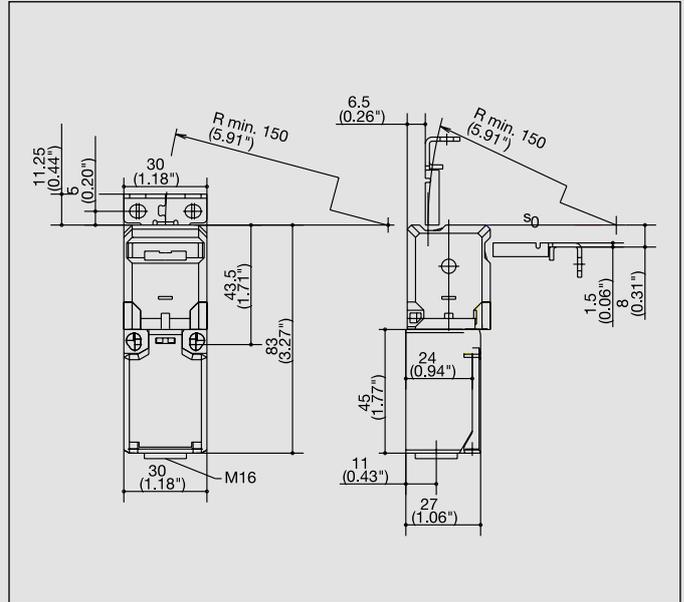


Safety Switches with Separate Actuator

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 The positive opening NC contact is always open when the actuator is withdrawn.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):**

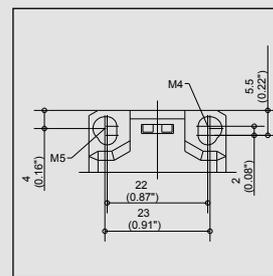
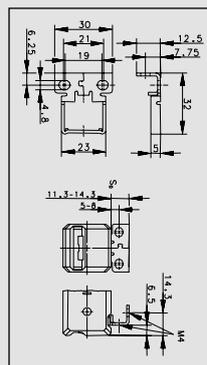
The actuator is ejected if the door is not locked securely. Consequently, the safety contact is opened, thus preventing the machine from starting up. In addition, this function makes it apparent that the door still needs to be locked.

- **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_{min} 150 mm
Actuating forces FE to FI50

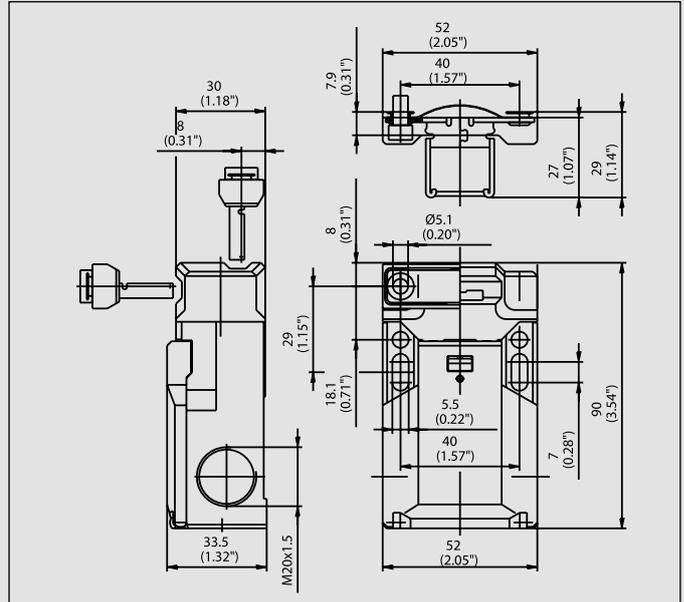
Technical data

Electrical data		
Rated insulation voltage	U _i max.	250 V
Rated operating voltage	U _e max.	240 V AC
Conventional thermal current	I _{the}	10 A
Utilization category		AC-15, U _e /I _e 240 V / 3 A; DC-13, U _e /I _e 250 V / 0.27 A
Mechanical data		
Switching frequency		≤ 30/min
Mechanical service life Standard		1 x 10 ⁶ switching cycles
Mechanical service life increased actuator holding force B10d (up to) ^①		1 x 10 ⁵ switching cycles
		2 Mill.
Short-circuit protection		Fuse 6 A gL/gG
Protection class		II, Insulated
Ambient temperature		-30 °C to + 80 °C
Protection class		IP 65 conforming to IEC/EN 60529
Type of connection		Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5 mm ²
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 70 – 73.

