



EN Operating instructions.pages 1 to 4
Original

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1. About this document

1.1 Function

This operating instructions manual provides all the information required for the mounting, set-up and commissioning to ensure the safe operation and disassembly of the safety switchgear. The operating instructions must be available in a legible condition and a complete version in the vicinity of the device.

1.2 Target group: authorised qualified personnel

All operations described in this operating instructions manual must be carried out by trained specialist personnel, authorised by the plant operator only.

Please make sure that you have read and understood these operating instructions and that you know all applicable legislations regarding occupational safety and accident prevention prior to installation and putting the component into operation.

The machine builder must carefully select the harmonised standards to be complied with as well as other technical specifications for the selection, mounting and integration of the components.

1.3 Explanation of the symbols used



Information, hint, note:

This symbol is used for identifying useful additional information.



Caution: Failure to comply with this warning notice could lead to failures or malfunctions.

Warning: Failure to comply with this warning notice could lead to physical injury and/or damage to the machine.

1.4 Appropriate use

The product must be exclusively used in accordance with the versions listed below or for the applications authorised by the manufacturer. Detailed information regarding the range of applications can be found in the chapter "Product description".

1.5 General safety instructions

The user must observe the safety instructions in this operating instructions manual, the country-specific installation standards as well as all prevailing safety regulations and accident prevention rules.



Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: www.schmersal.net.

The information contained in this operating instructions manual is provided without liability and is subject to technical modifications.

There are no residual risks, provided that the safety instructions as well as the instructions regarding mounting, commissioning, operation and maintenance are observed.

1.6 Warning about misuse



In case of inadequate or improper use or manipulations of the component, personal hazards or damage to machinery or plant components cannot be excluded. The relevant requirements of the standard ISO 14119 must be observed.

1.7 Exclusion of liability

We shall accept no liability for damages and malfunctions resulting from defective mounting or failure to comply with this operating instructions manual. The manufacturer shall accept no liability for damages resulting from the use of unauthorised spare parts or accessories.

For safety reasons, invasive work on the device as well as arbitrary repairs, conversions and modifications to the device are strictly forbidden; the manufacturer shall accept no liability for damages resulting from such invasive work, arbitrary repairs, conversions and/or modifications to the device.

2. Product description

2.1 Ordering code

This operating instructions manual applies to the following types:

① S 232-②-③

No.	Option	Description
①	Z	Snap action
	T	Slow action
	②	11
②	01	1 NC contact (only slow action)
	02	2 NC contacts
	10	1 NO contact (only slow action)
	20	2 NO contacts (only slow action)
③		without wiring compartment cover
	i	with wiring compartment cover

2.2 Special versions

For special versions, which are not listed in the order code below 2.1, these specifications apply accordingly, provided that they correspond to the standard version.

2.3 Destination and use

Micro switches are used as signal transmitters in systems of control and precision engineering, in apparatus and in vehicle construction.

2.4 Technical data

Standards:	IEC 60947-5-1
Enclosure:	glass-fibre reinforced thermoplastic
Actuator:	glass-fibre reinforced thermoplastic
Plunger:	Stainless steel
Protection class:	IP40 according to IEC 60529
- Connections:	IP00 (IP20 with wiring compartment cover)
Degree of pollution:	3
Contact material:	Silver
Contact type:	change-over contact with double break, or 2 NC contacts, with galvanically separated contact bridges
Switching system:	Slow action or snap action, positive break NC contact ⊖
Connection:	Screw connection
Cable section:	max. 2.5 mm ² (incl. conductor ferrules)
Rated impulse withstand voltage U_{imp} :	6 kV
Rated insulation voltage U_i :	500 V
Thermal test current I_{the} :	10 A
Utilisation category:	AC-15, DC-13
Rated operating current/voltage I_e/U_e :	4 A / 230 VAC 1 A / 24 VDC
Max. fuse rating:	6 A gG D-fuse
Required rated short-circuit current:	1000 A
Actuating force:	9 N
Contact break:	Z 232: 2 x 2 mm T 232: 2 x 3.5 mm
Switchover time:	Z 232: ≤ 5 ms T 232: -
Bounce duration:	Z 232: ≤ 3 ms T 232: -
Ambient temperature:	- 30 °C ... + 80 °C
Mechanical life:	≥ 20 million operations
Operations	
Switching frequency:	max. 5000/h
Actuating speed:	Z 232: 10 mm/min T 232: min. 60 mm/min

3. Mounting

3.1 General mounting instructions

The installation may only be carried out by authorised personnel. The micro switch is mounted with two M4 screws. Any mounting position.

