

## Datasheet - AZM 200ST1-T-1P2P

Solenoid interlock / AZM 200



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

- **NOTICE: Available until 2020.12.31 (substitute: AZM201)**
- Thermoplastic enclosure
- Guard locking monitored
- Electronic contact-free, coded system
- Connector M23, 8+1-pole
- 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
- Manual release

### Ordering details

Product type description	AZM 200ST1-T-1P2P
Article number	101187958
EAN Code	4030661351100
eCl@ss	27-27-26-03

### Approval

Approval



### Classification


#### Interlocking function:

Standards	EN ISO 13849-1, IEC 61508, IEC 60947-5-3
PL	bis e
Control category	bis 4
PFH	$4.0 \times 10^{-9}/h$
PFD value	$1.0 \times 10^{-4}$
SIL	bis 3
Mission time	20 Years

Classification	PDF-M
<b>Guard locking function:</b>	
Standards	EN ISO 13849-1, IEC 61508, IEC 60947-5-3
PL	up d
Control category	up 2
PFH value	$2.5 \times 10^{-9}/h$
PFD value	$2.2 \times 10^{-4}$
SIL	up 2
Mission time	20 Years

## Global Properties

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Permanent light	AZM 200
Standards	EN 60947-5-1, 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	inductive
Duty cycle ED	100 %
Materials	
- Material of the housings	Plastic, glass-fibre reinforced thermoplastic
Housing coating	None
Weight	544
Guard locking monitored (Y/N)	Yes
Actuator monitored (Y/N)	No
Idle assignable pushbutton and LED (Y/N)	No
Reaction time	$\leq 60$
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, 8+1-pole
Mechanical life	$\geq 1.000.000$ operations
resistance 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)	Yes
Emergency release (Y/N)	No
Latching force	30
Clamping force F	2000 N
Max. Actuating speed	$\leq 0,2$

## Ambient conditions

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Ambient temperature	
- Min. environmental temperature	-25
- Max. environmental temperature	+60
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 To 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
Power to unlock	Yes
Power to lock	No
Supply voltage $U_B$	
- Min. supply voltage	20.4 V DC
- Max. supply voltage	26.4 V DC
Switch frequency	1
Rated insulation voltage $U_i$	32 V DC
Operating current $I_e$	1.2 A
Utilisation category	DC-12, DC-13
No-load current $I_0$	0,6 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, p-type
Rated operating voltage	0 V ... 4 V under Supply voltage $U_B$
Residual current $I_r$	$\leq 0,5$ mA
Operating current $I_e$	0,25 A
Utilisation category	DC-12, DC-13

### Electrical data - Diagnostic output

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Serial diagnostics (Y/N)	No
Fuse rating	p-type, short-circuit proof
Operating current $I_e$	0,05 A
Utilisation category	DC-12, DC-13
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!

### Electrical data - Solenoid control IN

Rated operating voltage $U_e$	- 3 V ... 5 V ( Low) 15 V ... 30 V ( High)
Operating current $I_e$	typically 10 mA / 24 V, dynamically 20 mA

### LED switching conditions display

LED switching conditions display (Y/N)	Yes
LED switching conditions display	
- Supply voltage $U_b$	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 Solenoid control
9	without function

### notice

As long as the actuating unit remains inserted in the solenoid interlock, the unlocked safety guard can be relocked. The safety outputs then will be enabled again; opening the safety guard therefore is not required.

### Included in delivery

Included in delivery	AZM 200 Triangular key
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Actuators must be ordered separately.

### Indication legend

see drawing: Wiring example

With the represented power-to-unlock principle, the solenoid is energised to enable the opening.

With the alternative power-to-lock principle (not represented), the solenoid must be energised to keep the device in closed condition.

