

## Datasheet - EX-T3K 335-03ZH-3G/D



Position switches with safety function / EX-335 Metal enclosure with Actuator / EX-335 Angle roller lever 3K



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

- Explosion protection for ATEX Zones 2 and 22
- Metal enclosure
- Wide range of alternative actuators
- Good resistance to oil and petroleum spirit
- 40,5 mm x 76 mm x 38 mm
- Actuator heads can be repositioned by 4 x 90°
- Ex-certified screwed cable gland
- Mounting details to EN 50041
- 1 Cable entry M 20 x 1.5
- Ex certified
- Actuation from bottom parallel to the switch, therefore only suitable for small housings.

### Ordering details

|                          |                      |
|--------------------------|----------------------|
| Product type description | EX-T3K 335-03ZH-3G/D |
| Article number           | EX-T3K 335-03ZH-3G/D |
| EAN Code                 |                      |
| eCl@ss                   | 27-27-26-01          |

### Approval

|          |      |
|----------|------|
| Approval | ATEX |
|----------|------|

### Classification

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

### Global Properties

|                                      |   |
|--------------------------------------|---|
| Permanent light                      | EX-T 335 Winkelhebel 3K   |
| Standards                            | EN 60079-0, EN 60079-15, EN 60079-31, 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          | Aluminium                |
| - 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          | 7   |
| - 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   | 30.000.000 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. 17 N   |
| Bounce duration   | < 2   |
| Switchover time   | in accordance with actuating speed  |
| Impact energy   | max. 4 J  |
| Actuating speed with actuating angle 30° to switch axis |   |
| - Min. Actuating speed                                  |   |
| - Max. Actuating speed                                  | 0,5 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   | Opener (NC)                              |
| Switching principle   | Slow action with staggered contacts      |
| - positive break NC contact  |  |
| Number of auxiliary contacts  | 0  |
| Number of safety contacts   | 3  |
| Rated impulse withstand voltage $U_{imp}$   | 4 kV                                     |
| Rated insulation voltage $U_i$  | 250 V                                    |
| Thermal test current $I_{the}$  | 10 A                                     |
| Utilisation category  | AC-15: 230 V / 4 A,<br>DC-13: 24 V / 1 A |
| Max. fuse rating  | 6 A gG D-fuse                            |

## ATEX

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|            |                                |
|------------|--------------------------------|
| EX-marking | EX II 3D Ex tc IIIC T90°C Dc 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

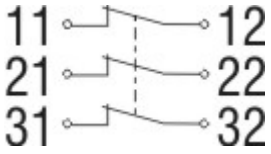
|                    |       |
|--------------------|-------|
| - Width of sensor  | 58.25 |
| - Height of sensor | 121.5 |
| - Length of sensor | 38    |

## Keywords

### Keywords

Ex, EEx, ATEX, Ex 235, Ex 235, 235 Ex, 235ex, 235ex, ATEX 235

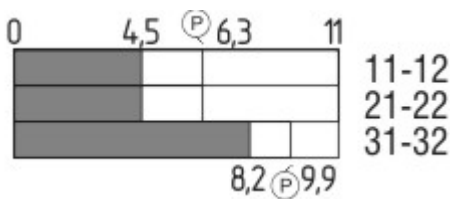
## Diagram



### 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 suffix

The applicable ordering suffix is added at the end of the part number of the safety switch.  
Order example: EX-T3K 335-03ZH-3G/D-**1297**

|          |   |
|----------|---|
| ...-1297 | Enclosure with transverse slotted holes |
| ...-1637 | 0,3 µm gold-plated contacts             |

## Ordering code

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EX-(1)(2) 335-(3)Z(4)-(5)-(6)-(7)-3G/D

|            |  |
|------------|--|
| <b>(1)</b> |  |
| Z          | Snap action  |
| T          | Slow action  |
| <b>(2)</b> |  |
| S          | Plunger S  |
| R          | Roller plunger R   |
| H          | Roller lever H   |
| 10H        | Rod lever 10H  |
| 7H         | Roller lever 7H  |
| 7H-2138    | Roller lever 7H for Position switches with safety function                                   |
| 1K         | Offset roller lever 1K   |
| 3K         | Angle roller lever 3K  |
| <b>(3)</b> |  |
| 11         | 1 Normally open contact (NO) / 1 Opener (NC)   |
| 02         | 2 Opener (NC)  |
| 20         | 2 Normally open contact (NO) ( <i>Switch with 2 NO contacts are not for security tasks</i> ) |
| 01/01      | 1 Opener (NC) left / 1 Opener (NC) right   |
| 12         | 1 Normally open contact (NO) / 2 Opener (NC)   |
| 03         | 3 Opener (NC)  |
| <b>(4)</b> |  |
| H          | Slow action with staggered contacts  |
| UE         | Slow action with overlapping contacts  |
| <b>(5)</b> |  |
| 1297       | Enclosure with transverse slotted holes  |
| <b>(6)</b> |  |
| 2138       | Roller lever 7H for Position switches with safety function                                   |
| <b>(7)</b> |  |
| 1637       | gold-plated contacts   |

