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1 General information

In this operating instruction you will find:

- information on installation, adjustment, maintenance and disposal of the assembly WZF2
- safety information
- assistance in the case of malfunctions

Read this operating instruction carefully before you start mounting the device WZF2. Pay special attention to the safety instructions, as the failure to comply with them might result in severest injuries, environmental damage or damage to the device and to machines.

1.1 Key words and warning symbols used

**Danger**

Indicates an imminent danger for life and health of persons.

**Warning**

Indicates a potentially dangerous situation. Disregarding this warning may result in death or serious injury. This advice additionally warns of risks for machine, material or environment.

**Attention**

Indicates possible minor personal injury due to neglect.

**Caution**

Indicates possible material damage when disregarding the instructions or gives an important advice for the function.

**Note**

Indicates general information on the handling or the product.

1.2 Brief description safety switch WZF2

The safety switch WZF2 has been developed and manufactured in accordance with the applicable national standards and guidelines.

The features of the safety switch at a glance:

mechanism:	<ul style="list-style-type: none">• especially robust design• a long actuation travel (8.0 mm) from initial contact to stop of the actuator, thus no unintentional turning off of the machine due to vibration of the protection device• mounting brackets made of stainless steel, rotatable for change of the hole distance
electricity:	<ul style="list-style-type: none">• two contacts, positively driven normally closed contact and normally open contact
mounting points:	<ul style="list-style-type: none">• rotatable movable protection devices as e.g.: protective covers, doors or flaps

1.3 Intended use

The safety switch WZF2 is **only** used as intended:

- as component of safety-related functions in installations, machines or lift installations
- in installations that end a dangerous state by opening a rotatable movable protection device. The application can also be used in conjunction with the control-related part of a machine or installation.
- in combination with the original actuator
- taking into account the information and the safety instructions in these operating instructions

The use of the safety switch WZF2 is only permitted outside Ex-protected areas.

Any other use is considered **improper** and may result in personal injury, environmental damage and / or property damage.

Hans & Jos. Kronenberg GmbH do not assume any liability for damages caused by

- improper or incorrect use
- unauthorized modifications
- use of non-approved spare or accessory parts
- non observance of this manual

2 Safety



Caution – Read this manual carefully, especially the safety instructions and information on the mounting of the safety switch WZF2!

For the safety of persons, the environment and to avoid damage to property always observe the country-specific regulations for installation, safety and accident prevention in addition to the instructions in this manual.

- Before mounting familiarize yourself with all functions of the safety switch WZF2.
- Keep this manual in a safe and legible condition near the safety switch WZF2.
- Only pass the safety switch WZF2 on to third parties together with these operating instructions.

2.1 Safety advice



Danger – Risk of injury or death due to electrical current!

Only a **qualified electrician** may connect the safety switch WZF2 to a properly installed power supply line.

When working on the switch make sure that no voltage is applied and protect it against unintentional reconnection.

If the switch housing, the cable gland or the supply cable is damaged the switch may no longer be operated.

Damaged or faulty switches or actuators must not be repaired and must be replaced with original components of the manufacturer.

Make sure the connection cable is not bent, especially at the insertion opening of the switch.



Warning – Malfunction and destruction of the safety switch WZF2 due to incorrect mounting, setup or manipulated actuators

After mounting the switch and the actuator check that the actuator is accurately fitted into the actuator opening at the switch.

Any change at the actuator, e.g. by mechanical processing such as filing or bending is not allowed.

If pivoting radii are to be observed in the installation, you will find the specifications described in chapter 4.1.2.



