



Plug connector MR10
9-pin + PE



Approach direction

Horizontal
Adjustable 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.

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)

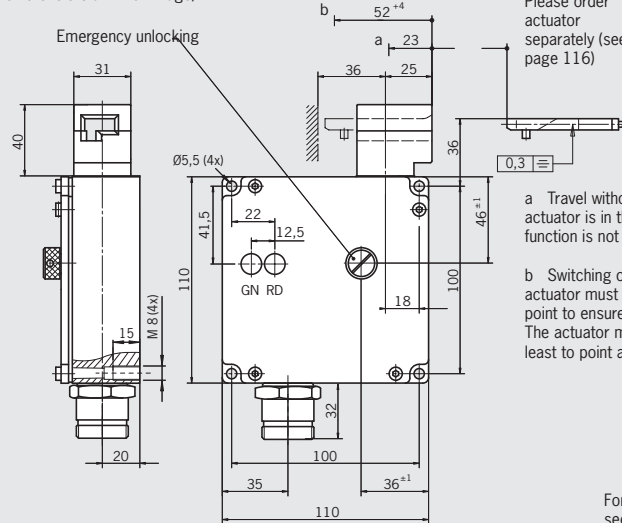
For combinations available, see ordering table:

- ▶ **528H** Slow-action switching contact
1 NC ⊖ + 1 NO

- ▶ **2121H** Slow-action switching contact
4 NC ⊖

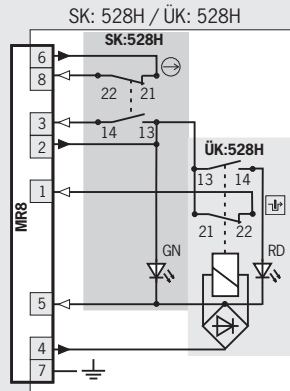
Dimension drawings

(actuator head on the left is a mirror image)



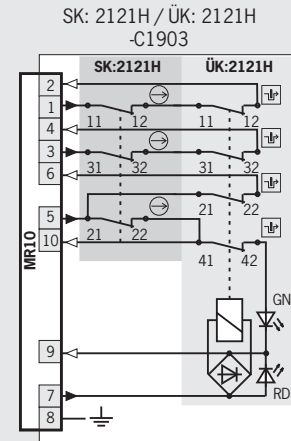
For mating connectors, see page 131

Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 180

Solenoid monitoring
 Door monitoring



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		24 V	
TZ	MR8 Plug connector	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	Emergency unlocking cannot be sealed	054964 TZ1LE024PGOR8C	-	-	-
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	Emergency unlocking cannot be sealed	059920 TZ1RE024PGOR8C	-	-	-
	MR10 Plug connector	1 Mechanical	LE Left	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Emergency unlocking cannot be sealed	-	082095 TZ1LE024BHAC1903	-	-
			RE Right	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Emergency unlocking cannot be sealed	-	082096 TZ1RE024BHAC1903	-	-
		2 Electrical	LE Left	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Emergency unlocking cannot be sealed	-	082083 TZ2LE024BHAC1903	-	-
			RE Right	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Emergency unlocking cannot be sealed	-	082084 TZ2RE024BHAC1903	-	-

Safety switch TZ with guard locking and guard locking monitoring

- ▶ Mechanical release on the front
- ▶ Protective plate for switch head
- ▶ Two LED indicators, red and green
- ▶ Plug connector optional
- ▶ Actuator head fitted left or right



Approach direction

- Horizontal
- Adjustable in 90° steps

Mechanical release

Is used for releasing the guard locking with the aid of a tool. Sealing can be fitted to protect against tampering. Lead seal 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 contact
1 NC \ominus + 1 NO
- ▶ **2131HS** Slow-action switching contact
3 NC \ominus + 1 NO
- ▶ **3131HS** Slow-action switching contact
2 NC \ominus + 2 NO

Ordering table

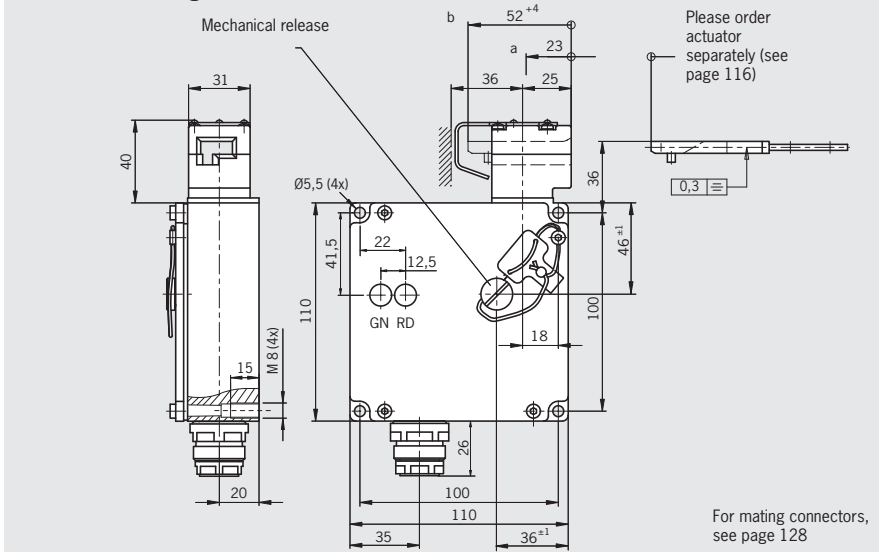
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover	
						24 V	
TZ	SR6 Plug connector	1 Mechanical	LE Left	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	059694 TZ1LE024SR6-C1677	
			RE Right	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	059692 TZ1RE024SR6-C1677	
		2 Electrical	LE Left	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	059852 TZ2LE024SR6-C1677	
			RE Right	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	059699 TZ2RE024SR6-C1677	
	SR11 Plug connector	1 Mechanical	LE Left	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	093860 TZ1LE024SR11-093860	
			RE Right	SK: 528H , 1 NC \ominus + 1 NO ÜK: 528H , 1 NC \oplus + 1 NO	With protective plate	093861 TZ1RE024SR11-093861	



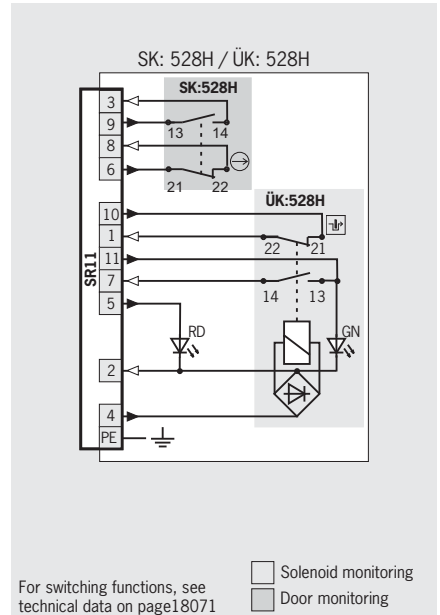
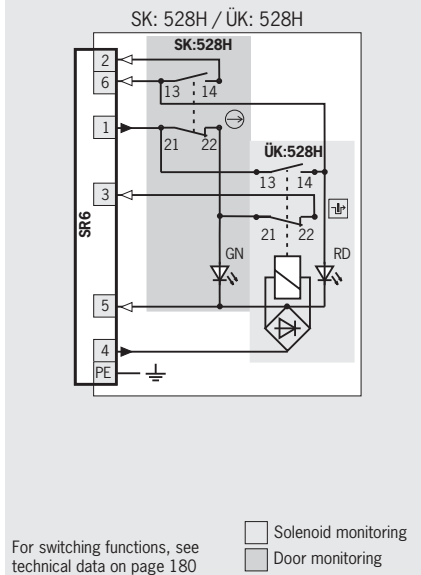
Plug connector SR6
6-pin + PE

