

Datasheet - EX-TK4 235-02Z-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 235-02Z-3D |
| Article number | EX-TK4 235-02z-3D |
| EAN Code | |
| 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

| | |
|---|---|
| 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

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

Electrical data

| | |
|---|--|
| Design of control element | Opener (NC) |
| Switching principle | Creep circuit element |
| - positive break NC contact  | |
| Number of auxiliary contacts | 0 |
| Number of safety contacts | 2 |
| 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

| | |
|---|--|
| 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 |

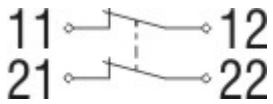
Dimensions

| | |
|--------------------------|-----|
| 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 |
|----------|---|

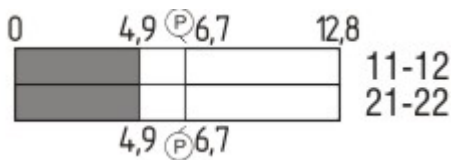
Diagram



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

| | |
|------|---|
| (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) | |
| 02 | 2 Opener (NC) |
| 11 | 1 Normally open contact (NO) / 1 Opener (NC) |
| 20 | 2 Normally open contact (NO), (<i>Switch with 2 NO contacts are not for security tasks</i>) |
| (4) | |
| H | Slow action with staggered contacts |
| UE | Slow action with overlapping contacts |
| (5) | |
| 1297 | Enclosure with transverse slotted holes |
| (6) | |
| 2138 | Roller lever 7H for Position switches with safety function |
| (7) | |
| 1637 | gold-plated contacts |

Documents

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

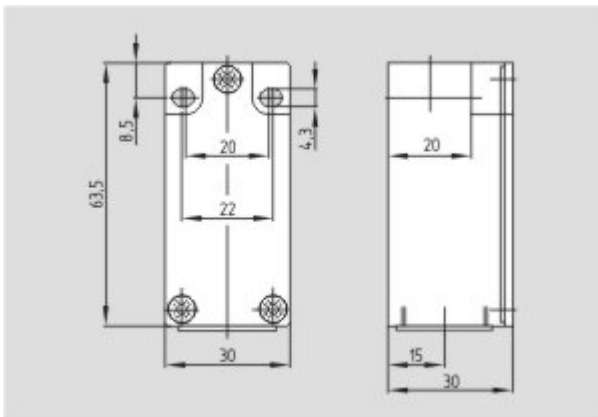
Brochure (it) 3 MB, 20.07.2007

Code: b_atep05

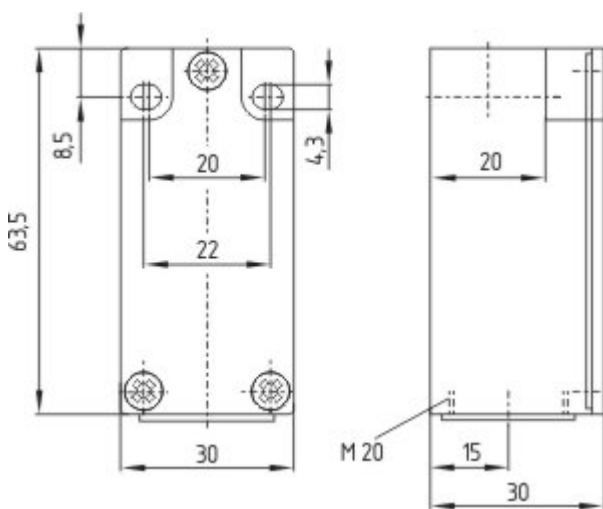
Brochure (es) 5 MB, 18.08.2009

Code: b_atep09

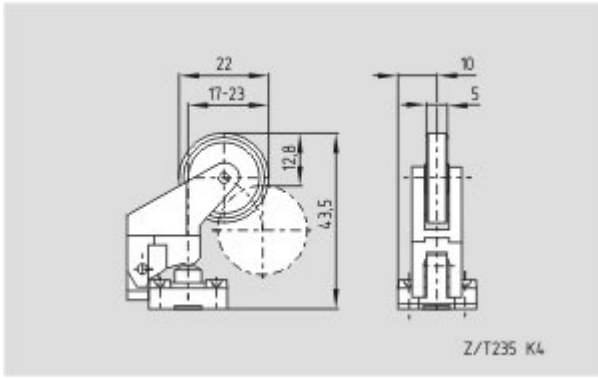
Images



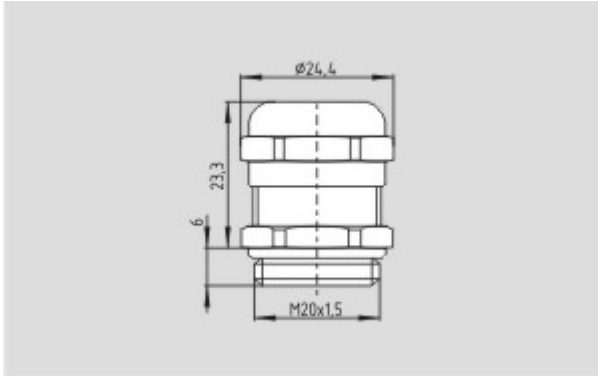
Dimensional drawing (basic component)



Dimensional drawing (basic component)



Dimensional drawing (actuator)



Dimensional drawing (miscellaneous)

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

Generiert am 13.02.2019 - 14:00:45h Kasbase 3.3.0.F.64I