KRONENBERG

Safety Switch WZK

Operating Instructions

kronenberg-gmbh.de

Manufacturer

Hans & Jos. Kronenberg GmbH
D-51427 Bergisch Gladbach
Germany

Contact

Hans & Jos. Kronenberg GmbH
Kurt-Schumacher-Straße 1
D-51427 Bergisch Gladbach
Germany

T: +49 2204 / 207 -0
E: info@kronenberg-gmbh.de
W: kronenberg-gmbh.de

Document Information
Titel: kro_ba_wzk_gb, Stand: 15.08.2022

Legal Notices
© Hans & Jos. Kronenberg GmbH

All rights reserved.
All photos are property of Hans & Jos. Kronenberg GmbH.
This documentation may not be copied, modified or translated into any other language in whole or in part.Especially when using electronic systems, Hans & Jos. Kronenberg GmbH have to agree to processing, duplication or storage of this documentation.

Contents

1 General information 4

1.1 Key words and warning symbols used 4

1.2 Brief description safety switch WZK 5

1.3 Intended use 5

2 Safety 6

2.1 Safety advice 6

3 Overview safety switch WZK, actuator and accessories 7

3.1 Connection cable 7

4 Assembly 8

4.1 Safety switch WZK and actuator 8

4.1.1 Insertion position of the actuator at the switch 8

4.1.2 Specifications for actuation radii 9

4.1.3 Procedure 9

5 Electrical connection 10

6 Functional test 10

7 Maintenance, storage, disassembly and disposal 10

7.1 Maintenance 10

7.2 Storage 10

7.3 Disassembly and disposal 10

8 Data sheet 11

8.1 Dimensions 11

8.2 Switch mechanism and circuit diagram 12

8.3 Technical Data 13

9 EU-Declaration of conformity 13

1 General information

In this operating instruction you will find:

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

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

Attention

Indicates possible minor personal injury due to neglect.

Caution

Indicates possible material damage when disregarding these 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 WZK

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

The featues of the safety switch at a glance:

mechanism:	• compact, square design • actuator is ejected • fixing screws, pressure plate and actuator (BBK) included in the scope of delivery
electricity:	• versions (WZK10, WZK11, WZK21) with up to three contacts • connection cable firmly attached
actuation:	• lateral or frontal
mounting points:	• switch can be screwed on in four positions, for actuation from all sides

1.3 Intended use

The safety switch WZK 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
- using the **pressure plate** included in the delivery for the mounting
- taking into account the information and safety instructions in these operating instructions

The use of the safety switch WZK 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 repairs or modifciations
- 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 WZK!

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 safety instructions in this manual.

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

Warning – Malfunction and destruction of the safety switch WZK 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 filling or bending is not allowed.

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

Attention

Only use the **PRESSURE PLATE** provided and the fixing material included in the scope of delivery for assembly.

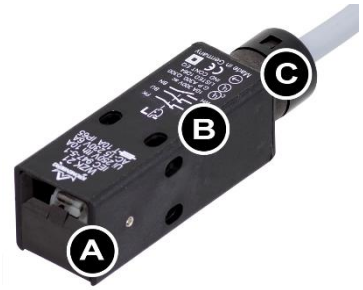
Secure the screw connections of the fixation at the actuator and switch with Loctite or alike for protection against self-loosening.

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

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

3 Overview safety switch WZK, actuator and accessories

The picture below shows the safety switch together with the actuator and pressure plate.

switch WZK	actuator BBK	pressure plate
		

switch-variants:

Typ*	contacts
WZK10	1 positively driven normally closed contact
WZK11	1 positively driven normally closed contact / 1 normally open contact
WZK21	2 positively driven normally closed contacts / 1 normally open contact

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

Legend:

(A) insertion opening for actuator

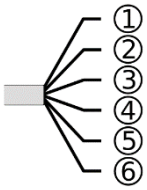
(B) fixing holes

(C) connection cable (pre-assembled)

3.1 Connection cable

The safety switch WZK is delivered with ready-made and pre-assembled connection cable. The connection cable is available in the lengths 2 m, 6 m or 10 m.

Assignment of the connection cable:



Nr.	colour	function	WZK10	WZK11	WZK21
①	black	set of contacts 1 (NC)	✓	✓	✓
②	blue				
③	white	set of contacts 2 (NO)	-	✓	✓
④	brown				
⑤	grey	set of contacts 3 (NC)	-	-	✓
⑥	pink				

4 Assembly

Notes for fixation

You need:

- fixing material*:
  - screw connections M4x35, serrated lock washers A4.3 (2 pieces each)
  - pressure plate
- 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.

