SCHMERSAL

EN Operating instructions. . . . . .pages 1 to 12
Translation of the original operating instructions

Content

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 is used for identifying 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 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 machinery 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".

x.000 / Januar 2015 / v.A. - 103001171-EN / D / 2015-01-09 / AE-Nr. 4245

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: www.schmersal.net.

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 when safety switchgear is used. The relevant requirements of the standard EN 14119 must be observed.

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-③-④-⑤

No.	Option	Beschreibung
①	Z	Solenoid interlock monitored
	B	Actuator monitored
②		Standard coding
	I1	Individual coding
	I2	Individual coding, re-teaching enabled
③	1P2P	1 p-type diagnostic output and 2 p-type safety outputs
	SD2P	Serial diagnostic output and 2 p-type safety outputs
④		Power to unlock
	A	Power to lock
⑤		Manual release
	T	Emergency exit
	N	Emergency release

Actuator **AZ/AZM300-B1**

2.2 Special versions

For special versions, which are not listed in the order code below 2.1, these specifications apply accordingly, provided that they correspond to the standard version.

2.3 Comprehensive quality insurance to 2006/42/EC

Schmersal is a certified company to appendix X of the Machinery Directive. As a result, Schmersal is entitled to autonomously conduct the conformity assessment procedure for the products listed in Appendix IV of the MD without involving a notified body. In addition to that, the EC prototype test certificates are available upon request or can be downloaded from the Internet at www.schmersal.com.

2.4 Destination and use

The AZM 300 with non-contact electronic safety sensors is designed for application in safety circuits and is used for monitoring the position of movable safety guards.

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

For applications requiring a safe monitoring of the interlocking function, the AZM300Z variant must be selected. The AZM300B variant is a safety switch with additional locking function.

The safety function consists of safely switching off the safety outputs when the safety guard is unlocked or opened and maintaining the safe switched off condition of the safety outputs for as long as the safety guard is open.

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.

Emergency exit (T)

Fitting 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)

Mounting and actuation only outside of the safety guard.

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 retightened.

Series-wiring
Series-wiring can be set up. The response and risk times are not altered by wiring in series. The number of components is only limited by the external cable protection according to the technical data and the line loss. Series-wiring of up to 31 AZM300 … SD components with serial diagnostics is possible. In devices with the serial diagnostics function (ordering suffix -SD), the serial diagnostics connections are wired in series and connected to a SD Gateway for evaluation purposes. Wiring examples for series-wiring, refer to appendix.

The user must evaluate and design the safety chain in accordance with the relevant standards and the required safety level. If multiple safety sensors are involved in the same safety function, the PFH values of the individual components must be added.

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

2.5 Technical data

Standards:	IEC 60947-5-1, IEC 60947-5-3, IEC 61508, ISO 13849-1
Material of the housings:	glass-fibre reinforced thermoplastic, ventilated
Working principle:	RFID
Coding levels according to ISO 14119:	
- variant I1:	high
- variant I2:	high
Series-wiring:	Unlimited number of components, please observe external cable protection, max. 31 components in case of serial diagnostics
Length of the sensor chain:	max. 200 m
Response time:	≤ 120 ms
Duration of risk:	≤ 200 ms
Time to readiness:	≤ 5 s
Actuator:	AZ/AZM300-B1
Switch distances	
Rated switching distance S_n:	2 mm
Assured switching distance s_{ao}:	1 mm
Assured switch-off distance s_{ar}:	20 mm
Mechanical data	
Execution of the electrical connection:	M12 connector plug, 8 poles, 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
Max. tightening torque:	1.8 Nm
Latching force:	25 N / 50 N
Holding force F:	1000 N
Ambient conditions	
Ambient temperature:	0° C ... +60° C
Storage and transport temperature:	−10 °C ... +90° C
Protection class:	IP66, IP67 to IEC/EN 60529 IP69K to DIN 40050-9
Protection class:	II
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
- Overvoltage category:	III
- Degree of pollution:	3
Electrical data	
Supply voltage U_B:	24 VDC (−-15 % / +10 %) stabilised PELV units
Switching frequency:	0.5 Hz
Power consumption without load:	0.1 A
Power consumption with solenoid enabled:	0.25 A
Switch-on time ED:	100 %
Required rated short-circuit current:	100 A
External Device fuse rating:	2 A (T)
Electrical data - Safety inputs	
Safety inputs:	X1 and X2
Switching thresholds:	− 3 V … 5 V (Low), 15 V … 30 V (High)
Power consumption:	≤ 5 mA / 24 V
Electrical data - Safety outputs	
Safety outputs:	Y1 and Y2
Switching elements:	p-type, short-circuit proof
Utilisation category:	AC-12, DC-13
Rated operating voltage U_e:	0 V ... 4 V under supply voltage U_B
Rated operating current I_e:	0.25 A
Leakage current I_r:	≤ 0.5 mA
Test impulse width:	< 0.5 ms
Test frequency:	1 Hz
Electrical data - Diagnostic output	
Diagnostic output:	OUT
Switching element:	p-type, short-circuit proof
Utilisation category:	AC-12, DC-13
Rated operating voltage U_e:	0 V ... 4 V under supply voltage UB
Rated operating current I_e:	0.05 A
Electrical data - Magnet control:	
Solenoid input:	IN
Switching thresholds:	− 3 V … 5 V (Low), 15 V … 30 V (High)
Power consumption:	10 mA / 24 V
Switch-on time ED:	100 %
LED status display:	
Green LED:	Supply voltage
Yellow LED:	device condition
Red LED:	Internal device error

This device is intended to be powered by a Listed Limited Voltage, Limited Current or Class 2 source.
This device shall be powered with the use of a Listed (CYJV) cable/connector assembly rated 24 Vdc, 0,8 A minimum.