Attention

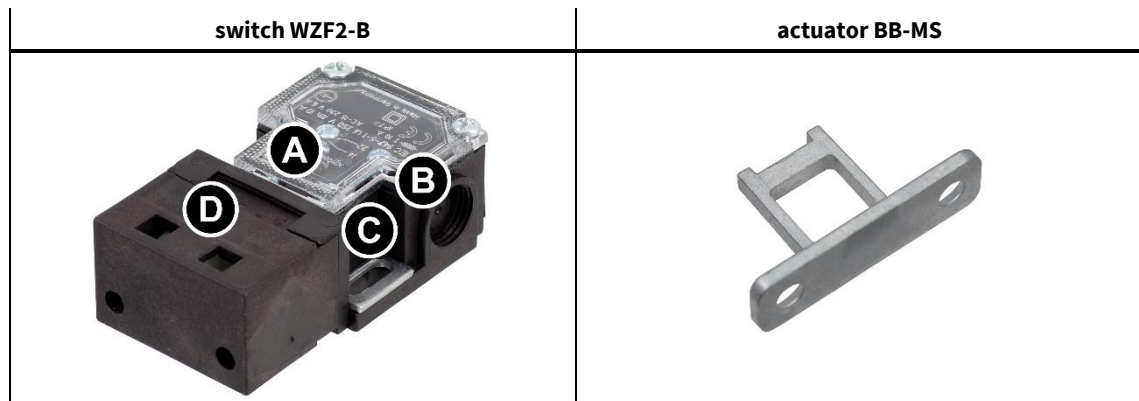
Secure the fastening screws at the actuator and the switch with Loctite or alike for protection against self-loosening.

Do not load the switch mechanically and do not use the switch as stop, e.g. as a door stop or a flap stop.

Seal the cable entries properly to prevent moisture and dirt entering the switch.

Operate the switch only within the permissible temperature range (see chapter 8.3).

3 Overview safety switch WZF2 and actuator



switch-variants:

type*	actuation	contacts
WZF2-B	base side	positively driven normally closed contact / normally open contact NC/NO
WZF2-D	cover side	
WZF2-S	from top side	
WZF2-SA	from top side offset	

actuator-variants:

type*	material
BB	plastic
BB-KIPP	zinc diecasting
BB-MS	zinc diecasting
BBV-KIPP	brass
BBV-MS	brass

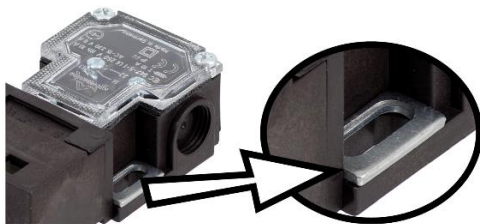
* Dimensioning and switching diagram can be found in chapter 8.

components:

- (A) cover switching compartment
- (B) cable gland

- (C) mounting bracket
- (D) insertion opening for actuator

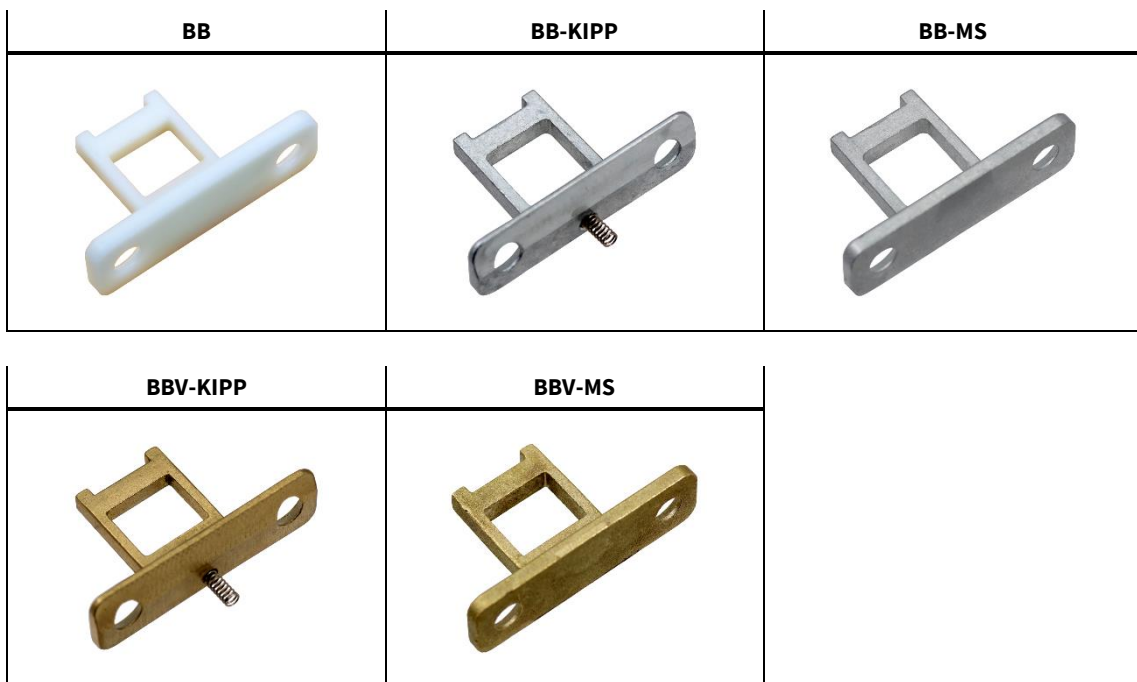
3.1 Mounting bracket



The mounting bracket is removable.