Plug connector SR11
11-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked



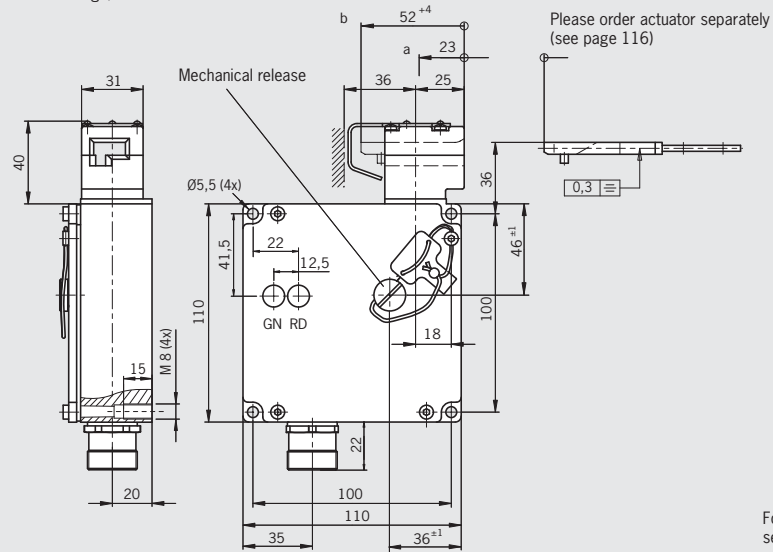
Please turn over

For technical data, see page 163

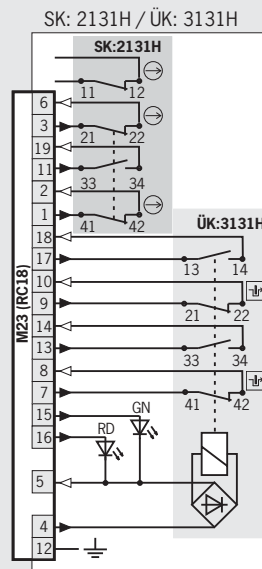


Plug connector M23 (RC18)
18-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 18072

- Solenoid monitoring
- Door monitoring

Ordering table

Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M23 (RC18) Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	With protective plate	093862 TZ1LE024RC18VAB-093862
			RE Right	SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	With protective plate	093863 TZ1RE024RC18VAB-093863

Safety switch TZ with guard locking and guard locking monitoring



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



Approach direction

- Horizontal
- Adjustable in 90° steps

Mechanical release

This releases the guard locking after operation 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

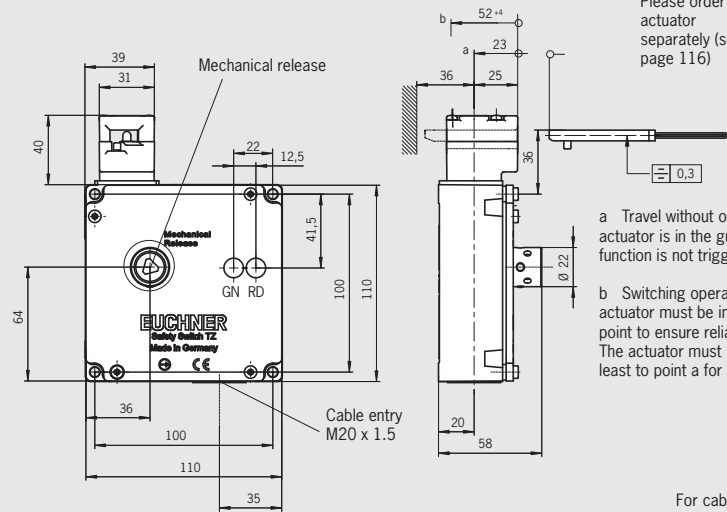
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available, see ordering table:

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

Cable entry M20 x 1.5

Dimension drawings actuator head on the right is a mirror image



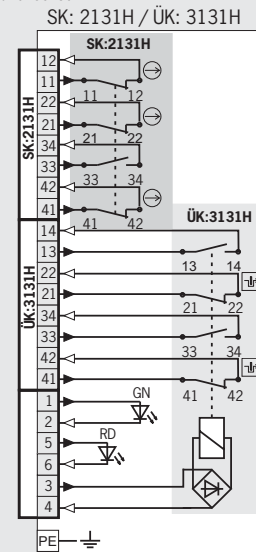
Please order actuator separately (see page 116)

a Travel without operation: actuator is in the guide slot, but 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 132

Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 18073

- ☐ Solenoid monitoring
- ☐ Door monitoring

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

Safety switch TZ with guard locking and guard locking monitoring



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



Approach direction

Horizontal
Adjustable 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:

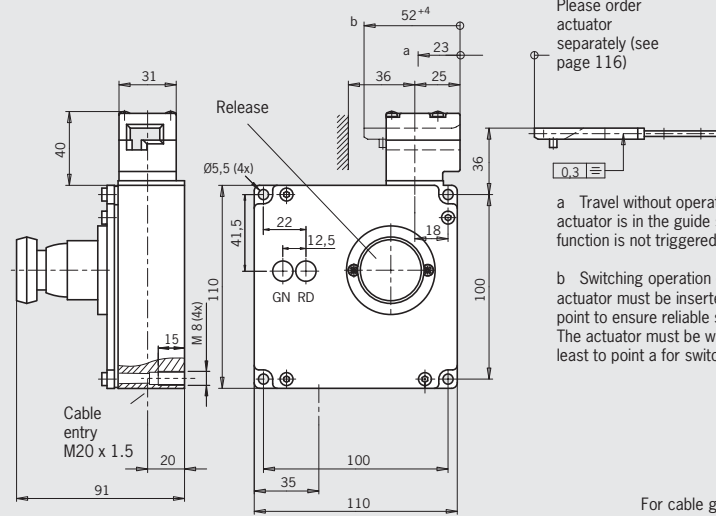
- ▶ **528H** Slow-action switching contact
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131HS** Slow-action switching contact
2 NC ⊖ + 2 NO

