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

### Release feature, front
- **HE** Mechanical release can be sealed
- **E** Emergency release
- **HD** Mechanical release for triangular key acc. to DIN 22417 (latching)
- **ND** Release on the front (pushbutton)
- **NR** Emergency unlocking on the front (rotary knob can be sealed)
- **O** Without manual release feature

### Release feature, rear
- **FS** Escape release on the rear (key button)
- **FD** Escape release on the rear (pushbutton/button without key)

### Version
- **SB** Protective plate, tamper protection on the switch head

### Enabling switch connection
- **BD4** Plug connector 4-pin
- **RC12** Plug connector 12-pin

### Connection
- **M** Thread M20 x 1.5 for cable glands
- **SR6** Plug connector 6-pin + PE
- **MR8** Plug connector 7-pin + PE
- **MR10** Plug connector 9-pin + PE
- **SR11** Plug connector 11-pin + PE
- **MR12** Plug connector 11-pin + PE
- **RC18** Plug connector 18-pin + PE

### Switching element
- **Two contacts** 2 x (1 NC + 1 NO)
- **Four contacts** 2 x (4 NC + 2 NC + 2 NO)

<table>
<thead>
<tr>
<th>Manual release</th>
<th>Enabling switch</th>
<th>Connection</th>
<th>Switching element (Two contacts)</th>
<th>With version</th>
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</table>
Safety Switches with Separate Actuator, Metal Housing

**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

**UK**

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

### Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>24 V</th>
<th>110 V</th>
<th>230 V</th>
<th>24 V</th>
<th>110 V</th>
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</table>

### Dimension drawings

Actuating head on the left is a mirror image

### Wiring diagrams

**Actuator inserted and locked**

For combinations available see ordering table:

- **SK: 528H**
  - Black cover: 082050 083160 083166 083164 083168
  - Red cover: 090561 083163 083167 083165 083169

- **SK: 5212H**
  - Black cover: 082051 083161 083167 083165 083169
  - Red cover: 090561 083163 083167 083165 083169

- **SK: 5213H**
  - Black cover: 083965 088023 088029 088023 088027
  - Red cover: 090561 083163 083167 083165 083169

- **SK: 5213H**
  - Black cover: 083966 088024 088030 088023 088027
  - Red cover: 090561 083163 083167 083165 083169

### 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.

### Guard locking head

- 110 V 24 V 230 V 110 V

### Actuator separately

- See page 118

### For cable glands

- See page 132

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**Subject to technical modifications; no responsibility is accepted for the accuracy of this information.**
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
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<td>RC18</td>
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2) Important: use suitable mating connector with option C1825!

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
### Plug connector SR6
6-pin + PE

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

**Wiring diagrams**
Actuator inserted and locked

For mating connectors see page 128

---

#### Ordering table

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<th>Series</th>
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1) No BG approval

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For switching functions see technical data on page 180

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For mating connectors see page 128

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1) No BG approval

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**Subject to technical modifications; no responsibility is accepted for the accuracy of this information.**
Ordering table

<table>
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<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
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1) No BG approval

For technical data see page 180

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

Plug connector MR12
11-pin + PE

Dimension drawings Actuating head on the left is a mirror image

Wiring diagrams Actuator inserted and locked

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
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For mating connectors see page 131

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
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<td>SK: 2131H, 3 NC ³ + 1 NO</td>
<td>2 cable entries</td>
<td>TZ1LE024M-C2087</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ÜK: 3131H, 2 NC ³ + 2 NO</td>
<td>entries</td>
<td>On request</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 528H, 1 NC ³ + 1 NO</td>
<td>2 cable entries</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ÜK: 528H, 1 NC ³ + 1 NO</td>
<td>entries</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 2131H, 3 NC ³ + 1 NO</td>
<td>2 cable entries</td>
<td>098205</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td>ÜK: 3131H, 2 NC ³ + 2 NO</td>
<td>entries</td>
<td>TZ1RE024MVAB-C2087</td>
</tr>
</tbody>
</table>

Wiring diagrams Actuator inserted and locked

- SK: 528H/ÜK: 528H
- ÜK: 528H, 1 NC ³ + 1 NO
- 2 cable entries
- T2131H/ÜK: 3131H
- ÜK: 3131H, 2 NC ³ + 2 NO
- 2 cable entries