* included in the switch set

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

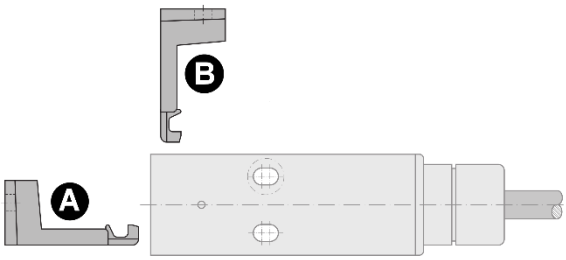
Do not use the actuator as stop.

Pay attention to the specifications for small pivoting radii in chapter 4.1.2

4.1 Safety switch WZK and actuator

4.1.1 Insertion position of the actuator at the switch

The switch is prepared for a frontal or lateral insertion of the actuator.

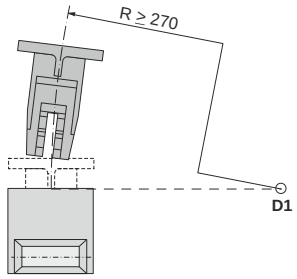


Legend:

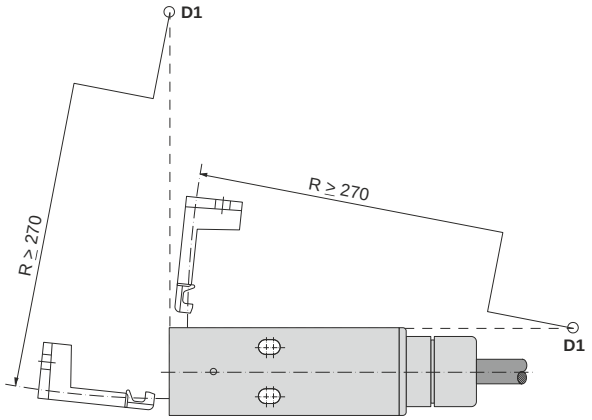
(A) frontal actuation

(B) lateral actuation

4.1.2 Specifications for actuation radii



view base side



side view

Legend:

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

4.1.3 Procedure

1. Determine the installation location for the switch and actuator so that the safety switch WZK can be used as intended.
2. Only use the provided pressure plate for the assembly of the switch (see fig. 4.1.3 / legend A).
3. Align the switch so that the actuator can be inserted easily into the switch.
4. Mount the switch and observe the instructions from chapter 4.1.2.
5. After mounting clean the switch outside from dirt.
6. Mount the actuator and observe the instructions from chapter 4.1.2.
7. Align the actuator so that it can be inserted easily into the switch.
8. After mounting clean the actuator and the switch from dirt.

fig. 4.1.3:
Use the pressure plate (legend A) for assembly!

5 Electrical connection

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

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

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

The contact and wire allocation are marked on the housing.

The switching diagrams of the WZK-variants are 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 and 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!

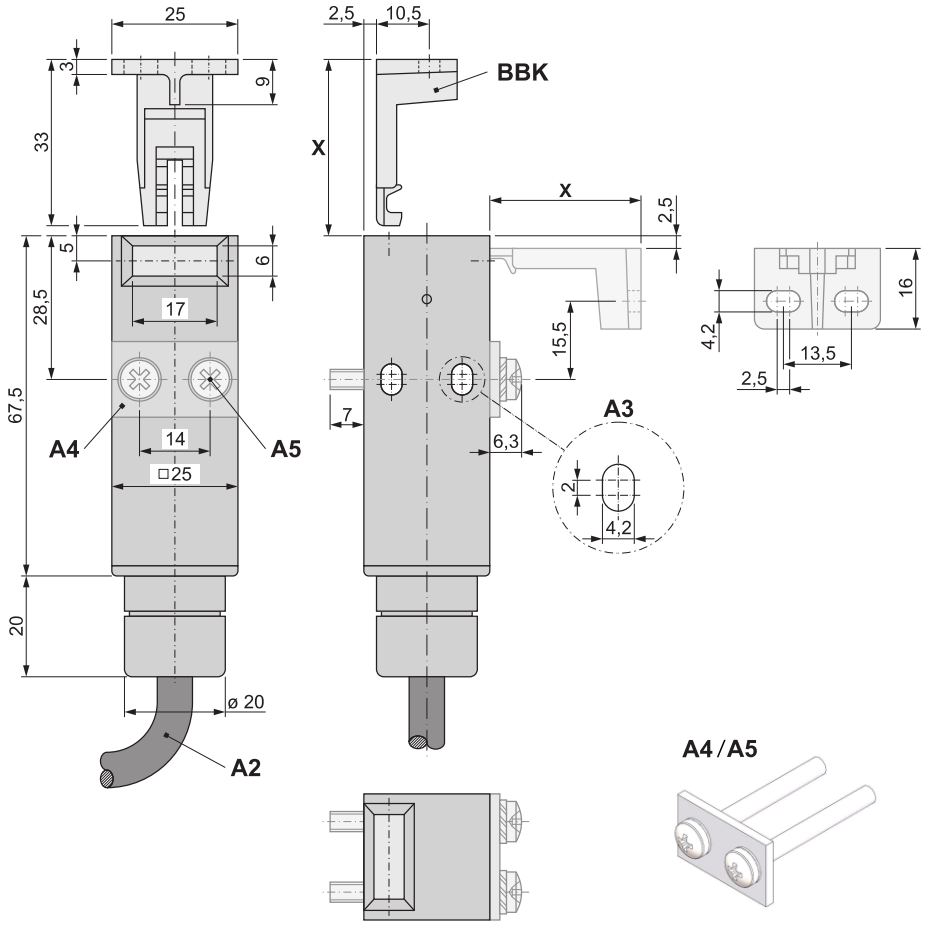
Disassemble only in de-energized state.

