


## Datasheet - AZ 16-12ZI-B1-2053 WITH BALL LATCH



Safety switch with separate actuator / AZ 16ZI / AZ 16ZI-B1 - 2053 WITH BALL LATCH



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

- Thermoplastic enclosure
- Individual coding
- 52 mm x 90 mm x 30 mm
- Long life
- Double-insulated 
- Large wiring compartment
- High level of contact reliability with low voltages and currents
- Not sensitive to dirty conditions by virtue of patented roller system
- Slotted holes for adjustment, circular holes for location
- For interlocking of light to medium-weight guards
- 3 cable entries M 16 x 1.5

### Ordering details

Product type description	AZ 16-12ZI-B1-2053 MIT KUGELRASTUNG
Article number	101145137
EAN code	
eCl@ss	27-27-26-02

### Approval

Approval



### Classification

Standards	EN ISO 13849-1
B10d Opener (NC)	2.000.000
B10d Normally open contact (NO)	1.000.000
- notice	at 10% I <sub>e</sub> and ohmic load
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

Product name	AZ 16ZI
Standards	EN 60947-5-1, BG-GS-ET-15
Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic, self-extinguishing
- Material of the contacts	Silver
Housing coating	None

## Mechanical data

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>
Design of actuators	straight, rigid
Mechanical life	> 1.000.000 operations
notice	All indications about the cable section are including the conductor ferrules.
With ejection force (Y/N)	Yes
Latching force adjustable up to	100 N
Positive break force	20 N
positive break travel	8 mm
Actuating speed	max. 2 m/s
Minimum actuating radius	250 mm

## Ambient conditions

Ambient temperature	
- Min. environmental temperature	-30 °C
- Max. environmental temperature	+80 °C
Protection class	IP67 to IEC/EN 60529

## Electrical data

Design of control element	Normally open contact (NO), Opener (NC)
Switching principle	Creep circuit element
Number of auxiliary contacts	1 piece
Number of safety contacts	2 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 / 4 A
Max. fuse rating	6 A gG D-fuse

## ATEX

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

## Dimensions

Dimensions of the sensor	
- Width of sensor	52 mm
- Height of sensor	90 mm

- Length of sensor

30 mm

## notice

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Minimum actuating radius on hinged guards 250 mm

The axis of the hinge should be 5 mm above the top edge of the safety switch and in the same plane

The actuator is not available separately.

## Included in delivery

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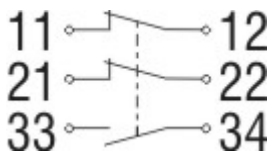
Individually coded actuator

tamperproof screws


Slot sealing plugs

## Diagram


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



Note Diagram

 positive break NC contact

 active

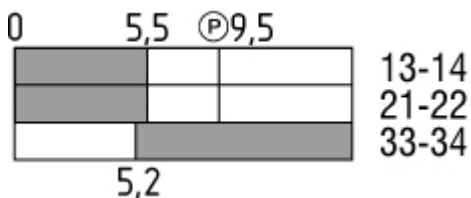
 no active

 Normally-open contact

 Normally-closed contact

## Switch travel diagram

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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

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The applicable ordering suffix is added at the end of the part number of the safety switch.

Order example: AZ 16-12ZI-B1-2053 WITH BALL LATCH-1762



....-1762

Versions with M5 nuts  
For front mounting of safety switch, e.g. on sheet-steel covers  
Cannot be retrofitted

....-1637

0,3 µm gold-plated contacts

....-M20

cable entries M20

## Ordering code

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AZ 16-(1)ZI-(2)-(3)

<b>(1)</b>	
<b>3.0</b>	3 Opener (NC)
<b>12</b>	1 Normally open contact (NO) / 2 Opener (NC)
<b>(2)</b>	<b>Actuator:</b>
<b>B1</b>	straight Design
<b>B1-1747</b>	straight Design with magnetic latch
<b>B1-2024</b>	straight Design with slot sealing plug
<b>B1-2053</b>	straight Design with ball latch
<b>B1-2177</b>	straight Design with centering guide
<b>(3)</b>	
<b>M16</b>	Cable entry M16
<b>M20</b>	Cable entry M20

## Documents

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**Operating instructions and Declaration of conformity (jp)** 593 kB, 01.09.2014

