



EN Operating instructions.pages 1 to 10
Original

Content

1 About this document

1.1 Function	1
1.2 Target group: authorised qualified personnel.	1
1.3 Explanation of the symbols used	1
1.4 Appropriate use	1
1.5 General safety instructions	1
1.6 Warning about misuse	1
1.7 Exclusion of liability	2

2 Product description

2.1 Ordering code	2
2.2 Special versions.	2
2.3 Purpose	2
2.4 Technical Data	2
2.5 Safety classification of the interlocking function.	3
2.6 Safety classification of the guard locking function.	3

3 Mounting

3.1 General mounting instructions	4
3.2 Manual release	5
3.3 Emergency exit -T/-T8 or emergency release -N.	5
3.4 Mounting with mounting plate	5
3.5 Dimensions	6
3.6 Actuator and accessories.	6

4 Electrical connection

4.1 General information for electrical connection.	7
--	---

5 Functions and configuration

5.1 Mode of operation of the safety outputs.	7
5.2 Magnet control.	7
5.3 Configuration of the safety monitor	7
5.4 Programming the slave address	7
5.5 Status signal "safety release"	7
5.6 Actuator coding	8
5.7 Adjustment of the latching force.	8

6 Diagnostic

6.1 LED indications	8
6.2 Error / Error warning	8
6.3 Diagnostic information	8
6.4 Diagnostic signal periphery error (FID)	9
6.5 Locking/unlocking of the solenoid interlock blocked	9
6.6 Read-out of the parameter ports	9

7 Set-up and maintenance

7.1 Functional testing.	9
7.2 Maintenance	9

8 Disassembly and disposal

8.1 Disassembly.	9
8.2 Disposal	9

9 EU Declaration of conformity

1. About this document

1.1 Function

This operating instructions manual provides all the information you need for the mounting, set-up and commissioning to ensure the safe operation and disassembly of the safety switchgear. The operating instructions must be available in a legible condition and a complete version in the vicinity of the device.

1.2 Target group: authorised qualified personnel

All operations described in this operating instructions manual must be carried out by trained specialist personnel, authorised by the plant operator only.

Please make sure that you have read and understood these operating instructions and that you know all applicable legislations regarding occupational safety and accident prevention prior to installation and putting the component into operation.

The machine builder must carefully select the harmonised standards to be complied with as well as other technical specifications for the selection, mounting and integration of the components.

1.3 Explanation of the symbols used



Information, hint, note:

This symbol indicates useful additional information.



Caution: Failure to comply with this warning notice could lead to failures or malfunctions.

Warning: Failure to comply with this warning notice could lead to physical injury and/or damage to the machine.

1.4 Appropriate use

The Schmersal range of products is not intended for private consumers.

The products described in these operating instructions are developed to execute safety-related functions as part of an entire plant or machine. It is the responsibility of the manufacturer of a machine or plant to ensure the correct functionality of the entire machine or plant.

The safety switchgear must be exclusively used in accordance with the versions listed below or for the applications authorised by the manufacturer. Detailed information regarding the range of applications can be found in the chapter "Product description".

1.5 General safety instructions

The user must observe the safety instructions in this operating instructions manual, the country specific installation standards as well as all prevailing safety regulations and accident prevention rules.



Further technical information can be found in the Schmersal catalogues or in the online catalogue on the Internet: products.schmersal.com.

The information contained in this operating instructions manual is provided without liability and is subject to technical modifications. There are no residual risks, provided that the safety instructions as well as the instructions regarding mounting, commissioning, operation and maintenance are observed.

1.6 Warning about misuse



In case of improper use or manipulation of the safety switchgear, personal hazards or damages to machinery or plant components cannot be excluded.

1.7 Exclusion of liability

We shall accept no liability for damages and malfunctions resulting from defective mounting or failure to comply with this operating instructions manual. The manufacturer shall accept no liability for damages resulting from the use of unauthorised spare parts or accessories.

For safety reasons, invasive work on the device as well as arbitrary repairs, conversions and modifications to the device are strictly forbidden, the manufacturer shall accept no liability for damages resulting from such invasive work, arbitrary repairs, conversions and/or modifications to the device.

2. Product description

2.1 Ordering code

AZM300①-②-ST-AS-③-④-⑤

No.	Option	Description
①	Z	Guard locking monitoring 
	B	Actuator monitoring
②		Standard coding
	I1	Individual coding
	I2	Individual coding, re-teaching enabled
③	A	Power to unlock (spring-operated locking)
	A	Power to lock (magnet-operated locking)
④		Magnet supply through the AS-Interface
	P	Magnet supply 24 VDC (AUX)
⑤		Manual release
	N	Emergency release
	T	Emergency exit
	T8	Emergency exit, distance 8.5 mm

Actuator **AZ/AZM300-B1**

2.2 Special versions

For special versions, which are not listed in the order code, these specifications apply accordingly, provided that they correspond to the standard version.

2.3 Purpose

The AZM 300 -AS with non-contact electronic safety sensors is designed for application in the AS interface Safety at Work and is used for monitoring the position and blocking movable protective equipment.



The safety switchgears are classified according to EN ISO 14119 as type 4 interlocking devices. Designs with individual coding are classified as highly coded.

The different variants can be used as safety switch with interlocking function either as solenoid interlock.