2.6 Safety classification

Standards:	ISO 13849-1, IEC 61508
PL:	e
Control Category:	4
PFH value:	5.2×10^{-10} / h
PFD:	9.0×10^{-5}
SIL:	suitable for SIL 3 applications
Service life:	20 years

3. Mounting

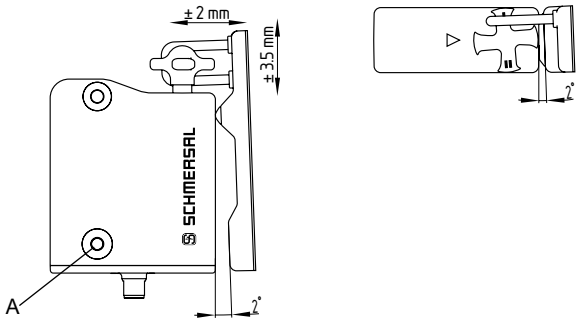
3.1 General mounting instructions

For the correct fixing of the solenoid interlock, the device is provided with two mounting holes for M6 screws.

Please observe the remarks of the standards ISO 12100, EN 953 and ISO 14119.

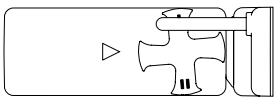
The solenoid interlock can be used as an end stop. Dependant upon the door weight and the actuating speed, the mechanical life could be reduced.

Any mounting position. The system must only be operated with an angle of ≤ 2° between the solenoid interlock and the actuator. When mounting the solenoid interlock onto metallic surfaces, a galvanic connection must be realised between the mounting surface and fixing point "A".

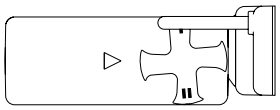


Provide for a sufficient insertion of the actuator into the rotary handle

Correct



False

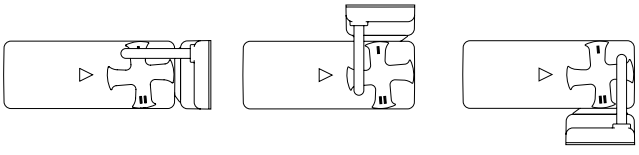


The safety component and the actuator must be permanently fitted to the safety guards and protected against displacement by suitable measures (tamperproof screws, gluing, drilling, pinning).

Mounting of the solenoid interlock and the actuator

Refer to the mounting instructions manual for the corresponding actuator.

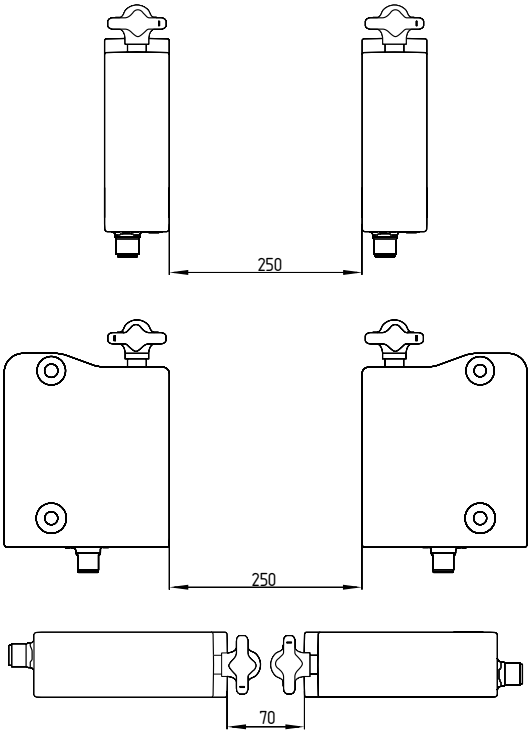
Actuating directions



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.

Observe the minimum distance between two solenoid interlocks

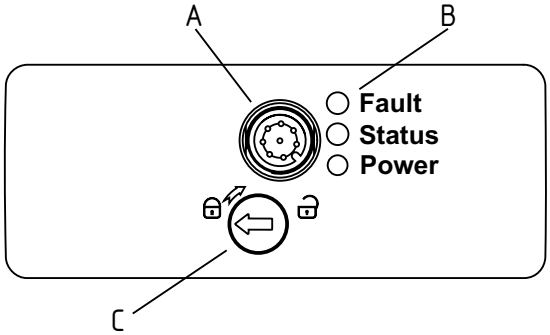


3.2 Manual release

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.