Ordering table

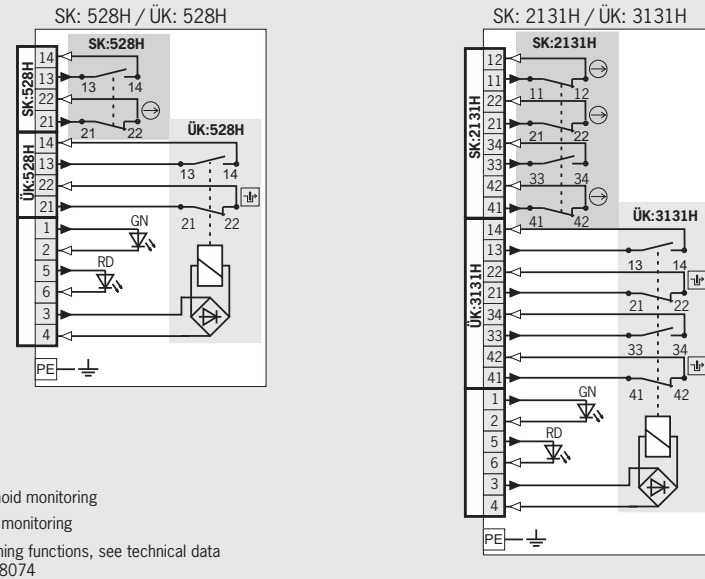
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)	089477 TZ1LE024M-C1816
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Release (blue pushbutton)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

Cable entry M20 x 1.5

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked



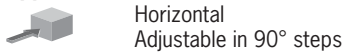
Safety switch TZ with guard locking and guard locking monitoring



- ▶ Emergency unlocking on the front with rotary knob
- ▶ Protective plate for switch head optional
- ▶ Two LED indicators, red and green
- ▶ Plug connector
- ▶ Actuator head fitted left or right



Approach direction



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. Sealing can be fitted to protect against tampering. Lead seal 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:

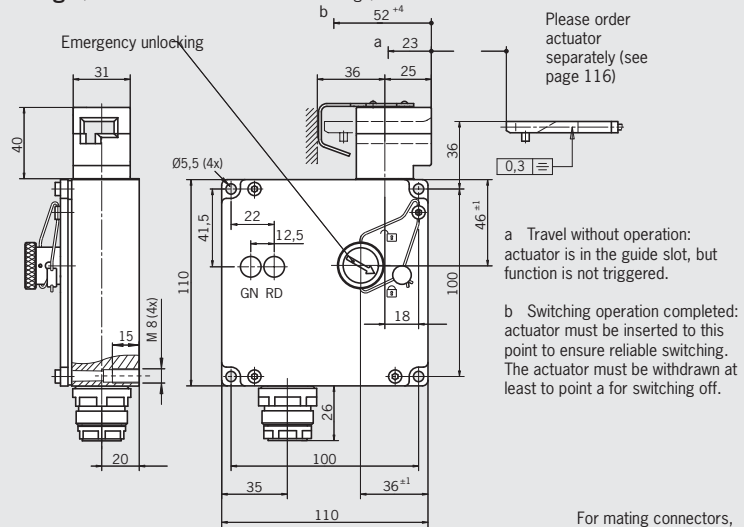
- ▶ **528H** Slow-action switching contact
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC ⊖ + 2 NO

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, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	-
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO ÜK: 528H, 1 NC ⊖ + 1 NO	Emergency unlocking (rotary knob), with protective plate	094343 TZ1RE024SR11-094343

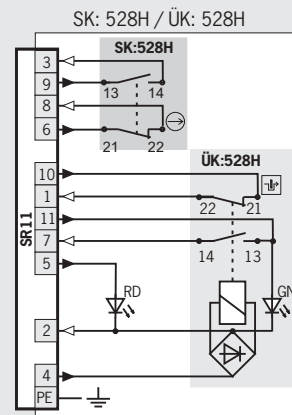
Plug connector SR11 with protective plate 11-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



For mating connectors, see page 128

Wiring diagrams (actuator inserted and locked)



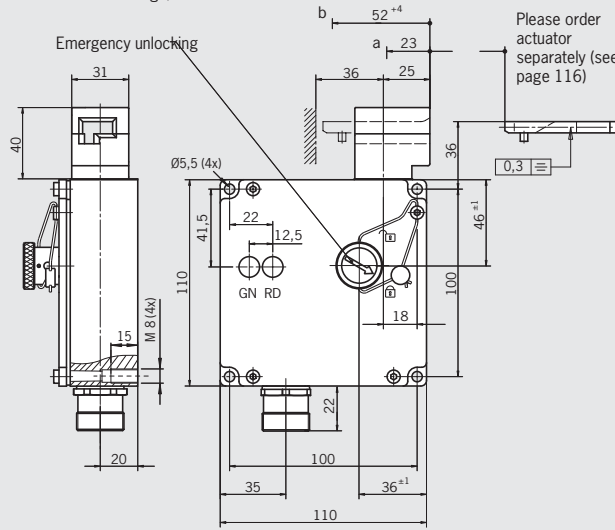
For switching functions, see technical data on page 18076

- Solenoid monitoring
- Door monitoring



Plug connector M23 (RC18)
18-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



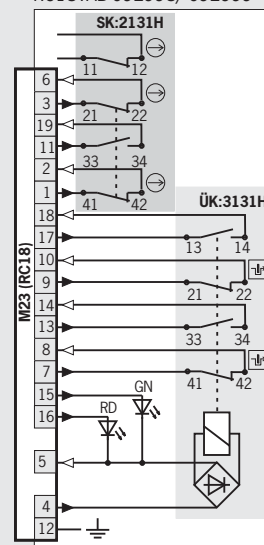
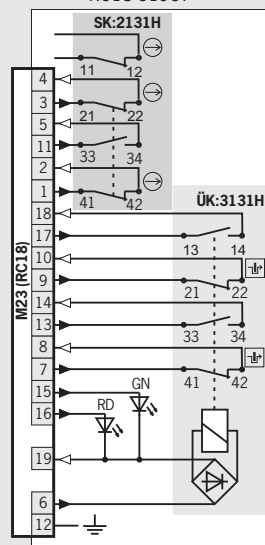
For mating connector with option C1825, see page 129

Wiring diagrams

Actuator inserted and locked

SK: 2131H / ÜK: 3131H
RC18-C1937

SK: 2131H / ÜK: 3131H
RC18VAB-092998/092999



For switching functions, see technical data on page 18077

Solenoid monitoring
 Door monitoring

Ordering table

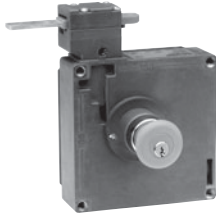
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M23 (RC18) ¹⁾ Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	074260 TZ1LE024RC18VAB-C1937
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	074261 TZ1RE024RC18VAB-C1937
		2 Electrical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	100778 TZ2LE024RC18VAB-C1937
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob)	100777 TZ2RE024RC18VAB-C1937
	M23 (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	092998 TZ1LE024RC18VAB-092998
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Emergency unlocking (rotary knob), alternative wiring	092999 TZ1RE024RC18VAB-092999

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

Safety switch TZ with guard locking and guard locking monitoring



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



Approach direction

- Horizontal
- Adjustable in 90° steps

Escape release

This is used for manual release of guard locking from within the danger zone 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%

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)

