

## Datasheet - EX-TK4 235-11Z-3D



Position switches with safety function / EX-235 Metal enclosure with Actuator / EX-235 Angle roller lever K4



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

- Ex certified
- Metal enclosure
- Wide range of alternative actuators
- Good resistance to oil and petroleum spirit
- 30 mm x 63,5 mm x 30 mm
- Actuator heads can be repositioned by 4 x 90°
- Mounting details to EN 50047
- Ex-certified screwed cable gland
- 1 Cable entry M 20 x 1.5

### Ordering details

Product type description	EX-TK4 235-11Z-3D
Article number	101186463
EAN Code	4030661255170
eCl@ss	27-27-26-01

### Approval

Approval




EEX

### Classification

Standards	EN ISO 13849-1
B10d Normally-closed contact (NC)	20.000.000
Mission time	20 Years
notice	$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}}$ $n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{cycle}}$

### Global Properties

Permanent light	EX-T 235 Winkelhebel K4
Standards	EN 60947-5-1, EN 60079-0, EN 60079-15, EN 60079-31, 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	

## Mechanical data

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Design of electrical connection	Screw connection
Cable cross-section of the cable glands	
- Min. Cable cross-section of the cable glands	6
- Max. Cable cross-section of the cable glands	12
Cable section	
- Min. Cable section	0,75
- Max. Cable section	2.5
AWG-Number	13
Mechanical life	20.000.000 operations
Switching frequency	max. 5000 /h
notice	All indications about the cable section are including the conductor ferrules.
Design of actuating element	Angle roller lever
Actuating force	min. 6 N
Bounce duration	in accordance with actuating speed
Switchover time	in accordance with actuating speed
Positive break force	16
Actuating speed with actuating angle 30° to switch axis	
- Min. Actuating speed	336 mm/min
- Max. Actuating speed	1 m/s


## Ambient conditions

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Ambient temperature	
- Min. environmental temperature	-20
- Max. environmental temperature	+60
Protection class	IP67

## Electrical data

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Design of control element	Normally open contact (NO), Opener (NC)
Switching principle	Creep circuit element
- positive break NC contact 	
Number of auxiliary contacts	1
Number of safety contacts	1
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: 230 V / 4 A, DC-13: 24 V / 1 A
Max. fuse rating	6 A gG D-fuse

## ATEX

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Marking	EX II 3D Ex tc IIIC T90°C Dc X EX II 3G Ex nC IIC T5 Gc X
Explosion protection categories for gases	3G
Explosion protection Zones for gases	2
Explosion protected category for dusts	3D
Explosion protection Zones for dusts	22

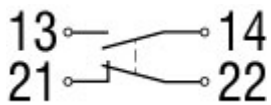
## Dimensions

Dimensions of the sensor	
- Width of sensor	32
- Height of sensor	107
- Length of sensor	30

## Keywords

Keywords	Ex, EEx, ATEX, Ex 235, Ex 235, 235 Ex, 235ex, 235ex, ATEX 235
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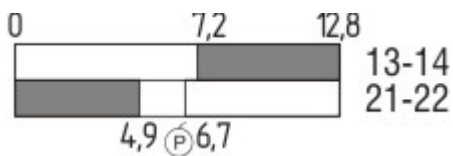
## Diagram



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 code

EX-(1)(2) 235-(3)Z-(4)-(5)-(6)-(7)-3D

(1)

Z

T

Snap action

Slow action

<b>(2)</b>	
<b>S</b>	Plunger S
<b>R</b>	Roller plunger R
<b>4S</b>	Plunger 4S
<b>4R</b>	Roller plunger 4R
<b>1R</b>	Offset roller lever 1R
<b>K</b>	Offset roller lever K
<b>3K</b>	Angle roller lever 3K
<b>4K</b>	Angle roller lever 4K
<b>K4</b>	Angle roller lever K4
<b>1H</b>	Roller lever 1H
<b>7H</b>	Roller lever 7H
<b>10H</b>	Rod lever 10H
<b>12H</b>	Roller lever 12H
<b>14H</b>	Roller lever 14H
<b>(3)</b>	
<b>02</b>	2 Opener (NC)
<b>11</b>	1 Normally open contact (NO) / 1 Opener (NC)
<b>20</b>	2 Normally open contact (NO), <i>(Switch with 2 NO contacts are not for security tasks)</i>
<b>(4)</b>	
<b>H</b>	Slow action with staggered contacts
<b>UE</b>	Slow action with overlapping contacts
<b>(5)</b>	
<b>1297</b>	Enclosure with transverse slotted holes
<b>(6)</b>	
<b>2138</b>	Roller lever 7H for Position switches with safety function
<b>(7)</b>	
<b>1637</b>	gold-plated contacts

## Documents

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**Operating instructions and Declaration of conformity** (pt) 360 kB, 24.01.2018