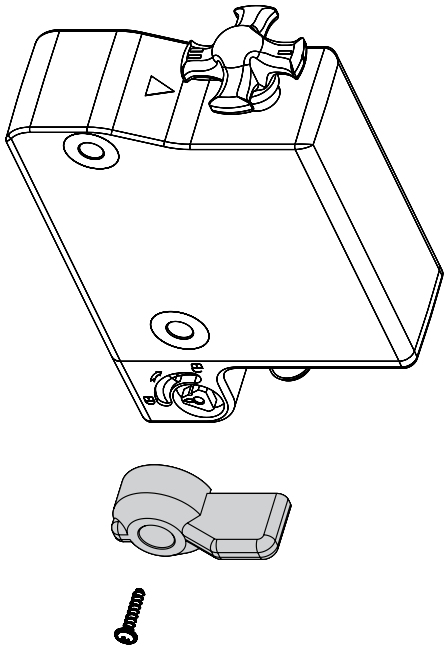


Key

A: Connector plug M12, 8-pole
B: LED indications
C: Manual release

3.3 Emergency exit -T or emergency release -N

With variants that have both emergency exit and emergency release, the red lever is loosely supplied. The lever should be fastened to the position intended with the supplied screws before first being used.
The lever should be installed on the unlocking triangle in such a way that the arrow on the triangle and the lever pivot are congruent. The opposite side of the lever is to be shut with the enclosed seal.

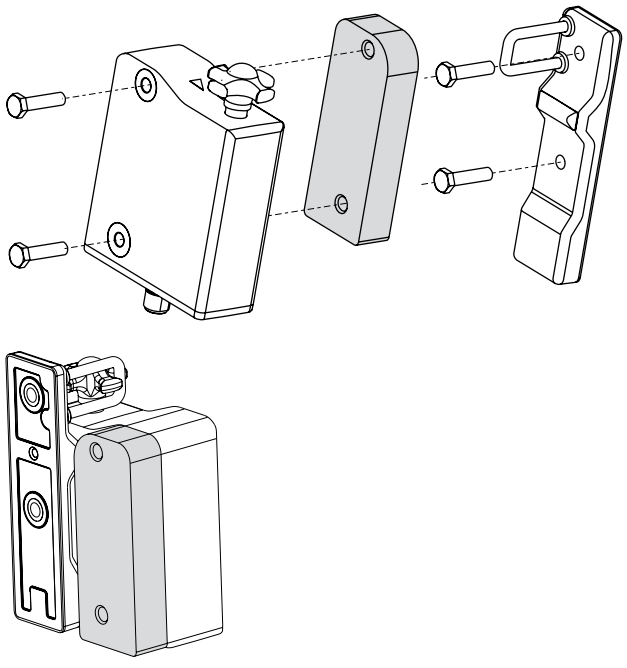


Emergency exit (-T)
Fitting and actuation only from within the hazardous area.

Emergency release (-N)
Mounting and actuation only outside of the safety guard.

3.4 Mounting with mounting plate

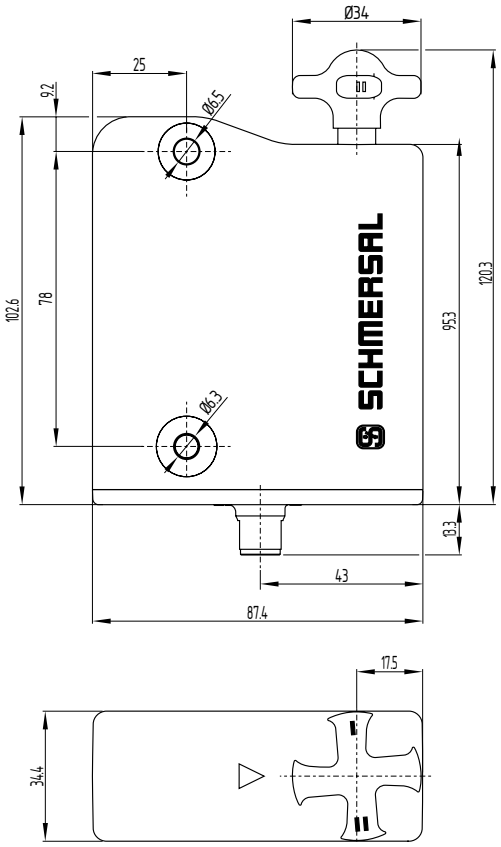
For doors, which close flush with the door frame, the optional mounting late MP-AZ/AZM300-1 can be used.