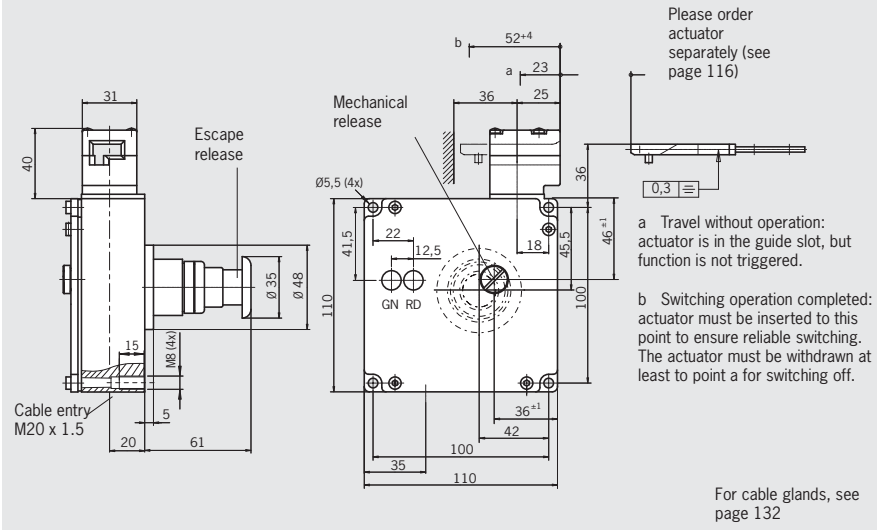
- SK** For monitoring the door/actuator position
- ÜK** For monitoring the guard locking (built-in solenoid)

For combinations available, see ordering table:

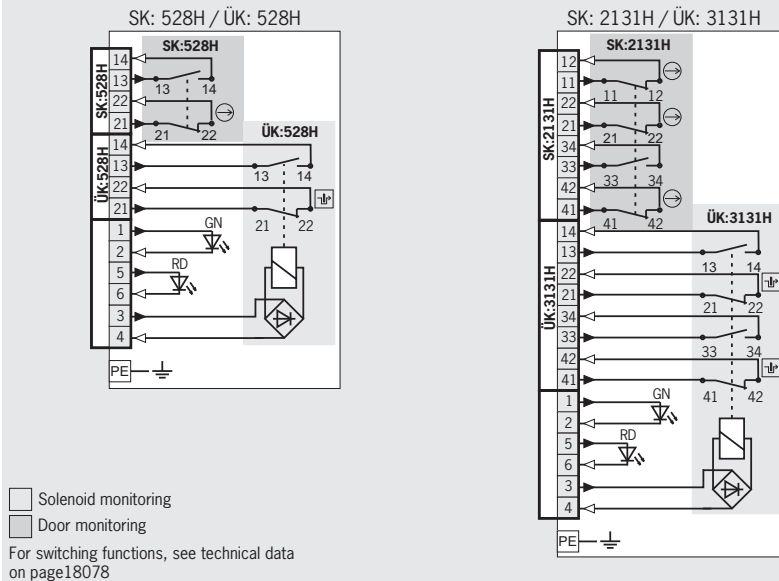
- ▶ **528H** Slow-action switching contact
1 NC ⊖ + 1 NO
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC ⊖ + 2 NO

Cable entry M20 x 1.5

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams (actuator inserted and locked)



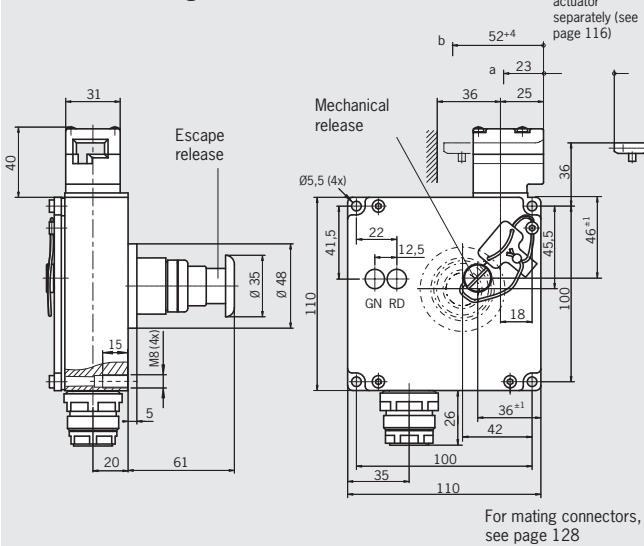
Ordering table

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



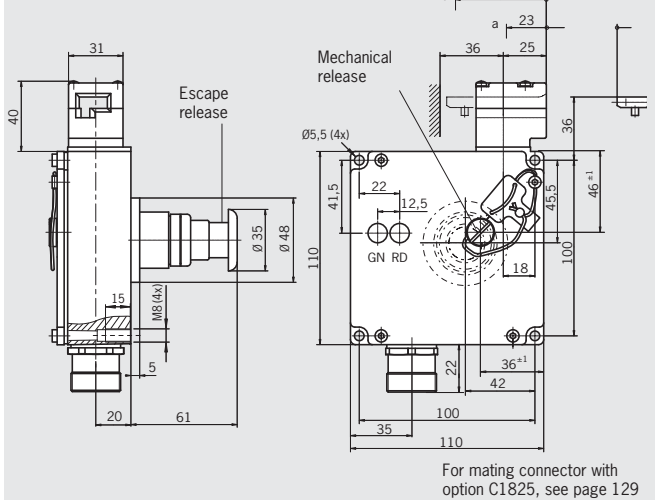
Plug connector SR11 11-pin + PE

Dimension drawings (actuator head on the left is a mirror image)

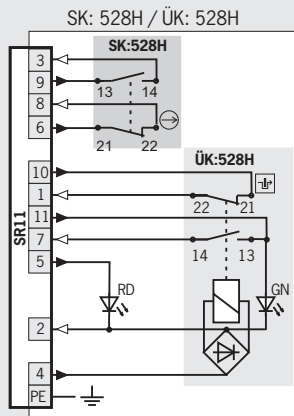


Plug connector M23 (RC18) 18-pin + PE

Dimension drawings (actuator head on the left is a mirror image)

