

## Datasheet - MS-AZ 200ST-T-1P2P-2568

Safety switch with separate actuator / AZ 200



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

- **NOTICE: Available until 2020.12.31 (substitute: AZ201)**
- Thermoplastic enclosure
- Connector M23, 8+1-pole
- Idle assignable pushbutton and LED
- Max. length of the sensor chain 200 m
- Self-monitoring series-wiring of 31 sensors
- 3 LEDs to show operating conditions
- Sensor technology permits an offset between actuator and interlock of  $\pm 5$  mm vertically and  $\pm 3$  mm horizontally
- Intelligent diagnosis

### Ordering details

Product type description	MS-AZ 200ST-T-1P2P-2568
Article number	103006853
EAN Code	
eCl@ss	27-27-26-02

### Approval

Approval




### Classification

Standards	EN ISO 13849-1, IEC 61508
PL	e
Control category	4
PFH	$4.0 \times 10^{-9}/h$
SIL	3
Mission time TM	20 Years
Classification	PDF-M

## Global Properties

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Permanent light	AZ 200
Standards	IEC 60947-5-3, IEC 61508, EN ISO 13849-1, EN ISO 13849-1
Compliance with the Directives (Y/N) 	Yes
Suitable for safety functions (Y/N)	Yes
Series-wiring	up to 31 components
Length of the sensor chain	max. 200 m
Active principle	Non-contact
Duty cycle ED	100 %
Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic
Housing coating	None
Weight	400
Actuator monitored (Y/N)	Yes
Idle assignable pushbutton and LED (Y/N)	Yes
Reaction time	≤ 60
Duration of risk	> 120
Time to readiness	4000
Recommended actuator	AZ/AZM 200-B1

## Mechanical data

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Design of electrical connection	Connector M23, 12-pole
Mechanical life	≥ 1.000.000 operations
Switch distance $S_n$	6.5 mm
Ensured switch distance ON $S_{ao}$	4 mm
Ensured switch distance OFF $S_{ar}$	30 mm
hysteresis	max. 1.5
Repeat accuracy $R_R$	< 0,5 mm
restistance to shock	30 g / 11 ms
Resistance to vibration	10 ... 55 HZ, Amplitude 1 mm
Emergency unlocking device (Y/N)	No
Manual release (Y/N)	No
Emergency release (Y/N)	No
Latching force	30
Max. Actuating speed	≤ 0,2

## Ambient conditions

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Ambient temperature	
- Min. environmental temperature	-25
- Max. environmental temperature	+70
Storage and transport temperature	
- Min. Storage and transport temperature	-25
- Max. Storage and transport temperature	+85
Relative humidity	30... 95
- non-condensing	
Protection class	IP67 to IEC/EN 60529
Protection rating	II
Air clearances and creepage distances $T_o$ IEC/EN 60664-1	
- Rated impulse withstand voltage $U_{imp}$	0,8 kV
- Overvoltage category	III
- Degree of pollution	3

## Electrical data

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Number of auxiliary contacts	0
Number of safety contacts	2
Cross circuit/short circuit recognition possible (Y/N)	Yes
Switch frequency	1
Rated insulation voltage $U_i$	32 VDC
Rated operating voltage $U_e$	
- Min. Rated operating voltage	20.4 VDC
- Max. Rated operating voltage	26.4 VDC
Operating current $I_e$	0,7 A
Utilisation category	DC-13
No-load current $I_0$	0,1 A
Device insulation	$\leq 4$ A

## Electrical data - Safety inputs

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Safety inputs	X1 and X2
Rated operating voltage $U_e$	- 3 V ... 5 V (Low) 15 V ... 30 V (High)
Operating current $I_e$	> 2 mA / 24 V

## Electrical data - Safety outputs

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Safety outputs	Y1 and Y2
Fuse rating	short-circuit proof
Design of control output	p-type
Rated operating voltage	0 V ... 4 V under $U_e$
Residual current $I_r$	$\leq 0,5$ mA
Operating current $I_e$	0,25 A
Utilisation category	DC-13: 24 V / 0,25 A

## Electrical data - Diagnostic output

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Serial diagnostics (Y/N)	No
Fuse rating	short-circuit proof
Design of control output	p-type
Operating current $I_e$	0,05 A
Utilisation category	DC-13: 24 V / 0,05 A
Wiring capacitance for serial diagnostics	-
diagnostic signals	guard door closed
Operating principle of the diagnostic output	The short-circuit proof diagnostic output OUT can be used for central visualisation or control tasks, e.g. in a PLC.
notice	The diagnostic output is not a safety-relevant output!