3.5 Dimensions

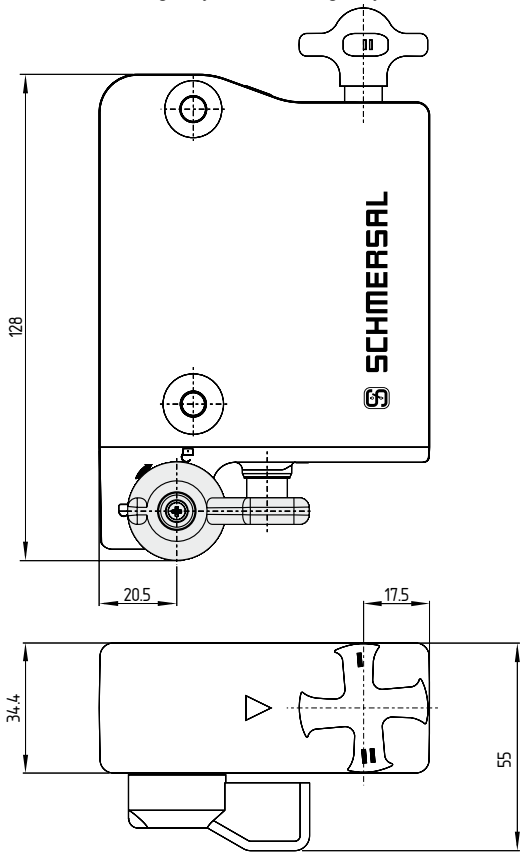
All measurements in mm.

AZM300



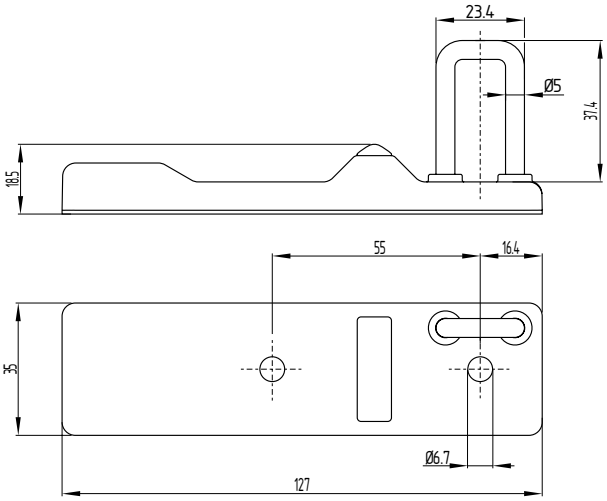
AZM300...-T/-N

Device with emergency exit or emergency release

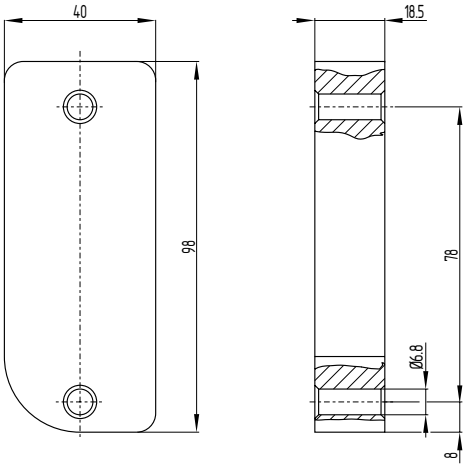


3.6 Actuator and accessories

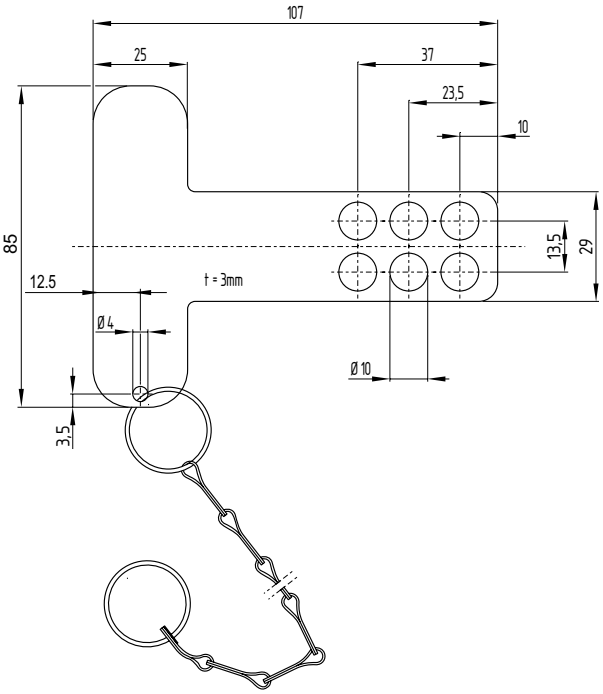
Actuator AZ/AZM300-B1 (not included in delivery)

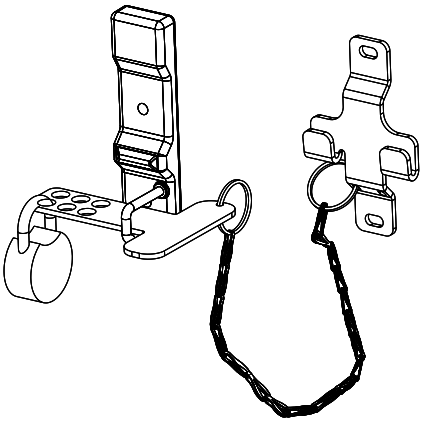


Mounting plate MP-AZ/AZM300-1 (available as accessory)



Lockout tag SZ 200-1 (available as accessory)





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 voltage inputs A1, X1, X2 and IN must have a protection against permanent overvoltage. The use of PELV supply units according to IEC 60204-1 is recommended.