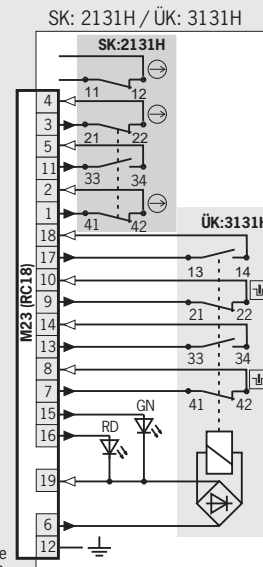


Wiring diagrams actuator inserted and locked



- Solenoid monitoring
- Door monitoring

For switching functions, see technical data on page 18079



- Solenoid monitoring
- Door monitoring

For switching functions, see technical data on page 170

Ordering table

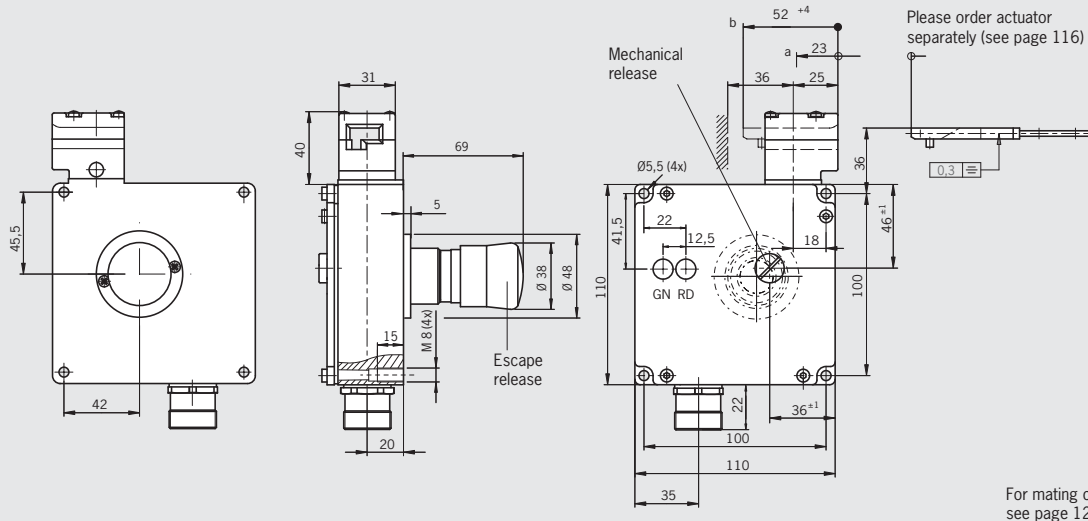
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	SR11 Plug connector	2 Electrical	LE Left	SK: 528H, 1 NC ⊕ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	Escape release (key button)	079660 TZ2LE024SR11-C1815
			RE Right	SK: 528H, 1 NC ⊕ + 1 NO ÜK: 528H, 1 NC ⊕ + 1 NO	Escape release (key button)	079661 TZ2RE024SR11-C1815
	M23 (RC18) ¹⁾ Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Escape release (key button)	090352 TZ1LE024RC18VAB-C1828
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Escape release (key button)	090353 TZ1RE024RC18VAB-C1828
		2 Electrical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Escape release (key button)	093103 TZ2LE024RC18VAB-C1828
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Escape release (key button)	093104 TZ2RE024RC18VAB-C1828

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



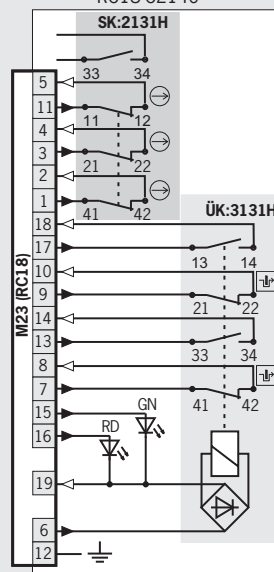
Plug connector M23 (RC18)
18-pin + PE

Dimension drawings (actuator 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	M23 (RC18) Plug connector	1 Mechanical	LE Left	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	C2140 Escape release (without key)	098297 TZ1LE024RC18VAB-C2140
			RE Right	SK: 2131H, 3 NC ⊕ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	C2140 Escape release (without key)	098298 TZ1RE024RC18VAB-C2140

For technical data, see page 163

Safety switch TZ with guard locking and guard locking monitoring



- ▶ Mechanical release on the front
- ▶ Escape release on the rear with push-button
- ▶ Two LED indicators, red and green
- ▶ Plug connector optional
- ▶ Actuator head fitted left or right



Approach direction

Horizontal
Adjustable in 90° steps

Mechanical release

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

Escape release

This is used for manual release of guard locking from within the danger zone without tools.

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:

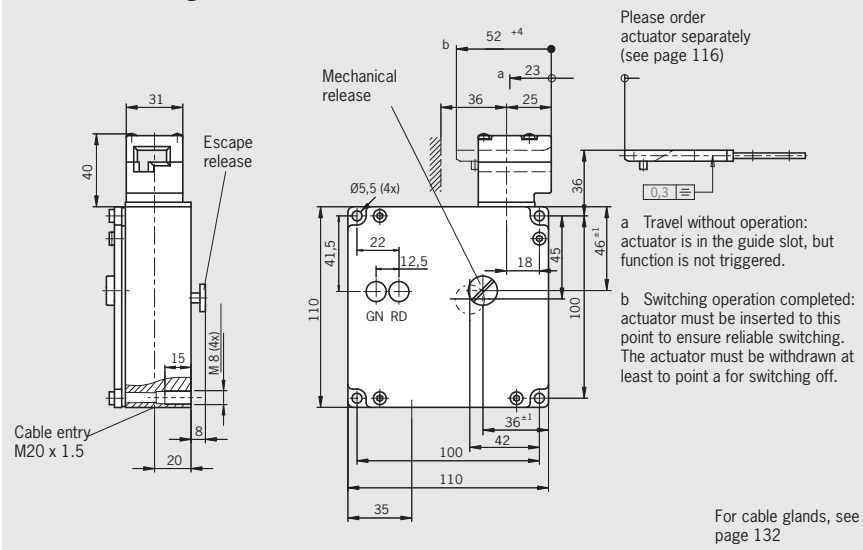
- ▶ **528H** Slow-action switching contact
1 NC \ominus + 1 NO
- ▶ **2131H** Slow-action switching contact
3 NC \ominus + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC \ominus + 2 NO

Ordering table

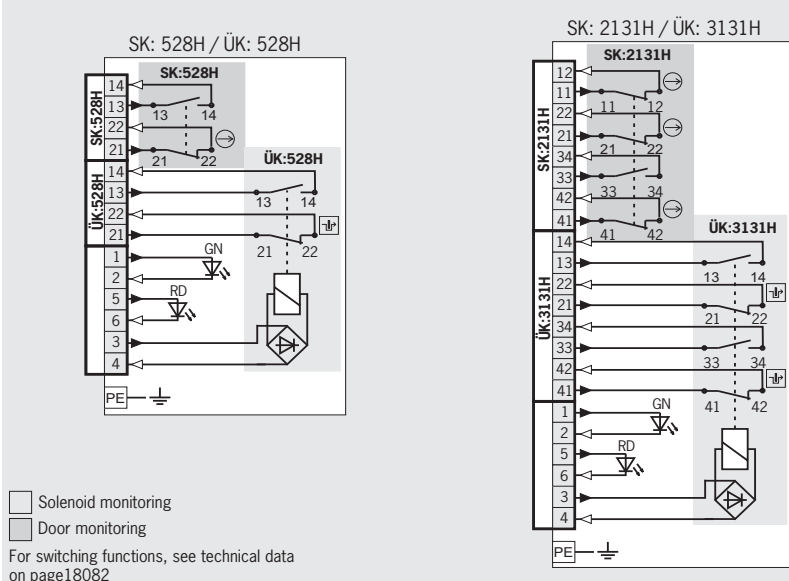
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover 24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC \ominus + 1 NO ÜK: 528H, 1 NC \boxplus + 1 NO	C1684 Escape release (pushbutton)	083170 TZ1LE024M-C1684
				SK: 2131H, 3 NC \ominus + 1 NO ÜK: 3131H, 2 NC \boxplus + 2 NO	C1684 Escape release (pushbutton)	084820 TZ1LE024MVAB-C1684
			RE Right	SK: 528H, 1 NC \ominus + 1 NO ÜK: 528H, 1 NC \boxplus + 1 NO	C1684 Escape release (pushbutton)	083171 TZ1RE024M-C1684
				SK: 2131H, 3 NC \ominus + 1 NO ÜK: 3131H, 2 NC \boxplus + 2 NO	C1684 Escape release (pushbutton)	088084 TZ1RE024MVAB-C1684