Code: mrl\_ex-zt235\_pt

**Operating instructions and Declaration of conformity** (pl) 379 kB, 31.01.2018

Code: mrl\_ex-zt235\_pl

**Operating instructions and Declaration of conformity** (nl) 355 kB, 31.01.2018

Code: mrl\_ex-zt235\_nl

**Operating instructions and Declaration of conformity** (jp) 435 kB, 10.02.2015

Code: mrl\_ex-zt235\_jp

**Operating instructions and Declaration of conformity** (da) 359 kB, 31.01.2018

Code: mrl\_ex-zt235\_da

**Operating instructions and Declaration of conformity** (es) 355 kB, 24.01.2018

Code: mrl\_ex-zt235\_es

**Operating instructions and Declaration of conformity** (it) 355 kB, 31.01.2018

Code: mrl\_ex-zt235\_it

**Operating instructions and Declaration of conformity (de)** 303 kB, 13.11.2017

Code: mrl\_ex-zt235\_de

**Operating instructions and Declaration of conformity (en)** 351 kB, 13.11.2017

Code: mrl\_ex-zt235\_en

**Operating instructions and Declaration of conformity (fr)** 360 kB, 31.01.2018

Code: mrl\_ex-zt235\_fr

**Brochure (de)** 7 MB, 19.10.2016

Code: b\_atep01\_de

**Brochure (en)** 7 MB, 19.10.2016

Code: b\_atep01\_en

**Brochure (it)** 3 MB, 20.07.2007

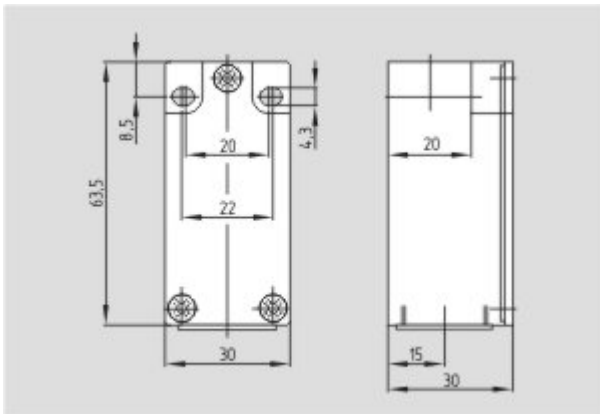
Code: b\_atep05

**Brochure (es)** 5 MB, 18.08.2009

Code: b\_atep09

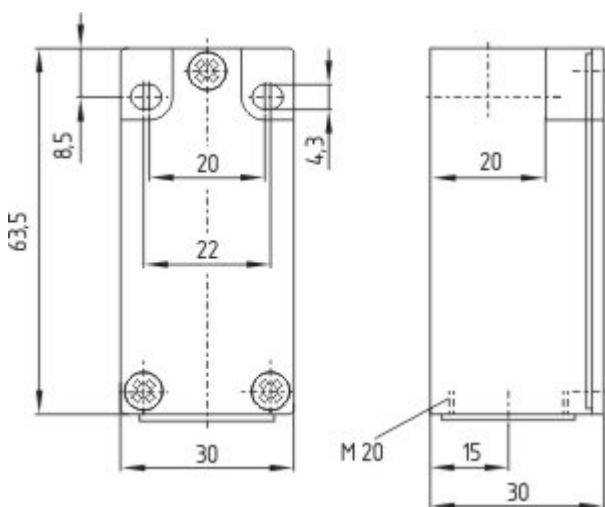
## Images

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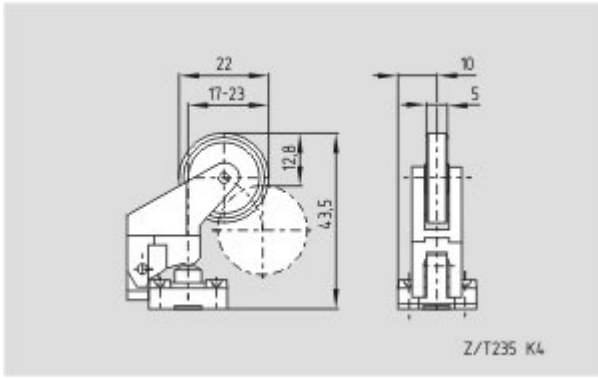
Dimensional drawing (basic component)

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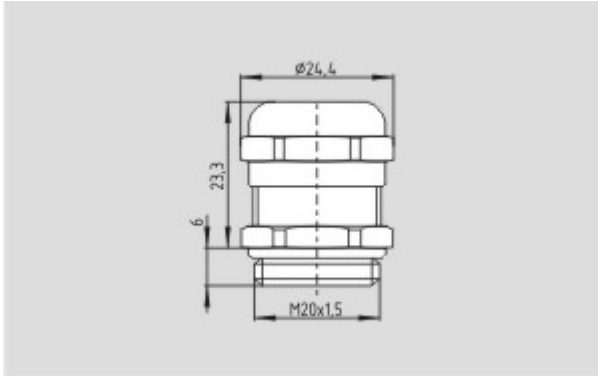
Dimensional drawing (basic component)

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Dimensional drawing (actuator)

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Dimensional drawing (miscellaneous)

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The data and values have been checked thoroughly. Technical modifications and errors excepted.

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