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
### Safety Switches with Separate Actuator, Metal Housing

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

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

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

- **Cable entry M20 x 1.5**

### Wiring diagrams
Actuator inserted and locked

- **For mating connectors see page 128**

### Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>SR6</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>Sk: 528H, 1 NC + 1 NO</td>
<td>Plug connector right, Cable entry M20x1,5 on bottom</td>
<td>On request</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>Sk: 528H, 1 NC + 1 NO</td>
<td>Plug connector left, Cable entry M20x1,5 on bottom</td>
<td>On request</td>
</tr>
<tr>
<td>TZ</td>
<td>SR11</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>Sk: 528H, 1 NC + 1 NO</td>
<td>Plug connector right, Cable entry M20x1,5 on bottom</td>
<td>On request</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>Sk: 528H, 1 NC + 1 NO</td>
<td>Plug connector left, Cable entry M20x1,5 on bottom</td>
<td>On request</td>
</tr>
</tbody>
</table>

### Notes
- **Travel without operation:** actuator is in the guide slot, however function is not triggered.
- **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 switching functions see technical data on page 180
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>MR8</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Emergency release cannot be sealed</td>
<td>054964</td>
<td>074917</td>
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<tr>
<td></td>
<td>RE Right</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Emergency release cannot be sealed</td>
<td>T21LE024PG0R8C</td>
<td>T21EL110PG0R8C</td>
<td>On request</td>
<td></td>
</tr>
<tr>
<td>TZ</td>
<td>MR10</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 2121H, 4 NC</td>
<td>Emergency release cannot be sealed</td>
<td>059920</td>
<td>074916</td>
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<tr>
<td></td>
<td>RE Right</td>
<td>SK: 2121H, 4 NC</td>
<td>Emergency release cannot be sealed</td>
<td>T21RE024PG0R8C</td>
<td>T21RE110PG0R8C</td>
<td>On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Electrical</td>
<td>LE Left</td>
<td>SK: 2121H, 4 NC</td>
<td>Emergency release cannot be sealed</td>
<td>On request</td>
<td>On request</td>
<td>T21LE024BHA-C1903</td>
</tr>
<tr>
<td></td>
<td>RE Right</td>
<td>SK: 2121H, 4 NC</td>
<td>Emergency release cannot be sealed</td>
<td>T21RE024BHA-C1903</td>
<td>T21RE110PG0R8C</td>
<td>On request</td>
<td></td>
</tr>
</tbody>
</table>

For switching functions see technical data on page 180

For mating connectors see page 118

Please order actuator separately (see page 118)

For solenoid monitoring
- 528H, 1 NC + 1 NO

For mechanical monitoring
- 2121H, 4 NC

For electrical monitoring
- 2131H, 3 NC + 1 NO
- 3131H, 2 NC + 2 NO

Solenoid monitoring
Door monitoring

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switching head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>089470</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>UK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>T21LEU24M-089470</td>
</tr>
</tbody>
</table>

Cable entry M20 x 1.5

Dimension drawings
Actuating head on the left is a mirror image

Please order actuator separately (see page 118)

Wiring diagrams
Actuator inserted and locked

For cable glands see page 132

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switching head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>089470</td>
</tr>
<tr>
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<td></td>
<td></td>
<td>RE Right</td>
<td>UK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>T21LEU24M-089470</td>
</tr>
</tbody>
</table>

Cable entry M20 x 1.5

Dimension drawings
Actuating head on the left is a mirror image

Please order actuator separately (see page 118)

Wiring diagrams
Actuator inserted and locked

For cable glands see page 132

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switching head</th>
<th>Switching element</th>
<th>Version</th>
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</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>089470</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>UK: 528H, 1 NC ⊗ + 1 NO</td>
<td>With protective plate</td>
<td>T21LEU24M-089470</td>
</tr>
</tbody>
</table>
Safety Switches with Separate Actuator, Metal Housing