The safety outputs can be integrated in the safety circuit of the control system.

Requirements for the connected safety-monitoring module:

- Dual-channel safety input, suitable for p-type semi-conductor outputs
- Test function
  The solenoid interlock cyclically switch off the safety output to test them. The safe The switch-off times must be tolerated by the safety-monitoring module. Additionally, the switch-off time of the solenoid interlock can be extended depending on the cable length and the capacity of the cable used. Typically, a switch-off time of 250 µs is reached with a 30-m connecting cable.

Information for the selection of suitable safety-monitoring modules can be found in the Schmersal catalogues or in the online catalogue on the Internet: www.schmersal.net.

Cable design in case of serial diagnostics

When wiring SD devices, please observe the voltage drop on the cables and the current carrying capacity of the individual components.

The wiring capacity of the connecting cable of the solenoid interlock must not exceed 50 nF. Depending on the strand structure, normal unshielded 30 m long control cables LIYY 0.25 mm² to 1.5 mm² have a wiring capacitance of approx. 3 … 7 nF.

5. Operating principles, coding and latching force

5.1 Magnet control

In the power to unlock version of the AZM300, the solenoid interlock is unlocked when the IN signal (= 24V) is set. In the power to lock version of the AZM300, the solenoid interlock is locked when the IN signal (= 24 V) is set.

5.2 Mode of operation of the safety outputs

In the standard AZM 300Z variant, the unlocking of the solenoid interlock causes the safety outputs to be disabled. The unlocked safety guard can be relocked as long as the actuator is inserted in the AZM 300Z solenoid interlock; in that case, the safety outputs are re-enabled. The safety guard must not be opened.
In the AZM300B version, only the opening of the safety guard causes the safety outputs to be disabled.

If the safety outputs are already enabled, any error that does not immediately affect the functionality of the solenoid interlock (e.g. too high an ambient temperature, interference potential at the safety outputs, cross-wire short) will lead to a warning message, the disabling of the diagnostic output and the delayed shutdown of the safety outputs. The safety outputs are disabled if the error warning is active for 30 minutes. The signal combination, diagnostic output disabled and safety channels still enabled, can be used to stop the production process in a controlled manner. After the rectification of the error, the error message is reset by opening the corresponding safety guard. For devices with serial diagnostic, a bit can be set/ deleted in the call telegram to reset the fault.

5.3 Actuator teaching / actuator detection

Solenoid interlocks with standard coding are ready to use upon delivery.

Individually coded solenoid interlocks and actuators will require the following "teach-in" procedure:

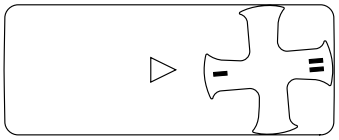
1. Switch the solenoid interlock's voltage supply off and back on.
2. Introduce the actuator in the detection range. The teach-in procedure is signalled at the solenoid interlock, green LED off, red LED on, yellow LED flashes (1 Hz).
3. After 10 seconds, brief yellow cyclic flashes (3 Hz) request the switch-off of the operating voltage of the solenid 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 thus executed allocation of safety switchgear 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 that moment, becomes invalid. Subsequent to that, an enabling inhibit will be active for ten minutes, thus providing for an increased protection against tampering. The green LED will flash 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.

5.4 Latching force adjustment

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. Diagnostic function

6.1 Diagnostic-LEDs

The solenoid interlock signals the operating condition, as well as errors through 3-colour LED's.

green (Power)	supply voltage on
yellow (Status)	operating condition
red (Fault)	Fault (see Table 2: Flash codes of the red diagnostic LED)

6.2 Solenoid interlock with conventional diagnostic output

The short-circuit proof diagnostic output OUT can be used for central visualisation or control functions, e.g. in a PLC.

The diagnostic output is not a safety-related output!

Error

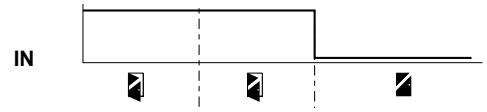
Errors, which no longer guarantee the function of the solenoid interlock (internal errors) cause the safety outputs to be disabled within the risk time. Any error that does not immediately affect the safe functionality of the AZM300 solenoid interlock (e.g. the ambient temperature too high, interference potential at a safety output, cross-wire short) will lead to a delayed shut-down (refer to table 2). After the rectification of the error, the error message is reset by opening the corresponding safety guard.

Error warning

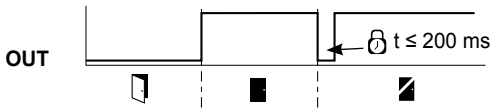
A fault has occurred, which causes the safety outputs to be disabled after 30 minutes (LED "fault" flashes, see Table 2). The safety outputs initially remain enabled. This enables the shutdown of the process in a controlled manner. An error warning is deleted when the cause of error is eliminated.

