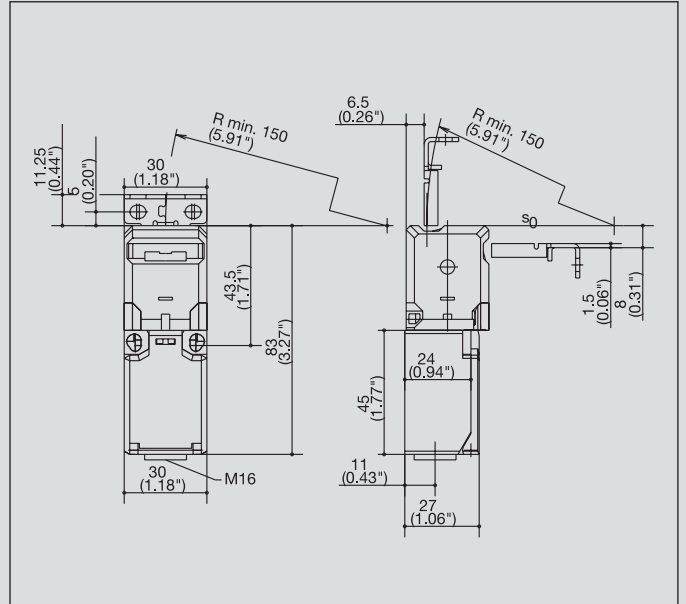


# Safety Switches with Separate Actuator

## SKT



Safety switches with separate actuator are positive opening position switches. In terms of design, the switching element and actuator are separated. On actuation, the switching element and actuator are either brought together or separated. The positive opening NC contact is always open when the actuator is withdrawn. These switches are assigned to Type 2.

BERNSTEIN offers various versions of these Type 2 switches. The differences and advantages of the individual switch groups are outlined in the following.

The SKT is the smallest safety switch with a separate actuator. It is particularly suited for applications that require an extremely slim and short switch design. Its rotary head, two actuator openings and various switching functions underscore its versatility in extremely confined spaces.

Added to this, the SKT features other options to meet any requirements:

- **Integrated eject function (FE):**

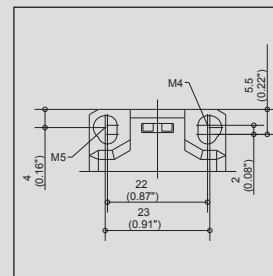
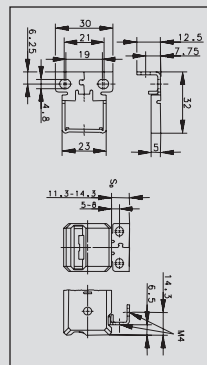
The actuator is ejected if the door is not locked securely. Consequently, the safety contact is opened, thus preventing the machine from starting up. In addition, this function makes it apparent that the door still needs to be locked.

- **Actuating force (up to 50 N):**

The standard actuating force is 10 N. Depending on the switch variant, an actuating force of 50 N can also be selected. In many applications, hatches and doors need to be secured to prevent them being opened unintentionally. This is achieved by means of bolts, fasteners or other latching mechanisms. The SKI safety switch should be selected for applications requiring increased actuating force.

- **Universal Hinged Actuator (MRU):**

The MRU actuator is ideally suited for applications where the installation conditions severely restrict the actuating travel or radius. It has an adjustable actuating radius in the horizontal and vertical plane.



R<sub>min</sub> 150 mm  
Actuating forces FE to F150

### Technical data

Electrical data		
Rated insulation voltage	U <sub>i</sub> max.	250 V
Rated operating voltage	U <sub>e</sub> max.	240 V AC
Conventional thermal current	I <sub>the</sub>	10 A
Utilization category		AC-15, U <sub>e</sub> /I <sub>e</sub> 240 V / 3 A; DC-13, U <sub>e</sub> /I <sub>e</sub> 250 V / 0.27 A
Mechanical data		
Switching frequency		≤ 30/min
Mechanical service life Standard		1 x 10 <sup>6</sup> switching cycles
Mechanical service life increased actuator holding force		1 x 10 <sup>5</sup> switching cycles
B10d (up to) <sup>①</sup>		2 Mill.
Short-circuit protection		Fuse 6 A gL/gG
Protection class		II, Insulated
Ambient temperature		-30 °C to + 80 °C
Protection class		IP65 conforming to IEC/EN 60529
Type of connection		Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm <sup>2</sup> or Stranded wire with ferrule 0.5 – 1.5 mm <sup>2</sup>
Enclosure		Thermoplastic, glass fibre-reinforced (UL94-V0)
Cable entry		M16 x 1.5
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1		
VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1		

① Depending on switching system. See Table on Pages 72 – 75.