Plug connector SR6
6-pin + PE

Plug connector SR11
11-pin + PE

Dimension drawings Actuating head on the left is a mirror image

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
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<th>Black cover</th>
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</thead>
<tbody>
<tr>
<td>SR6</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>Sk: 528H, 1 NC 0 + 1 NO</td>
<td>With protective plate</td>
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<td>T21LE024SR6-C1677</td>
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<td>RE Right</td>
<td>Sk: 528H, 1 NC 0 + 1 NO</td>
<td>With protective plate</td>
<td>059692</td>
<td>T21RE024SR6-C1677</td>
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<tr>
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<td>SR11</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>Sk: 528H, 1 NC 0 + 1 NO</td>
<td>With protective plate</td>
<td>093860</td>
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<td>RE Right</td>
<td>Sk: 528H, 1 NC 0 + 1 NO</td>
<td>With protective plate</td>
<td>093861</td>
<td>T21RE024SR11-093861</td>
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</table>

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>With protective plate</td>
<td>093862</td>
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<tr>
<td></td>
<td></td>
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<td>Left</td>
<td>ÜK: 3131H, 2 NC + 2 NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>With protective plate</td>
<td>093863</td>
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<tr>
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<td></td>
<td></td>
<td>Right</td>
<td>ÜK: 3131H, 2 NC + 2 NO</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
</table>
| TZ     | M20 x 1.5  | 1 LE Mechanical | SK: 2131H, 3 NC ⊕ + 1 NO  
UK: 3131H, 2 NC ⊕ + 2 NO | Mechanical release with triangular key | 098718  
TZ1LB024MVAB-C2159 |
|        |            | RE Right      | SK: 2131H, 3 NC ⊕ + 1 NO  
UK: 3131H, 2 NC ⊕ + 2 NO | Mechanical release with triangular key | 098717  
TZ1RB024MVAB-C2159 |

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>SK:528H/ÜK:528H</td>
<td>Release (blue pushbutton)</td>
<td>089477</td>
<td>24 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Electrical</td>
<td>SK:528H/ÜK:528H</td>
<td>Release (blue pushbutton)</td>
<td>087992</td>
<td>24 V</td>
</tr>
</tbody>
</table>

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180
Safety Switches with Separate Actuator, Metal Housing

Plug connector SR11
11-pin + PE

Plug connector RC18
18-pin + PE

Dimension drawings
Actuating head on the left is a mirror image

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>LE</td>
<td>Mechanical</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Release (blue pushbutton)</td>
<td>077044</td>
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<tr>
<td></td>
<td>RE</td>
<td></td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Release (blue pushbutton)</td>
<td>077044</td>
</tr>
<tr>
<td>RC18</td>
<td>LE</td>
<td>Mechanical</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>Release (blue pushbutton)</td>
<td>088090</td>
</tr>
<tr>
<td></td>
<td>RE</td>
<td></td>
<td>SK: 2131H, 3 NC + 2 NO</td>
<td>Release (blue pushbutton)</td>
<td>088090</td>
</tr>
</tbody>
</table>

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

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

For combinations available see ordering table:
- S28H 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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>SR11</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: S28H, 1NC ☐ + 1 NO</td>
<td>Emergency unlocking (rotary knob), with protective plate</td>
<td>094342</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Right</td>
<td>UK: S28H, 1NC ☐ + 1 NO</td>
<td>T1LE024SR11-094342</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: S28H, 1NC ☐ + 1 NO</td>
<td>Emergency unlocking (rotary knob), with protective plate</td>
<td>094343</td>
</tr>
<tr>
<td></td>
<td>RE</td>
<td>Mechanical</td>
<td></td>
<td>UK: S28H, 1NC ☐ + 1 NO</td>
<td>T1RE024SR11-094343</td>
<td></td>
</tr>
</tbody>
</table>

For mating connectors see page 128
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18 ¹)</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC $\ominus$ + 1 NO</td>
<td>Emergency unlocking (rotary knob)</td>
<td>074260</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>ÜK: 3131H, 2 NC $\ominus$ + 2 NO</td>
<td>100778</td>
<td>24 V</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Electrical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC $\ominus$ + 1 NO</td>
<td>Emergency unlocking (rotary knob)</td>
<td>074261</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>ÜK: 3131H, 2 NC $\ominus$ + 2 NO</td>
<td>Emergency unlocking (rotary knob)</td>
<td>100777</td>
</tr>
<tr>
<td>TZ</td>
<td>RC18 ¹)</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC $\ominus$ + 1 NO</td>
<td>Emergency unlocking (rotary knob), alternative wiring</td>
<td>092998</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>ÜK: 3131H, 2 NC $\ominus$ + 2 NO</td>
<td>Emergency unlocking (rotary knob), alternative wiring</td>
<td>092999</td>
</tr>
</tbody>
</table>