If the risk analysis indicates the use of a monitored interlock then a variant with the monitored interlock is to be used, marked with the  symbol in the ordering code. The actuator monitoring variant (B) is a safety switch with an interlock function for process protection.

The safety function consists of safe switch-off of the code transmission when the guard system is unlocked or opened and maintenance of the safe switch-off state for as long as the guard system is open or unlocked.



Interlocks with power to lock principle may only be used in special cases after a thorough evaluation of the accident risk, since the safety guard can be opened immediately on failure of the power supply or upon activation of the main switch.

An AS-Interface Safety at Work component functions on the basis of an individual code generator (8 x 4 bit). This safety code is cyclically transmitted over the AS-i network and monitored by a safety monitor.



The user must evaluate and design the safety chain in accordance with the relevant standards and the required safety level.



The entire concept of the control system, in which the safety component is integrated, must be validated to the relevant standards.

2.4 Technical Data

Standards: EN 60947-5-3, EN ISO 14119, EN 62026-2, EN ISO 13849-1, EN 61508

Active principle:	RFID
Frequency band:	125 kHz
Transmitter output:	max. -6 dBm
Coding level according to EN ISO 14119:	
- I1-version:	high
- I2-version:	high
- Standard coding version:	low
Enclosure:	Plastic, glass-fibre reinforced thermoplastic
Response time:	≤ 120 ms
Duration of risk:	≤ 220 ms
Time to readiness:	≤ 5 s
Actuator:	AZ/AZM300-B1

Mechanical data

Connection:	Connector plug M12, 4-pole, A-coded
Mechanical life:	≥ 1,000,000 operations
- when used as door stop:	≥ 50,000 operations
	for safety guards ≤ 5 kg
	and actuating speed ≤ 0.5 m/s

Angular misalignment between solenoid interlock and actuator:	≤ 2°
Fixing screws:	2x M6
Tightening torque for the fixing screws:	6 ... 7 Nm
Latching force:	25 N / 50 N
Holding force F_{max} :	1.500 N
Holding force F_{Zh} :	1.150 N

Actuating distances

Rated switching distance S_n :	2 mm
Assured switch-on distance s_{ao} :	1 mm
Assured switch-off distance s_{ar} :	20 mm

Ambient conditions

Ambient temperature:	0 °C ... +60 °C
Storage and transport temperature:	-10 °C ... +90 °C
Relative humidity:	max. 93 %, non condensing, non icing

Degree of protection:	IP66, IP67, IP69 to EN 60529
Installation altitude above sea level:	max. 2,000 m
Protection class:	III
Resistance to shock:	30 g / 11 ms
Resistance to vibration:	10 ... 150 Hz, Amplitude 0.35 mm

Insulation values to IEC 60664-1:

- Rated insulation voltage U_i :	32 VDC
- Rated impulse withstand voltage U_{imp} :	0.8 kV
- Over-voltage category:	III
- Degree of pollution:	3

Electrical data - AS-Interface

AS-i supply voltage:	26.5 ... 31.6 VDC, protection against polarity reversal
- Ordering suffix „P“:	18.0 ... 31.6 VDC, protection against polarity reversal
AS-i operating current:	≤ 0.2 A
- Ordering suffix "P":	≤ 0.1 A
AS-i device insulation:	internal short-circuit proof
AS-i specification:	
- Version:	V 3.0
- Profile:	S-7.B.F.E
AS-i inputs:	
- Channel 1:	Data bits DI 0/DI 1 = dynamic code transmission
- Channel 2:	Data bits DI 2/DI 3 = dynamic code transmission
	Data bits condition static 0 or dynamic code transmission

AS-i outputs:

- DO 0: Solenoid control / Error reset
- DO 1 ... DO 3: No function

AS-i Parameter bits:

- P0: Safety guard closed AND locking/unlocking possible
- P1: Solenoid interlock locked
- P2: Auxiliary voltage in
- P3: Internal device error (FID)

Parameter request: default value parameter request "1111" (0xF)

AS-i Input module address: 0

- preset to address 0, can be changed through

AS-interface bus master or hand-held programming device

Electrical data - auxiliary voltage (AUX) ordering suffix "P"

Supply voltage U_B : 24 VDC -15% / +10% reverse polarity protection (stabilised PELV-power supply)

Power consumption: ≤ 0.3 A

Magnet switch-on time: 100 %

Switching frequency: ≤ 0.5 Hz

Device fuse rating: ≤ 4 A when used to UL 508

LED switching conditions display

green/red LED (AS-i Duo LED): Supply voltage /

Communication error /

Slave address = 0 /

Peripheral error set /

Device error detected /

Manipulation protection active

yellow LED: Device condition (Enabling status)

red LED: Internal device error



Only for use in Pollution Degree 2 Environment.
For use in NFPA 79 Applications only.
Adapters providing field wiring means are available from the manufacturer. Refer to manufacturer's information.



This device complies with part 15 of the FCC Rules and contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s):
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and
(2) this device must accept any interference received, including interference that may cause undesired operation.
This device complies with the Nerve Stimulation Exposure Limits (ISED SPR-002) for direct touch operations. Changes or modifications not expressly approved by K.A. Schmersal GmbH & Co. KG could void the user's authority to operate the equipment.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

- (1) L'appareil ne doit pas produire de brouillage.
 - (2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.
- Cet appareil est conforme aux limites d'exposition relatives à la stimulation des nerfs (ISED CNR-102) pour les opérations tactiles directes. Changements ou modifications non expressément approuvés par K.A. Schmersal GmbH & Co. KG pourrait annuler le droit de l'utilisateur à utiliser l'équipement.