## SKI



The SKI is the slimline version of a safety switch with a separate actuator. It is based on the BERNSTEIN I88 family. Its dimensions, not including the actuating head, correspond to EN 50047.

The actuating head is rotary mounted and has two actuator openings. The SKI safety switch is predestined for installation on section structures and in applications with confined installation conditions. Compared to the SKT, it offers more connection space for the wiring and variants with up to three switching contacts available.

Other advantages of this series include:

- **Integrated eject function (FE):**

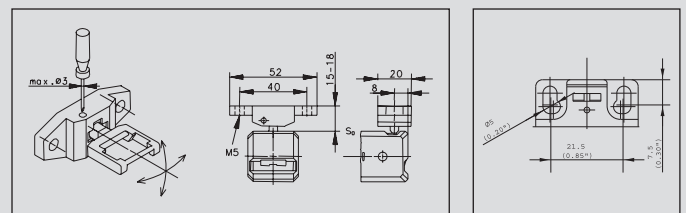
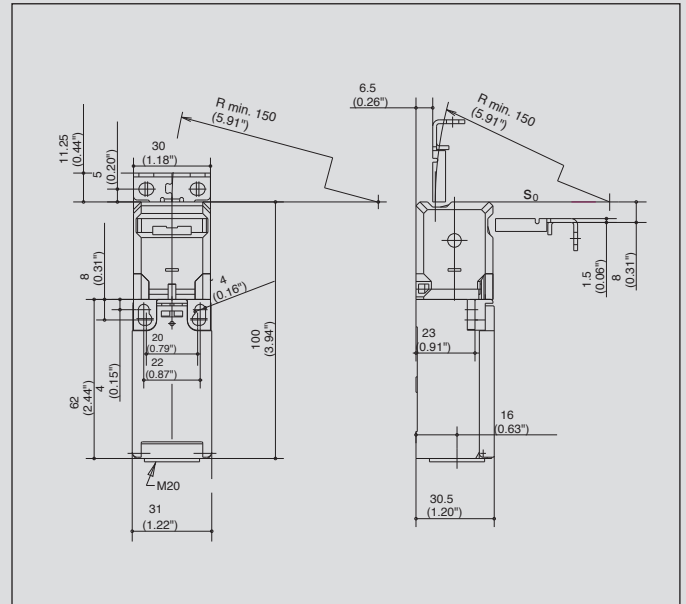
The actuator is ejected if the door is not locked securely. Consequently, the safety contact is opened, thus preventing the machine from starting up. In addition, this function makes it apparent that the door still needs to be locked.

- **Actuating force (up to 50 N):**

The standard actuating force is 10 N. Depending on the switch variant, an actuating force of 50 N can also be selected. In many applications, hatches and doors need to be secured to prevent them from being opened unintentionally. This is achieved by means of bolts, fasteners or other latching mechanisms. The SKI safety switch should be selected for applications requiring increased actuating force.

- **Universal radius actuator (MRU):**

The MRU actuator is ideally suited for applications where the installation conditions severely restrict the actuating travel or radius. It has an adjustable actuating radius in the horizontal and vertical plane.