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.

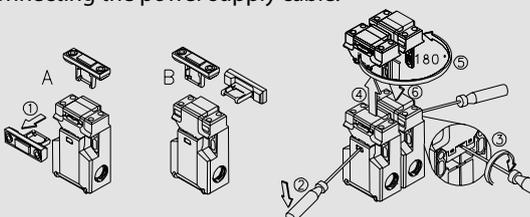
Actuating forces from 30 to 100 N can be realised with the aid of additional components that are mounted on the outside of the switch.

- **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) ^①	U _i max.	400 V AC
Rated operating voltage	U _e max.	240 V
Conventional thermal current (up to) ^①	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 ⁶ switching cycles
B10d (bis zu) ^①		2 Mill.
Short-circuit protection (up to) ^①		Fuse 10 A gL/gG
Protection class		II, Insulated
Ambient temperature		-30 °C ... + 80 °C
Protection class		IP 65 conforming to IEC/EN 60529
Type of connection		Screw connections
Conductor cross sections		Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5 mm ²
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 70 – 73.

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.

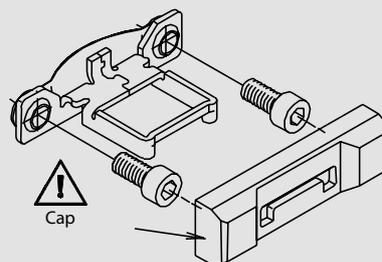
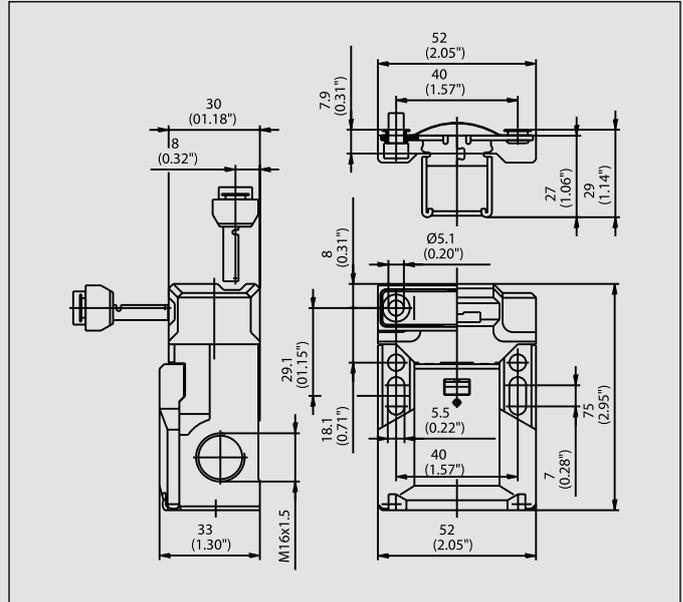
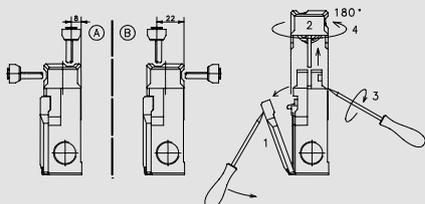
Actuating forces from 30 to 100 N can be realised with the aid of additional components that are mounted on the outside of the switch.

- **Anti-tamper facility:**

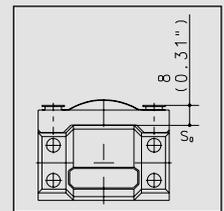
The switching system is protected by multiple coding to ensure enhanced safety of your application.

- **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_{min} 150 mm (5.9")
Actuator: Metal



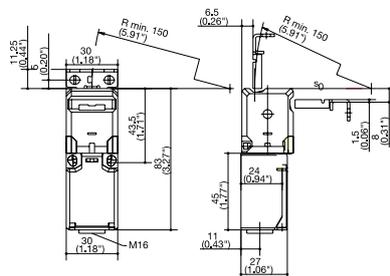
Technical data

Electrical data		
Rated insulation voltage	U _i max.	250 V AC
Rated operating voltage	U _e max.	240 V
Conventional thermal current	I _{the}	5 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 ⁶ switching cycles	
B10d (up to) ^①	2 Mill.	
Short-circuit protection	Fuse 6 A gL/gG	
Protection class	II, Insulated	
Ambient temperature	-30 °C ... + 80 °C	
Protection class	IP 65 conforming to IEC/EN 60529	
Type of connection	Screw connections	
Conductor cross sections	Single-wire 0.5 – 1.5 mm ² or Stranded wire with ferrule 0.5 – 1.5 mm ²	
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		

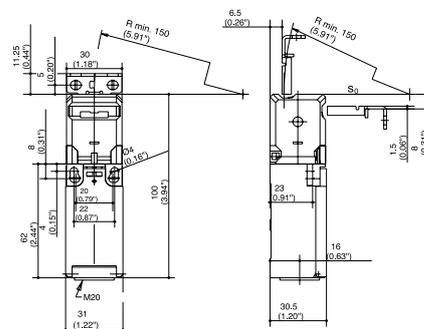
^① Depending on switching system. See Table on Pages 70 – 73.