Este equipamento não tem direito à proteção contra interferência prejudicial e não pode causar interferência em sistemas devidamente autorizados. Para maiores informações consultar:
www.gov.br/anatel

2.5 Safety classification of the interlocking function

Standards: EN ISO 13849-1, EN 61508

PL: up to e

Category: 4

PFH: $\leq 1.34 \times 10^{-9} / h$

PFD: $\leq 2.34 \times 10^{-4}$

SIL: suitable for SIL 3 applications

Mission time: 20 years

2.6 Safety classification of the guard locking function

If the device is used as an interlock for personal safety, a safety classification of the guard locking function is required.

When classifying the interlock function, a distinction must be made between monitoring of the interlock function (locking function) and controlling the unlocking function.

The following safety classification of the unlocking function is based on the application of the principle of safety energy disconnection for the solenoid supply

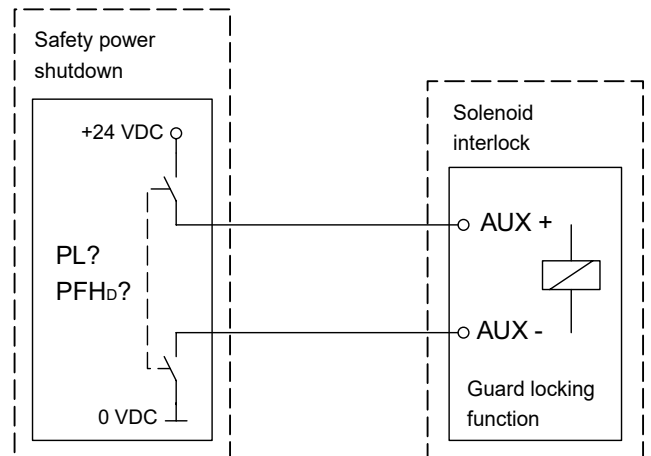


The safety classification for the release function only applies to devices with monitored interlock function, in power to unlock version and with solenoid supply from 24 VDC (AUX) (see ordering code).

A fault exclusion for the guard locking function can be assumed by an external safety energy disconnection.

In this case, the guard locking function does not have an effect on the failure probability of the unlock function.

The safety level of the unlock function is determined exclusively by the external safety power shutdown.



Fault exclusion with regard to wiring routing must be observed.



If for a certain application the power to unlock version of a solenoid interlock cannot be used, for this exception an interlock with power to lock can be used if additional safety measure need to be realised that have an equivalent safety level.

3. Mounting

3.1 General mounting instructions

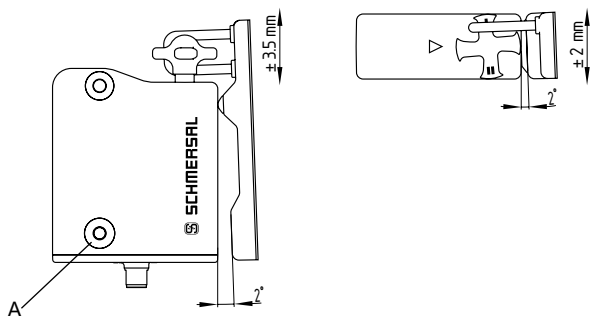


Please observe the remarks of the standards EN ISO 12100, EN ISO 14119 and EN ISO 14120.

For the correct fixing of the solenoid interlock, two mounting holes for M6 screws are provided (tightening torque: 6 ... 7 Nm).

Any mounting position. The system must only be operated with an angle of $\leq 2^\circ$ between the solenoid interlock and the actuator.

When mounting onto metallic surfaces, a galvanic connection must be realised between PE / FE and the mounting surface and fixing point "A".



The solenoid interlock can be used as an end stop. Dependant upon the door weight and the actuating speed, the mechanical life could be reduced.

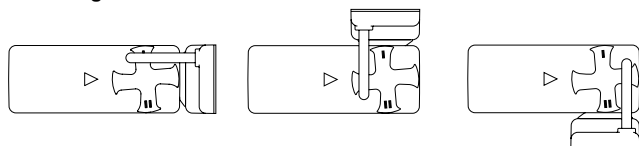
Mounting of the solenoid interlock and the actuator

Refer to the mounting instructions manual for the corresponding actuator.



The actuator must be permanently fitted to the safety guards and protected against displacement by suitable measures (tamperproof screws, gluing, drilling of the screw heads).

Actuating directions

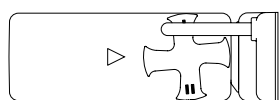


The diagrams show a closed guard system with a set latching force of 50 N (for adjustment of latching force, see chapter 5.7).

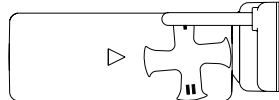


Provide for a sufficient insertion of the actuator into the rotary handle.