By turning the mounting bracket you can mount the switch on 36 mm or 40 mm hole spacings.

3.2 Actuator - designs



4 Assembly



Notes for fixation

You need:

- fixing material*:
 - screw connections M4 or M5, toothed washer and washer (2 pieces each)
 - countersunk head screws M6 for actuator (2 pieces)
- Loctite or alike for protection against self-loosening of the screw connections

The **switch** can be **mounted in any installation position**.

Ensure that the switch and the actuator are fixed on a full surface base.

*Please order accessories separately.



Caution: Installation position of the actuator!

For the installation position of the actuator pay attention to:

- a correct orientation to the switch (see chapter 4.1.1)
- a failure-free insertion of the actuator into the switch

Do not use the actuator as stop.

Pay attention to the specifications for actuation radii in chapter 4.1.2.

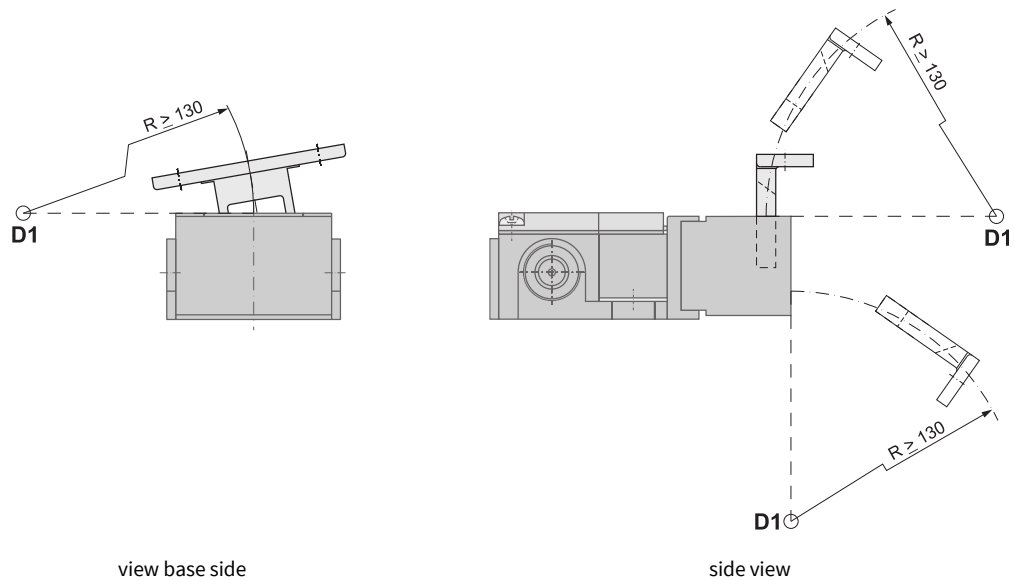
4.1 Safety switch WZF2 and actuator

4.1.1 Installation position of the actuator to the switch

Depending of the switch-variant used, the following installation positions of the actuator are to be observed:

Typ	actuation	drawing
WZF2-B	base side	see chapter 8.1
WZF2-D	cover side	
WZF2-S	from top side	
WZF2-SA	from top side offset	

4.1.2 Specifications for actuation radii



Legend:

- R: actuation radius for actuator
- D1: pivot point in the height of the top edge of the switch

4.1.3 Procedure

1. Determine the installation location for the switch and actuator so that the safety switch WZF2 can be used as intended.
2. Check the distance of the mounting brackets of the switch with the distance of the mounting holes. If the distances are different, you can remove the mounting brackets from the switch, turn and adjust to the 36 mm or 40 mm spacing of the mounting holes (see fig. 4.1).