Cable entry M20 x 1.5

Dimension drawings (actuator head on the left is a mirror image)



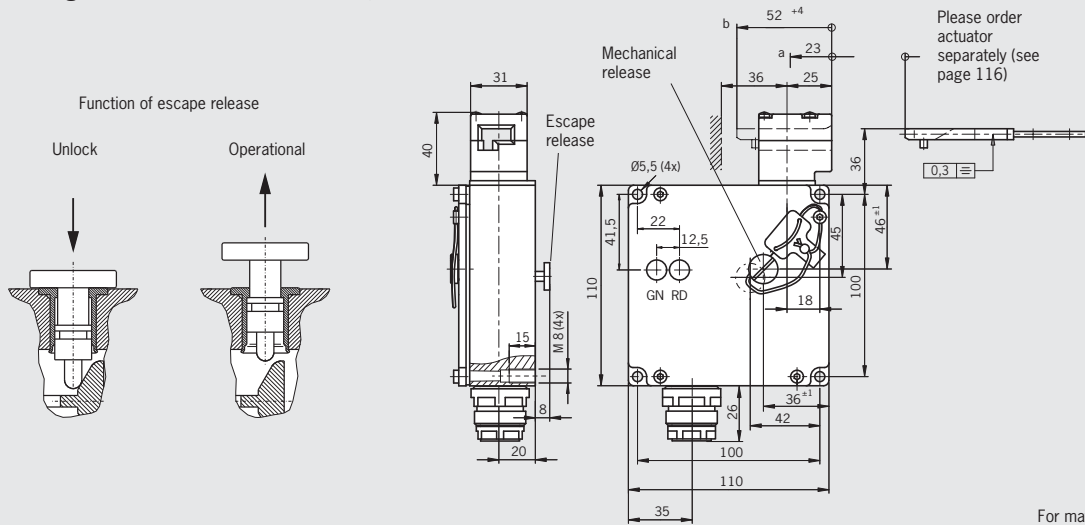
Wiring diagrams (actuator inserted and locked)



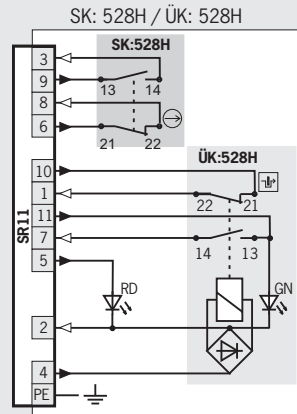


Plug connector SR11 11-pin + PE

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 18083

- 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 \ominus + 1 NO UK: 528H, 1 NC \uparrow + 1 NO	C1684 Escape release (pushbutton)	070886 TZ1LE024SR11-C1684
			RE Right	SK: 528H, 1 NC \ominus + 1 NO UK: 528H, 1 NC \uparrow + 1 NO	C1684 Escape release (pushbutton)	070884 TZ1RE024SR11-C1684

Safety switch TZ with guard locking and guard locking monitoring



- ▶ Emergency unlocking on the front with rotary knob
- ▶ Escape release on the rear with push-button
- ▶ Protective plate for switch head
- ▶ Two LED indicators, red and green
- ▶ Actuator head fitted left or right



Approach direction

Horizontal
Adjustable 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. Sealing can be fitted to protect against tampering. Lead seal kit and tool included (already pre-assembled on versions with plug connectors).

Escape release

This is used for manual release of guard locking from within the danger zone 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

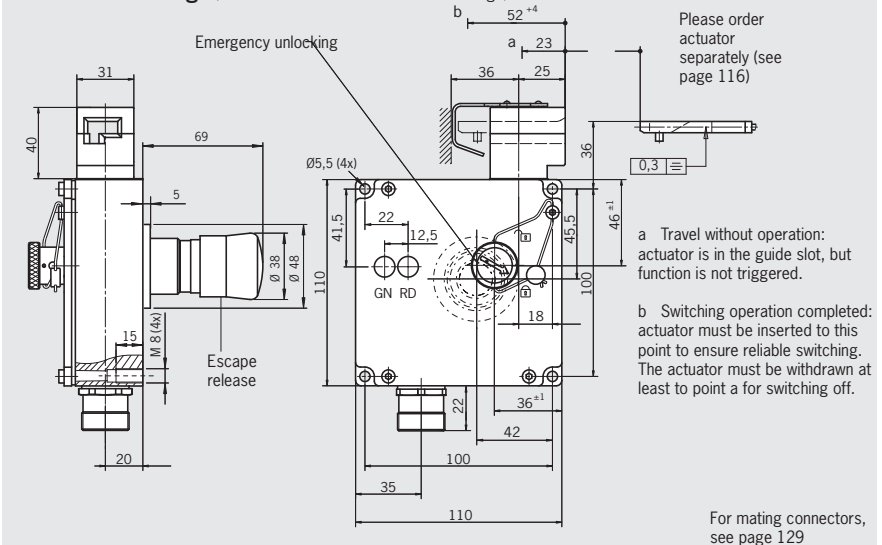
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available, see ordering table:

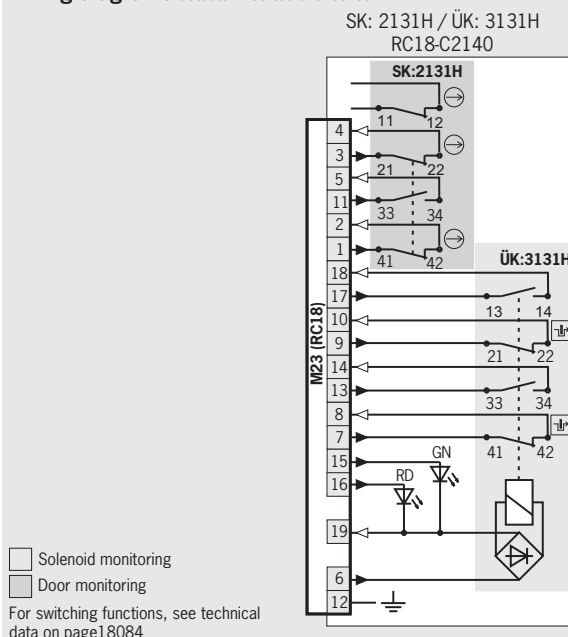
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC ⊖ + 2 NO

Plug connector M23 (RC18)
18-pin + PE

Dimension drawings (actuator 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	M23 (RC18) Plug connector	1	Mechanical	LE Left	SK: 2131H , 3 NC ⊖ + 1 NO UK: 3131H , 2 NC ⊖ + 2 NO	097347 TZ1LE024RC18VAB-C2123
				RE Right	SK: 2131H , 3 NC ⊖ + 1 NO UK: 3131H , 2 NC ⊖ + 2 NO	097348 TZ1RE024RC18VAB-C2123