Correct



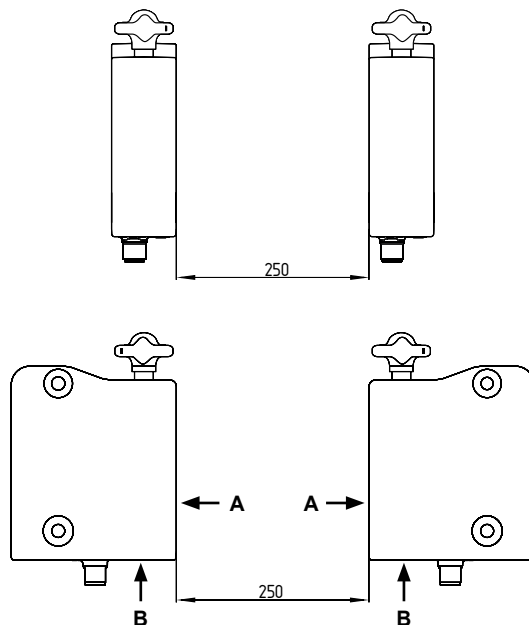
False



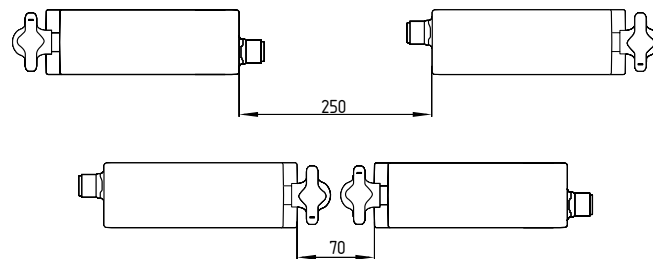
To avoid any interference inherent to this kind of system and any reduction of the switching distances, please observe the following guidelines:

- The presence of metal chips in the vicinity of the solenoid interlock is liable to modify the switching distance.
- Keep away from metal chips.

Minimum distance between two solenoid interlocks
as well as other systems with same frequency (125 kHz)



The minimum distance from metallic securing surfaces to the face side "A" and underside "B" of the device is 5 mm.

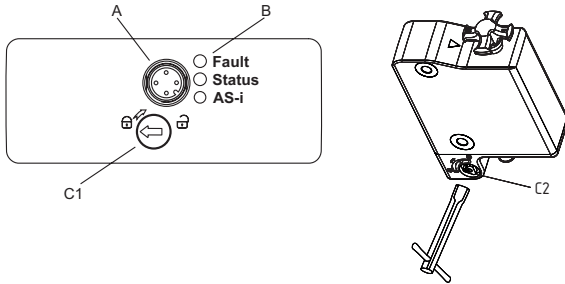


3.2 Manual release

For the machine set-up, the solenoid interlock can be unlocked in a de-energised condition. The solenoid interlock is unlocked by turning the manual release in the position . The normal locking function is only restored after the manual release has been returned to its original position .

Caution: do not turn beyond the end stop!

After being put into operation, the manual release must be sealed by means of the seal, which is included in delivery.



Key

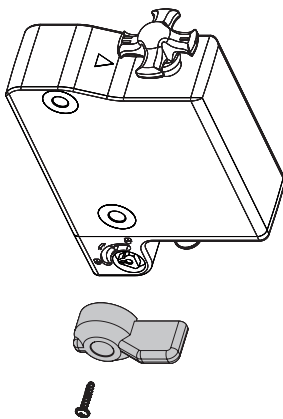
- A: Connector plug M12, 4-pole
- B: LED indications
- C1: Manual release by means of slotted screwdriver
- C2: Manual release by means of triangular key TK-M5

The manual release must be protected against accidental actuation, e.g. by using the enclosed seal after completing commissioning.

3.3 Emergency exit -T/-T8 or emergency release -N

With variants that have both emergency exit and emergency release, the red lever is loosely supplied. Before first use, mount the lever on the triangular part of the release using the screw supplied so that the arrow in the triangle and pin on the red lever are congruent.

The installation of the lever is possible on both sides. The opposite side can be used as a manual release by means of a triangular key TK-M5.



Reset of the manual release by actuating the red emergency exit lever must be prevented by the user.



Emergency exit (-T/-T8)
Mounting and actuation only from within the hazardous area.

To activate the emergency exit, turn the red lever in the direction of the arrow to the end stop. The safety outputs switch off and the guard system can be opened. The blocked position is cancelled by turning the lever in the opposite direction. In the unlocked position, the guard system is secured against unintentional locking.



Emergency release (-N)

Fitting and actuation only from outside the hazardous area. The emergency release should only be used in an emergency. The solenoid interlock should be installed and/or protected so that an inadvertent opening of the interlock by an emergency release can be prevented. The emergency release must be clearly labelled that it should only be used in an emergency. The label can be used that was included in the delivery.

To activate the emergency release turn the red lever in the direction of the arrow to the end stop. The safety outputs switch off and the guard system can be opened. The lever is latched and cannot be returned to its original position. To cancel the blocking condition, the central mounting screw must be loosened to such extent that the lever can be turned back into its original position. The screw must then be re-tightened.