Behaviour of the diagnostic output

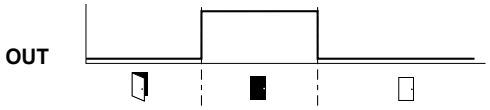
Input signal magnet control



Normal sequence, door was locked



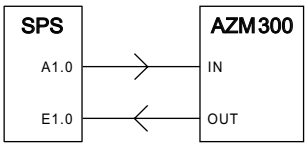
Door could not be locked or fault



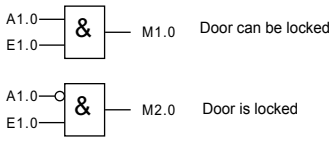
Key

- Safety guard open
- Safety guard closed
- Unlock safety guard
- Safety guard locked
- Delay time
- Guard not locked or fault

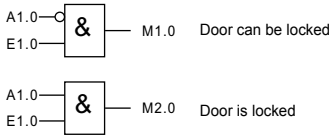
Evaluation of the diagnostic outputs



Power to unlock: IN = 0 = locking



Power to lock: IN = 1 = locking



Diagnostic information

Table 1: Diagnostic information of the safety switchgear
The safety switch signals the operational state as well as errors through three coloured LED's installed on the device.

System condition	Solenoid control IN		LED			Safety outputs Y1, Y2		Diagnostic output OUT
	Power to unlock	Power to lock	green	red	yellow	AZM300Z	AZM300B	
Safety guard open	24 V (0 V)	0 V (24 V)	On	Off	Off	0 V	0 V	0 V
Door closed, **not locked**	24 V	0 V	On	Off	Flashes	0 V	24 V	24 V
Door closed, **locking impossible**	0 V	24 V	On	Off	Flashes	0 V	24 V	0 V
Door closed and locked	0 V	24 V	On	Off	On	24 V	24 V	24 V
Error warning [1]	0 V	24 V	On	Flashes [2]	Off	24 V[1]	24 V[1]	0 V
Error	0 V (24 V)	24 V (0 V)	On	Flashes [2]	Off	0 V	0 V	0 V
Additionally for variant I1/I2:								
Teach-in procedure actuator started			Off	On	Flashes	0 V	0 V	0 V
Only I2: teach-in procedure actuator (release block)			Flashes	Off	Off	0 V	0 V	0 V

1) after 30 min: disabling due to fault
2) refer to flash code

Table 2: Error messages / flash codes red diagnostic LED

Flash codes (red)	Designation	Autonomous switch-off after	Error cause
1 flash pulse	Error (warning) at output Y1	30 min	Fault in output test or voltage at output Y1, although the output is disabled.
2 flash pulses	Error (warning) at output Y2	30 min	Fault in output test or voltage at output Y2, although the output is disabled.
3 flash pulses	Error (warning) cross-wire short	30 min	Cross-wire short between the output cables or fault at both outputs
4 flash pulses	Error (warning) temperature too high	30 min	The temperature measurement reveals an internal temperature that is too high
5 flash pulses	Actuator fault	0 min	Incorrect or defective actuator, bracket broken
6 flash pulses	Fault rotary handle	0 min	Rotary handle not in authorised intermediate position
Continuous red signal	Internal error	0 min	

6.3 Solenoid interlock with serial diagnostic function SD

Solenoid interlocks with serial diagnostic cable have a serial input and output cable instead of the conventional diagnostic output. If solenoid interlocks are wired in series, the diagnostic data are transmitted through the series-wiring of the inputs and outputs.

Max. 31 solenoid interlocks can be wired in series. For the evaluation of the serial diagnostics line either the PROFIBUS-Gateway SD-I-DP-V0-2 or the Universal-Gateway SD-I-U-... are used. This serial diagnostic interface is integrated as a slave in an existing field bus system. In this way, the diagnostic signals can be evaluated by means of a PLC.

The response data and the diagnostic data are automatically and permanently written in an input byte of the PLC for each solenoid interlock in the series-wired chain. The request data for each solenoid interlock is transmitted to the component through an output byte of the PLC. In case of a communication error between the field bus gateway and the solenoid interlock, the switching condition of the solenoid interlock is maintained.

Error
A fault has occured, which causes the safety outputs to be disabled. The fault is reset, when the cause is eliminated and bit 7 of the request byte changes from 1 to 0 or the safety guard is opened. Faults at the safety outputs are only deleted upon the next release, as the fault rectification cannot be detected sooner.

If more than one fault is detected at the safety outputs, the AZM 300 will be electronically locked and a normal fault reset will no longer be possible. To reset this type of interlocking, the AZM 300, must be isolated from the power supply after elimination of the error causes.

Error warning
A fault has occurred, which causes the safety outputs to be disabled after 30 minutes. The safety outputs initially remain enabled. This enables the shutdown of the process in a controlled manner. An error warning is deleted when the cause of error is eliminated.

Diagnostic error (warning)
If an error (warning) is signalled in the response byte, detailed fault information can be read out.

