

## Datasheet - AZ 16-02ZVRK-ST

Safety switch with separate actuator / AZ 16



- thermoplastic enclosure
- Double-insulated
- Large wiring compartment
- 52 mm x 90 mm x 30 mm
- Multiple coding
- Long life
- High level of contact reliability with low voltages and currents
- Slotted holes for adjustment, circular holes for location
- 2 cable entries M 16 x 1.5
- Connector M12, 4-pole

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

### Ordering details

Product type description	AZ 16-02ZVRK-ST
Article number	1143125
EAN code	4030661127224

### Approval

Approval	 BG  USA/CAN  CCC
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### Classification

Standards	EN ISO 13849-1
B <sub>10d</sub> Opener (NC)	2.000.000
Mission time	20 Years
notice	$MTTF_d = \frac{B_{10d}}{0,1 \times n_{op}}$ $n_{op} = \frac{d_{op} \times h_{op} \times 3600 \text{ s/h}}{t_{zyklus}}$

### Global Properties

Product name	AZ 16
Standards	EN 60947-5-1, BG-GS-ET-15
Compliance with the Directives (Y/N) 	Yes

Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic, self-extinguishing
- Material of the contacts	Silver
Housing coating	None
Weight	120 g

## Mechanical data

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Design of electrical connection	Connector M12
Mechanical life	20.000.000 operations
higher Latching force (Y/N)	Yes
Latching force	30 N
With ejection force (Y/N)	No
Positive break force	20 N
positive break travel	8 mm
Max. Actuating speed	0,2 m/s

## Ambient conditions

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

## Electrical data

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Design of control element	Opener (NC)
Switching principle	Creep circuit element
Number of auxiliary contacts	0 piece
Number of safety contacts	2 piece
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 / 4 A
Max. fuse rating	6 A gG D-fuse

## ATEX

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

## Dimensions

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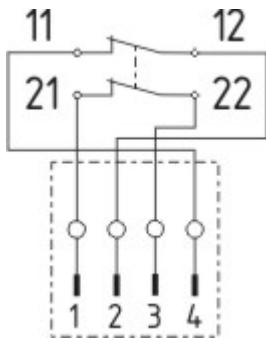
Dimensions of the sensor	
- Width of sensor	52 mm
- Height of sensor	90 mm
- Length of sensor	30 mm

## Included in delivery

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Actuators must be ordered separately.

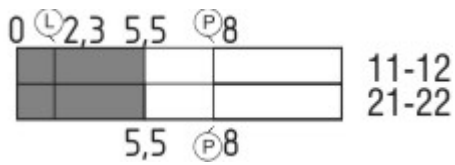
## Diagram



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: AZ 16-02ZVRK-ST-**2254**

... <b>2254</b>	Latching force 5 N
... <b>L</b>	Plug-in connection M12 left
... <b>R</b>	Plug-in connection M12 right



...- 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

AZ 16-(1)ZV(2)K-(3)-(4)-(5)

(1)

*without* 1 Normally open contact (NO) / 1 Opener (NC)

**02** 2 Opener (NC)

**03** 3 Opener (NC)

**12** Normally open contact (NO) 1 / Opener (NC) 2

(2)

*without* Ejection force

**R** Latching force 30 N

(3)

**G24** with LED (*only available for version with one NO and one NC contact.*)

(4)

*without* Cable entry M16

**M20** Cable entry M20

**ST** Connector M12, 4-pole, bottom

**STL** Connector M12, 4-pole, left

**STR** Connector M12, 4-pole, right

(5)

**2254** Latching force 5 N

**1762** Front mounting

**1637** gold-plated contacts

## Documents

**Operating instructions and Declaration of conformity** (de) 396 kB, 18.02.2011

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/DE/mrl\\_az15-16\\_de.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/DE/mrl_az15-16_de.pdf)

**Operating instructions and Declaration of conformity** (en) 516 kB, 26.05.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/EN/mrl\\_az15-16\\_en.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/EN/mrl_az15-16_en.pdf)

**Operating instructions and Declaration of conformity** (fr) 442 kB, 01.07.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/FR/mrl\\_az15-16\\_fr.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/FR/mrl_az15-16_fr.pdf)