Code: mrl\_az16zi\_jp

**Operating instructions and Declaration of conformity (nl)** 345 kB, 30.09.2014

Code: mrl\_az16zi\_nl

**Operating instructions and Declaration of conformity (it)** 344 kB, 01.09.2014

Code: mrl\_az16zi\_it

**Operating instructions and Declaration of conformity (pt)** 350 kB, 17.06.2014

Code: mrl\_az16zi\_pt

**Operating instructions and Declaration of conformity (da)** 361 kB, 25.01.2012

Code: mrl\_az16zi\_da

**Operating instructions and Declaration of conformity (en)** 528 kB, 27.01.2011

Code: mrl\_az16zi\_en

**Operating instructions and Declaration of conformity (de)** 577 kB, 24.02.2011

Code: mrl\_az16zi\_de

**Operating instructions and Declaration of conformity (ro)** 362 kB, 25.01.2012

Code: mrl\_az16zi\_ro

**Operating instructions and Declaration of conformity (fr)** 347 kB, 30.09.2014

Code: mrl\_az16zi\_fr

**Operating instructions and Declaration of conformity (es)** 349 kB, 11.08.2014

Code: mrl\_az16zi\_es

**Operating instructions and Declaration of conformity (sv)** 343 kB, 17.06.2015

Code: mrl\_az16zi\_sv

**Operating instructions and Declaration of conformity (pl)** 414 kB, 11.08.2014

Code: mrl\_az16zi\_pl

**BG-test certificate (en)** 536 kB, 05.01.2011

Code: z\_\_16p02

**BG-test certificate (de)** 544 kB, 05.01.2011

Code: z\_\_16p01

**CCC certification (cn)** 408 kB, 24.06.2014

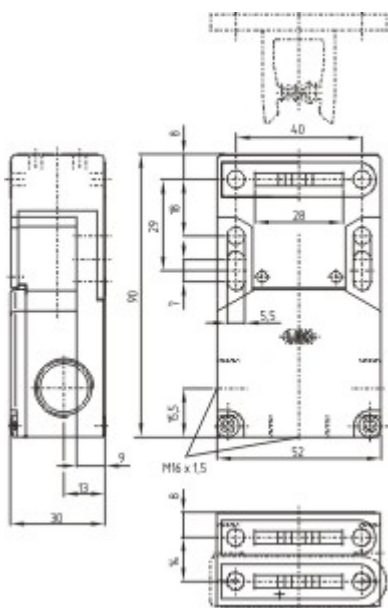
Code: q\_175p03

**CCC certification (en)** 396 kB, 24.06.2014

Code: q\_175p02

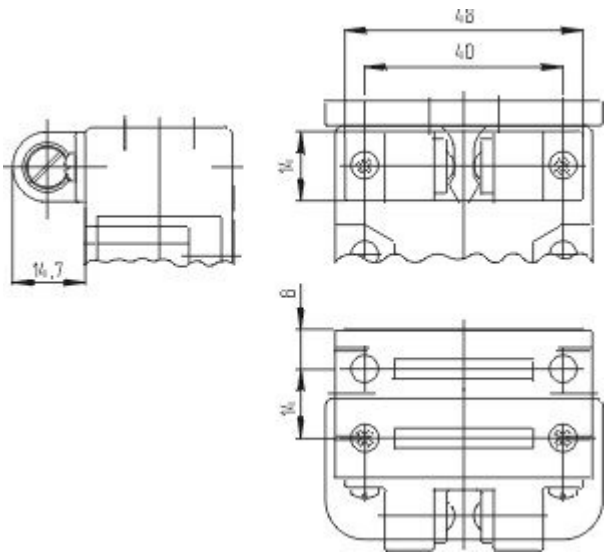
## Images

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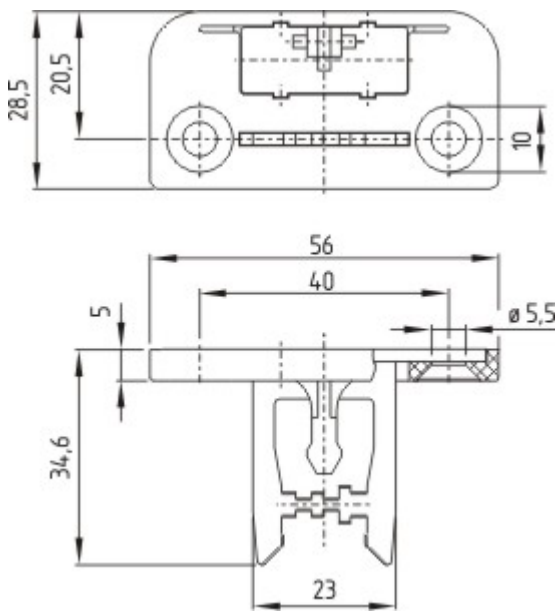


Dimensional drawing (basic component)

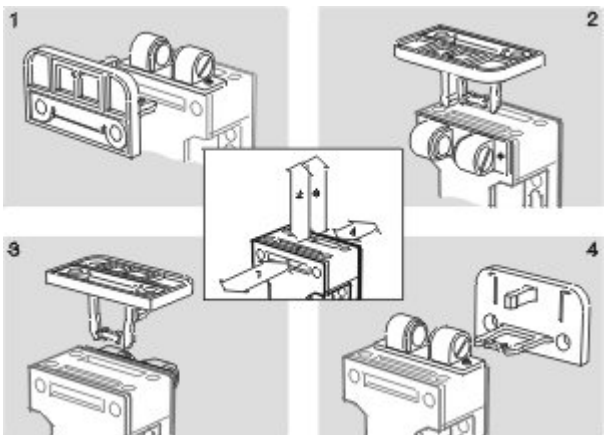
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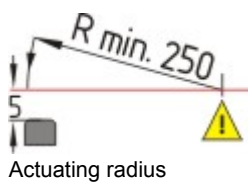
Dimensional drawing (miscellaneous)



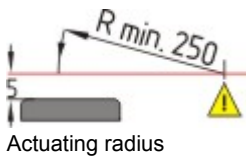
Dimensional drawing (miscellaneous)



Operating principle



Actuating radius



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## System components

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### Mounting accessories



#### **1135338 - TAMPERPROOF SCREWS M 5 x 12**

- To mount the actuator
- Higher protection against tampering with interlock
- Protects against unauthorised removal of actuator
- Various lengths available



#### **101135339 - TAMPERPROOF SCREWS M 5 x 16**

- To mount the actuator
- Higher protection against tampering with interlock
- Protects against unauthorised removal of actuator
- Various lengths available



#### **101135340 - TAMPERPROOF SCREWS M 5 x 20**

- To mount the actuator
- Higher protection against tampering with interlock
- Protects against unauthorised removal of actuator
- Various lengths available

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

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