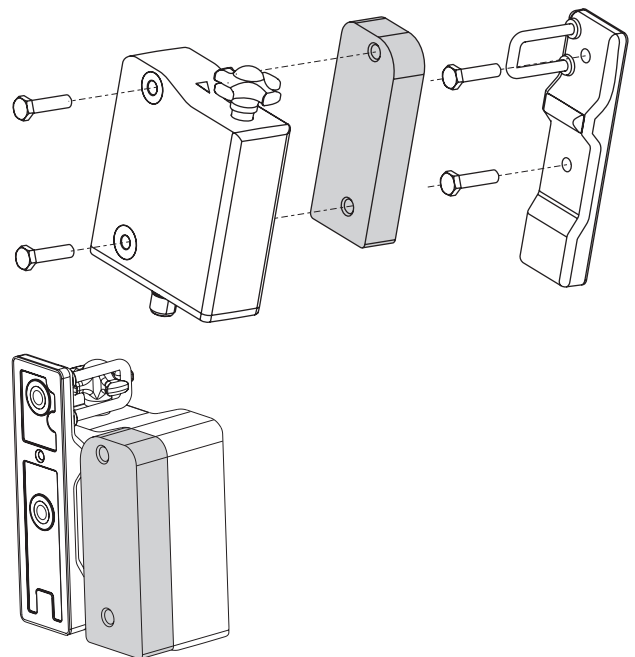
To ensure correct operation of emergency exit -T/-T8 and emergency release -N, the safety door/guard must not be in a mechanically tensioned state.



It is possible to combine an emergency exit with an emergency release. Please note that when the red lever is actuated, the opposite lever also rotates. As such, the procedure outlined above must be followed to release the emergency release lever.

3.4 Mounting with mounting plate

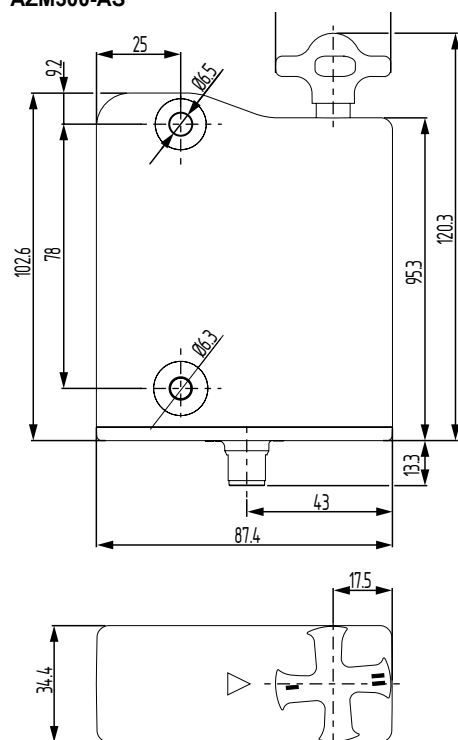
For doors, which close flush with the door frame, the optional mounting late MP-AZ/AZM300-1 can be used.



3.5 Dimensions

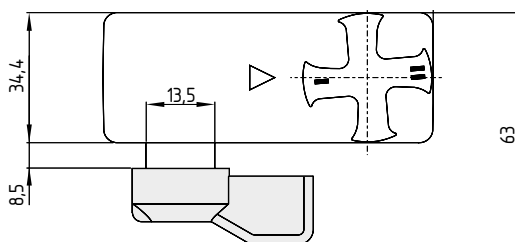
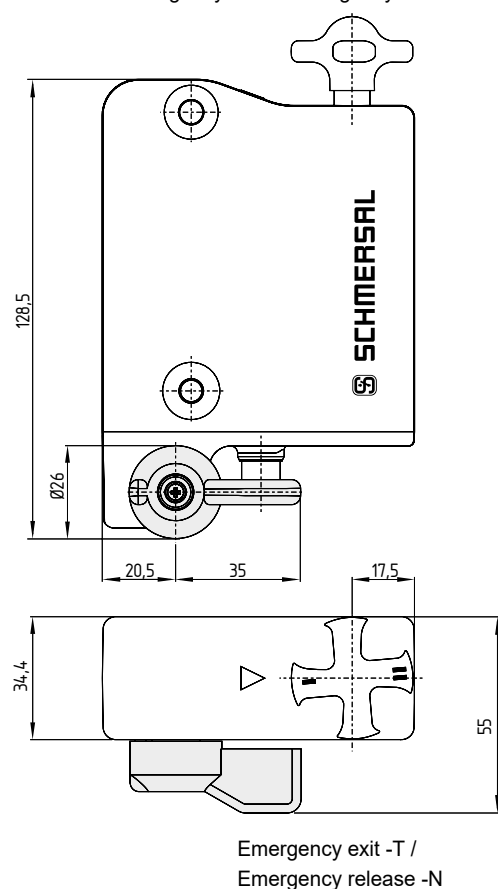
All measurements in mm.

AZM300-AS



AZM300-AS...-T/-T8 and -N

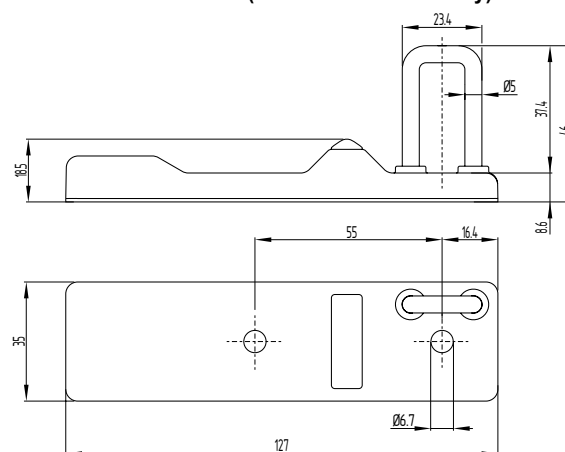
Device with emergency exit or emergency release