$R_{min}$  in setting directions 50 mm  
Actuating forces FE to FI50

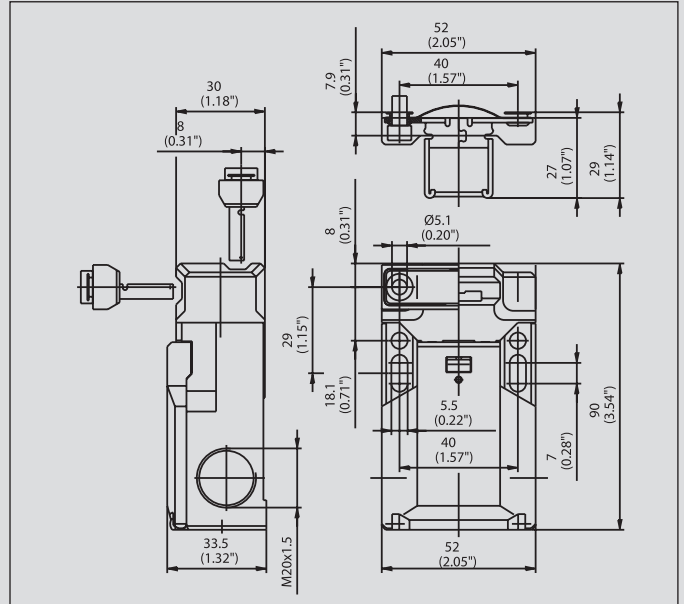
### Technical data

Electrical data		
Rated insulation voltage	$U_i$ max.	250 V AC
Rated operating voltage	$U_e$ max.	240 V
Conventional thermal current (up to) <sup>①</sup>	$I_{the}$	10 A
Utilization category (up to) <sup>①</sup>		AC-15, $U_e / I_e$ 240 V / 3 A
Mechanical data		
Switching frequency		≤ 30/min.
Mechanical service life Standard		1 x 10 <sup>6</sup> switching cycles
Mechanical service life increased actuator holding force		1 x 10 <sup>5</sup> switching cycles
B10d (up to) <sup>①</sup>		2 Mill.
Short-circuit protection		Fuse 6 A gL/gG
Protection class		II, Insulated
Ambient temperature		-30 °C to + 80 °C
Protection class		IP65 conforming to IEC/EN 60529
Type of connection		Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm <sup>2</sup> or Stranded wire with ferrule 0.5 – 1.5 mm <sup>2</sup>
Enclosure		Thermoplastic, glass fibre-reinforced (UL94-V0)
Cable entry		1 x M20 x 1.5
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1		
VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1		

<sup>①</sup> Depending on switching system. See Table on Pages 72 – 75.

# Safety Switches with Separate Actuator

## SK



The SK safety position switch is an industry standard and can be used in virtually any application.

Thanks to design safety features conforming to VDE 0660 T200, IEC 60947-5-1 and the test regulations GS-ET 15, the SK is particularly suitable for personal protection applications. Its versatility is enhanced by the variable actuator head and two actuator openings.

Other decisive advantages include:

- **Different actuating forces:**

Corresponding to your specific application, in addition to the standard 10 N, you can also choose an actuating force of 5, 20 or 30 N.

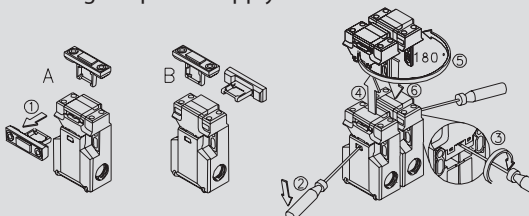
Actuating forces from 30 to 100 N can be realised with the aid of additional components that are mounted on the outside of the switch.

- **Anti-tamper facility:**

The switching system is protected by multiple coding to ensure enhanced safety of your application.

- **Outstanding handling:**

With the two slots you can easily adjust the SK safety switch and lock it in position by means of the two holes accessible from the top or the two holes accessible from the front. The switch can be wired from three different sides. A transparent cover prevents foreign particles from entering the contact space while connecting the power supply cable.



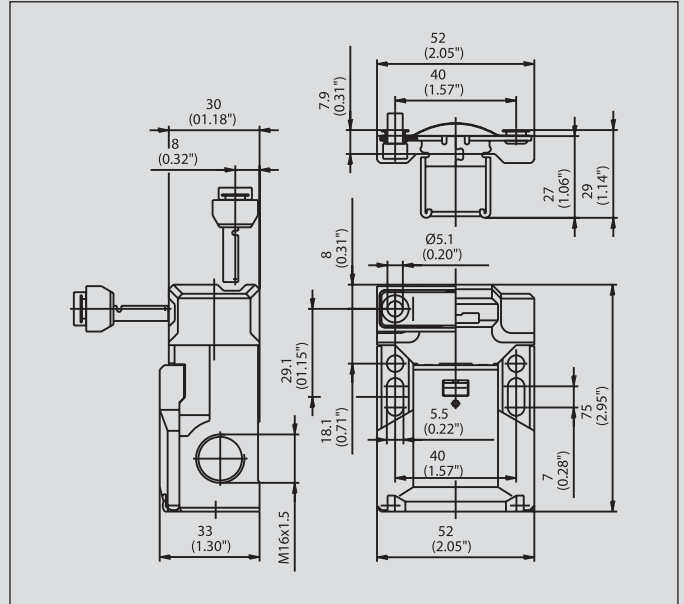
50 mm to direction of adjustment  
Actuator: metal