Accessories for the series-wiring
To provide for a comfortable wiring and series-wiring of SD components, the connectors and the SD-2V-F-SK SD junction boxes (variant for the field in closed enclosure) and SD-2V-S-SK (variant for DIN rail mounting in the control cabinet) are available.

When wiring SD devices, please observe the voltage drop on the cables and the current carrying capacity of the individual components.

Table 3: I/O data and diagnostic data

Bit n°	Request byte	Response byte	Diagnostic error warning	Diagnostic error
Bit 0:	Magnet on, irrespective of power to lock or power to unlock principle	Safety output activated	Error output Y1	Error output Y1
Bit 1:	---	Actuator detected	Error output Y2	Error output Y2
Bit 2:	---	Actuator detected and locked	Cross-wire short	Cross-wire short
Bit 3:	---	---	Temperature too high	Temperature too high
Bit 4:	---	Input condition X1 and X2	---	Incorrect or defective actuator, bracket broken
Bit 5:	---	Coding recognised	Internal device error	Internal device error
Bit 6:	---	Error warning [1)]	Communication error between the field bus Gateway and the safety switchgear	---
Bit 7:	Error reset	Error (enabling path switched off)	Rotary handle not in authorised intermediate position	Rotary handle not in authorised intermediate position

1) after 30 min -> fault

The described condition is reached, when Bit = 1

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 variants with an emergency exit and emergency release, the following is to be considered:
   - For variants with emergency exits it should be possible to open the safety guard inside the hazardous area; it should not be possible to lock the safety guard from 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

Adequate measures must be taken to ensure protection against tampering either to prevent tampering of the safety guard, for instance by means of replacement actuators.

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.

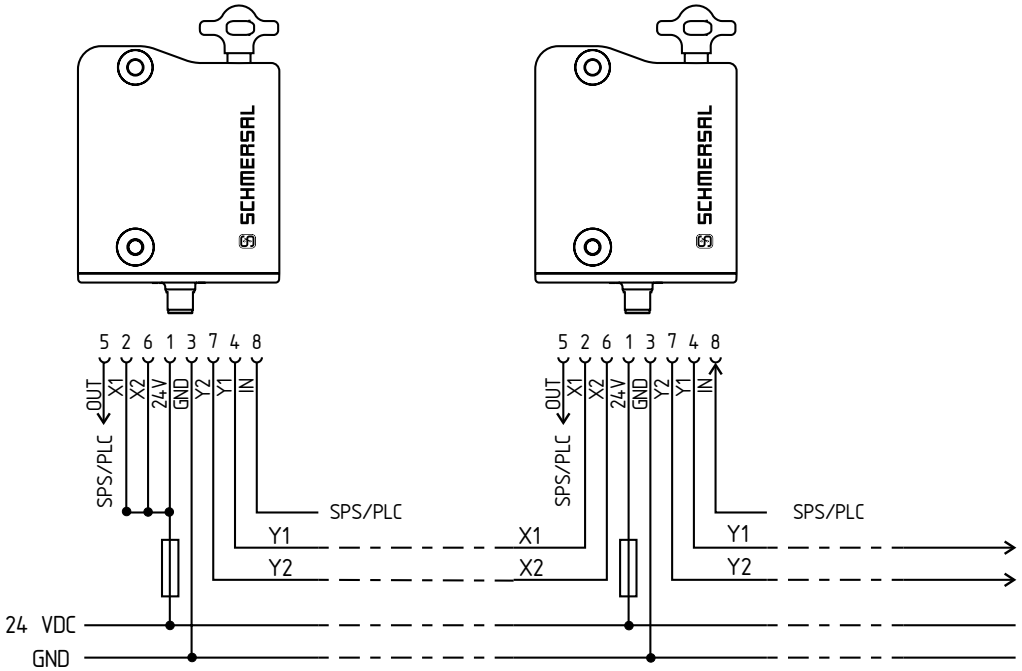
9. Appendix

9.1 Wiring examples

The application examples shown are suggestions. They however do not release the user from carefully checking whether the switchgear and its set-up are suitable for the individual application.