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

For mating connector with option C1825 see page 129

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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
UK 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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ M20x1.5</td>
<td>LE 1 Mechanical</td>
<td>SK: 528H, 1 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>087990</td>
<td>24 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td>ŠK: 528H, 1 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>087991</td>
<td>110 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>SK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>089468</td>
<td>24 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>UK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>094311</td>
<td>110 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>SK: 3131H, 2 NC ⊗ + 2 NO</td>
<td>Escape release (red key button)</td>
<td>089469</td>
<td>24 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>UK: 3131H, 2 NC ⊗ + 2 NO</td>
<td>Escape release (red key button)</td>
<td>094312</td>
<td>110 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>RE 2 Electrical</td>
<td>SK: 528H, 1 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>089460</td>
<td>24 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Left</td>
<td>ŠK: 528H, 1 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>087290</td>
<td>110 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>UK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>SK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>089461</td>
<td>24 V On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Right</td>
<td>UK: 2131H, 3 NC ⊗ + 1 NO</td>
<td>Escape release (red key button)</td>
<td>087291</td>
<td>110 V On request</td>
<td></td>
</tr>
</tbody>
</table>

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

**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)

**Wiring diagrams**  
Actuator inserted and locked

**Ordering table**

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18 [1]</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>Escape release (key button)</td>
<td>093103</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>UK: 3131H, 2 NC + 2 NO</td>
<td>Escape release (key button)</td>
<td>093104</td>
</tr>
<tr>
<td>TZ</td>
<td>SR11 Plug connector</td>
<td>2 Electrical</td>
<td>LE Left</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Escape release (key button)</td>
<td>079660</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>UK: 528H, 1 NC + 2 NO</td>
<td>Escape release (key button)</td>
<td>079661</td>
</tr>
</tbody>
</table>

For mating connectors see page 128  
For mating connector with option C1825 see page 129

---

[1] Important: use suitable mating connector with option C1825!
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td></td>
<td>LE 1</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096487 095992 T21LE10MAB-C2082 T21LE110MAB-C2082</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096488 095103 T21RE10MAB-C2082 T21RE110MAB-C2082</td>
</tr>
</tbody>
</table>

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td></td>
<td>LE 1</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096487 095992 T21LE10MAB-C2082 T21LE110MAB-C2082</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096488 095103 T21RE10MAB-C2082 T21RE110MAB-C2082</td>
</tr>
</tbody>
</table>

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td></td>
<td>LE 1</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096487 095992 T21LE10MAB-C2082 T21LE110MAB-C2082</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 2131H, 3 NC + 1 NO, ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2082</td>
<td>096488 095103 T21RE10MAB-C2082 T21RE110MAB-C2082</td>
</tr>
</tbody>
</table>
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>SK: 2131H, 3 NC + 1 NO ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2140 Escape release (pushbutton)</td>
<td>098297 TZ1LE024RC18VAB-C2140</td>
</tr>
<tr>
<td>TZ</td>
<td>RC18</td>
<td>1 Mechanical</td>
<td>RE</td>
<td>SK: 2131H, 3 NC + 1 NO ÜK: 3131H, 2 NC + 2 NO</td>
<td>C2140 Escape release (pushbutton)</td>
<td>098298 TZ1RE024RC18VAB-C2140</td>
</tr>
</tbody>
</table>

For switching functions see technical data on page 180

For mating connectors see page 129

Soldering points are marked with a black dot.

Please order actuator separately (see page 118)

For technical data see page 163

For safety precautions see page 196

Please order actuator separately (see page 118)

For technical data see page 163

For safety precautions see page 196
Safety Switches with Separate Actuator, Metal Housing

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.