### Technical data

Electrical data		
Rated insulation voltage (up to) <sup>①</sup>	$U_i$ max.	400 V AC
Rated operating voltage	$U_e$ max.	240 V
Conventional thermal current (up to) <sup>①</sup>	$I_{the}$	10 A
Utilization category		AC-15, $U_e/I_e$ 240 V / 1.5 A
Mechanical data		
Switching frequency		≤ 30/min
Mechanical service life		1 x 10 <sup>6</sup> switching cycles
B10d (bis zu) <sup>①</sup>		2 Mill.
Short-circuit protection (up to) <sup>①</sup>		Fuse 10 A gL/gG
Protection class		II, Insulated
Ambient temperature		-30 °C ... + 80 °C
Protection class		IP65 conforming to IEC/EN 60529
Type of connection		Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm <sup>2</sup> or Stranded wire with ferrule 0.5 – 1.5 mm <sup>2</sup>
Enclosure		Thermoplastic, glass fibre-reinforced (UL94-V0)
Cable entry		3 x M20 x 1.5
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1		
VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1		

① Depending on switching system. See Table on Pages 72 – 75.

## SKC



In terms of lengths, the SKC safety position switch is the 15 mm shorter variant of the SK. This makes it the right choice for confined installation conditions.

The SKC otherwise offers the same advantages as the SK: Industrial standard with particular emphasis on safety, personal protection and a variable actuator head with two actuator openings.

Other decisive advantages include:

- **Different actuating forces:**

Corresponding to your specific application, in addition to the standard 10 N, you can also choose an actuating force of 5, 20, 30 or 50 N.

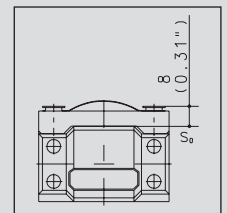
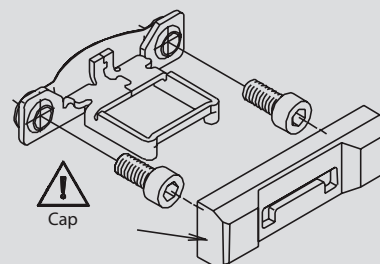
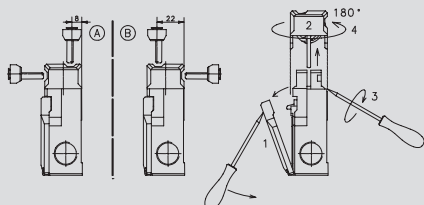
Actuating forces from 30 to 100 N can be realised with the aid of additional components that are mounted on the outside of the switch.

- **Anti-tamper facility:**

The switching system is protected by multiple coding to ensure enhanced safety of your application.

- **Outstanding handling:**

With the two slots you can easily adjust the SKC safety switch and lock it in position by means of the two holes accessible from the top or the two holes accessible from the front. The switch can be wired from three different sides. A transparent cover prevents foreign particles from entering the contact space while connecting the power supply cable.