**Operating instructions and Declaration of conformity (pt)** 436 kB, 24.06.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/pt/mrl\\_az15-16\\_pt.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/pt/mrl_az15-16_pt.pdf)

**Operating instructions and Declaration of conformity (es)** 405 kB, 25.03.2011

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/ES/mrl\\_az15-16\\_es.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/ES/mrl_az15-16_es.pdf)

**Operating instructions and Declaration of conformity (br)** 436 kB, 26.05.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/AZ\\_15\\_16\\_ACE/br/mrl\\_az15-16\\_br.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/AZ_15_16_ACE/br/mrl_az15-16_br.pdf)

**Operating instructions and Declaration of conformity (pt)** 433 kB, 25.05.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/AZ\\_15\\_16\\_ACE/pt/mrl\\_az15-16\\_pt.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/AZ_15_16_ACE/pt/mrl_az15-16_pt.pdf)

**Operating instructions and Declaration of conformity (jp)** 479 kB, 15.03.2011

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/JP/mrl\\_az15-16\\_jp.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/JP/mrl_az15-16_jp.pdf)

**Operating instructions and Declaration of conformity (it)** 330 kB, 27.11.2009

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/bedien/IT/mrl\\_az15-16\\_it.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/bedien/IT/mrl_az15-16_it.pdf)

**Operating instructions and Declaration of conformity (nl)** 431 kB, 14.09.2010

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**BG-test certificate (en)** 197 kB, 01.06.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/baumuste/z\\_z15p02.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/baumuste/z_z15p02.pdf)

**BG-test certificate (de)** 198 kB, 01.06.2010

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/baumuste/z\\_z15p01.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/baumuste/z_z15p01.pdf)

**CCC certification (cn)** 730 kB, 12.12.2006

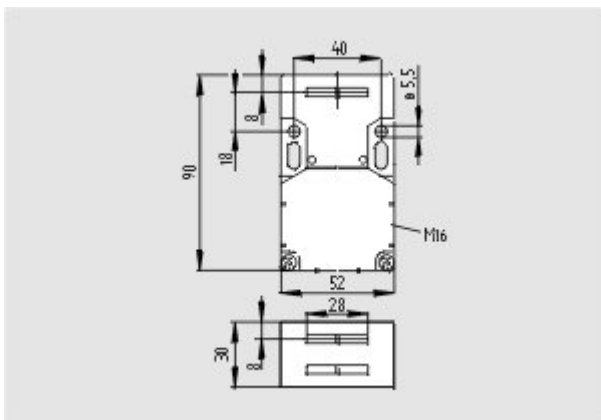
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**Gost certification (ru)** 1 MB, 21.06.2007

[http://127.0.0.1/Bilddata/AZ/Pdf/Az15\\_16/zertifikat/q\\_az1p01.pdf](http://127.0.0.1/Bilddata/AZ/Pdf/Az15_16/zertifikat/q_az1p01.pdf)

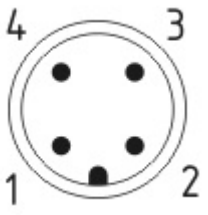
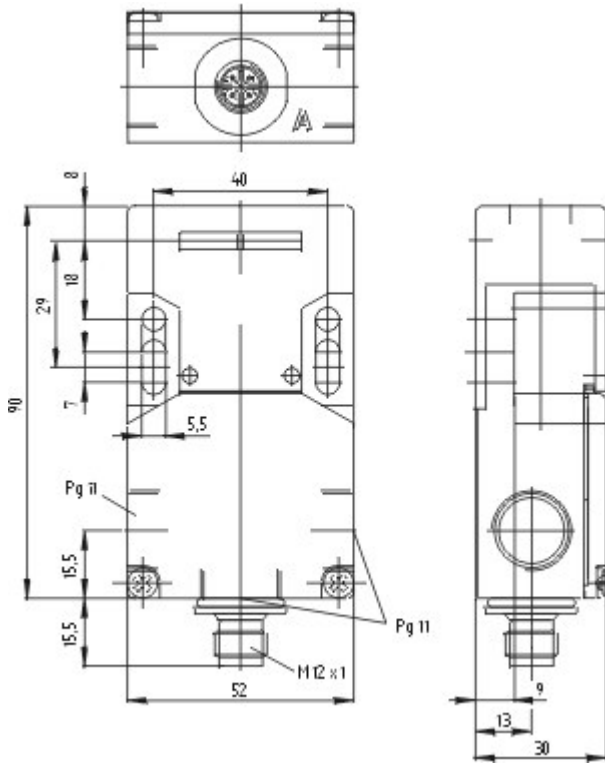
## Images