## Ordering code

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AZM 200(1)(2)-T-(3)(4)

(1)

*without*

**B** Guard locking monitored

(2)

**SK** Screw connection

**CC** Spring pulley connection

**ST1** connector M23 x 1, (8+1-pole)

**ST2** connector M12 x 1, 8-pole

(3)

**1P2P** 1 Diagnostic output and 2 Safety outputs, p-type

**1P2PW** gleich - 1P2P, combined diagnostic signal: guard door closed and interlocking device locked

**SD2P** serial diagnostic output and 2 Safety outputs, p-type

(4)

*without*

**A** Power to unlock

Power to lock

## Documents

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**Operating instructions and Declaration of conformity** (pl) 372 kB, 07.06.2017

Code: mrl\_azm200t\_pl

**Operating instructions and Declaration of conformity** (jp) 450 kB, 09.10.2017

Code: mrl\_azm200t\_jp

**Operating instructions and Declaration of conformity** (es) 349 kB, 31.05.2017

Code: mrl\_azm200t\_es

**Operating instructions and Declaration of conformity** (cn) 507 kB, 23.11.2018

Code: mrl\_azm200t\_cn

**Operating instructions and Declaration of conformity** (en) 348 kB, 26.09.2017

Code: mrl\_azm200t\_en

**Operating instructions and Declaration of conformity** (pt) 355 kB, 26.05.2017

Code: mrl\_azm200t\_pt

**Operating instructions and Declaration of conformity** (fr) 353 kB, 03.07.2017

Code: mrl\_azm200t\_fr

**Operating instructions and Declaration of conformity** (it) 349 kB, 28.06.2017

Code: mrl\_azm200t\_it

**Operating instructions and Declaration of conformity** (de) 336 kB, 26.09.2017

Code: mrl\_azm200t\_de

**Operating instructions and Declaration of conformity** (nl) 398 kB, 03.08.2018

Code: mrl\_azm200t\_nl

**Operating instructions and Declaration of conformity** (da) 312 kB, 22.08.2013

Code: mrl\_azm200t\_da

**Operating instructions and Declaration of conformity** (sv) 343 kB, 07.08.2015

Code: mrl\_azm200t\_sv

**Wiring example** (99) 21 kB, 12.01.2009

Code: kazm2l26

**Diagnosis tables** (en) 136 kB, 12.01.2009

Code: b\_tabp02

**Diagnosis tables** (de) 135 kB, 12.01.2009

Code: b\_tabp01

**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

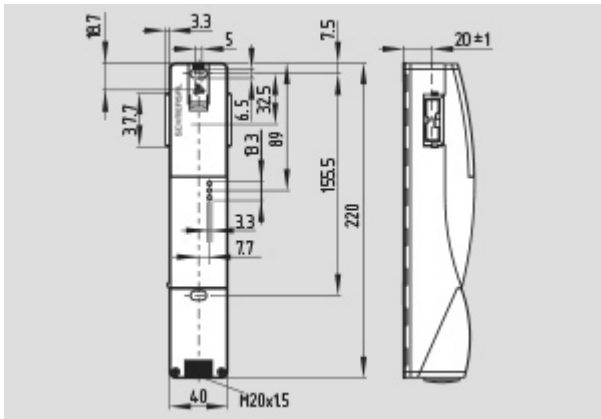
Code: z\_azmp04

**EAC certification** (ru) 809 kB, 05.10.2015

Code: q\_6040p17\_ru

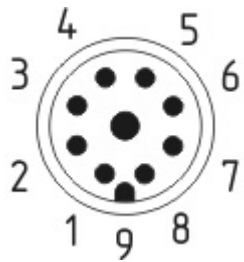
## Images

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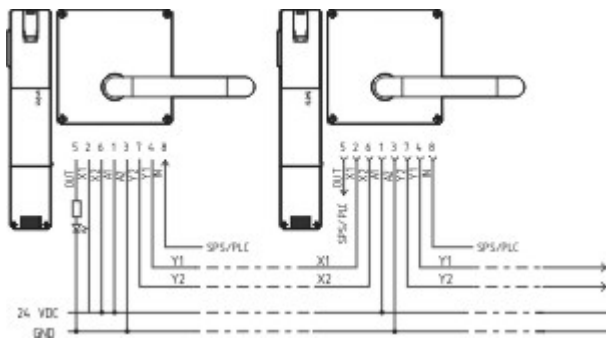
Dimensional drawing (miscellaneous)

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Contact arrangement

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Wiring example

## System components

### Actuator



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

- 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



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

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



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

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



#### 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

#### 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



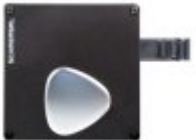
**101186150 - AZ/AZM 200-B30-LTAG1P20**

- 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



**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



**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



**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

**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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**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



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**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



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**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

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**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



#### 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



#### 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

## Connector

#### S-K9M23

- Connector without cable



- with shrink connection
- 8+1-pole



**A-K9M23**

- Pre-wired cable
- 8+1-pole

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

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