R<sub>min</sub> 150 mm (5.9")  
Actuator: Metal

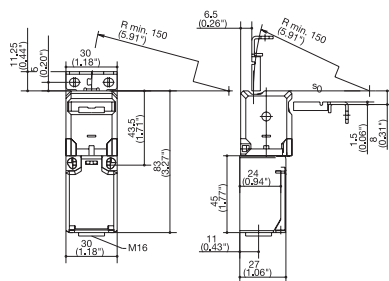
### Technical data

Electrical data		
Rated insulation voltage	U <sub>i</sub> max.	250 V AC
Rated operating voltage	U <sub>e</sub> max.	240 V
Conventional thermal current	I <sub>the</sub>	5 A
Utilization category	AC-15, U <sub>e</sub> /I <sub>e</sub> 240 V / 1.5 A	
Mechanical data		
Switching frequency	≤ 30/min.	
Mechanical service life	1 x 10 <sup>6</sup> switching cycles	
B10d (up to) <sup>①</sup>	2 Mill.	
Short-circuit protection	Fuse 6 A gL/gG	
Protection class	II, Insulated	
Ambient temperature	-30 °C ... + 80 °C	
Protection class	IP65 conforming to IEC/EN 60529	
Type of connection	Screw connections	
Conductor cross sections	Single-wire 0.5 – 1.5 mm <sup>2</sup> or Stranded wire with ferrule 0.5 – 1.5 mm <sup>2</sup>	
Enclosure	Thermoplastic, glass fibre-reinforced (UL94-V0)	
Cable entry	3 x M16 x 1.5	
Standards		
VDE 0660 T100, DIN EN 60947-1, IEC 60947-1 VDE 0660 T200, DIN EN 60947-5-1, IEC 60947-5-1		

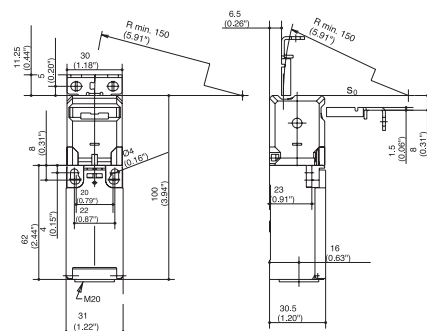
<sup>①</sup> Depending on switching system. See Table on Pages 72 – 75.

# Safety Switches with Separate Actuator

## SKT



## SKI



### Switching operation

### Standard High actuating force Radius actuation

### Standard High actuating force Radius actuation

1 NC / 1 NO contact

**6016419059**  
SKT-U1Z M3

**6016819052** **6016819139** **6016819123**  
SKI-U1Z M3 SKI-U1Z FI50 M3 SKI-U1Z MRU

1 NC contacts

2 NC contacts

**6016469066**  
SKT-A2Z M3

**6016869056** **6016869122**  
SKI-A2Z M3 SKI-A2Z MRU

2 NC / 1 NO contact  
Overlapping

**6016869058** **6016869145** **6016869131**  
SKI-UV15Z M3 SKI-UV15Z FI50 M3 SKI-UV15Z MRU

### Approvals

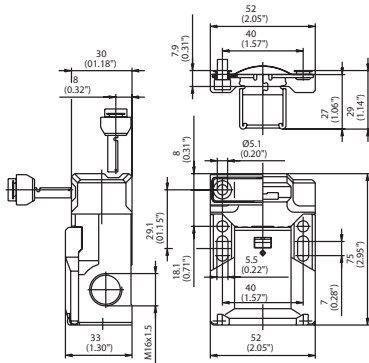
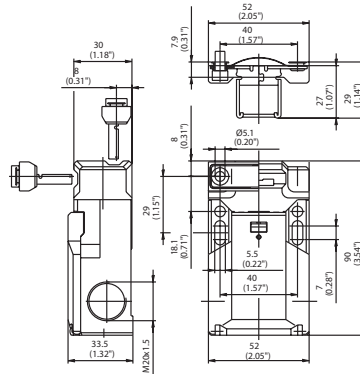


### Special features / variants (on request)

- Replacement actuator for:  
**3112850340**

### Special features / variants (on request)

- Replacement actuator for:
  - Standard **3112850340**
  - High actuating force **3112850340**
  - Radius actuation **3911452058**

**SKC**

**SK**

**Standard High actuating force Radius actuation**

**6016169039** SKC-A1Z M  
**6116169016** SKC-A1Z F30 M  
**6016169087** SKC-A1Z MRU

**Standard High actuating force Radius actuation**

**6016119016** SK-U1Z M  
**6116119109** SK-U1Z F30 M  
**6016119084** SK-U1Z MRU

**6016169036** SK-A2Z M  
**6016169053** SK-A2Z F30 M  
**6016169085** SK-A2Z MRU

**6016169026** SK-UV15Z M  
**6016169061** SK-UV15Z F30 M  
**6016169086** SK-UV15Z MRU


**Special features / variants**

(on request)

- 50 N and 100 N actuating force on request
- Replacement actuator for:
 

Standard	<b>3911452116</b>
High actuating force	<b>3911451914</b>
Radius actuation	<b>3911452058</b>

**Special features / variants**

(on request)

- 100 N actuating force on request
- Replacement actuator for:
 

Standard	<b>3911452116</b>
High actuating force	<b>3911451914</b>
Radius actuation	<b>3911452058</b>