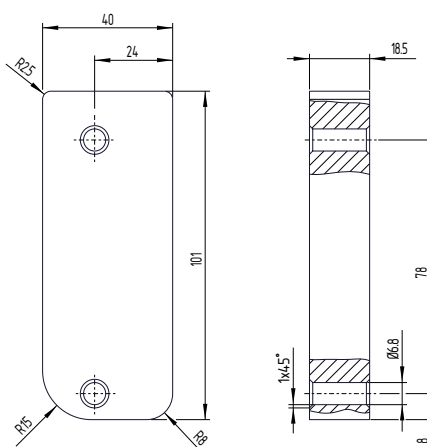
Emergency exit -T8

3.6 Actuator and accessories

Actuator AZ/AZM300-B1 (not included in delivery)

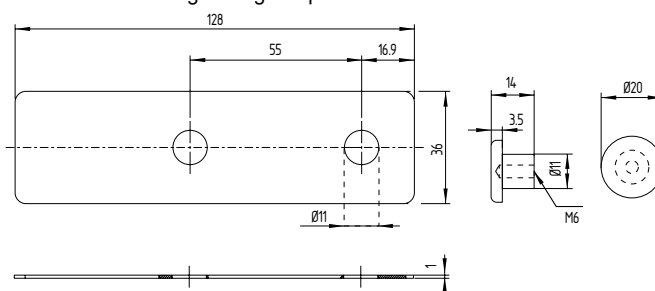


Mounting plate MP-AZ/AZM300-1 (available as accessory)

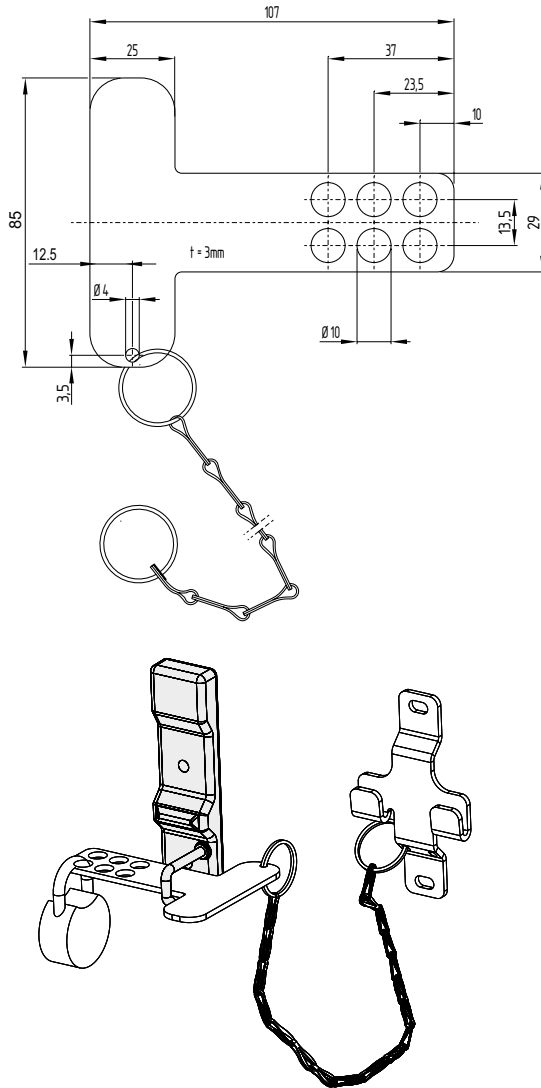


MS-AZ/AZM300-B1-1 (available as accessory)

Aluminium protective plate as a cover for use on glass and plastic doors on machines with high design requirements.

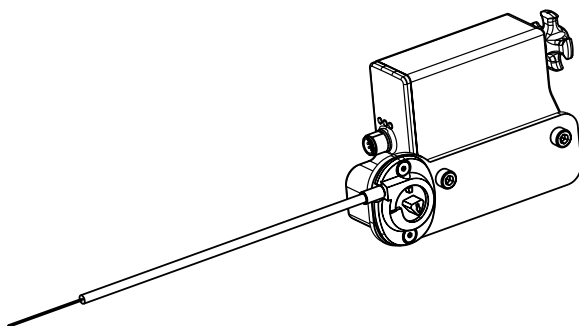


Lockout tag SZ 200-1 (available as accessory)



Bowden cable release ACC-AZM300-BOW-.-M-.M

Observe the additional notes in the operating instructions of the Bowden cable release.



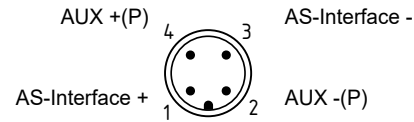
4. Electrical connection

4.1 General information for electrical connection



The electrical connection may only be carried out by authorised personnel in a de-energised condition.

The connection to the AS-Interface system is realised through an M12 connector. The M12 x 1 connector has an A-coding. The wiring configuration of the M12 connector is defined as follows (to EN 62026-2):



5. Functions and configuration

5.1 Mode of operation of the safety outputs

AZM300B-AS

The safety outputs of the AS-i safety monitor are enabled, when the following conditions are met:

- the actuator is on the device
- the turnstile is turned to the locking position by the actuator

AZM300Z-AS

The safety outputs of the AS-i safety monitor are enabled, when the following conditions are met:

- the actuator is on the device
- the turnstile is turned to the locking position by the actuator
- the solenoid interlock is locked

5.2 Magnet control

The control system with the AS-Interface Master can lock and unlock the solenoid interlock through the output bit 0 of the addressed AS-i slave AZM300-AS.