## LED switching conditions display

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LED switching conditions display (Y/N)	Yes
LED switching conditions display	
- Supply voltage	green LED
- switching condition	yellow LED
- Error functional defect	red LED

## ATEX

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

## Dimensions

Dimensions of the sensor	
- Width of sensor	40
- Height of sensor	220
- Length of sensor	50

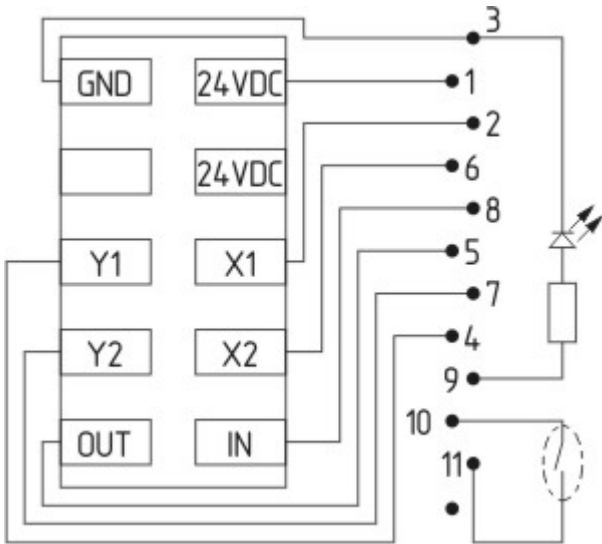
## Pin assignment

1	A1 Supply voltage $U_B$
2	X1 Safety input 1
3	A2 GND
4	Y1 Safety output 1
5	OUT Diagnostic output
6	X2 Safety input 2
7	Y2 Safety output 2
8	IN serial diagnostic input
9	without function






## Included in delivery

Actuators must be ordered separately.

## Diagram



Note Diagram

-  positive break NC contact
-  active
-  no active
-  Normally-open contact
-  Normally-closed contact

## Ordering code

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AZ 200(1)-T-(2)

(1)

<b>SK</b>	Screw connection
<b>CC</b>	Spring pulley connection
<b>ST1</b>	connector M23 x 1, 8+1-pole
<b>ST2</b>	connector M12 x 1, 8-pole

(2)

<b>1P2P</b>	1 Diagnostic output and 2 Safety outputs, p-type
<b>SD2P</b>	serial diagnostic output and 2 Safety outputs, p-type

## Documents

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**Operating instructions and Declaration of conformity** (nl) 313 kB, 01.08.2018