Switching elements (see also page 13/14)
SK For monitoring the door/actuator position
ÜK For monitoring the guard locking (built-in solenoid)

For combinations available see ordering table:
- 528H Slow-action switching element
  1 NC ☐ + 1 NO
- 2131H Slow-action switching element
  3 NC ☐ + 1 NO
- 3131H Slow-action switching element
  2 NC ☐ + 2 NO

Cable entry M20 x 1.5

Dimension drawings Actuating head on the left is a mirror image

Please order actuator separately (see page 118)

For cable glands see page 132

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>SK: 528H, 1 NC ☐ + 1 NO</td>
<td>C1684</td>
<td>083170 T21LE024MC1684 089924 T21LE110MC1684 093770 T21LE220MC1684</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 2131H, 3 NC ☐ + 1 NO</td>
<td>C1684</td>
<td>084820 T21LE024MVAB1684 On request On request</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 528H, 1 NC ☐ + 1 NO</td>
<td>C1684</td>
<td>083171 T21RE024MC1684 089475 T21RE110MC1684 093771 T21RE220MC1684</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 2131H, 3 NC ☐ + 1 NO</td>
<td>C1684</td>
<td>088084 T21RE024MVAB1684 On request On request</td>
</tr>
</tbody>
</table>

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
## Safety Switches with Separate Actuator, Metal Housing

### Plug connector SR11
11-pin + PE

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

### Wiring diagrams
Actuator inserted and locked

### Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>SR11</td>
<td>Mechanical</td>
<td>LE</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ÜK: 528H, 1 NC  + 1 NO</td>
<td>C1684</td>
<td>070886</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>ÜK: 528H, 1 NC  + 1 NO</td>
<td>C1684</td>
<td>070884</td>
</tr>
</tbody>
</table>

Please order actuator separately (see page 118)

For mating connectors see page 128

For switching functions see technical data on page 180

Plug connector Mechanical

RE
SK: 528H, 1 NC + 1 NO  |
ÜK: 528H, 1 NC  + 1 NO  | C1684   | 070884  | TZE024SR11-C1684

TZ
SR11 1
(plunger)

Plug connector SR11

LE
SK: 528H, 1 NC + 1 NO  |
ÜK: 528H, 1 NC  + 1 NO  | C1684   | 070886  | TZE024SR11-C1684

TZ
SR11 1
(push button)

Function escape release
Unlocking
Operational

Please order separately (see page 118)

For technical data see page 163

For safety precautions see page 196

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18</td>
<td>1 Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC + 1 NO ÜK: 3131H, 2 NC + 2 NO</td>
<td>Emergency unlocking (rotary knob), escape release (pushbutton), with protective plate</td>
<td>097347 TZE024RC18VAB-C2123</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 3 NC + 1 NO ÜK: 3131H, 2 NC + 2 NO</td>
<td>Emergency unlocking (rotary knob), escape release (pushbutton), with protective plate</td>
<td>097348 TZE024RC18VAB-C2123</td>
</tr>
</tbody>
</table>

For mating connectors see page 129

Please order actuator separately (see page 118)
Safety Switches with Separate Actuator, Metal Housing

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
UK 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

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

Wiring diagrams Actuator inserted and locked

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>M20x1.5</td>
<td>1 Mechanical</td>
<td>LE</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>-</td>
<td>083246</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>-</td>
<td>083247</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>-</td>
<td>085171</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>096052</td>
<td>T21E0244AB2100</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>UK: 2131H, 3 NC + 1 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>-</td>
<td>085170</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 2131H, 2 NC + 2 NO</td>
<td>Without mechanical release, with protective plate</td>
<td>096051</td>
<td>T21E0244AB2100</td>
</tr>
</tbody>
</table>

For safety precautions see page 196
For technical data see page 180

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

Plug connector MR10
9-pin + PE

Dimension drawings Actuating head on the left is a mirror image

Please order actuator separately (see page 118)

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Plug connector MR12
11-pin + PE

Please order actuator separately (see page 118)

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Plug connector MR10 VAB-F

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Plug connector MR12 VAB-F

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Plug connector MR10 VAB-F

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring

Plug connector MR10 VAB-F

For mating connectors see page 131

Wiring diagrams Actuator inserted and locked

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Red cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>MR10</td>
<td>Plug connector</td>
<td>Mechanical</td>
<td>LE Left</td>
<td>SK: 2131H, 3 NC</td>
<td>Without mechanical release</td>
<td>095902</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>RE Right</td>
<td>SK: 2131H, 2 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>095903</td>
</tr>
</tbody>
</table>