Dispose of the components in accordance with national regulations.

8 Data sheet

8.1 Dimensions

WZK and actuator BBK:



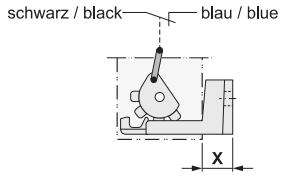
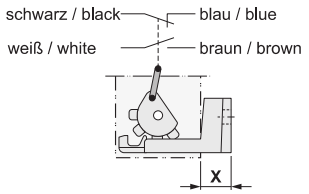
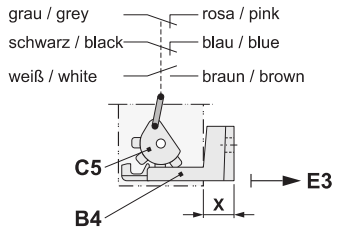
Legend:

A2: connection cable LiYY 0.75 mm²; Ø 7.2 mm
A3: actuation from all sides due to fixation in different directions
A4: pressure plate
A5: lens head screw M4x35 and serrated lock washer A4.3
BBK: actuator for WZK
X: distance between switch housing and mounting surface for the actuator

8.2 Switch mechanism and circuit diagram

The diagrams show the contacts at closed protective device.

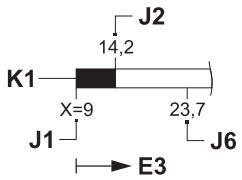
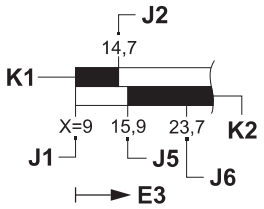
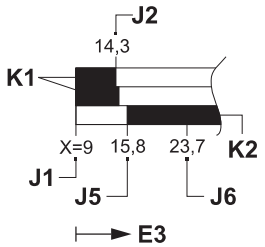
WZK – variants:

WZK10	WZK11	WZK21
		

Legend:

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

Circuit diagram of the WZK – variants:

WZK10	WZK11	WZK21
		

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 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	Ui = 250 V Ith = 10 A Uimp = 4 kV
	AC-15: Ue = 230 V Ie = 6 A DC-13: Ue = 200 V Ie = 0.5 A
	AC-15: Ue = 24 V Ie = 10 A
short-circuit capacity	T 10 A F 16 A
contact material	fine silver
actuation- / back pressure force	10 N / 2 N
connection	connection cable LiYY 0.75 mm^2; Ø 7.2 mm; 2-, 6- or 10-pole; cable length 2 m, 6 m or 10 m
level of protection	IP65
ambient air tempreature	-30 °C up to +80 °C
Installation position	any
B10d - value (10% nominal load)	1 million / service life max. 20 years
weight	WZK = 100 g BBK = 15 g

9 EU-Declaration of conformity

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

Notes:

Notes:

Hans & Jos. Kronenberg GmbH

Kurt-Schumacher-Straße 1 | D-51427 Bergisch Gladbach
T: +49 2204 / 207-0 | **E:** info@kronenberg-gmbh.de