



**EN** Operating instructions. . . . . pages 1 to 2  
Original

**General information**

Position and limit switches are used to detect the position and monitoring of moving parts in machinery and plants.

**Technical data**

Standards:	IEC 60947-5-1
Enclosure:	light-alloy diecast, chromated and paint finish
Protection class:	IP65 to IEC 60529, DIN VDE 0470-1
Contact material:	Silver
Switching system:	slow action, double break
Contact types:	NC contact
Connection:	Screw terminals M4
Cable section:	max. 2.5 mm <sup>2</sup> (incl. conductor ferrules)
Cable entry:	M20 x 1.5
Rated impulse withstand voltage $U_{imp}$ :	6 kV
Rated insulation voltage $U_i$ :	500 V
Rated operating current/voltage $I_e/U_e$ :	6 A / 400 VAC
Thermal test current $I_{the}$ :	16 A
Max. fuse rating:	16 A gL / gG gG D-fuse
Contact opening:	max. 2 x 1.5 mm
Ambient temperature:	-20 ... +60°C
Mechanical life:	10 x 10 <sup>6</sup> operations
Contact life:	2 x 10 <sup>6</sup> operations at 6 A/400 V, $\cos \varphi = 0.4$
Max. switching frequency:	3,000/h
Actuating speed:	max. 1 m/s, min. 1 mm/s at the plunger

**UL** Openings shall be closed by equipment rated for enclosure types: 3, 3R, 3RX, 3S, 3SX, 3X, 4, 4X, 5, 6, 6P, 12 or 13.

**i** Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: [www.schmersal.net](http://www.schmersal.net).

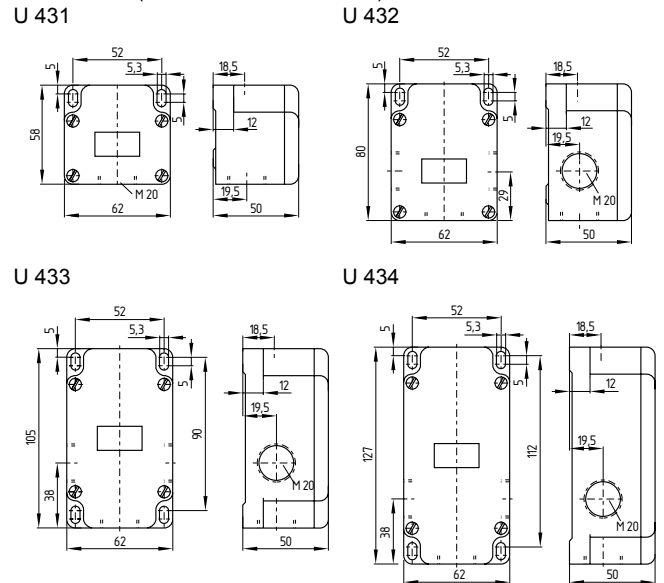
**i** The currently valid declaration of conformity can be downloaded from the internet at [www.schmersal.net](http://www.schmersal.net).

**!** Country-specific installation and safety standards and accident prevention regulations must be properly observed.

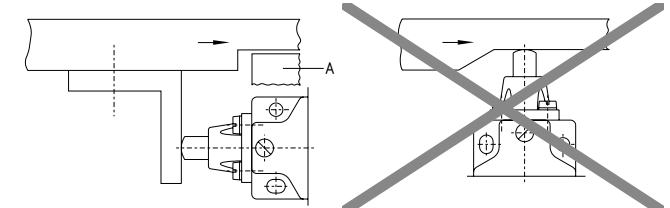
**Mounting**

The mounting dimensions for the position switches are specified on the rear of the enclosure. To ensure a proper functioning, the switch must be installed so that the required switch travel is obtained. All components have sufficient after-travel to compensate for inaccuracies in the guidance of the actuating system. The position switch must not be used as an end switch. Any mounting position.

