

## Datasheet - Z3K 235-11Z



Position switch / 235 Metal enclosure - DIN EN 50047 with Actuator / 235 Angle roller lever 3K



- Metal enclosure
- Wide range of alternative actuators
- Good resistance to oil and petroleum spirit
- 30 mm x 63,5 mm x 30 mm
- Snap action with constant contact pressure up to switching point
- slim design
- Actuator heads can be repositioned by 4 x 90°
- Mounting details to EN 50047
- 1 Cable entry M 20 x 1.5
- Actuation from bottom parallel to the switch, therefore only suitable for small housings.

(Minor differences between the printed image and the original product may exist!)

### Ordering details

Product type description	Z3K 235-11Z
Article number	1165850
EAN code	4030661212326

### Approval


Approval	 USA/CAN  CCC
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### Classification

Standards	EN ISO 13849-1
B <sub>10d</sub> Opener (NC)	20.000.000
Mission time	20 Years
notice	$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}}$ $n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{zyklus}}$

### Global Properties

Product name	Z 235 Winkelhebel 3K
Standards	EN 60947-5-1 BG-GS-ET-15

Compliance with the Directives (Y/N) 	Yes
Suitable for safety functions (Y/N)	Yes
Materials	
- Material of the housings	Zink
- Material of the contacts	Silver
Housing coating	painted
Housing construction form	Norm construction design
Weight	150 g

## Mechanical data

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Design of actuating element	Angle roller lever
Design of electrical connection	Screw connection
Cable section	
- Min. Cable section	0,75 mm <sup>2</sup>
- Max. Cable section	2.5 mm <sup>2</sup>
Mechanical life	20.000.000 operations
Switching frequency	max. 5000 /h
Actuating force	min. 9 N
Bounce duration	< 3 ms
Switchover time	> 5.5 ms
Positive break force	19 N
Actuating speed with actuating angle 30° to switch axis	
- Min. Actuating speed	27 mm/min
- Max. Actuating speed	1 m/s
notice	All indications about the cable section are including the conductor ferrules.


## Ambient conditions

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Ambient temperature	
- Min. environmental temperature	- 30°C
- Max. environmental temperature	+ 80°C
Protection class	IP67

## Electrical data

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Design of control element	Normally open contact (NO), Opener (NC)
Switching principle	Snap switch element
- positive break NC contact 	
Number of auxiliary contacts	1 piece
Number of safety contacts	1 piece
Rated impulse withstand voltage U <sub>imp</sub>	6 kV
Rated insulation voltage U <sub>i</sub>	500 V
Thermal test current I <sub>the</sub>	10 A
Utilisation category	AC-15: 230 V / 4 A, DC-13: 24 V / 1 A
Max. fuse rating	6 A gG D-fuse

## ATEX

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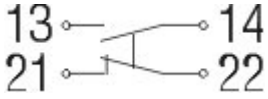
Explosion protection categories for gases	None
Explosion protected category for dusts	None

## Dimensions

Dimensions of the sensor

- Width of sensor 35 mm
- Height of sensor 93.5 mm
- Length of sensor 30 mm

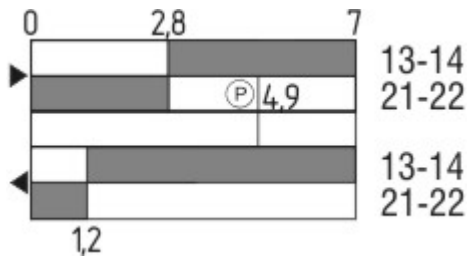
Diagram



Note Diagram

- positive break NC contact
- active
- no active
- Normally-open contact
- Normally-closed contact

Switch travel diagram



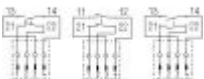
Notes Switch travel diagram

- Contact closed
- Contact open
- Setting range
- Break point
- Positive opening sequence/- angle
- VS** adjustable range of NO contact
- VÖ** adjustable range of NC contact
- N** after travel

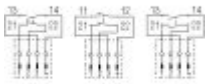
Ordering suffix

The applicable ordering suffix is added at the end of the part number of the safety switch.  
Order example: Z3K 235-11Z-1637

...-1637 0,3 µm gold-plated contacts



...-ST M12 connector with A-coding  
Rated impulse withstand voltage  $U_{imp}$ : 0,8 kV  
Rated insulation voltage  $U_i$ : 50 V  
Operating current  $I_e$ : AC-15: 50 V / 4 A  
Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.



M12 connector with B-coding  
Rated impulse withstand voltage  $U_{imp}$ : 0,8 kV  
Rated insulation voltage  $U_i$ : 50 V  
Operating current  $I_e$ : AC-15: 50 V / 4 A  
Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.