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

1 NC / 1 NO contact
Overlapping

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

Approvals



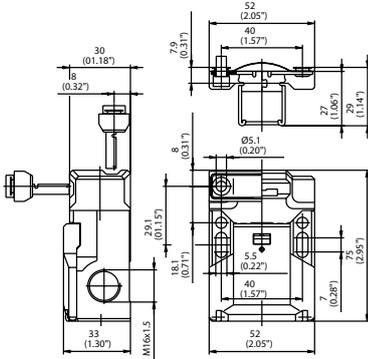
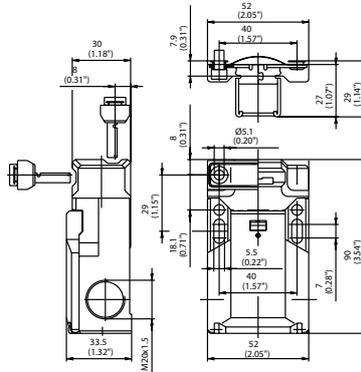
Special features / variants (on request)

- 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	3911452116
High actuating force	3911451914
Radius actuation	3911452058

Special features / variants

(on request)

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

Standard	3911452116
High actuating force	3911451914
Radius actuation	3911452058

Safety Switches with Separate Actuator

Switch with VTW, VTU, VT actuator



These position switches of the tried-and-tested switch families I88, ENK, ENM2 and GC correspond to Type 2.

This means that you can use Type 1 and Type 2 position switches corresponding to your applications while using one family of switches.

This results in many advantages:

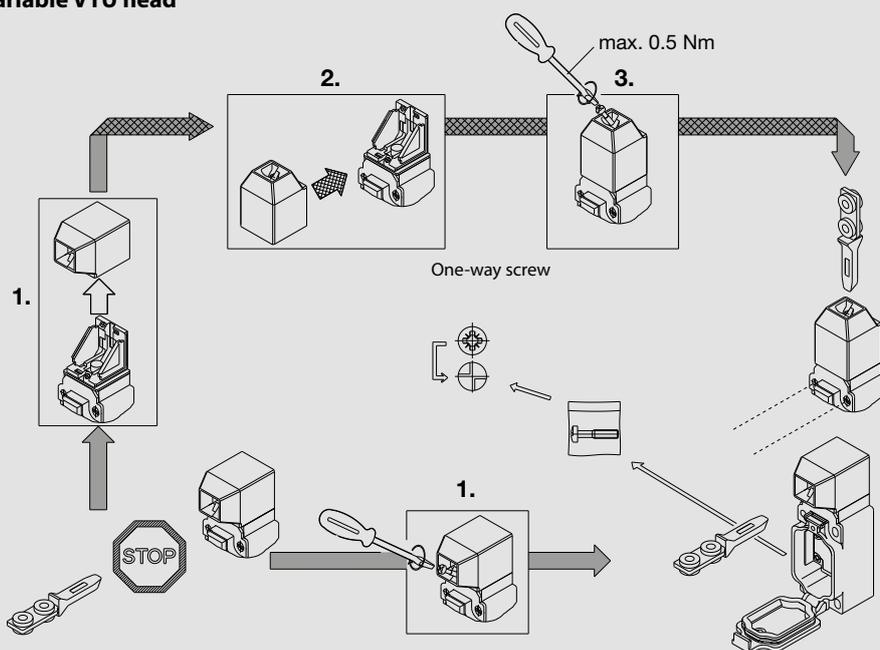
- **Standardisation:**

Switches of one family have the same mounting dimensions and the same electrical properties.

- **Reduced costs:**

I88, ENK, ENM2 and GC are used in large quantities. This not only reflects the quality of the products but also means lower prices compared to special designs used in small quantities.

Variable VTU head



Repositioning the actuator head either in horizontal or vertical direction results in 8 approach actuator directions.