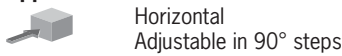
Safety switch TZ with guard locking and guard locking monitoring



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



Approach direction



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%

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)

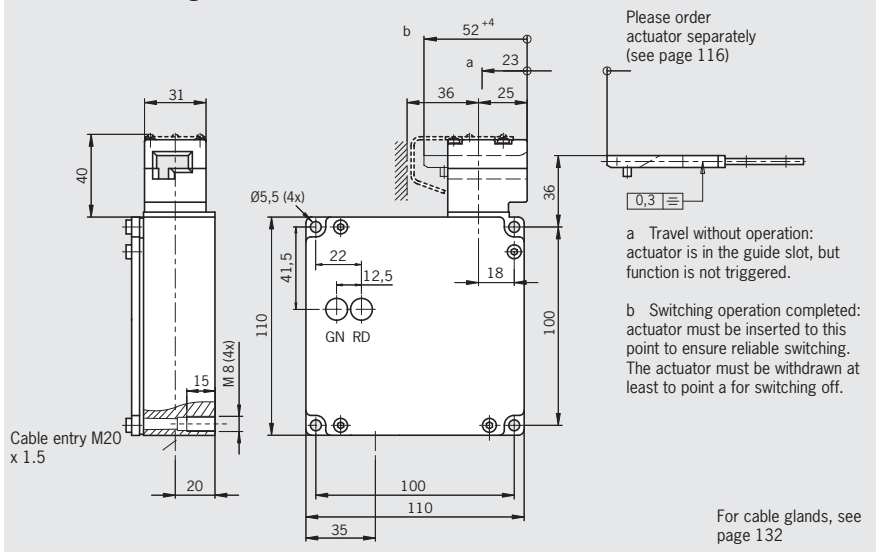
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available, see ordering table:

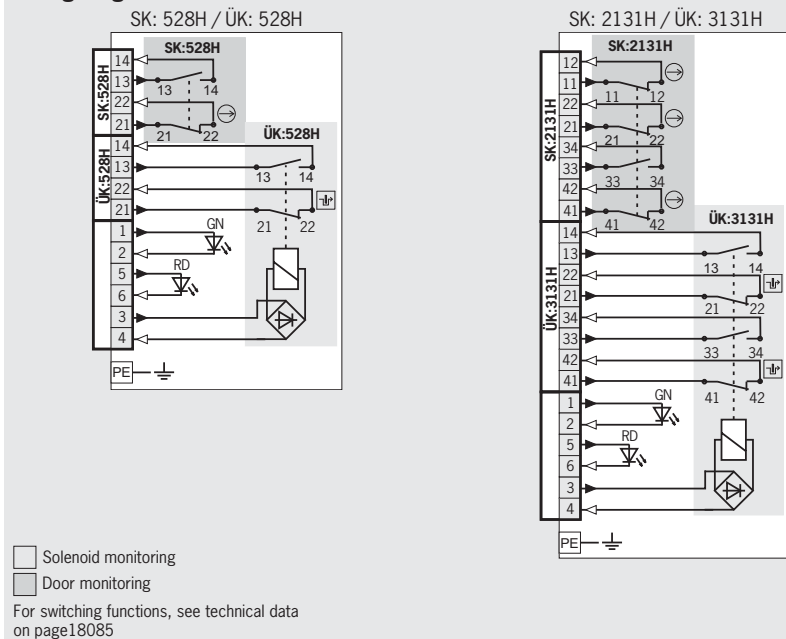
- ▶ **528H** Slow-action switching contact
1 NC ⊖ + 1 NO
- ▶ **2121H** Slow-action switching contact
4 NC ⊖
- ▶ **2131H** Slow-action switching contact
3 NC ⊖ + 1 NO
- ▶ **3131H** Slow-action switching contact
2 NC ⊖ + 2 NO

Cable entry M20 x 1.5

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked

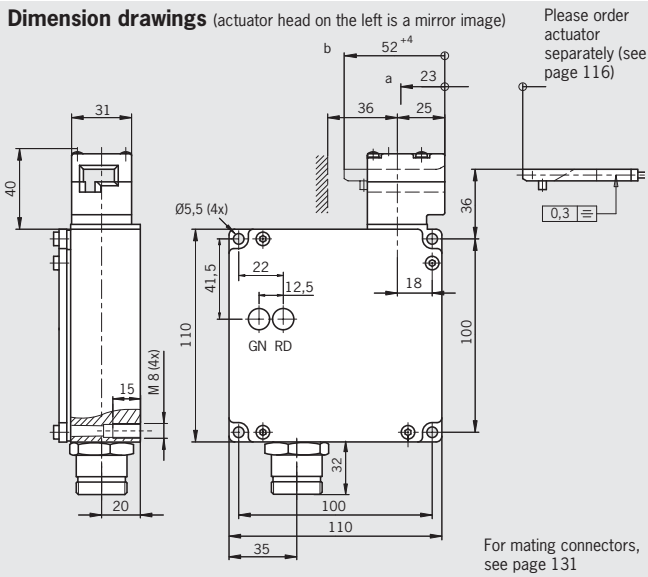


Ordering table

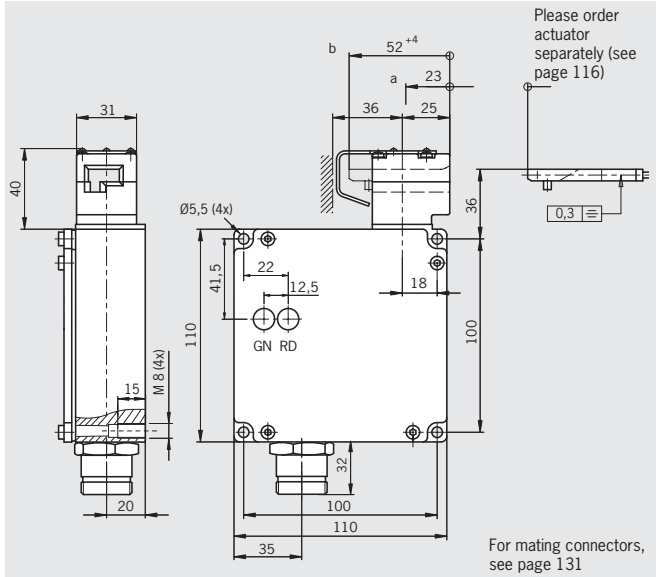
Series	Connection	Guard locking	Switch head	Switching element	Version	Black cover
						24 V
TZ	M20x1.5	1 Mechanical	LE Left	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release, with protective plate	083246 TZ1LE024M-C1623
				ÜK: 528H, 1 NC ⊕ + 1 NO	Without mechanical release, with protective plate	085170 TZ1LE024MVAB-C1623
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Without mechanical release	096052 TZ1LE024MVAB-RC2100
			RE Right	SK: 528H, 1 NC ⊖ + 1 NO	Without mechanical release, with protective plate	083247 TZ1RE024M-C1623
				ÜK: 528H, 1 NC ⊕ + 1 NO	Without mechanical release, with protective plate	085171 TZ1RE024MVAB-C1623
				SK: 2131H, 3 NC ⊖ + 1 NO ÜK: 3131H, 2 NC ⊕ + 2 NO	Without mechanical release	096051 TZ1RE024MVAB-RC2100