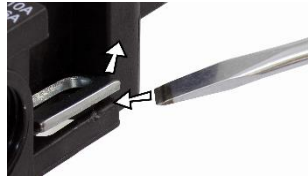
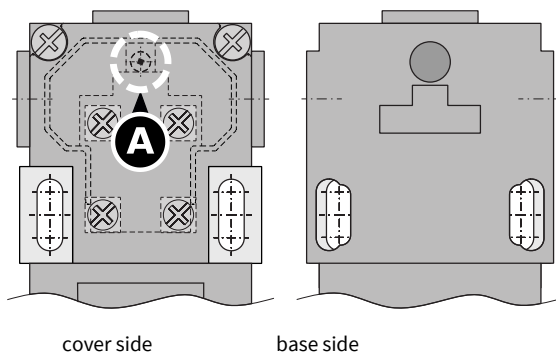


fig. 4.1: remove mounting bracket

3. Determine the position of the cable gland for the insertion of the cable at the switch.
4. Carefully remove the closing wall at the switch of step 2. We recommend to remove the closing wall by screwing in a suitable cable gland.
5. Clean the switching compartment from dirt.
6. Attach the cable gland at the switch. Only use cable glands with the corresponding level of protection.
7. Align the switch so that the actuator can be inserted easily into the switch.
8. Mount the switch.
9. After mounting clean the switch outside and the switch compartment from dirt.
10. Mount the actuator and observe the notes on the installation position (see chapters 4.1.1 / 4.1.2).
11. After installation clean the actuator from dirt.

4.1.4 Pinned fitting of the switch



After mounting and adjusting the actuator you can fix the switch with a pin (\varnothing 3mm) against rotation.

The opening in the switch for the pinned fitting (A) is closed on delivery. When pinning the switch, you must break through the bottom of the switch from the inside at the marked point.

Please note that by this the level of protection is reduced from IP 66 to IP 40.

5 Electrical connection



Danger – Risk of injury or death due to electrical current!

Only a **qualified electrician** may connect the safety switch WZF2 to a properly installed power supply line.

The electrical connection must only be made when the power is switched off.

The contacts are marked on the terminal compartment cover and in the terminal compartment at the terminals.

The switching diagram of the WZF2-variants is described in chapter 8.2.

6 Functional test

1. Check the tightness of the switch and actuator.
2. Check the electrical supply for damage, in particular make sure that the supply line is laid without tensile load and is not bent.
3. Check the insertion of the electrical supply in the switch for damage and for tightness.
4. Check the correct insertion of the actuator into the switch.
5. Check the switch in **its safety function**.

7 Maintenance, storage, disassembly and disposal



Danger – Risk of injury or death due to electrical current!

Damaged or faulty switches or actuators must not be repaired.

They must be replaced with original components of the manufacturer.

7.1 Maintenance

We recommend to perform the tests mentioned in chapter 6 at every maintenance.
If necessary remove dust and dirt at the switch and the actuator

7.2 Storage

Store the switch in a clean and dry place. Do not put any loads on the switch.

7.3 Disassembly and disposal



Danger – Risk of injury or death due to electrical current!