In the power to lock variant of the AZM300-AS, the functional set of output bit 0 will cause the solenoid interlock to be locked.

In the power to unlock variant of the AZM300-AS, the functional set of output bit 0 will cause the solenoid interlock to be unlocked.

Additionally, the functional set of output bit 0 will reset an error message, if the cause of the error is resolved.

5.3 Configuration of the safety monitor

The AZM300-AS can be configured in the ASIMON configuration software with the following monitoring devices. (also refer to the ASIMON manual)

Double channel dependent

- Synchronisation time: 0.1 s
- Start up test: Optional
- Local acknowledge: Optional



The configuration of the safety monitor must be tested and confirmed by a qualified and authorised safety expert/safety engineer.

5.4 Programming the slave address

The slave address is programmed through the M12 connector. Any address from 1 to 31 can be set by means of the AS-i bus master or a hand-held programming device.

5.5 Status signal "safety release"

The "safety release" status signal from a Safety at Work slave can be cyclically queried by the control system through the AS-i master. To this effect, the 4 input bits with the varying SaW code of a Safety at Work slave are evaluated through an OR operation with 4 inputs in the control system.

5.6 Actuator coding

Safety sensors with standard coding are ready to use upon delivery.

Individually coded safety sensors and actuators will require the following "teach-in" procedure:

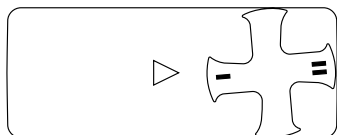
1. Switch the solenoid interlock's voltage supply off and back on.
2. Introduce the actuator in the detection range. The teach-in is signaled to the solenoid interlock, the red LED illuminates and the yellow LED flashes (1 Hz).
3. After 10 seconds, brief yellow cyclic flashes (3 Hz) request the switch-off of the operating voltage of the solenoid interlock. (If the voltage is not switched off within 5 minutes, the solenoid interlock cancels the "teach-in" procedure and signals a false actuator by 5 red flashes).
4. After the operating voltage is switched back on, the actuator must be detected once more in order to activate the taught actuator code. In this way, the activated code is definitively saved!

For ordering suffix -I1, the executed allocation of safety sensor and actuator is irreversible.

For ordering suffix -I2, the "teach-in" procedure for a new actuator can be repeated an unlimited number of times. When a new actuator is taught, the code, which was applicable until the moment, becomes invalid. Subsequent to that, an enabling inhibit will be active for ten minutes, thus providing for an increased protection against tampering. The AS-i Duo LED will flash red/green until the expiration of the time of the enabling inhibit and the detection of the new actuator. In case of power failure during the lapse of time, the 10-minutes tampering protection time will restart.

5.7 Adjustment of the latching force

In order to enable trouble-free functionality of the device, the rotary handle must be in position I or II when the safety guard is open. In the intermediate positions, locking is impossible. The latching force is changed by turning the rotary handle by 180°. In position I, the latching force is approx. 25 N. In position II, the latching force is approx. 50 N.



6.3 Diagnostic information

Table 1: Diagnostic information of the safety switchgear AZM300-AS

The safety switch signals the switching condition as well as malfunctions via three coloured LEDs installed on the device.

System condition	Solenoid control (DO 0)		LED indications			Fault diagnostic		Authorised operation
	Power to lock	Power to unlock	red-green AS-i duo-LED	red Error	yellow Status	FID-Bit	P3	
Safety guard open	0	1	green	Off	Off	0	0	static 0
Safety guard closed	0	1	green	Off	Flashes	0	0	AZM300B-AS: dynamic AZM300Z-AS: static 0
Solenoid interlock locked	1	0	green	Off	on	0	0	dynamically
Tampering protection time active	0/1	0/1	red-green flashing	Off	Off	1	0	static 0
Locking / unlocking blocked	0/1	0/1	red-green flashing	Off	depending on the condition	1	1	static 0
Device fault detected	0/1	0/1	red-green flashing	Flashes ¹⁾	Off	1	1	static 0
AS-i error: Slave address = 0 or communication error	0/1	0/1	red	depending on the condition		0	0	static 0

¹⁾ refer to flash code

6. Diagnostic

6.1 LED indications

The solenoid interlock signals the operational state as well as errors through three coloured LED's installed on the front side of the device.

The LEDs have the following meaning (in accordance with EN 62026-2)

LED green-red (AS-i Duo LED):	AS-Interface supply voltage / AS-Interface communication error / Slave address = 0 / Periphery error set / Device error detected / Manipulation protection time active
Yellow LED:	Device status / Release status (Actuator applied / interlock locked)
Red LED:	Device error (see table 2)

6.2 Error / Error warning

Errors, which no longer guarantee the safe functionality of the AZM300-AS electromagnetic interlock, cause the safety outputs to be switched off within the duration of risk and are signaled through a flashing pattern of the red LED (see table 2).

After fault rectification, the error message can be reset by opening and closing the relevant guard door. The safety outputs of the safety monitor can be switched back on, thus enabling the machine.

With an excess temperature in the device the system is safely switched off only after 30 mins. as the safe functioning of the AZM300-AS is guaranteed.