**Dimensions (All measurements in mm.)**

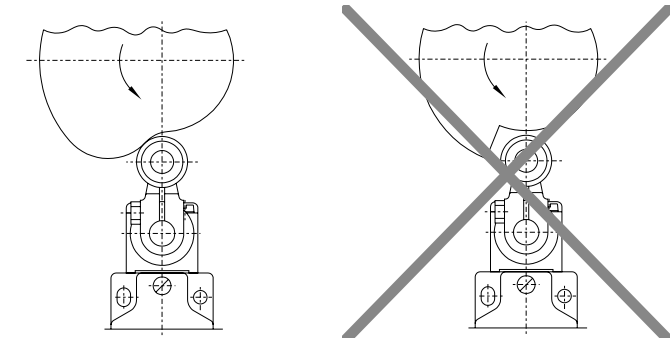


**Top plunger**

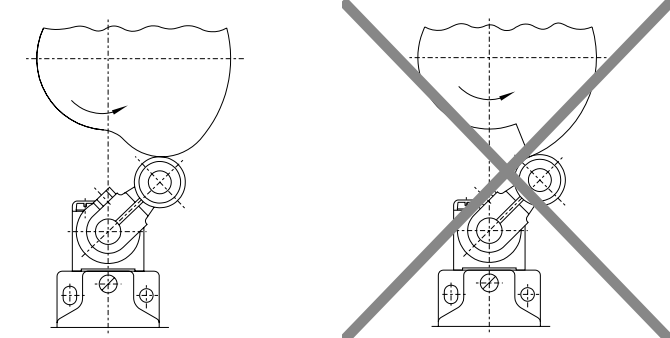


**A Stop**

**Cam disc front side**



**Trailing edge**



### Actuator setting of actuating heads K and VH

#### Actuating head K and VH

The actuating head can be repositioned by  $4 \times 90^\circ$ .

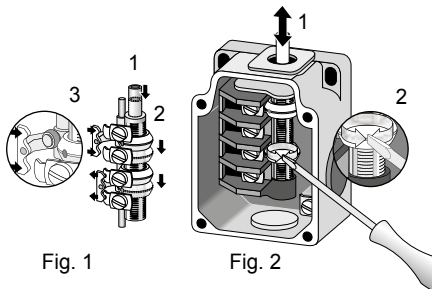
#### Actuating head K

Remove the tamper-proof screw from the bearing bolt and release the lever by pulling out the bearing bolt. Unscrew the bearing block. Remove the sealing plugs from the unused threaded holes and press in again according to the new actuating head positions. Refit the bearing block, apply sealing agent (e.g. Fermit) to the screws as they are inserted.

#### Actuating head VH

Unscrew two retaining screws and remove the actuating head. The two guide pins that are now visible must be unscrewed from the enclosure and inserted again according to the new actuating head position. Position the head and screw tight.

### Switching point setting



#### Fine adjustment

For fine adjustment of the switching point and to change the contact type from NC contact to NO contact and vice versa, the cover must firstly be removed from the enclosure when working with encapsulated devices. The cam rings 2 on the switch lever 1 will then be visible. These rings are used to adjust the switching point. These cam rings 2 can be rotated on the switch lever 1, as shown in Fig. 2, either by hand or with a screwdriver. Fig. 1 shows how the cam rings 2 act on the switch unit 3. Fig. 1 shows the direction of rotation for adjusting the contacts from NC contacts to NO contacts and vice versa. When adjusting the switch travel, ensure that there is sufficient contact pressure and opening width. Otherwise, adequate combustion safety cannot be ensured. A check must be carried out on NC contacts when unactuated and on NO contacts when actuated. The cam ring 2 is equipped with a ball latch which latches six times during one rotation. Ensure that the cam ring is latched in its adjusted position. The latching is sufficient for normal operating conditions. Where there is extreme vibration or shaking, a drop of sealing paint must be applied to the cam ring after adjustment.

### Electrical connection



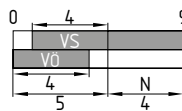
The electrical connection may only be carried out by authorised personnel in a de-energised condition.

For the cable entry, suitable cable glands with an appropriate degree of protection must be used.

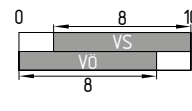
Unused openings must be sealed with threaded plugs. An extremely strong tightening of the cover screws can reduce the sealing efficiency and therefore must be avoided.

### Contact variants

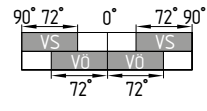
#### Plunger



#### Offset roller lever



#### Roller lever



#### Key

- VS: Adjustment range, NO contact
- VÖ: Adjustment range, NC contact
- N: After-travel

### Maintenance

In case of correct installation in accordance with the above-described instructions, the component requires little maintenance.

In extreme operating conditions, we recommend quarterly maintenance to include the following steps:

1. Check the actuator for ease of movement
2. Remove particles of dust and soiling
3. Lubricate the shaft or plunger
4. Check cable entry and connections

The switch must be disposed of in an appropriate manner in accordance with the national prescriptions and legislations.

### Disassembly and disposal

#### Disassembly

The switch must be disassembled in a de-energised condition only.

#### Disposal

The switch must be disposed of in an appropriate manner in accordance with the national prescriptions and legislations.

#### K.A. Schmersal GmbH & Co. KG

Mödinghofe 30, D - 42279 Wuppertal  
Postfach 24 02 63, D - 42232 Wuppertal

Phone: +49 - (0)2 02 - 64 74 - 0  
Telefax: +49 - (0)2 02 - 64 74 - 1 00  
E-Mail: [info@schmersal.com](mailto:info@schmersal.com)  
Internet: <http://www.schmersal.com>