TZ

MR12 Plug connector Mechanical

LE Left | SK: 2121H, 4 NC | Without mechanical release, with protective plate | C1971 | 085569 |
|        | ÜK: 2121H, 4 NC | Alternative wiring, without mechanical release, with protective plate | | TZE024BHAFGR1971 |
|        |               | Without mechanical release, with protective plate | 079693 |
|        |               | Alternative wiring, without mechanical release, with protective plate | 085570 |

1) No BG approval

For switching functions see technical data on page 180

Solenoid monitoring
Door monitoring
Safety Switches with Separate Actuator, Metal Housing

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

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

Dimension drawings
Actuating head on the left is a mirror image

Wiring diagrams
Actuator inserted and locked

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
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

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
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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Enabling switch connection</th>
<th>Guard locking</th>
<th>Switching element</th>
<th>Version</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>SR6</td>
<td>Enabling switch plug BD4</td>
<td>1 Mechanical</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Left</td>
<td>UK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Right</td>
<td>UK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release</td>
</tr>
<tr>
<td></td>
<td>2 Electrical</td>
<td></td>
<td>Left</td>
<td>SK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Right</td>
<td>UK: 528H, 1 NC + 1 NO</td>
<td>Without mechanical release</td>
</tr>
</tbody>
</table>

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Enabling switch connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18 ¹)</td>
<td>Enabling switch plug RC12</td>
<td>1</td>
<td>Mechanical</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>091062</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>2</td>
<td>Electrical</td>
<td>SK: 2131H, 3 NC + 1 NO</td>
<td>Without mechanical release</td>
<td>075955</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>SK: 2131H, 2 NC + 2 NO</td>
<td>Without mechanical release</td>
<td>077149</td>
</tr>
</tbody>
</table>

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

For mating connector with option C1825 see page 129/127

For enabling switch 091062 (077040) or ZSA092141C2038 (092141) with plug RC12 see catalog on enabling switches. (Enabling switch not included)
Safety Switches with Separate Actuator, Metal Housing

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

For combinations available see ordering table:
- 2131H Slow-action switching element
  3 Ω Ω + 1 S
- 3131H Slow-action switching element
  2 Ω Ω + 2 S

Wiring diagrams Actuator inserted and locked

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Enabling switch connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18 1)</td>
<td>Enabling switch plug RC12</td>
<td>Mechanical</td>
<td>LE</td>
<td>SK: 2131H, 3 NC Ω + 1 NO</td>
<td>3 Push buttons with LED</td>
<td>100445</td>
</tr>
<tr>
<td></td>
<td>RC12</td>
<td></td>
<td>Right</td>
<td>UK: 3131H</td>
<td>2 NC Ω + 2 NO</td>
<td>3 Push buttons with LED</td>
<td>100444</td>
</tr>
<tr>
<td></td>
<td>RC18 2)</td>
<td></td>
<td>Electrical</td>
<td>Left</td>
<td>SK: 2131H, 3 NC Ω + 1 NO</td>
<td>3 Push buttons with LED</td>
<td>100447</td>
</tr>
<tr>
<td></td>
<td>RC12</td>
<td></td>
<td>Right</td>
<td>UK: 3131H</td>
<td>2 NC Ω + 2 NO</td>
<td>3 Push buttons with LED</td>
<td>100446</td>
</tr>
</tbody>
</table>

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

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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

![Image of safety switch TZ](image)

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

Please order actuator separately (see page 118)

Wiring diagrams
Actuator inserted

For switching functions see technical data on page 180

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Enabling switch connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18</td>
<td>Enabling switch plug RC12</td>
<td>non</td>
<td>LE SK: 2131H, 3 NC 3 + 1 NO</td>
<td>2 Push buttons with LED</td>
<td>100449</td>
<td>T21E000RC18-C2199</td>
</tr>
<tr>
<td></td>
<td>RE</td>
<td>SK: 3131H, 2 NC 3 + 2 NO</td>
<td>2 Push buttons with LED</td>
<td>100448</td>
<td>T21RE000RC18-C2199</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
Safety Switches with Separate Actuator, Metal Housing