## Documents

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**Operating instructions and Declaration of conformity** (jp) 614 kB, 18.08.2017

Code: mrl\_ex-zt335-3gd\_jp

**Operating instructions and Declaration of conformity** (de) 303 kB, 16.08.2018

Code: mrl\_ex-zt335-3gd\_de

**Operating instructions and Declaration of conformity** (it) 339 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_it

**Operating instructions and Declaration of conformity** (en) 354 kB, 16.08.2018

Code: mrl\_ex-zt335-3gd\_en

**Operating instructions and Declaration of conformity (pt)** 361 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_pt

**Operating instructions and Declaration of conformity (fr)** 359 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_fr

**Operating instructions and Declaration of conformity (pl)** 394 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_pl

**Operating instructions and Declaration of conformity (es)** 357 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_es

**Operating instructions and Declaration of conformity (nl)** 356 kB, 27.08.2018

Code: mrl\_ex-zt335-3gd\_nl

**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

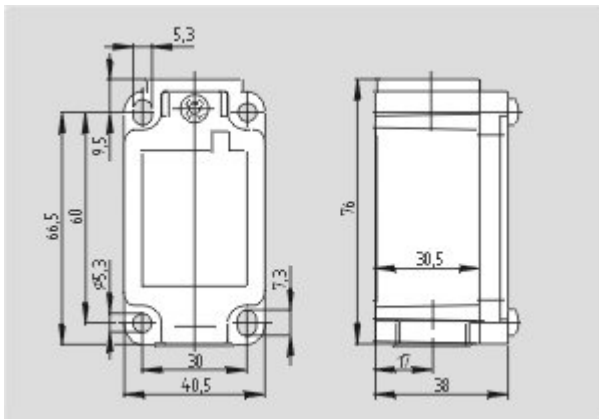
Code: b\_atep05

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

Code: b\_atep09

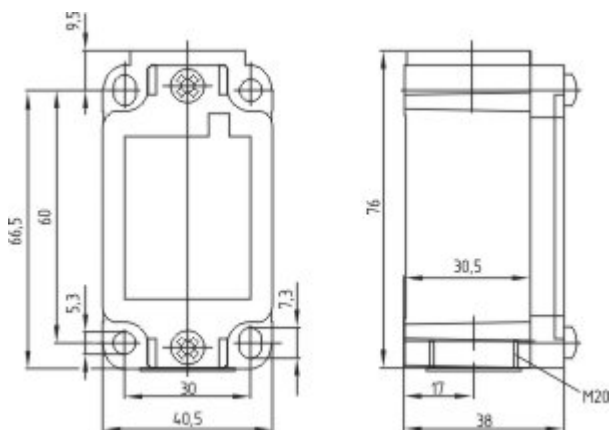
## Images

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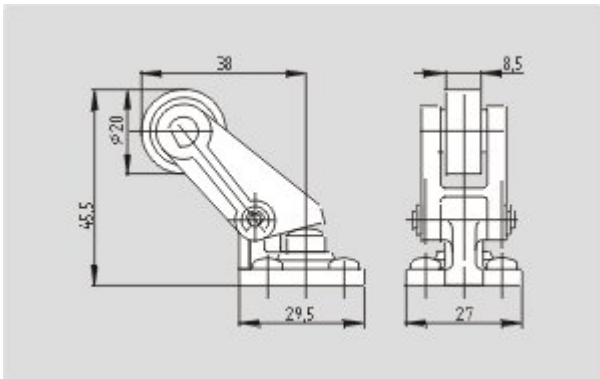


Dimensional drawing (basic component)

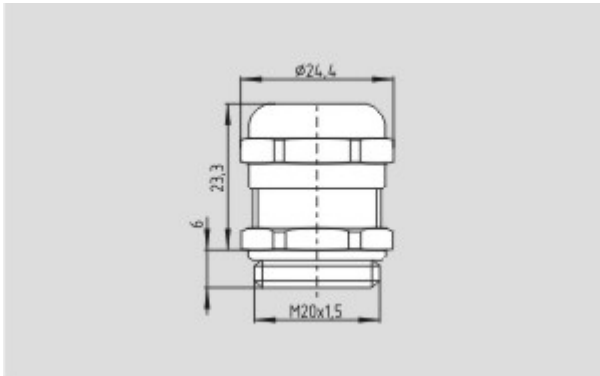
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Dimensional drawing (basic component)



Dimensional drawing (actuator)



Dimensional drawing (miscellaneous)

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

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