...-2310

...-NPT

Cable entry NPT 1/2"

...-1297

Enclosure with transverse slotted holes

## Ordering code

(1)(2) 2(3)5-(4)Z(5)-(6)-(7)-(8)-(9)

(1)

Z Snap action

T Slow action

(2)

S Plunger S

R Roller plunger R

4S Plunger 4S

4R Roller plunger 4R

1R Offset roller lever 1R

K Offset roller lever K

3K Angle roller lever 3K

4K Angle roller lever 4K

K4 Angle roller lever K4

1H Roller lever 1H

7H Roller lever 7H

10H Rod lever 10H

12H Roller lever 12H

14H Roller lever 14H

(3)

3 slim design

5 large design

(4)

02 2 Opener (NC)

11 1 Normally open contact (NO) / 1 Opener (NC)

20 2 Normally open contact (NO), (Switch with 2 NO contacts are not for security tasks)

(5)

H Slow action with staggered contacts

UE Slow action with overlapping contacts

(6)

without Cable entry M20

ID IDC method of termination

NPT cable entry NPT 1/2"

ST M12 connector with A-coding (Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.)

2310 M12 connector with B-coding (Caution! The versions with connector may only be used in PELV circuits to EN 60204-1.)

(7)

1297 Enclosure with transverse slotted holes

(8)

2138 Roller lever 7H for Position switches with safety function

(9)

1637 gold-plated contacts

## Documents

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**Operating instructions and Declaration of conformity** (de) 644 kB, 06.04.2010

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/DE/mrl\\_ZT235\\_236\\_de.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/DE/mrl_ZT235_236_de.pdf)

**Operating instructions and Declaration of conformity** (pt) 451 kB, 01.03.2010

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/PT/mrl\\_ZT235\\_236\\_pt.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/PT/mrl_ZT235_236_pt.pdf)

**Operating instructions and Declaration of conformity** (nl) 383 kB, 27.11.2009

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/NL/mrl\\_ZT235\\_236\\_nl.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/NL/mrl_ZT235_236_nl.pdf)

**Operating instructions and Declaration of conformity** (en) 535 kB, 01.03.2010

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/EN/mrl\\_ZT235\\_236\\_en.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/EN/mrl_ZT235_236_en.pdf)

**Operating instructions and Declaration of conformity** (es) 391 kB, 27.11.2009

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/ES/mrl\\_ZT235\\_236\\_es.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/ES/mrl_ZT235_236_es.pdf)

**Operating instructions and Declaration of conformity** (fr) 399 kB, 27.11.2009

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/FR/mrl\\_ZT235\\_236\\_fr.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/FR/mrl_ZT235_236_fr.pdf)

**Operating instructions and Declaration of conformity** (it) 375 kB, 27.11.2009

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/IT/mrl\\_ZT235\\_236\\_it.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/IT/mrl_ZT235_236_it.pdf)

**Operating instructions and Declaration of conformity** (jp) 562 kB, 27.11.2009

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/bedien/JP/mrl\\_ZT235\\_236\\_jp.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/bedien/JP/mrl_ZT235_236_jp.pdf)

**CCC certification** (en) 584 kB, 12.12.2006

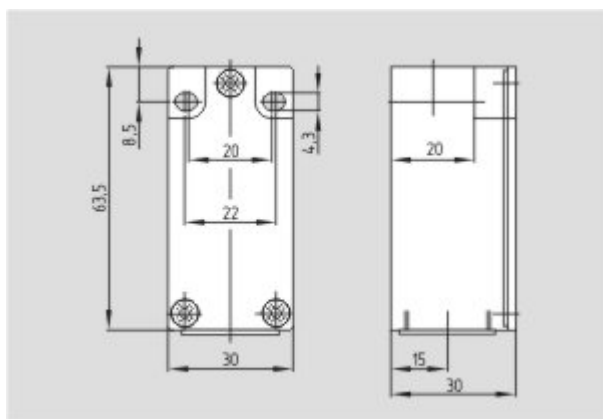
[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/zertifikat/q\\_347p02.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/zertifikat/q_347p02.pdf)

**CCC certification** (cn) 605 kB, 12.12.2006

[http://www.schmersal.net/Bilddata/Si\\_f1/Pdf/Zt235/zertifikat/q\\_347p03.pdf](http://www.schmersal.net/Bilddata/Si_f1/Pdf/Zt235/zertifikat/q_347p03.pdf)

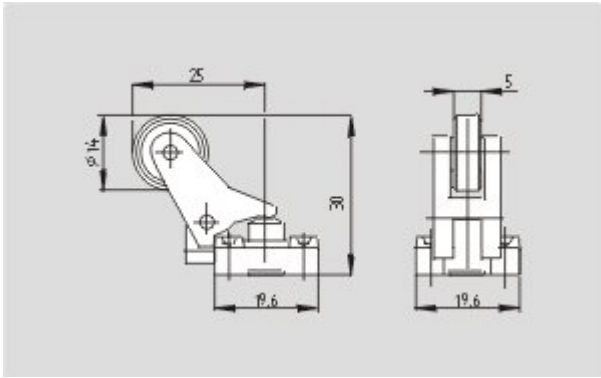
## Images

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Dimensional drawing (basic component)

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Dimensional drawing (actuator)

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K.A. Schmersal GmbH, Möddinghofe 30, D-42279 Wuppertal  
The data and values have been checked thoroughly. Technical modifications and errors excepted.  
Generiert am 13.04.2010 - 17:53:01h Kasbase 1.3.5 DBI