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
- UK: 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

Ordering table

<table>
<thead>
<tr>
<th>Series</th>
<th>Connection</th>
<th>Enabling switch connection</th>
<th>Guard locking</th>
<th>Switch head</th>
<th>Switching element</th>
<th>Version</th>
<th>Black cover</th>
</tr>
</thead>
<tbody>
<tr>
<td>TZ</td>
<td>RC18 1)</td>
<td>Enable switch plug RC12</td>
<td>Mechanical</td>
<td>LE: SK: 2131H, 3 NC + 1 NO</td>
<td>2 Push buttons with LED + 1 LED</td>
<td>100176</td>
<td>T21LE024RC18VAB-C2189</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RE: UK: 3131H, 2 NC + 2 NO</td>
<td>2 Push buttons with LED + 1 LED</td>
<td>100175</td>
<td>T21RE024RC18VAB-C2189</td>
</tr>
<tr>
<td></td>
<td>RC12</td>
<td></td>
<td>Electrical</td>
<td>LE: SK: 2131H, 3 NC + 1 NO</td>
<td>2 Push buttons with LED + 1 LED</td>
<td>On request</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>RE: UK: 3131H, 2 NC + 2 NO</td>
<td>2 Push buttons with LED + 1 LED</td>
<td>On request</td>
<td></td>
</tr>
</tbody>
</table>

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

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

Subject to technical modifications; no responsibility is accepted for the accuracy of this information.
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

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>B10d</td>
<td></td>
<td>3 x 10^6 operating cycles</td>
</tr>
</tbody>
</table>

### Switch

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Housing material</td>
<td>Anodized die-cast alloy</td>
<td></td>
</tr>
<tr>
<td>Mechanical life</td>
<td>1 x 10^6 operating cycles</td>
<td></td>
</tr>
<tr>
<td>Ambient temperature</td>
<td>-25 ... + 80 °C</td>
<td></td>
</tr>
<tr>
<td>Weight</td>
<td>Approx. 1.2 kg</td>
<td></td>
</tr>
<tr>
<td>Max. approach speed</td>
<td>20 m/min</td>
<td></td>
</tr>
<tr>
<td>Actuating force</td>
<td>35 N</td>
<td></td>
</tr>
<tr>
<td>Extraction force</td>
<td>30 N</td>
<td></td>
</tr>
<tr>
<td>Retention force</td>
<td>10 N</td>
<td></td>
</tr>
<tr>
<td>Locking force, max.</td>
<td>2000 N</td>
<td></td>
</tr>
<tr>
<td>Locking force Fzh, in accordance with test principles GSET-19</td>
<td>1500 N</td>
<td></td>
</tr>
</tbody>
</table>

### Switching element

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Switching principle</td>
<td>Slow-action switching element</td>
<td></td>
</tr>
<tr>
<td>Switching elements with 2 switching elements</td>
<td>SK: 528H / UK: 528H</td>
<td></td>
</tr>
<tr>
<td>Switching elements with 4 switching elements</td>
<td>SK: 2131H / UK: 3131H</td>
<td></td>
</tr>
<tr>
<td>Switching elements</td>
<td>SK: 2121H / UK: 2121H</td>
<td></td>
</tr>
<tr>
<td>Rated impulse withstand voltage Uimp</td>
<td>2.5 mA</td>
<td></td>
</tr>
<tr>
<td>Contact material</td>
<td>Silver alloy, gold flashed</td>
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</tr>
</tbody>
</table>

### Guard locking

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solenoid operating voltage</td>
<td>AC/DC 24 V +10/-15%</td>
<td></td>
</tr>
<tr>
<td>Duty cycle LD</td>
<td>100</td>
<td></td>
</tr>
<tr>
<td>Power consumption</td>
<td>10 W</td>
<td></td>
</tr>
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### Connection, cable entry M20 x 1.5