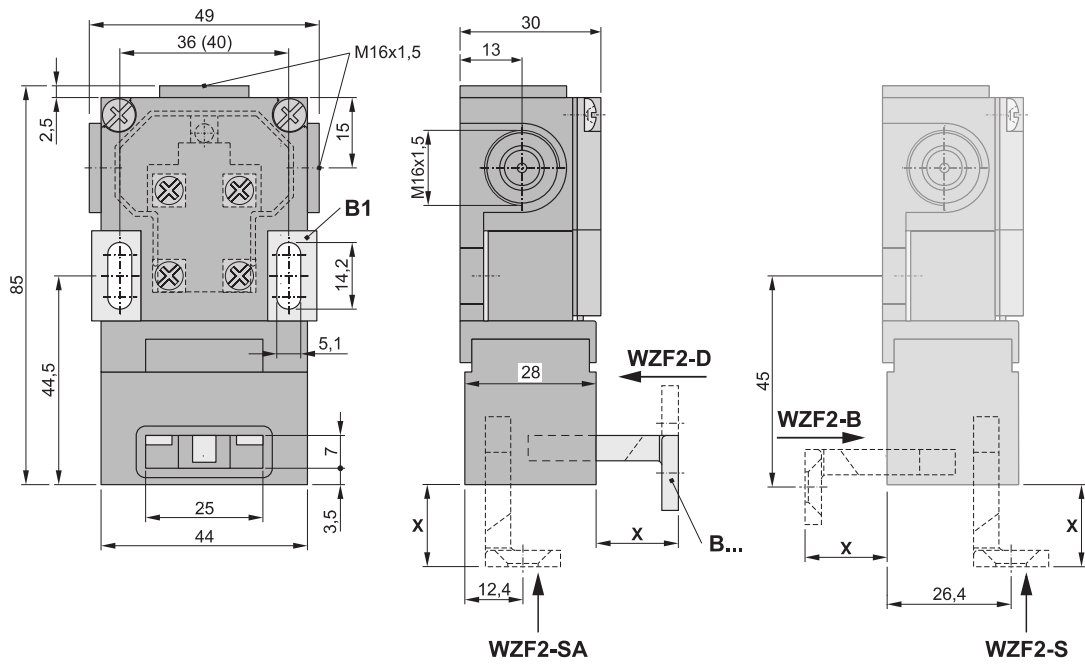
Disassemble only in de-energized state.

Dispose of the components in accordance with national regulations.

8 Data sheet

8.1 Dimensions

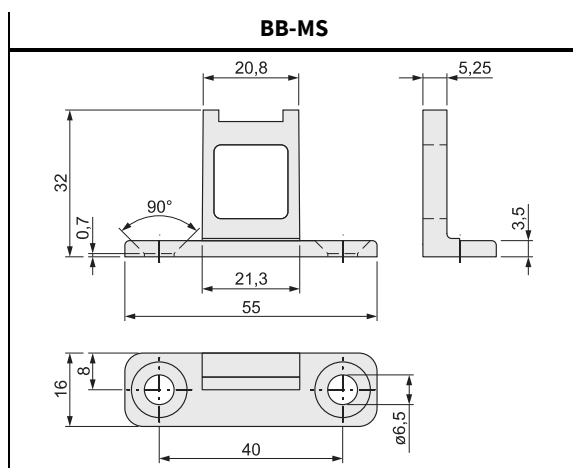
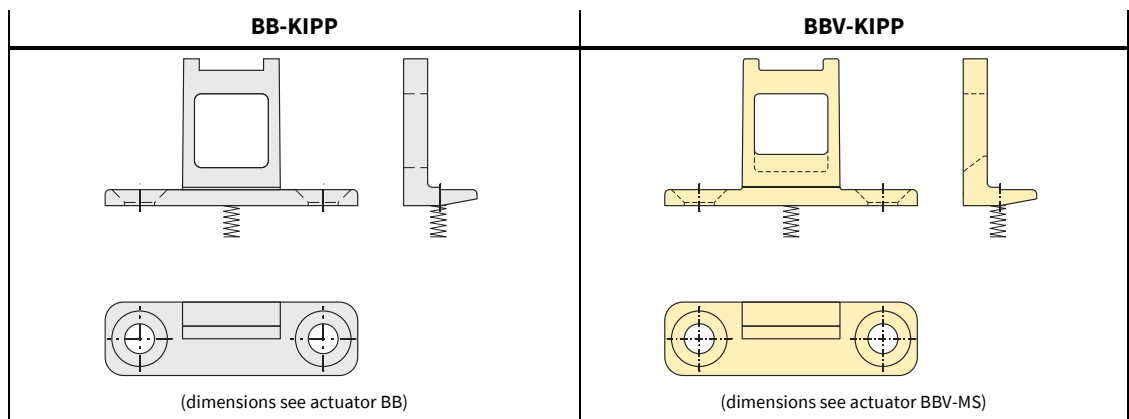
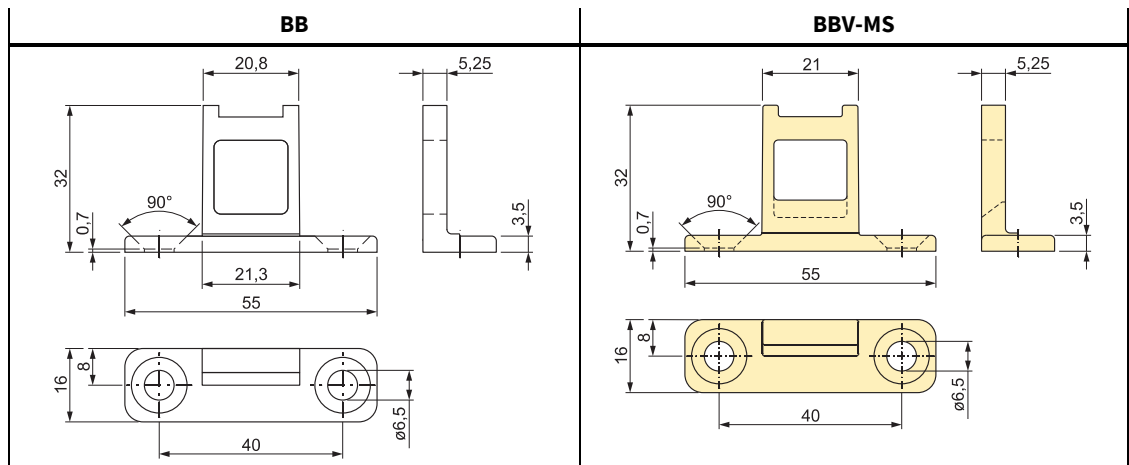
WZF2:



Legend:

- B1: mounting brackets made of stainless steel, rotatable for change of the hole distance
- B...: actuator, e.g. BB-MS
- WZF2-B: base side actuation
- WZF2-D: cover side actuation
- WZF2-S: top side actuation
- WZF2-SA: top side offset actuation
- X: distance between switch housing and mounting surface for the actuator

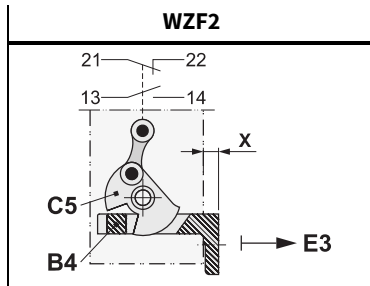
Actuators:



8.2 Switch mechanism and circuit diagram

The diagrams show the contacts at closed protective device.

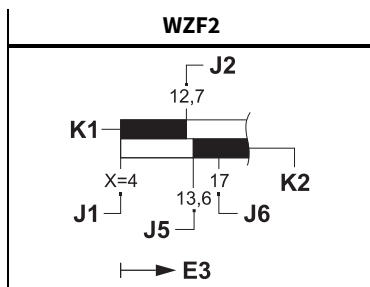
Switch mechanism for realization of the positive opening:



Legend:

- B4: actuator
- C5: gear drum
- E3: pull-out direction actuator
- X: distance between housing of the switch and mounting surface for actuator

Circuit diagram:



Legend:

- E3: pull-out direction actuator
- J1: maximum depth of immersion (stop)
- J2: positively driven normally closed contact opens
- J5: signal contact closes
- J6: last contact of actuator and gear drum
- K1: positively driven normally closed contact is closed, if the actuator is inside the switch
- K2: normally open- / signal contact (13-14) is open, if the actuator is inside the switch
- X: Distance between housing of the switch and mounting surface of the actuator

Switch legend: ■ contact closed □ contact open

8.3 Technical data

norms	EN 81-20, EN 81-50, IEC/EN 60947-5-1, GS-ET 15, EN ISO 13489-1
switching capacity	U _i = 250 V I _{th} = 10 A U _{imp} = 4 kV AC-15: U _e = 230 V I _e = 6 A DC-13: U _e = 200 V I _e = 1 A AC-15: U _e = 24 V I _e = 10 A
short-circuit capacity	T 10 A F 16 A
contact material	fine silver
actuation- / back pressure force	21 N / 0 N
connection	by screw terminal max. 2.5 mm ² cable gland 3x M16x1,5
level of protection	IP 66
ambient air temperature	-30 °C up to +80 °C
installation position	any
B10d - value (10% nominal load)	10 million / service life max. 25 years
weight	switch = 100 g actuator = 6 - 34 g

9 EU-Declaration of conformity

The current version of the declaration of conformity for the safety switch WZF2 is available for download on our homepage www.kronenberg-gmbh.de.



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