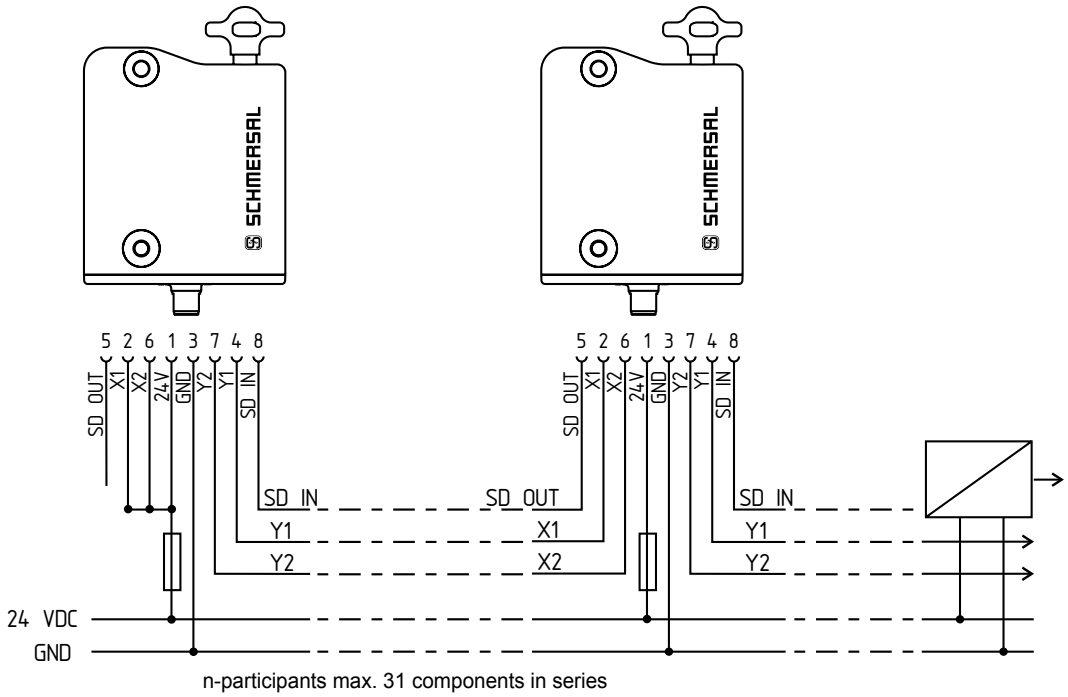
Wiring example 1: Series-wiring of the AZM300 with conventional diagnostic output

The voltage is supplied at both safety inputs of the terminal safety component of the chain (considered from the safety-monitoring module).
The safety outputs of the first safety component are wired to the safety-monitoring module.



Y1 and Y2 = Safety outputs → Safety monitoring module

Wiring example 2: Series-wiring of the AZM300 with serial diagnostic function
The safety outputs of the first safety component are wired to the safety-monitoring module. The serial Diagnostic Gateway is connected to the serial diagnostic input of the first safety component.



Y1 and Y2 = Safety outputs → Safety monitoring module
SD-IN → Gateway → Field bus

9.2 Wiring configuration and connector accessories

Function safety switchgear			Pin configuration of the connector	Colour code or conductor numbering of the below-mentioned Schmersal connectors		Possible colour code of other commercially available connectors	
	With conventional diagnostic output	With serial diagnostic function				to EN 60947-5-2: 2007	DIN 47100
A1	U_e		1	BN	1	BN	WH
X1	Safety input 1		2	WH	2	WH	BN
A2	GND		3	BU	3	BU	GN
Y1	Safety output 1		4	BK	4	BK	YE
OUT	Diagnostic output	SD output	5	GY	5	GY	GY
X2	Safety input 2		6	VT	6	PK	PK
Y2	Safety output 2		7	RD	7	VT	BU
IN	Solenoid control	SD input	8	PK	8	or	RD

Connector plug M12, 8-pole

Connecting cables with female connector IP67, M12, 8-pole - 8 x 0.23 mm²		Connecting cables with female connector IP69K, M12, 8-pole - 8 x 0.21 mm²	
Cable length	**Ordering code**	**Cable length**	**Ordering code**
2.5 m	101209963	5.0 m	101210560
5.0 m	101209964	5.0 m	101210561 (angled)
10.0 m	101209960		

10. Declaration of conformity

10.1 EC Declaration of conformity

SCHMERSAL

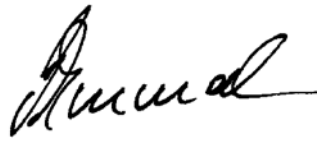
EC Declaration of conformity

Translation of the original
Declaration of Conformity

K.A. Schmersal GmbH & Co. KG
Möddinghofe 30
42279 Wuppertal
Germany
Internet: www.schmersal.com

We hereby certify that the hereafter described safety components both in its basic design and construction conform to the applicable European Directives.

Name of the safety component:	AZM300
Description of the safety component:	Interlocking device with electromagnetic interlock for safety functions
Relevant EC-Directives:	2006/42/EC - EC-Machinery Directive 2004/108/EC - EMC-Directive 1999/5/EC - R&TTE-Directive
Person authorized for the compilation of the technical documentation:	Oliver Wacker Möddinghofe 30 42279 Wuppertal
Notified body, which approved the full quality assurance system, referred to in Appendix X, 2006/42/EC:	TÜV Rheinland Industrie Service GmbH Alboinstr. 56 12103 Berlin ID n°: 0035
Place and date of issue:	Wuppertal, May 26, 2014



Authorised signature
Philip Schmersal
Managing Director

AZM300-B-EN

The currently valid declaration of conformity can be downloaded from the internet at www.schmersal.net.

CE

K. A. Schmersal GmbH & Co. KG
Möddinghofe 30, D - 42279 Wuppertal
Postfach 24 02 63, D - 42232 Wuppertal

Phone: +49 - (0)2 02 - 64 74 - 0
Telefax: +49 - (0)2 02 - 64 74 - 1 00
E-Mail: info@schmersal.com
Internet: http://www.schmersal.com