The fault warning is via the permanent port P3 and the FID-Bit. These advanced fault warnings can be used to control the process switch off.

Table 2: Error messages / flash codes red LED

Flash codes (red)	Designation	Autonomous switch-off after	Error cause
4 flash pulses	Excess device temperature	30 min	Internal temperate too high, $T > 90\text{ °C}$ (FID)
5 flash pulses	Actuator fault	0 min	Incorrect or defective actuator, bracket broken (FID), malfunction of the RFID signal
6 flash pulses	Fault rotary handle	0 min	Rotary handle in non-authorised intermediate position
Continuous red signal	Internal error	0 min	Device defective (FID)

6.4 Diagnostic signal periphery error (FID)

All error messages of the safety switchgear are also transmitted as a "periphery error" to the control system through the AS-i master.

A "periphery error" (FID input of the AS-i chip) is signaled by the alternating red and green flashing of the AS-i duo LED on the AS-i device.

The peripheral error is also set when the manipulation protection time with the teach-in process of a new actuator terminates.

6.5 Locking/unlocking of the solenoid interlock blocked

This error is transmitted, when the solenoid interlock no longer can be correctly locked or unlocked.

The causes for this error can be a safety door not correctly closed, the actuator is deformed, tension on the actuator, the manual release is not correctly reset or the auxiliary voltage is missing.

6.6 Read-out of the parameter ports

The parameter port P0 to P3 of an AS-i slave can be read out through the control interface of the AS-i master (see component description) by using the "Write parameter" instruction (with hexadecimal value F). This (non-safe) diagnostic information from the reflected parameters or the answer to a "Write parameter instruction" can be used by the user for diagnostic purposes or for the control programme.

Diagnostic information (P0 ... P3)

Parameter bit	Condition = 1
0	Safety guard closed AND locking/unlocking possible
1	Solenoid interlock locked
2	Auxiliary (AUX) voltage in
3	Internal device error detected (FID)

The leading diagnosis message through bit 0 indicates whether locking or unlocking of the guard system is possible.

The solenoid interlock **cannot be unlocked** if e.g. the door pulls the turret out of its rest position beyond the set latching force. This can occur if doors are heavily distorted or when pulling the door.

The solenoid interlock can only be **locked** if the turret is in the rest position, i.e. the latching force is sufficient to pull the guard system into the correct position.

7. Set-up and maintenance

7.1 Functional testing

The safety function of the safety components must be tested. The following conditions must be previously checked and met:

1. Check max. axial misalignment of actuator and solenoid interlock.
2. Check max. angular misalignment (see "Mounting" part)
3. Fitting and integrity of the cable connections.
4. Check the switch enclosure for damage.
5. Remove particles of dust and soiling.

6. For versions with emergency exit and emergency release the following should also be considered:

- For versions with emergency exit it must be possible to open the guard system from within the hazardous area; it must not be possible that the guard system is blocked from the inside.
- By operating the emergency release lever outside of the hazardous zone it must be possible to open the guard system.

7.2 Maintenance

In the case of correct installation and adequate use, the safety switchgear features maintenance-free functionality.

A regular visual inspection and functional test, including the following steps, is recommended:

- Check for a secure installation of the actuator and the solenoid interlock
- Check max. axial misalignment of actuator and solenoid interlock.
- Check max. angular misalignment (see "Mounting" part)
- Fitting and integrity of the cable connections.
- Check the switch enclosure for damages
- Remove soiling



Measures must be taken to protect against manipulation or against the bypassing of safety device, for example, using an extra actuator.

Damaged or defective components must be replaced.

8. Disassembly and disposal

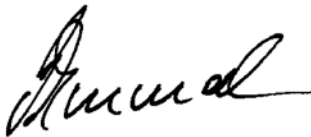
8.1 Disassembly

The safety switchgear must be disassembled in a de-energised condition only.

8.2 Disposal

The safety switchgear must be disposed of in an appropriate manner in accordance with the national prescriptions and legislations.

9. EU Declaration of conformity

EU Declaration of conformity		 SCHMERSAL
Original	K.A. Schmersal GmbH & Co. KG Möddinghofe 30 42279 Wuppertal Germany Internet: www.schmersal.com	
We hereby certify that the hereafter described components both in their basic design and construction conform to the applicable European Directives.		
Name of the component:	AZM300-AS	
Type:	Refer to ordering code	
Description of the component:	Interlocking device with electromagnetic interlock for safety functions with integrated AS-I Safety at Work	
Relevant Directives:	Machinery Directive 2006/42/EC RED-Directive 2014/53/EU RoHS-Directive 2011/65/EU	
Applied standards:	EN 60947-5-3:2013 EN ISO 14119:2013 EN 300 330 V2.1.1:2017 EN ISO 13849-1:2015 IEC 61508 Parts 1-7:2010	
Notified body for Type Examination:	TÜV Rheinland Industrie Service GmbH Am Grauen Stein, 51105 Köln ID n°: 0035	
EC-Type Examination Certificate:	01/205.5281.04/23	
Person authorised for the compilation of the technical documentation:	Oliver Wacker Möddinghofe 30 42279 Wuppertal	
Place and date of issue:	Wuppertal, June 20, 2023	
AZM300AS-F-EN		
	Authorised signature Philip Schmersal Managing Director	



The currently valid declaration of conformity can be downloaded from the internet at products.schmersal.com.