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Dimensional drawing (basic component)

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**System components**

**Actuator**

**1083036 - AZ 15/16-B1**



**1092711 - AZ 15/16-B1-1747**

- For play-free interlocking of light guards
- Suitable for retrofitting



**1093553 - AZ 15/16-B1-1747**

- For play-free interlocking of light guards
- The magnetic latch can be easily fitted in any actuating plane
- Suitable for retrofitting



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**1108276 - AZ 15/16-B1-2024**



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**1108278 - AZ 15/16-B1-2024 WITH SLOT SEALING PLUG**

- For protection against the ingress of course dirt



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**1111079 - AZ 15/16-B1-2053**

- For interlocking of light to medium-weight guards



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**1111081 - AZ 15/16-B1-2053 WITH BALL LATCH**

- For interlocking of light to medium-weight guards



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**1126793 - AZ 15/16-B1-2177**

- For interlocking of light, unguided guards



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**1126794 - AZ 15/16-B1-2177 WITH CENTERING GUIDE**

- For interlocking of light, unguided guards



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**1137408 - AZ 15/16-B1-2245**

- Damps vibration on guard device



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**1095558 - AZ 15/16-B2**

- For very small actuating radii in line with the plane of the actuator



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**1096091 - AZ 15/16-B2-1747**



- For very small actuating radii in line with the plane of the actuator
- Suitable for retrofitting
- For play-free interlocking of light guards



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**1096089 - AZ 15/16-B2-1747 WITH MAGNETIC LATCH**

- For very small actuating radii in line with the plane of the actuator
- Suitable for retrofitting
- For play-free interlocking of light guards
- The magnetic latch can be easily fitted in any actuating plane



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**1095550 - AZ 15/16-B3**

- For very small actuating radii at 90° to the plane of the actuator



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**1096090 - AZ 15/16-B3-1747 WITH MAGNETIC LATCH**

- For very small actuating radii at 90° to the plane of the actuator
- Suitable for retrofitting
- For play-free interlocking of light guards
- The magnetic latch can be easily fitted in any actuating plane



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**1096092 - AZ 15/16-B3-1747**

- For very small actuating radii at 90° to the plane of the actuator
- Suitable for retrofitting
- For play-free interlocking of light guards



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**1137434 - AZ 15/16-B6**

- For very small actuating radii in line with or at 90° to the plane of the actuator

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**Door-handle system**

**AZ 16-ST530**

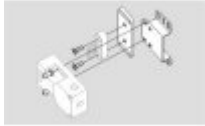
- Latching handle
- Suitable for all types of guard



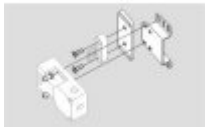


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## Accessories



**1149214 - Mounting set MS AZ 15/16 R/P**



**1150373 - Mounting set MS AZ 15/16 P**



**1089116 - Slot sealing plugs AZ 15/16-1476**

- For protection against the ingress of course dirt
- To cover unused actuator slots
- Simple clip-in fitting



**1115025 - Ball latch 2053-2**

- Additional ball latch for stable latching of light to medium-weight guards
- For separate mounting on the guard



**1110500 - SZ 16/335**

- To prevent inadvertent closing, e.g. during maintenance
- For complex plant
- Prevents actuation of the switch
- Up to 6 padlocks can be fitted
- The lockout tag can be mounted on a chain near to the safety switch

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## Connector



**A-K4M12**

- Pre-wired cable
- 4-pole

**S-K4M12**

- Connector without cable
- 4-pole



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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



### **1135339 - 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



### **1135340 - 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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K.A. Schmersal GmbH, Möddinghofe 30, D-42279 Wuppertal

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

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