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Screw terminal</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>M20 x 1.5</td>
<td></td>
</tr>
<tr>
<td>Conductor cross-section max.</td>
<td>per wire 1.5 mm²</td>
<td></td>
</tr>
<tr>
<td>Degree of protection acc. to IEC 60529</td>
<td>IP 67</td>
<td></td>
</tr>
<tr>
<td>IP 65: With escape release TZ...C1815, TZ...C1828</td>
<td></td>
<td></td>
</tr>
<tr>
<td>With emergency release TZ...C1816, TZ...C1823</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage Ui</td>
<td>250 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current In</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>24 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947-5-1</td>
<td>AC15</td>
<td></td>
</tr>
<tr>
<td>le 4 A Ue 230 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>le 4 A Ue 24 V</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Screwed tight with the related plug connector (see page 121)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Technical Data

**Connection, plug connector SR11**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Plug connector</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>SR11 (11-pin + PE)</td>
<td></td>
</tr>
<tr>
<td>Degree of protection according to IEC 60529</td>
<td>IP 65 I)</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage $U_i$</td>
<td>110 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current $I_{th}$</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>4 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947/5-1</td>
<td>AC15 $I_e$ 4 A $U_e$ 110 V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DC13 $I_e$ 4 A $U_e$ 24 V</td>
<td></td>
</tr>
</tbody>
</table>

**Connection, plug connector SR6**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Plug connector</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>SR6 (6-pin + PE)</td>
<td></td>
</tr>
<tr>
<td>Degree of protection according to IEC 60529</td>
<td>IP 65 I)</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage $U_i$</td>
<td>110 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current $I_{th}$</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>4 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947/5-1</td>
<td>AC15 $I_e$ 4 A $U_e$ 110 V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DC13 $I_e$ 4 A $U_e$ 24 V</td>
<td></td>
</tr>
</tbody>
</table>

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

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

<table>
<thead>
<tr>
<th>LED</th>
<th>Actuator</th>
<th>Safety circuit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Red</td>
<td>Green</td>
<td>Locked</td>
</tr>
<tr>
<td></td>
<td></td>
<td>X</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Open</td>
</tr>
<tr>
<td>ON</td>
<td>ON</td>
<td>X</td>
</tr>
<tr>
<td>OFF</td>
<td>OFF</td>
<td>Not defined or no power</td>
</tr>
</tbody>
</table>

**Connection, plug connector MR8**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Plug connector</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>MR8 (7-pin + PE)</td>
<td></td>
</tr>
<tr>
<td>Degree of protection according to IEC 60529</td>
<td>IP 65 I)</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage $U_i$</td>
<td>90 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current $I_{th}$</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>4 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947/5-1</td>
<td>AC15 $I_e$ 4 A $U_e$ 230 V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DC13 $I_e$ 4 A $U_e$ 24 V</td>
<td></td>
</tr>
</tbody>
</table>

**Connection, plug connector MR10**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Plug connector</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>MR10 (9-pin + PE)</td>
<td></td>
</tr>
<tr>
<td>Degree of protection according to IEC 60529</td>
<td>IP 65 I)</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage $U_i$</td>
<td>90 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current $I_{th}$</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>4 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947/5-1</td>
<td>AC15 $I_e$ 4 A $U_e$ 230 V</td>
<td></td>
</tr>
<tr>
<td></td>
<td>DC13 $I_e$ 4 A $U_e$ 24 V</td>
<td></td>
</tr>
</tbody>
</table>

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

### Connection, plug connector MR12

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
<th>Unit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection</td>
<td>Plug connector</td>
<td></td>
</tr>
<tr>
<td>Version</td>
<td>MR12 (11-pin + PE)</td>
<td></td>
</tr>
<tr>
<td>Degree of protection according to IEC 60529</td>
<td>IP 65 1)</td>
<td></td>
</tr>
<tr>
<td>Rated insulation voltage Uᵢ</td>
<td>230 V AC/DC</td>
<td></td>
</tr>
<tr>
<td>Conventional thermal current Iₜh</td>
<td>4 A</td>
<td></td>
</tr>
<tr>
<td>Short circuit protection according to IEC 60269-1 (control circuit fuse)</td>
<td>4 A gG</td>
<td></td>
</tr>
<tr>
<td>Utilization category to IEC 60947-5-1</td>
<td>AC15 L 4 A, Uₑ 60 V, DC13 L 4 A, Uₑ 24 V</td>
<td></td>
</tr>
</tbody>
</table>

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

![Switching functions TZ diagram](image_url)