Code: mrl\_az200t\_nl

**Operating instructions and Declaration of conformity** (it) 313 kB, 09.01.2018

Code: mrl\_az200t\_it

**Operating instructions and Declaration of conformity** (en) 312 kB, 29.11.2017

Code: mrl\_az200t\_en

**Operating instructions and Declaration of conformity** (cs) 293 kB, 27.02.2012

Code: mrl\_az200t\_cs

**Operating instructions and Declaration of conformity** (cn) 359 kB, 01.06.2017

Code: mrl\_az200t\_cn

**Operating instructions and Declaration of conformity** (jp) 1 MB, 17.11.2010

Code: mrl\_az200t\_jp

**Operating instructions and Declaration of conformity** (de) 271 kB, 29.11.2017

Code: mrl\_az200t\_de

**Operating instructions and Declaration of conformity** (es) 328 kB, 16.01.2018

Code: mrl\_az200t\_es

**Operating instructions and Declaration of conformity** (fr) 315 kB, 01.02.2018

Code: mrl\_az200t\_fr

**Operating instructions and Declaration of conformity** (da) 292 kB, 26.01.2012

Code: mrl\_az200t\_da

**Operating instructions and Declaration of conformity** (pt) 319 kB, 22.01.2018

Code: mrl\_az200t\_pt

**Operating instructions and Declaration of conformity** (pl) 336 kB, 23.05.2018

Code: mrl\_az200t\_pl

**Operating instructions and Declaration of conformity** (sv) 289 kB, 19.03.2012

Code: mrl\_az200t\_sv

**Wiring example** (de, en) 150 kB, 06.06.2011

Code: mrl\_az-azm200st\_de-en

**Brochure** (de) 6 MB, 15.02.2018

Code: b\_css\_brosch09\_de

**Brochure** (en) 6 MB, 15.02.2018

Code: b\_css\_brosch09\_en

**TÜV certification** (de, en) 848 kB, 09.08.2017

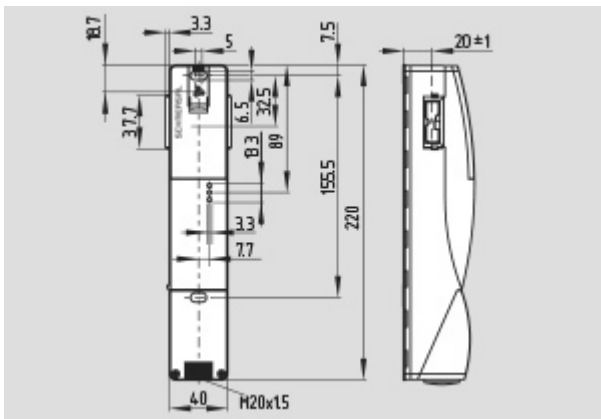
Code: z\_azmp04

**EAC certification** (ru) 844 kB, 05.10.2015

Code: q\_6037p17\_ru

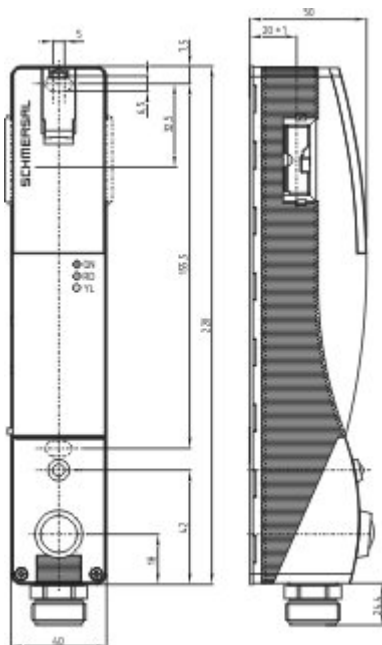
## Images

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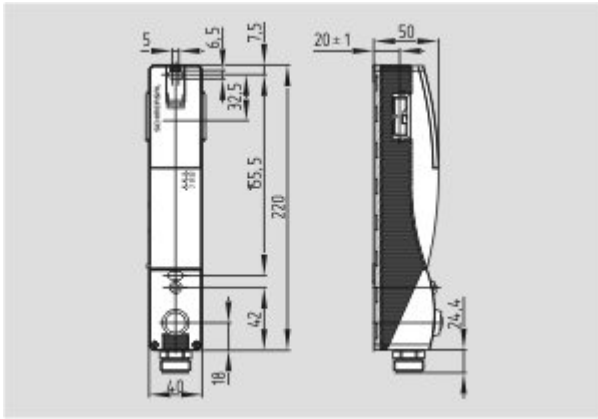
Dimensional drawing (miscellaneous)

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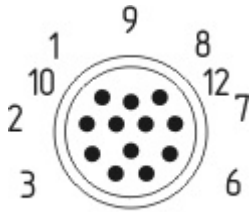


Dimensional drawing (miscellaneous)

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Dimensional drawing (miscellaneous)



Contact arrangement

## System components

### Actuator



#### 101183470 - AZ/AZM 200-B1-RTP0

- Actuators with return spring
- Actuator for sliding guards
- Tolerates up to max. 5 mm overtravel



#### 101183469 - AZ/AZM 200-B1-RT

- Actuators with return spring
- Actuator for sliding guards
- Tolerates up to max. 5 mm overtravel



#### 101183466 - AZ/AZM 200-B1-LTP0

- Actuators with return spring
- Actuator for sliding guards
- Tolerates up to max. 5 mm overtravel



#### 101183465 - AZ/AZM 200-B1-LT

- Actuators with return spring
- Actuator for sliding guards
- Tolerates up to max. 5 mm overtravel



#### 101178680 - AZ/AZM 200-B30-RTAG1

- Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



#### 101178738 - AZ/AZM 200-B30-RTAG1P1

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



#### 101186144 - AZ/AZM 200-B30-RTAG1P20

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



#### 101192103 - AZ/AZM 200-B30-RTAG1P25

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



#### 101181139 - AZ/AZM 200-B30-RTAG2

- Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

#### 101181143 - AZ/AZM 200-B30-RTAG2P1

- One-hand emergency exit, even in de-energised condition
- Actuator for hinged guards
- With door detection sensor T
- Easy and intuitive operation





- No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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**101191659 - AZ/AZM 200-B30-RTAG2P20**



- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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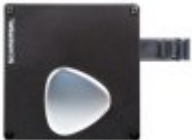
**101192104 - AZ/AZM 200-B30-RTAG2P25**



- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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**101181137 - AZ/AZM 200-B30-LTAG2**



- Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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**101181141 - AZ/AZM 200-B30-LTAG2P1**



- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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**101189020 - AZ/AZM 200-B30-LTAG2P20**

- One-hand emergency exit, even in de-energised condition
- Actuator for hinged guards



- With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



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**101192106 - AZ/AZM 200-B30-LTAG2P25**

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



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**101178681 - AZ/AZM 200-B30-LTAG1**

- Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



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**101178668 - AZ/AZM 200-B30-LTAG1P1**

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability



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**101186150 - AZ/AZM 200-B30-LTAG1P20**

- One-hand emergency exit, even in de-energised condition
  - Actuator for hinged guards
  - With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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**101192102 - AZ/AZM 200-B30-LTAG1P25**

- One-hand emergency exit, even in de-energised condition
- Actuator for hinged guards



- With door detection sensor T
  - Easy and intuitive operation
  - No risk of injury from protruding actuator
  - No supplementary door handles required
  - Does not protrude into the door opening
  - Various handles available
- Greater mechanical stability

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## Connector



### **A-K12M23**

- Pre-wired cable
- 12-pole

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K.A. Schmersal GmbH & Co. KG, Mödinghofe 30, D-42279 Wuppertal

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

Generiert am 13.02.2019 - 14:38:26h Kasbase 3.3.0.F.64I