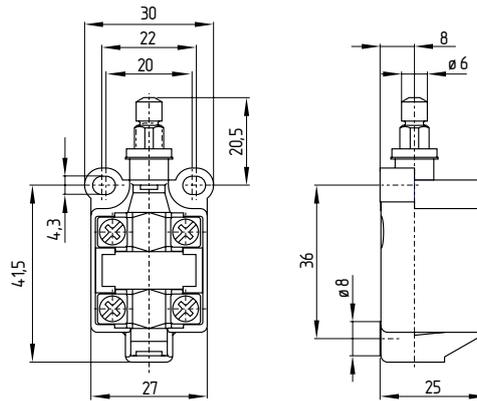


Please observe the remarks of the standards ISO 12100, ISO 14119 and ISO 14120.

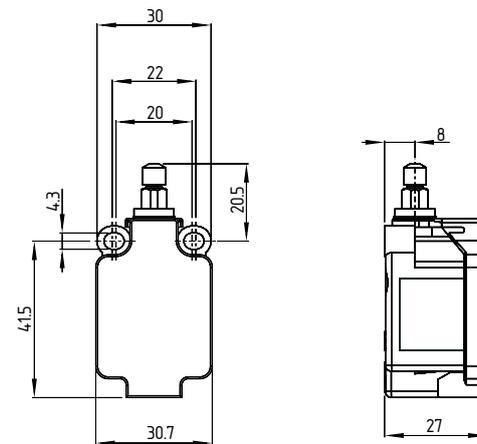
3.2 Dimensions

All measurements in mm.

Z/T 232

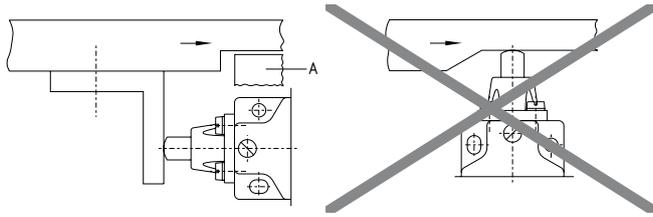


Z/T 232-...-i with wiring compartment cover

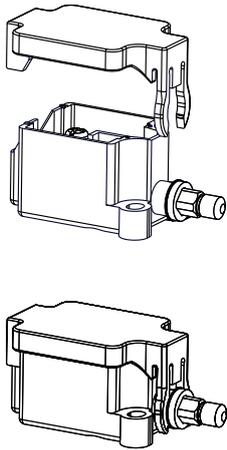


3.3 Actuation of the micro switch

Plunger



Peeling / clipping the wiring compartment cover



4. Electrical connection

4.1 General information for electrical connection



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

The contact labelling can be found in the wiring compartment of the switch. Since it is a double insulated switch, a protective conductor is not permitted.

Work steps with an electrical connection:

- Variant -i: Peeling the wiring compartment cover
- Specialist connection of the cable
- After wiring, dust and soiling must be removed from the wiring compartment.
- Variant -i: Clipping the wiring compartment cover
- Attaching a strain relief



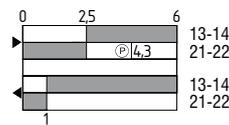
If you lose the wiring compartment cover, the protection class IP20 is no longer guaranteed.

4.2 Contact variants and switch travel

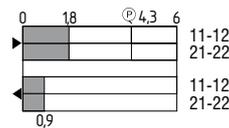
The contacts are shown in a non-actuated condition.

Snap action

ZS 232-11

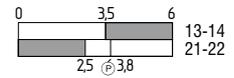


ZS 232-02

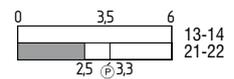


Slow action

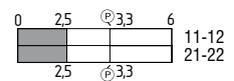
TS 232-11



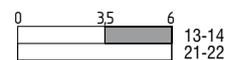
TS 232-01



TS 232-02



TS 232-10



TS 232-20



5. Set-up and maintenance

5.1 Functional testing

The function of the component must be tested. The following conditions must be previously checked and met:

1. Check the switch enclosure for damage
2. Check for free movement of the actuating element
3. Check the integrity of the cable entry and connections

5.2 Maintenance

A regular visual inspection and functional test, including the following steps, is recommended:

1. Check the free movement of the actuating element
2. Remove particles of dust and soiling
3. Check cable entry and connections

Damaged or defective components must be replaced.

6. Disassembly and disposal

6.1 Disassembly

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

6.2 Disposal

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

7. EU Declaration of conformity

EU Declaration of conformity		
Original	Schmersal India Private Limited, G-7/1, MIDC, Ranjangaon, Tal. Shirur, Dist. Pune – 412 220 Maharashtra, India Internet: www.schmersal.in	
We hereby certify that the hereafter described components both in their basic design and construction conform to the applicable European Directives.		
Name of the component:	Z/T 232	
Description of the component:	Micro switches	
Relevant Directives:	Low Voltage Directive RoHS-Directive	2014/35/EU 2011/65/EU
Applied standards:	IEC 60947-5-1:2003 + A1:2009	
Place and date of issue:	Pune, September 5, 2016	
		
	Authorised signature Sagar Jeevan Bhosale Managing Director	

India-Z/T232-B-EN



The currently valid declaration of conformity can be downloaded from the internet at www.schmersal.net.



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