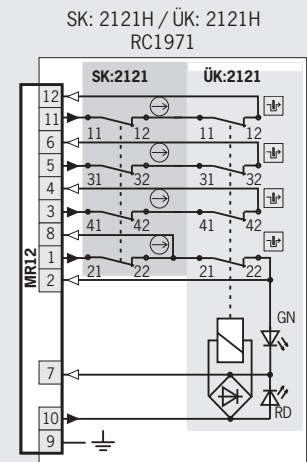
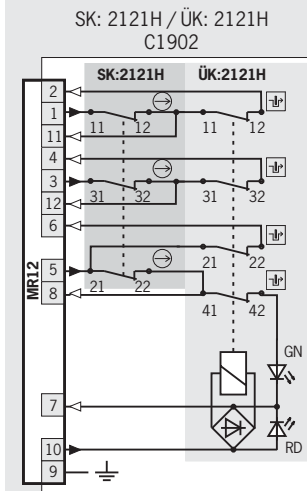
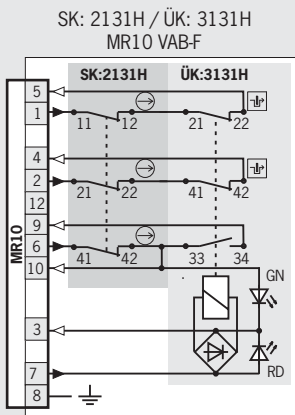
Plug connector MR10 9-pin + PE



Plug connector MR12 11-pin + PE



Wiring diagrams actuator inserted and locked



For switching functions, see technical data on page 18086

Solenoid monitoring
 Door monitoring

For switching functions, see technical data on page 18086

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: 2131H, 3 NC ⊖ ÜK: 3131H, 2 NC ⊕ + 1 NO	Without mechanical release	095902 TZ1LE024MVAB-10C-FW
			RE Right	SK: 2131H, 3 NC ⊖ ÜK: 3131H, 2 NC ⊕ + 1 NO	Without mechanical release	095903 TZ1RE024MVAB-10C-FW
	MR12 Plug connector	1 Mechanical	LE Left	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Without mechanical release, with protective plate	079692 TZ1LE024BHA-C1902
					Alternative wiring, without mechanical release with protective plate	085569 TZ1LE024BHAVFG-RC1971
			RE Right	SK: 2121H, 4 NC ⊖ ÜK: 2121H, 4 NC ⊕	Without mechanical release, with protective plate	079693 TZ1RE024BHA-C1902
					Alternative wiring, without mechanical release with protective plate	085570 TZ1RE024BHAVFG-RC1971

Safety switch TZ with guard locking and guard locking monitoring



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

Plug connector M23 (RC18) and RC12 (enabling switch)
18-pin + PE / 12-pin



Approach direction

- Horizontal
- Adjustable 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.

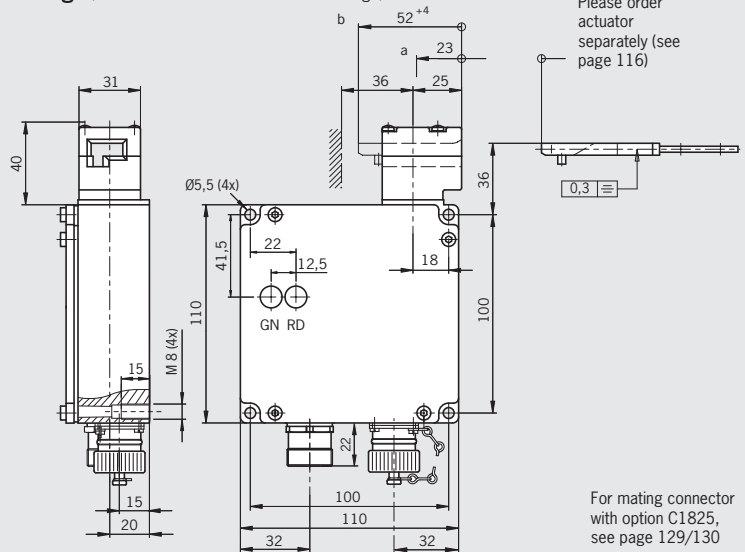
Switching elements (see also page 13/14)

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

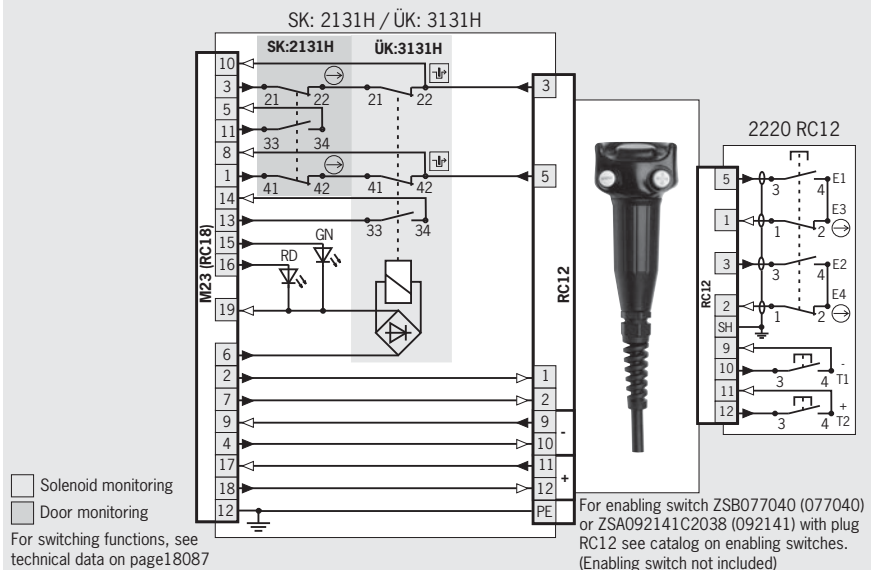
For combinations available, see ordering table:

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

Dimension drawings (actuator head on the left is a mirror image)



Wiring diagrams actuator inserted and locked



Ordering table

Series	Connection	Enabling switches Connection	Guard locking	Switch head	Switching element	Version	Black cover
							24 V
TZ	M23 (RC18) ¹⁾ Plug connector	Enabling switches Plug RC12	1 Mechanical	LE Left	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊖ + 2 NO	Without mechanical release	091062 TZ1LE024RC18VAB-C1803
				RE Right	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊖ + 2 NO	Without mechanical release	091063 TZ1RE024RC18VAB-C1803
			2 Electrical	LE Left	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊖ + 2 NO	Without mechanical release	075955 TZ2LE024RC18VAB-C1803
				RE Right	SK: 2131H , 3 NC ⊖ + 1 NO ÜK: 3131H , 2 NC ⊖ + 2 NO	Without mechanical release	077149 TZ2RE024RC18VAB-C1803

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

