

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



Position switches with safety function / EX-235 Metal enclosure with Actuator / EX-235 Plunger S



(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-TS 235-11Z-3D |
| Article number           | 101186288        |
| EAN Code                 | 4030661326924    |
| 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 | T 236 Plunger S   |
| 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                      |
| Actuator type   | B to EN 50047            |
| Materials   |                          |
| - Material of the housings  | Zink                     |
| - Material of the contacts  | Silver                   |
| Housing coating   | painted                  |
| Housing construction form   | Norm construction design |
| Weight  | 193                      |

## 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                    | Plunger   |
| Actuating force                                | min. 9 N  |
| Bounce duration                                | in accordance with actuating speed  |
| Switchover time                                | in accordance with actuating speed  |
| Positive break force                           | 19  |
| Actuating speed for vertical actuation         |   |
| - Min. Actuating speed                         | 60 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,<br>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<br>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   |

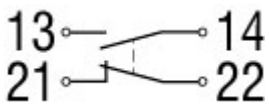
## Dimensions

|                          |      |
|--------------------------|------|
| Dimensions of the sensor |      |
| - Width of sensor        | 30   |
| - Height of sensor       | 75.5 |
| - Length of sensor       | 30   |

## Keywords

|          |   |
|----------|---|
| Keywords | Ex, EEx, ATEX, Ex 235, Ex 235, 235 Ex, 235ex, 235ex, ATEX 235 |
|----------|---|

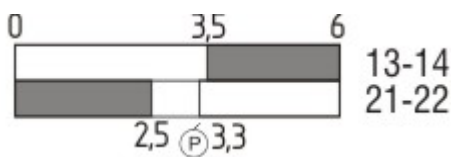
## Diagram



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    | 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)  |   |
| 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

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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

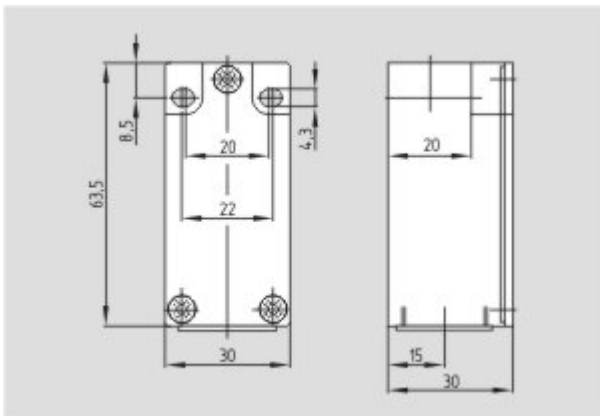
Code: b\_atep05

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

Code: b\_atep09

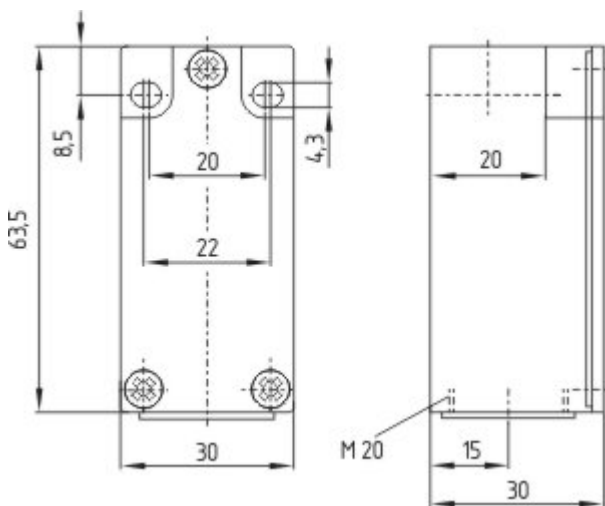
## Images

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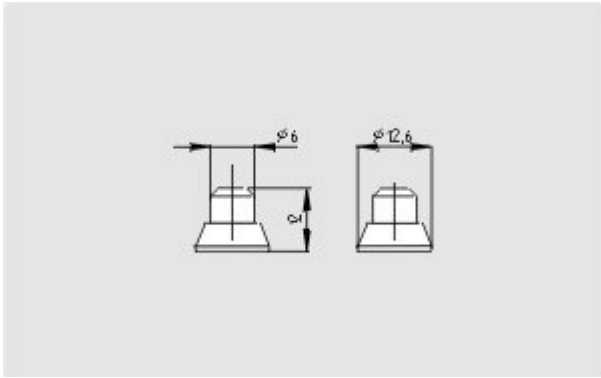
Dimensional drawing (basic component)

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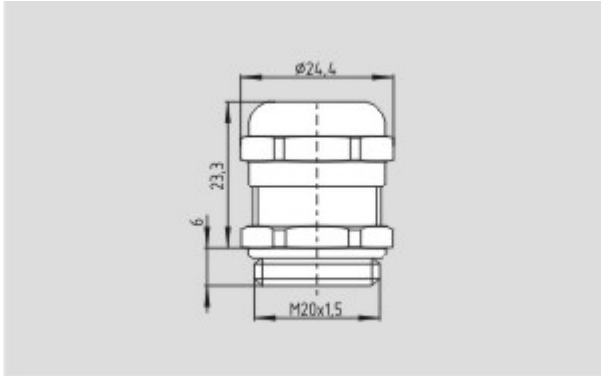
Dimensional drawing (basic component)

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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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